

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

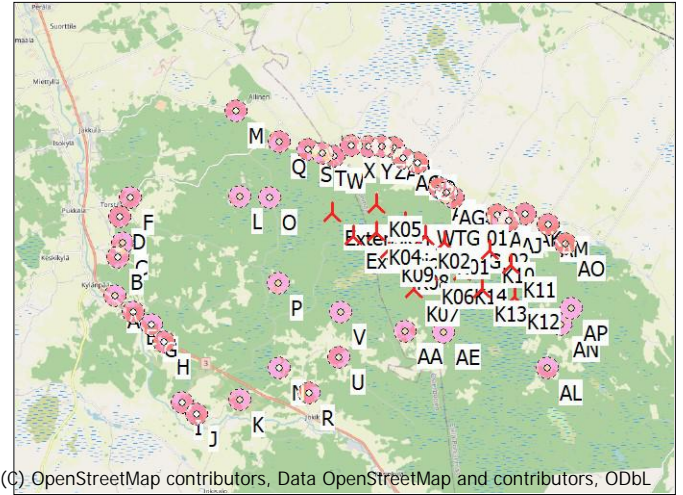
2024-05-23 15:15/4.0.531

DECIBEL - Main Result

Calculation: VE1: Kattiharju + laajennus

Calculation is done according to Finnish guideline " Ympäristöhallinnon ohjeita 2 | 2014" from the Ministry of the Environment of Finland

All coordinates are in
Finish TM ETRS-TM35FIN-ETRS89



WTGs

	East	North	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data	Wind speed [m/s]	LwA_ref [dB(A)]	Uncertainty [dB(A)]	
					Valid	Manufact.	Type-generator								
Extension WTG 01	255,944	6,985,328	50.0	NORDEX Generic 180-169-6800 180.0 l...	Yes	NORDEX	Generic 180-169-6.800	6,800	180.0	169.0	USER	Third octave sound power levels for N175-6-X, Mode 0, STE	8.0	106.9	2.0
Extension WTG 02	256,455	6,984,657	50.0	NORDEX Generic 180-169-6800 180.0 l...	Yes	NORDEX	Generic 180-169-6.800	6,800	180.0	169.0	USER	Third octave sound power levels for N175-6-X, Mode 0, STE	8.0	106.9	2.0
K01	258,892	6,984,359	45.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K02	258,361	6,984,512	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	149.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K03	257,878	6,984,922	48.7	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K04	257,087	6,984,720	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K05	257,163	6,985,462	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K06	259,414	6,983,575	51.8	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	145.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K07	257,962	6,983,145	55.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	149.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K08	257,766	6,984,006	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	149.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K09	257,382	6,984,262	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K10	260,052	6,984,010	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K11	260,574	6,983,589	45.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K12	260,637	6,982,769	47.5	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K13	259,773	6,983,040	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0
K14	259,278	6,983,511	50.0	NORDEX N163/6.X 6800 163.0 IOI hub...	Yes	NORDEX	N163/6.X-6.800	6,800	163.0	150.5	USER	Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added	8.0	108.4	0.0

Calculation Results

Sound level

Noise sensitive area	No.	Name	East	North	Z	Immission height [m]	Demands Noise [dB(A)]	Sound level			Distance to noise demand [m]	Demands fulfilled? 2 dB penalty applied for one or more WTGs	
								From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB(A)]			
A		Noise sensitive point: Finnish normal frequency - User defined (291)	250,049	6,983,575	30.0	4.0	40.0	24.0	0.3	24.3	5,228	Yes	No
B		Noise sensitive point: Finnish normal frequency - User defined (272)	250,198	6,984,576	30.0	4.0	40.0	24.2	0.3	24.6	4,897	Yes	No
C		Noise sensitive point: Finnish normal frequency - User defined (273)	250,341	6,984,961	30.0	4.0	40.0	24.4	0.3	24.8	4,724	Yes	No
D		Noise sensitive point: Finnish normal frequency - User defined (277)	250,343	6,985,667	28.0	4.0	40.0	24.3	0.3	24.6	4,731	Yes	No
E		Noise sensitive point: Finnish normal frequency - User defined (269)	250,494	6,983,108	30.0	4.0	40.0	24.5	0.3	24.8	4,940	Yes	No
F		Noise sensitive point: Finnish normal frequency - User defined (279)	250,645	6,986,141	29.9	4.0	40.0	24.6	0.4	25.0	4,487	Yes	No
G		Noise sensitive point: Finnish normal frequency - User defined (268)	250,968	6,982,726	34.7	4.0	40.0	25.1	0.3	25.4	4,643	Yes	No
H		Noise sensitive point: Finnish normal frequency - User defined (252)	251,226	6,982,266	34.3	4.0	40.0	25.2	0.3	25.6	4,611	Yes	No
I		Noise sensitive point: Finnish normal frequency - User defined (263)	251,592	6,980,644	37.4	4.0	40.0	24.8	0.3	25.0	5,194	Yes	No
J		Noise sensitive point: Finnish normal frequency - User defined (260)	251,960	6,980,299	35.0	4.0	40.0	25.0	0.2	25.2	5,140	Yes	No
K		Noise sensitive point: Finnish normal frequency - User defined (261)	253,131	6,980,587	43.3	4.0	40.0	26.7	0.3	27.0	4,102	Yes	No
L		Noise sensitive point: Finnish normal frequency - User defined (259)	253,546	6,985,931	45.0	4.0	40.0	30.6	0.7	31.4	1,603	Yes	No
M		Noise sensitive point: Finnish normal frequency - User defined (290)	253,607	6,988,208	24.5	4.0	40.0	27.6	0.5	28.1	2,834	Yes	No
N		Noise sensitive point: Finnish normal frequency - User defined (264)	254,248	6,981,332	42.1	4.0	40.0	29.4	0.3	29.7	2,796	Yes	No
O		Noise sensitive point: Finnish normal frequency - User defined (258)	254,339	6,985,826	55.0	4.0	40.0	33.6	0.9	34.6	813	Yes	No
P		Noise sensitive point: Finnish normal frequency - User defined (255)	254,373	6,983,560	46.0	4.0	40.0	33.1	0.6	33.7	1,234	Yes	No
Q		Noise sensitive point: Finnish normal frequency - User defined (289)	254,693	6,987,302	30.0	4.0	40.0	31.4	0.7	32.1	1,455	Yes	No
R		Noise sensitive point: Finnish normal frequency - User defined (262)	255,007	6,980,631	40.0	4.0	40.0	29.5	0.2	29.7	2,770	Yes	No
S		Noise sensitive point: Finnish normal frequency - User defined (287)	255,437	6,987,054	30.0	4.0	40.0	33.9	0.7	34.7	885	Yes	No
T		Noise sensitive point: Finnish normal frequency - User defined (283)	255,814	6,986,908	29.4	4.0	40.0	35.4	0.7	36.1	631	Yes	No
U		Noise sensitive point: Finnish normal frequency - User defined (265)	255,826	6,981,493	42.9	4.0	40.0	32.9	0.2	33.1	1,581	Yes	No
V		Noise sensitive point: Finnish normal frequency - User defined (254)	255,991	6,982,694	45.0	4.0	40.0	36.6	0.3	37.0	611	Yes	No
W		Noise sensitive point: Finnish normal frequency - User defined (282)	256,145	6,986,833	25.0	4.0	40.0	36.4	0.7	37.0	488	Yes	No
X		Noise sensitive point: Finnish normal frequency - User defined (288)	256,601	6,987,078	25.0	4.0	40.0	35.9	0.5	36.3	643	Yes	No
Y		Noise sensitive point: Finnish normal frequency - User defined (286)	257,040	6,987,001	26.9	4.0	40.0	36.6	0.4	37.0	514	Yes	No
Z		Noise sensitive point: Finnish normal frequency - User defined (285)	257,405	6,986,979	30.0	4.0	40.0	36.8	0.3	37.0	503	Yes	No
AA		Noise sensitive point: Finnish normal frequency - User defined (267)	257,676	6,982,066	50.0	4.0	40.0	39.4	0.1	39.5	77	Yes	No
AB		Noise sensitive point: Finnish normal frequency - User defined (284)	257,698	6,986,934	29.8	4.0	40.0	36.8	0.2	37.1	509	Yes	No
AC		Noise sensitive point: Finnish normal frequency - User defined (281)	257,931	6,986,612	28.2	4.0	40.0	38.3	0.2	38.4	265	Yes	No

To be continued on next page...

DECIBEL - Main Result

Calculation: VE1: Kattiharju + laajennus

...continued from previous page

Noise sensitive area

No.	Name	East	North	Z	Immission height	Demands Noise	Sound level From WTGs	Uncertainty margin	WTG+Uncertainty margin	Distance to noise demand	Demands fulfilled? Noise	2 dB penalty applied for one or more WTGs
					[m]	[dB(A)]	[dB(A)]	[dB]	[dB(A)]	[m]		
AD	Noise sensitive point: Finnish normal frequency - User defined (280)	258,308	6,986,493	30.0	4.0	40.0	38.2	0.2	38.4	291	Yes	No
AE	Noise sensitive point: Finnish normal frequency - User defined (266)	258,674	6,981,951	50.0	4.0	40.0	39.5	0.0	39.6	79	Yes	No
AF	Noise sensitive point: Finnish normal frequency - User defined (278)	258,840	6,985,771	30.0	4.0	40.0	40.7	0.1	40.7	-128	No	No
AG	Noise sensitive point: Finnish normal frequency - User defined (276)	259,027	6,985,623	32.8	4.0	40.0	40.9	0.1	41.0	-169	No	No
AH	Noise sensitive point: Finnish normal frequency - User defined (275)	259,178	6,985,473	37.8	4.0	40.0	41.3	0.1	41.3	-226	No	No
AI	Noise sensitive point: Finnish normal frequency - User defined (257)	260,319	6,984,939	45.0	4.0	40.0	41.0	0.0	41.0	-158	No	No
AJ	Noise sensitive point: Finnish normal frequency - User defined (256)	260,630	6,984,768	39.4	4.0	40.0	41.0	0.0	41.0	-145	No	No
AK	Noise sensitive point: Finnish normal frequency - User defined (274)	261,049	6,984,913	35.0	4.0	40.0	38.5	0.0	38.6	224	Yes	No
AL	Noise sensitive point: Finnish normal frequency - User defined (250)	261,344	6,980,808	50.0	4.0	40.0	33.2	0.0	33.2	1,198	Yes	No
AM	Noise sensitive point: Finnish normal frequency - User defined (271)	261,661	6,984,584	36.4	4.0	40.0	37.1	0.0	37.1	449	Yes	No
AN	Noise sensitive point: Finnish normal frequency - User defined (251)	261,796	6,981,916	50.0	4.0	40.0	36.0	0.0	36.0	564	Yes	No
AO	Noise sensitive point: Finnish normal frequency - User defined (270)	262,098	6,984,032	40.0	4.0	40.0	36.2	0.0	36.2	596	Yes	No
AP	Noise sensitive point: Finnish normal frequency - User defined (253)	262,110	6,982,324	50.0	4.0	40.0	35.7	0.0	35.7	640	Yes	No

Distances (m)

WTG

NSA	Extension WTG 01	Extension WTG 02	K01	K02	K03	K04	K05	K06	K07	K08	K09	K10	K11	K12	K13	K14
A	6146	6492	8872	8359	7938	7126	7355	8359	7919	7724	7360	10006	10518	10611	9732	9223
B	5791	6253	8691	8158	7682	6886	7016	8271	7889	7584	7186	9863	10416	10587	9691	9136
C	5611	6117	8566	8027	7532	6746	6836	8185	7829	7481	7071	9751	10317	10520	9619	9048
D	5607	6191	8642	8095	7566	6805	6818	8332	8020	7601	7173	9843	10433	10687	9782	9185
E	5881	6155	8485	7986	7598	6782	7067	7928	7463	7322	6979	9594	10085	10142	9273	8787
F	5357	5992	8431	7881	7330	6592	6549	8176	7901	7429	6989	9639	10245	10538	9634	9018
G	5611	5813	8085	7600	7246	6431	6768	7489	7002	6913	6591	9168	9638	9662	8805	8341
H	5621	5746	7941	7475	7158	6350	6738	7301	6788	6763	6467	8990	9435	9418	8576	8142
I	6389	6301	8185	7791	7598	6837	7360	7420	6839	7025	6823	9099	9446	9285	8519	8198
J	6411	6256	8028	7658	7504	6765	7325	7233	6638	6884	6711	8896	9215	9016	8274	7986
K	5509	5251	6881	6535	6424	5717	6322	6065	5463	5756	5615	7716	8020	7811	7076	6802
L	2471	3174	5569	5016	4445	3740	3645	5404	5218	4635	4180	6779	7403	7759	6861	6218
M	3706	4549	6534	6018	5385	4924	4490	6672	6674	5908	5457	7686	8353	8882	8040	7359
N	4338	3988	5540	5195	5102	4417	5052	4728	4130	4416	4287	6388	6712	6544	5779	5478
O	1679	2416	4780	4228	3650	2960	2845	4652	4504	3878	3419	5991	6620	6996	6102	5451
P	2364	2352	4586	4097	3758	2949	3374	4038	3610	3420	3088	5693	6197	6309	5421	4902
Q	2335	3176	5124	4605	3973	3519	3078	5263	5285	4503	4056	6285	6950	7470	6627	5945
R	4786	4276	5381	5126	5159	4584	5287	4500	3877	4356	4336	6068	6300	6018	5337	5148
S	1798	2602	4379	3872	3239	2856	2346	4576	4650	3833	3400	5525	6192	6734	5905	5222
T	1584	2339	3994	3494	2862	2530	1976	4224	4330	3495	3074	5131	5799	6351	5531	4848
U	3834	3224	4194	3939	3993	3462	4185	3319	2698	3173	3174	4915	5187	4974	4237	3996
V	2633	2016	3343	2985	2918	2302	3004	2576	2021	2206	2095	4266	4666	4644	3795	3385
W	1517	2196	3694	3207	2578	2312	1706	3968	4109	3257	2851	4817	5486	6054	5245	4563
X	1868	2424	3553	3109	2504	2406	1710	3942	4159	3283	2920	4614	5284	5900	5131	4457
Y	1999	2414	3224	2816	2240	2280	1543	3689	3962	3080	2758	4242	4909	5550	4809	4143
Z	2203	2507	3011	2644	2109	2280	1535	3548	3872	2993	2715	3975	4637	5304	4593	3939
AA	3691	2862	2594	2538	2861	2717	3432	1679	1116	1941	2214	3068	3272	3041	2311	2156
AB	2377	2592	2836	2509	2019	2295	1565	3432	3796	2927	2689	3751	4408	5094	4409	3768
AC	2364	2448	2448	2142	1690	2070	1382	3073	3465	2609	2412	3355	4013	4697	4016	3379
AD	2634	2607	2211	1980	1628	2151	1540	2918	3364	2544	2414	3032	3681	4389	3748	3134
AE	4340	3497	2416	2578	3074	3189	3820	1644	1389	2245	2646	2476	2507	2125	1546	1672
AF	2928	2631	1412	1346	1282	2043	1704	2235	2767	2065	2097	2136	2785	3496	2884	2301
AG	3095	2746	1270	1294	1345	2138	1870	2136	2695	2049	2134	1910	2554	3275	2687	2125
AH	3235	2841	1149	1261	1411	2221	2014	2045	2625	2035	2165	1703	2343	3070	2503	1963
AI	4389	3872	1539	2003	2439	3237	3197	2341	2960	2716	3012	966	1373	2192	1975	1766
AJ	4716	4174	1784	2282	2754	3541	3533	2515	3121	2962	3285	953	1180	1998	1928	1845
AK	5118	4598	2226	2716	3169	3964	3922	2953	3555	3404	3722	1344	1406	2182	2265	2257
AL	7037	6218	4312	4753	5376	5778	6252	4027	4108	4796	5253	3451	2884	2083	2728	3400
AM	5761	5203	2776	3299	3796	4573	4580	3398	3966	3935	4288	1707	1473	2083	2437	2612
AN	6770	5999	3792	4303	4935	5477	5830	3765	4024	4537	4995	2723	2070	1438	2313	2979
AO	6285	5674	3221	3765	4310	5055	5135	3710	4227	4329	4719	2045	1586	1930	2526	2866
AP	6854	6113	3805	4338	4963	5562	5854	3899	4226	4655	5106	2659	1989	1538	2443	3069

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

LWA,ref:	Sound pressure level at WTG
K:	Pure tone
Dc:	Directivity correction
Adiv:	the attenuation due to geometrical divergence
Aatm:	the attenuation due to atmospheric absorption
Agr:	the attenuation due to ground effect
Abar:	the attenuation due to a barrier
Amisc:	the attenuation due to miscellaneous other effects
Cmet:	Meteorological correction

Calculation Results

Noise sensitive area: A Noise sensitive point: Finnish normal frequency - User defined (291)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	6,146	6,149	0	12.29	2.00	14.29	106.9	0.00	86.78	-	-	0.00	0.00	-
Extension WTG 02	6,492	6,495	0	11.66	2.00	13.66	106.9	0.00	87.25	-	-	0.00	0.00	-
K01	8,872	8,873	0	11.30	0.00	11.30	108.4	0.00	89.96	-	-	0.00	0.00	-
K02	8,359	8,360	0	11.96	0.00	11.96	108.4	0.00	89.44	-	-	0.00	0.00	-
K03	7,938	7,940	0	12.52	0.00	12.52	108.4	0.00	89.00	-	-	0.00	0.00	-
K04	7,126	7,127	0	13.70	0.00	13.70	108.4	0.00	88.06	-	-	0.00	0.00	-
K05	7,355	7,357	0	13.36	0.00	13.36	108.4	0.00	88.33	-	-	0.00	0.00	-
K06	8,359	8,361	0	11.97	0.00	11.97	108.4	0.00	89.44	-	-	0.00	0.00	-
K07	7,919	7,921	0	12.56	0.00	12.56	108.4	0.00	88.98	-	-	0.00	0.00	-
K08	7,724	7,725	0	12.83	0.00	12.83	108.4	0.00	88.76	-	-	0.00	0.00	-
K09	7,360	7,362	0	13.35	0.00	13.35	108.4	0.00	88.34	-	-	0.00	0.00	-
K10	10,006	10,007	0	9.96	0.00	9.96	108.4	0.00	91.01	-	-	0.00	0.00	-
K11	10,518	10,519	0	9.41	0.00	9.41	108.4	0.00	91.44	-	-	0.00	0.00	-
K12	10,611	10,613	0	9.31	0.00	9.31	108.4	0.00	91.52	-	-	0.00	0.00	-
K13	9,732	9,733	0	10.27	0.00	10.27	108.4	0.00	90.77	-	-	0.00	0.00	-
K14	9,223	9,224	0	10.87	0.00	10.87	108.4	0.00	90.30	-	-	0.00	0.00	-
Sum						24.26								

- Data undefined due to calculation with octave data

Noise sensitive area: B Noise sensitive point: Finnish normal frequency - User defined (272)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,791	5,794	0	12.98	2.00	14.98	106.9	0.00	86.26	-	-	0.00	0.00	-
Extension WTG 02	6,253	6,256	0	12.09	2.00	14.09	106.9	0.00	86.93	-	-	0.00	0.00	-
K01	8,691	8,692	0	11.53	0.00	11.53	108.4	0.00	89.78	-	-	0.00	0.00	-
K02	8,158	8,159	0	12.23	0.00	12.23	108.4	0.00	89.23	-	-	0.00	0.00	-
K03	7,682	7,684	0	12.88	0.00	12.88	108.4	0.00	88.71	-	-	0.00	0.00	-
K04	6,886	6,888	0	14.07	0.00	14.07	108.4	0.00	87.76	-	-	0.00	0.00	-
K05	7,016	7,018	0	13.87	0.00	13.87	108.4	0.00	87.92	-	-	0.00	0.00	-
K06	8,271	8,273	0	12.09	0.00	12.09	108.4	0.00	89.35	-	-	0.00	0.00	-
K07	7,889	7,891	0	12.60	0.00	12.60	108.4	0.00	88.94	-	-	0.00	0.00	-
K08	7,584	7,586	0	13.03	0.00	13.03	108.4	0.00	88.60	-	-	0.00	0.00	-
K09	7,186	7,188	0	13.61	0.00	13.61	108.4	0.00	88.13	-	-	0.00	0.00	-
K10	9,863	9,865	0	10.12	0.00	10.12	108.4	0.00	90.88	-	-	0.00	0.00	-
K11	10,416	10,417	0	9.52	0.00	9.52	108.4	0.00	91.35	-	-	0.00	0.00	-
K12	10,587	10,588	0	9.33	0.00	9.33	108.4	0.00	91.50	-	-	0.00	0.00	-
K13	9,691	9,692	0	10.32	0.00	10.32	108.4	0.00	90.73	-	-	0.00	0.00	-
K14	9,136	9,137	0	10.97	0.00	10.97	108.4	0.00	90.22	-	-	0.00	0.00	-
Sum						24.56								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: C Noise sensitive point: Finnish normal frequency - User defined (273)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,611	5,614	0	13.33	2.00	15.33	106.9	0.00	85.99	-	-	0.00	0.00	-
Extension WTG 02	6,117	6,120	0	12.35	2.00	14.35	106.9	0.00	86.74	-	-	0.00	0.00	-
K01	8,566	8,568	0	11.69	0.00	11.69	108.4	0.00	89.66	-	-	0.00	0.00	-
K02	8,027	8,029	0	12.41	0.00	12.41	108.4	0.00	89.09	-	-	0.00	0.00	-
K03	7,532	7,534	0	13.10	0.00	13.10	108.4	0.00	88.54	-	-	0.00	0.00	-
K04	6,746	6,748	0	14.29	0.00	14.29	108.4	0.00	87.58	-	-	0.00	0.00	-
K05	6,836	6,838	0	14.15	0.00	14.15	108.4	0.00	87.70	-	-	0.00	0.00	-
K06	8,185	8,187	0	12.20	0.00	12.20	108.4	0.00	89.26	-	-	0.00	0.00	-
K07	7,829	7,831	0	12.68	0.00	12.68	108.4	0.00	88.88	-	-	0.00	0.00	-
K08	7,481	7,483	0	13.18	0.00	13.18	108.4	0.00	88.48	-	-	0.00	0.00	-
K09	7,071	7,073	0	13.78	0.00	13.78	108.4	0.00	87.99	-	-	0.00	0.00	-
K10	9,751	9,752	0	10.25	0.00	10.25	108.4	0.00	90.78	-	-	0.00	0.00	-
K11	10,317	10,319	0	9.62	0.00	9.62	108.4	0.00	91.27	-	-	0.00	0.00	-
K12	10,520	10,521	0	9.40	0.00	9.40	108.4	0.00	91.44	-	-	0.00	0.00	-
K13	9,619	9,620	0	10.40	0.00	10.40	108.4	0.00	90.66	-	-	0.00	0.00	-
K14	9,048	9,049	0	11.08	0.00	11.08	108.4	0.00	90.13	-	-	0.00	0.00	-
Sum						24.76								

- Data undefined due to calculation with octave data

Noise sensitive area: D Noise sensitive point: Finnish normal frequency - User defined (277)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,607	5,610	0	13.34	2.00	15.34	106.9	0.00	85.98	-	-	0.00	0.00	-
Extension WTG 02	6,191	6,193	0	12.21	2.00	14.21	106.9	0.00	86.84	-	-	0.00	0.00	-
K01	8,642	8,644	0	11.59	0.00	11.59	108.4	0.00	89.73	-	-	0.00	0.00	-
K02	8,095	8,097	0	12.32	0.00	12.32	108.4	0.00	89.17	-	-	0.00	0.00	-
K03	7,566	7,568	0	13.05	0.00	13.05	108.4	0.00	88.58	-	-	0.00	0.00	-
K04	6,805	6,807	0	14.20	0.00	14.20	108.4	0.00	87.66	-	-	0.00	0.00	-
K05	6,818	6,820	0	14.18	0.00	14.18	108.4	0.00	87.68	-	-	0.00	0.00	-
K06	8,332	8,334	0	12.01	0.00	12.01	108.4	0.00	89.42	-	-	0.00	0.00	-
K07	8,020	8,022	0	12.42	0.00	12.42	108.4	0.00	89.09	-	-	0.00	0.00	-
K08	7,601	7,603	0	13.01	0.00	13.01	108.4	0.00	88.62	-	-	0.00	0.00	-
K09	7,173	7,175	0	13.63	0.00	13.63	108.4	0.00	88.12	-	-	0.00	0.00	-
K10	9,843	9,844	0	10.15	0.00	10.15	108.4	0.00	90.86	-	-	0.00	0.00	-
K11	10,433	10,434	0	9.50	0.00	9.50	108.4	0.00	91.37	-	-	0.00	0.00	-
K12	10,687	10,688	0	9.23	0.00	9.23	108.4	0.00	91.58	-	-	0.00	0.00	-
K13	9,782	9,784	0	10.22	0.00	10.22	108.4	0.00	90.81	-	-	0.00	0.00	-
K14	9,185	9,187	0	10.92	0.00	10.92	108.4	0.00	90.26	-	-	0.00	0.00	-
Sum						24.65								

- Data undefined due to calculation with octave data

Noise sensitive area: E Noise sensitive point: Finnish normal frequency - User defined (269)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,881	5,884	0	12.80	2.00	14.80	106.9	0.00	86.39	-	-	0.00	0.00	-
Extension WTG 02	6,155	6,157	0	12.28	2.00	14.28	106.9	0.00	86.79	-	-	0.00	0.00	-
K01	8,485	8,486	0	11.79	0.00	11.79	108.4	0.00	89.57	-	-	0.00	0.00	-
K02	7,986	7,987	0	12.47	0.00	12.47	108.4	0.00	89.05	-	-	0.00	0.00	-
K03	7,598	7,600	0	13.00	0.00	13.00	108.4	0.00	88.62	-	-	0.00	0.00	-
K04	6,782	6,784	0	14.23	0.00	14.23	108.4	0.00	87.63	-	-	0.00	0.00	-
K05	7,067	7,069	0	13.79	0.00	13.79	108.4	0.00	87.99	-	-	0.00	0.00	-
K06	7,928	7,930	0	12.55	0.00	12.55	108.4	0.00	88.99	-	-	0.00	0.00	-
K07	7,463	7,465	0	13.21	0.00	13.21	108.4	0.00	88.46	-	-	0.00	0.00	-
K08	7,322	7,324	0	13.41	0.00	13.41	108.4	0.00	88.29	-	-	0.00	0.00	-
K09	6,979	6,981	0	13.92	0.00	13.92	108.4	0.00	87.88	-	-	0.00	0.00	-
K10	9,594	9,595	0	10.43	0.00	10.43	108.4	0.00	90.64	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
K11	10,085	10,086	0	9.88	0.00	9.88	108.4	0.00	91.07	-	-	0.00	0.00	-
K12	10,142	10,143	0	9.81	0.00	9.81	108.4	0.00	91.12	-	-	0.00	0.00	-
K13	9,273	9,274	0	10.81	0.00	10.81	108.4	0.00	90.35	-	-	0.00	0.00	-
K14	8,787	8,789	0	11.40	0.00	11.40	108.4	0.00	89.88	-	-	0.00	0.00	-
Sum						24.80								

- Data undefined due to calculation with octave data

Noise sensitive area: F Noise sensitive point: Finnish normal frequency - User defined (279)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,357	5,360	0	13.86	2.00	15.86	106.9	0.00	85.58	-	-	0.00	0.00	-
Extension WTG 02	5,992	5,995	0	12.58	2.00	14.58	106.9	0.00	86.56	-	-	0.00	0.00	-
K01	8,431	8,433	0	11.86	0.00	11.86	108.4	0.00	89.52	-	-	0.00	0.00	-
K02	7,881	7,882	0	12.61	0.00	12.61	108.4	0.00	88.93	-	-	0.00	0.00	-
K03	7,330	7,332	0	13.39	0.00	13.39	108.4	0.00	88.30	-	-	0.00	0.00	-
K04	6,592	6,594	0	14.54	0.00	14.54	108.4	0.00	87.38	-	-	0.00	0.00	-
K05	6,549	6,551	0	14.61	0.00	14.61	108.4	0.00	87.33	-	-	0.00	0.00	-
K06	8,176	8,178	0	12.22	0.00	12.22	108.4	0.00	89.25	-	-	0.00	0.00	-
K07	7,901	7,903	0	12.58	0.00	12.58	108.4	0.00	88.96	-	-	0.00	0.00	-
K08	7,429	7,431	0	13.26	0.00	13.26	108.4	0.00	88.42	-	-	0.00	0.00	-
K09	6,989	6,991	0	13.91	0.00	13.91	108.4	0.00	87.89	-	-	0.00	0.00	-
K10	9,639	9,640	0	10.38	0.00	10.38	108.4	0.00	90.68	-	-	0.00	0.00	-
K11	10,245	10,246	0	9.70	0.00	9.70	108.4	0.00	91.21	-	-	0.00	0.00	-
K12	10,538	10,540	0	9.38	0.00	9.38	108.4	0.00	91.46	-	-	0.00	0.00	-
K13	9,634	9,635	0	10.39	0.00	10.39	108.4	0.00	90.68	-	-	0.00	0.00	-
K14	9,018	9,020	0	11.12	0.00	11.12	108.4	0.00	90.10	-	-	0.00	0.00	-
Sum						24.96								

- Data undefined due to calculation with octave data

Noise sensitive area: G Noise sensitive point: Finnish normal frequency - User defined (268)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,611	5,614	0	13.33	2.00	15.33	106.9	0.00	85.99	-	-	0.00	0.00	-
Extension WTG 02	5,813	5,816	0	12.93	2.00	14.93	106.9	0.00	86.29	-	-	0.00	0.00	-
K01	8,085	8,086	0	12.32	0.00	12.32	108.4	0.00	89.16	-	-	0.00	0.00	-
K02	7,600	7,602	0	13.01	0.00	13.01	108.4	0.00	88.62	-	-	0.00	0.00	-
K03	7,246	7,247	0	13.52	0.00	13.52	108.4	0.00	88.20	-	-	0.00	0.00	-
K04	6,431	6,433	0	14.81	0.00	14.81	108.4	0.00	87.17	-	-	0.00	0.00	-
K05	6,768	6,769	0	14.26	0.00	14.26	108.4	0.00	87.61	-	-	0.00	0.00	-
K06	7,489	7,491	0	13.18	0.00	13.18	108.4	0.00	88.49	-	-	0.00	0.00	-
K07	7,002	7,004	0	13.90	0.00	13.90	108.4	0.00	87.91	-	-	0.00	0.00	-
K08	6,913	6,915	0	14.04	0.00	14.04	108.4	0.00	87.80	-	-	0.00	0.00	-
K09	6,591	6,593	0	14.54	0.00	14.54	108.4	0.00	87.38	-	-	0.00	0.00	-
K10	9,168	9,169	0	10.94	0.00	10.94	108.4	0.00	90.25	-	-	0.00	0.00	-
K11	9,638	9,639	0	10.38	0.00	10.38	108.4	0.00	90.68	-	-	0.00	0.00	-
K12	9,662	9,664	0	10.35	0.00	10.35	108.4	0.00	90.70	-	-	0.00	0.00	-
K13	8,805	8,806	0	11.38	0.00	11.38	108.4	0.00	89.90	-	-	0.00	0.00	-
K14	8,341	8,343	0	11.98	0.00	11.98	108.4	0.00	89.43	-	-	0.00	0.00	-
Sum						25.37								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: H Noise sensitive point: Finnish normal frequency - User defined (252)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,621	5,623	0	13.32	2.00	15.32	106.9	0.00	86.00	-	-	0.00	0.00	-
Extension WTG 02	5,746	5,749	0	13.07	2.00	15.07	106.9	0.00	86.19	-	-	0.00	0.00	-
K01	7,941	7,943	0	12.52	0.00	12.52	108.4	0.00	89.00	-	-	0.00	0.00	-
K02	7,475	7,477	0	13.19	0.00	13.19	108.4	0.00	88.47	-	-	0.00	0.00	-
K03	7,158	7,159	0	13.65	0.00	13.65	108.4	0.00	88.10	-	-	0.00	0.00	-
K04	6,350	6,352	0	14.94	0.00	14.94	108.4	0.00	87.06	-	-	0.00	0.00	-
K05	6,738	6,740	0	14.30	0.00	14.30	108.4	0.00	87.57	-	-	0.00	0.00	-
K06	7,301	7,303	0	13.45	0.00	13.45	108.4	0.00	88.27	-	-	0.00	0.00	-
K07	6,788	6,790	0	14.23	0.00	14.23	108.4	0.00	87.64	-	-	0.00	0.00	-
K08	6,763	6,765	0	14.27	0.00	14.27	108.4	0.00	87.61	-	-	0.00	0.00	-
K09	6,467	6,469	0	14.75	0.00	14.75	108.4	0.00	87.22	-	-	0.00	0.00	-
K10	8,990	8,992	0	11.15	0.00	11.15	108.4	0.00	90.08	-	-	0.00	0.00	-
K11	9,435	9,436	0	10.62	0.00	10.62	108.4	0.00	90.50	-	-	0.00	0.00	-
K12	9,418	9,419	0	10.64	0.00	10.64	108.4	0.00	90.48	-	-	0.00	0.00	-
K13	8,576	8,578	0	11.67	0.00	11.67	108.4	0.00	89.67	-	-	0.00	0.00	-
K14	8,142	8,144	0	12.24	0.00	12.24	108.4	0.00	89.22	-	-	0.00	0.00	-
Sum						25.55								

- Data undefined due to calculation with octave data

Noise sensitive area: I Noise sensitive point: Finnish normal frequency - User defined (263)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	6,389	6,392	0	11.84	2.00	13.84	106.9	0.00	87.11	-	-	0.00	0.00	-
Extension WTG 02	6,301	6,303	0	12.00	2.00	14.00	106.9	0.00	86.99	-	-	0.00	0.00	-
K01	8,185	8,187	0	12.19	0.00	12.19	108.4	0.00	89.26	-	-	0.00	0.00	-
K02	7,791	7,792	0	12.74	0.00	12.74	108.4	0.00	88.83	-	-	0.00	0.00	-
K03	7,598	7,600	0	13.00	0.00	13.00	108.4	0.00	88.62	-	-	0.00	0.00	-
K04	6,837	6,839	0	14.15	0.00	14.15	108.4	0.00	87.70	-	-	0.00	0.00	-
K05	7,360	7,362	0	13.35	0.00	13.35	108.4	0.00	88.34	-	-	0.00	0.00	-
K06	7,420	7,422	0	13.28	0.00	13.28	108.4	0.00	88.41	-	-	0.00	0.00	-
K07	6,839	6,841	0	14.15	0.00	14.15	108.4	0.00	87.70	-	-	0.00	0.00	-
K08	7,025	7,027	0	13.86	0.00	13.86	108.4	0.00	87.94	-	-	0.00	0.00	-
K09	6,823	6,825	0	14.17	0.00	14.17	108.4	0.00	87.68	-	-	0.00	0.00	-
K10	9,099	9,100	0	11.02	0.00	11.02	108.4	0.00	90.18	-	-	0.00	0.00	-
K11	9,446	9,447	0	10.60	0.00	10.60	108.4	0.00	90.51	-	-	0.00	0.00	-
K12	9,285	9,286	0	10.80	0.00	10.80	108.4	0.00	90.36	-	-	0.00	0.00	-
K13	8,519	8,520	0	11.75	0.00	11.75	108.4	0.00	89.61	-	-	0.00	0.00	-
K14	8,198	8,199	0	12.17	0.00	12.17	108.4	0.00	89.28	-	-	0.00	0.00	-
Sum						25.02								

- Data undefined due to calculation with octave data

Noise sensitive area: J Noise sensitive point: Finnish normal frequency - User defined (260)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	6,411	6,414	0	11.80	2.00	13.80	106.9	0.00	87.14	-	-	0.00	0.00	-
Extension WTG 02	6,256	6,259	0	12.09	2.00	14.09	106.9	0.00	86.93	-	-	0.00	0.00	-
K01	8,028	8,029	0	12.40	0.00	12.40	108.4	0.00	89.09	-	-	0.00	0.00	-
K02	7,658	7,659	0	12.92	0.00	12.92	108.4	0.00	88.68	-	-	0.00	0.00	-
K03	7,504	7,506	0	13.14	0.00	13.14	108.4	0.00	88.51	-	-	0.00	0.00	-
K04	6,765	6,767	0	14.26	0.00	14.26	108.4	0.00	87.61	-	-	0.00	0.00	-
K05	7,325	7,327	0	13.40	0.00	13.40	108.4	0.00	88.30	-	-	0.00	0.00	-
K06	7,233	7,235	0	13.56	0.00	13.56	108.4	0.00	88.19	-	-	0.00	0.00	-
K07	6,638	6,640	0	14.48	0.00	14.48	108.4	0.00	87.44	-	-	0.00	0.00	-
K08	6,884	6,886	0	14.08	0.00	14.08	108.4	0.00	87.76	-	-	0.00	0.00	-
K09	6,711	6,713	0	14.35	0.00	14.35	108.4	0.00	87.54	-	-	0.00	0.00	-
K10	8,896	8,898	0	11.27	0.00	11.27	108.4	0.00	89.99	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
K11	9,215	9,216	0	10.88	0.00	10.88	108.4	0.00	90.29	-	-	0.00	0.00	-
K12	9,016	9,017	0	11.12	0.00	11.12	108.4	0.00	90.10	-	-	0.00	0.00	-
K13	8,274	8,276	0	12.07	0.00	12.07	108.4	0.00	89.36	-	-	0.00	0.00	-
K14	7,986	7,988	0	12.46	0.00	12.46	108.4	0.00	89.05	-	-	0.00	0.00	-
Sum						25.21								

- Data undefined due to calculation with octave data

Noise sensitive area: K Noise sensitive point: Finnish normal frequency - User defined (261)

Wind speed: 8.0 m/s

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,509	5,512	0	13.54	2.00	15.54	106.9	0.00	85.83	-	-	0.00	0.00	-
Extension WTG 02	5,251	5,254	0	14.09	2.00	16.09	106.9	0.00	85.41	-	-	0.00	0.00	-
K01	6,881	6,883	0	14.08	0.00	14.08	108.4	0.00	87.76	-	-	0.00	0.00	-
K02	6,535	6,536	0	14.65	0.00	14.65	108.4	0.00	87.31	-	-	0.00	0.00	-
K03	6,424	6,426	0	14.82	0.00	14.82	108.4	0.00	87.16	-	-	0.00	0.00	-
K04	5,717	5,719	0	16.06	0.00	16.06	108.4	0.00	86.15	-	-	0.00	0.00	-
K05	6,322	6,324	0	14.99	0.00	14.99	108.4	0.00	87.02	-	-	0.00	0.00	-
K06	6,065	6,067	0	15.45	0.00	15.45	108.4	0.00	86.66	-	-	0.00	0.00	-
K07	5,463	5,465	0	16.55	0.00	16.55	108.4	0.00	85.75	-	-	0.00	0.00	-
K08	5,756	5,758	0	16.00	0.00	16.00	108.4	0.00	86.20	-	-	0.00	0.00	-
K09	5,615	5,618	0	16.25	0.00	16.25	108.4	0.00	85.99	-	-	0.00	0.00	-
K10	7,716	7,717	0	12.83	0.00	12.83	108.4	0.00	88.75	-	-	0.00	0.00	-
K11	8,020	8,022	0	12.41	0.00	12.41	108.4	0.00	89.09	-	-	0.00	0.00	-
K12	7,811	7,813	0	12.70	0.00	12.70	108.4	0.00	88.86	-	-	0.00	0.00	-
K13	7,076	7,077	0	13.78	0.00	13.78	108.4	0.00	88.00	-	-	0.00	0.00	-
K14	6,802	6,804	0	14.20	0.00	14.20	108.4	0.00	87.66	-	-	0.00	0.00	-
Sum						27.00								

- Data undefined due to calculation with octave data

Noise sensitive area: L Noise sensitive point: Finnish normal frequency - User defined (259)

Wind speed: 8.0 m/s

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,471	2,477	0	23.78	2.00	25.78	106.9	0.00	78.88	-	-	0.00	0.00	-
Extension WTG 02	3,174	3,178	0	20.63	2.00	22.63	106.9	0.00	81.04	-	-	0.00	0.00	-
K01	5,569	5,570	0	16.34	0.00	16.34	108.4	0.00	85.92	-	-	0.00	0.00	-
K02	5,016	5,019	0	17.44	0.00	17.44	108.4	0.00	85.01	-	-	0.00	0.00	-
K03	4,445	4,447	0	18.76	0.00	18.76	108.4	0.00	83.96	-	-	0.00	0.00	-
K04	3,740	3,743	0	20.89	0.00	20.89	108.4	0.00	82.46	-	-	0.00	0.00	-
K05	3,645	3,648	0	21.20	0.00	21.20	108.4	0.00	82.24	-	-	0.00	0.00	-
K06	5,404	5,407	0	16.68	0.00	16.68	108.4	0.00	85.66	-	-	0.00	0.00	-
K07	5,218	5,220	0	17.03	0.00	17.03	108.4	0.00	85.35	-	-	0.00	0.00	-
K08	4,635	4,638	0	18.26	0.00	18.26	108.4	0.00	84.33	-	-	0.00	0.00	-
K09	4,180	4,183	0	19.52	0.00	19.52	108.4	0.00	83.43	-	-	0.00	0.00	-
K10	6,779	6,781	0	14.24	0.00	14.24	108.4	0.00	87.63	-	-	0.00	0.00	-
K11	7,403	7,404	0	13.29	0.00	13.29	108.4	0.00	88.39	-	-	0.00	0.00	-
K12	7,759	7,760	0	12.77	0.00	12.77	108.4	0.00	88.80	-	-	0.00	0.00	-
K13	6,861	6,862	0	14.11	0.00	14.11	108.4	0.00	87.73	-	-	0.00	0.00	-
K14	6,218	6,220	0	15.17	0.00	15.17	108.4	0.00	86.88	-	-	0.00	0.00	-
Sum						31.36								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: M Noise sensitive point: Finnish normal frequency - User defined (290)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	3,706	3,711	0	18.63	2.00	20.63	106.9	0.00	82.39	-	-	0.00	0.00	-
Extension WTG 02	4,549	4,553	0	15.95	2.00	17.95	106.9	0.00	84.17	-	-	0.00	0.00	-
K01	6,534	6,536	0	14.64	0.00	14.64	108.4	0.00	87.31	-	-	0.00	0.00	-
K02	6,018	6,020	0	15.53	0.00	15.53	108.4	0.00	86.59	-	-	0.00	0.00	-
K03	5,385	5,388	0	16.69	0.00	16.69	108.4	0.00	85.63	-	-	0.00	0.00	-
K04	4,924	4,927	0	17.62	0.00	17.62	108.4	0.00	84.85	-	-	0.00	0.00	-
K05	4,490	4,493	0	18.64	0.00	18.64	108.4	0.00	84.05	-	-	0.00	0.00	-
K06	6,672	6,674	0	14.43	0.00	14.43	108.4	0.00	87.49	-	-	0.00	0.00	-
K07	6,674	6,676	0	14.42	0.00	14.42	108.4	0.00	87.49	-	-	0.00	0.00	-
K08	5,908	5,911	0	15.72	0.00	15.72	108.4	0.00	86.43	-	-	0.00	0.00	-
K09	5,457	5,460	0	16.55	0.00	16.55	108.4	0.00	85.74	-	-	0.00	0.00	-
K10	7,686	7,688	0	12.87	0.00	12.87	108.4	0.00	88.72	-	-	0.00	0.00	-
K11	8,353	8,355	0	11.96	0.00	11.96	108.4	0.00	89.44	-	-	0.00	0.00	-
K12	8,882	8,884	0	11.29	0.00	11.29	108.4	0.00	89.97	-	-	0.00	0.00	-
K13	8,040	8,042	0	12.38	0.00	12.38	108.4	0.00	89.11	-	-	0.00	0.00	-
K14	7,359	7,361	0	13.35	0.00	13.35	108.4	0.00	88.34	-	-	0.00	0.00	-
Sum						28.10								

- Data undefined due to calculation with octave data

Noise sensitive area: N Noise sensitive point: Finnish normal frequency - User defined (264)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	4,338	4,341	0	16.58	2.00	18.58	106.9	0.00	83.75	-	-	0.00	0.00	-
Extension WTG 02	3,988	3,992	0	17.68	2.00	19.68	106.9	0.00	83.02	-	-	0.00	0.00	-
K01	5,540	5,542	0	16.39	0.00	16.39	108.4	0.00	85.87	-	-	0.00	0.00	-
K02	5,195	5,198	0	17.08	0.00	17.08	108.4	0.00	85.32	-	-	0.00	0.00	-
K03	5,102	5,104	0	17.25	0.00	17.25	108.4	0.00	85.16	-	-	0.00	0.00	-
K04	4,417	4,420	0	18.84	0.00	18.84	108.4	0.00	83.91	-	-	0.00	0.00	-
K05	5,052	5,054	0	17.36	0.00	17.36	108.4	0.00	85.07	-	-	0.00	0.00	-
K06	4,728	4,731	0	18.07	0.00	18.07	108.4	0.00	84.50	-	-	0.00	0.00	-
K07	4,130	4,133	0	19.67	0.00	19.67	108.4	0.00	83.33	-	-	0.00	0.00	-
K08	4,416	4,419	0	18.84	0.00	18.84	108.4	0.00	83.91	-	-	0.00	0.00	-
K09	4,287	4,290	0	19.21	0.00	19.21	108.4	0.00	83.65	-	-	0.00	0.00	-
K10	6,388	6,390	0	14.88	0.00	14.88	108.4	0.00	87.11	-	-	0.00	0.00	-
K11	6,712	6,714	0	14.35	0.00	14.35	108.4	0.00	87.54	-	-	0.00	0.00	-
K12	6,544	6,546	0	14.62	0.00	14.62	108.4	0.00	87.32	-	-	0.00	0.00	-
K13	5,779	5,781	0	15.95	0.00	15.95	108.4	0.00	86.24	-	-	0.00	0.00	-
K14	5,478	5,480	0	16.51	0.00	16.51	108.4	0.00	85.78	-	-	0.00	0.00	-
Sum						29.69								

- Data undefined due to calculation with octave data

Noise sensitive area: O Noise sensitive point: Finnish normal frequency - User defined (258)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	1,679	1,687	0	28.45	2.00	30.45	106.9	0.00	75.54	-	-	0.00	0.00	-
Extension WTG 02	2,416	2,421	0	24.06	2.00	26.06	106.9	0.00	78.68	-	-	0.00	0.00	-
K01	4,780	4,782	0	17.93	0.00	17.93	108.4	0.00	84.59	-	-	0.00	0.00	-
K02	4,228	4,231	0	19.38	0.00	19.38	108.4	0.00	83.53	-	-	0.00	0.00	-
K03	3,650	3,653	0	21.19	0.00	21.19	108.4	0.00	82.25	-	-	0.00	0.00	-
K04	2,960	2,964	0	23.73	0.00	23.73	108.4	0.00	80.44	-	-	0.00	0.00	-
K05	2,845	2,849	0	24.21	0.00	24.21	108.4	0.00	80.09	-	-	0.00	0.00	-
K06	4,652	4,654	0	18.24	0.00	18.24	108.4	0.00	84.36	-	-	0.00	0.00	-
K07	4,504	4,506	0	18.60	0.00	18.60	108.4	0.00	84.08	-	-	0.00	0.00	-
K08	3,878	3,880	0	20.44	0.00	20.44	108.4	0.00	82.78	-	-	0.00	0.00	-
K09	3,419	3,422	0	21.98	0.00	21.98	108.4	0.00	81.69	-	-	0.00	0.00	-
K10	5,991	5,992	0	15.56	0.00	15.56	108.4	0.00	86.55	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
K11	6,620	6,621	0	14.50	0.00	14.50	108.4	0.00	87.42	-	-	0.00	0.00	-
K12	6,996	6,997	0	13.90	0.00	13.90	108.4	0.00	87.90	-	-	0.00	0.00	-
K13	6,102	6,104	0	15.37	0.00	15.37	108.4	0.00	86.71	-	-	0.00	0.00	-
K14	5,451	5,453	0	16.56	0.00	16.56	108.4	0.00	85.73	-	-	0.00	0.00	-
Sum						34.58								

- Data undefined due to calculation with octave data

Noise sensitive area: P Noise sensitive point: Finnish normal frequency - User defined (255)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,364	2,370	0	24.33	2.00	26.33	106.9	0.00	78.49	-	-	0.00	0.00	-
Extension WTG 02	2,352	2,358	0	24.39	2.00	26.39	106.9	0.00	78.45	-	-	0.00	0.00	-
K01	4,586	4,588	0	18.38	0.00	18.38	108.4	0.00	84.23	-	-	0.00	0.00	-
K02	4,097	4,100	0	19.77	0.00	19.77	108.4	0.00	83.26	-	-	0.00	0.00	-
K03	3,758	3,761	0	20.83	0.00	20.83	108.4	0.00	82.51	-	-	0.00	0.00	-
K04	2,949	2,953	0	23.78	0.00	23.78	108.4	0.00	80.41	-	-	0.00	0.00	-
K05	3,374	3,378	0	22.14	0.00	22.14	108.4	0.00	81.57	-	-	0.00	0.00	-
K06	4,038	4,041	0	19.94	0.00	19.94	108.4	0.00	83.13	-	-	0.00	0.00	-
K07	3,610	3,614	0	21.32	0.00	21.32	108.4	0.00	82.16	-	-	0.00	0.00	-
K08	3,420	3,423	0	21.98	0.00	21.98	108.4	0.00	81.69	-	-	0.00	0.00	-
K09	3,088	3,091	0	23.22	0.00	23.22	108.4	0.00	80.80	-	-	0.00	0.00	-
K10	5,693	5,695	0	16.11	0.00	16.11	108.4	0.00	86.11	-	-	0.00	0.00	-
K11	6,197	6,199	0	15.20	0.00	15.20	108.4	0.00	86.85	-	-	0.00	0.00	-
K12	6,309	6,311	0	15.01	0.00	15.01	108.4	0.00	87.00	-	-	0.00	0.00	-
K13	5,421	5,423	0	16.62	0.00	16.62	108.4	0.00	85.69	-	-	0.00	0.00	-
K14	4,902	4,904	0	17.67	0.00	17.67	108.4	0.00	84.81	-	-	0.00	0.00	-
Sum						33.74								

- Data undefined due to calculation with octave data

Noise sensitive area: Q Noise sensitive point: Finnish normal frequency - User defined (289)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,335	2,343	0	24.47	2.00	26.47	106.9	0.00	78.39	-	-	0.00	0.00	-
Extension WTG 02	3,176	3,181	0	20.61	2.00	22.61	106.9	0.00	81.05	-	-	0.00	0.00	-
K01	5,124	5,127	0	17.21	0.00	17.21	108.4	0.00	85.20	-	-	0.00	0.00	-
K02	4,605	4,608	0	18.32	0.00	18.32	108.4	0.00	84.27	-	-	0.00	0.00	-
K03	3,973	3,977	0	20.14	0.00	20.14	108.4	0.00	82.99	-	-	0.00	0.00	-
K04	3,519	3,523	0	21.63	0.00	21.63	108.4	0.00	81.94	-	-	0.00	0.00	-
K05	3,078	3,082	0	23.26	0.00	23.26	108.4	0.00	80.78	-	-	0.00	0.00	-
K06	5,263	5,266	0	16.95	0.00	16.95	108.4	0.00	85.43	-	-	0.00	0.00	-
K07	5,285	5,288	0	16.90	0.00	16.90	108.4	0.00	85.47	-	-	0.00	0.00	-
K08	4,503	4,506	0	18.60	0.00	18.60	108.4	0.00	84.08	-	-	0.00	0.00	-
K09	4,056	4,059	0	19.89	0.00	19.89	108.4	0.00	83.17	-	-	0.00	0.00	-
K10	6,285	6,287	0	15.05	0.00	15.05	108.4	0.00	86.97	-	-	0.00	0.00	-
K11	6,950	6,952	0	13.97	0.00	13.97	108.4	0.00	87.84	-	-	0.00	0.00	-
K12	7,470	7,472	0	13.19	0.00	13.19	108.4	0.00	88.47	-	-	0.00	0.00	-
K13	6,627	6,629	0	14.48	0.00	14.48	108.4	0.00	87.43	-	-	0.00	0.00	-
K14	5,945	5,948	0	15.64	0.00	15.64	108.4	0.00	86.49	-	-	0.00	0.00	-
Sum						32.09								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: R Noise sensitive point: Finnish normal frequency - User defined (262)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	4,786	4,789	0	15.29	2.00	17.29	106.9	0.00	84.61	-	-	0.00	0.00	-
Extension WTG 02	4,276	4,279	0	16.77	2.00	18.77	106.9	0.00	83.63	-	-	0.00	0.00	-
K01	5,381	5,383	0	16.70	0.00	16.70	108.4	0.00	85.62	-	-	0.00	0.00	-
K02	5,126	5,128	0	17.22	0.00	17.22	108.4	0.00	85.20	-	-	0.00	0.00	-
K03	5,159	5,162	0	17.14	0.00	17.14	108.4	0.00	85.26	-	-	0.00	0.00	-
K04	4,584	4,587	0	18.38	0.00	18.38	108.4	0.00	84.23	-	-	0.00	0.00	-
K05	5,287	5,289	0	16.88	0.00	16.88	108.4	0.00	85.47	-	-	0.00	0.00	-
K06	4,500	4,502	0	18.61	0.00	18.61	108.4	0.00	84.07	-	-	0.00	0.00	-
K07	3,877	3,880	0	20.44	0.00	20.44	108.4	0.00	82.78	-	-	0.00	0.00	-
K08	4,356	4,359	0	19.01	0.00	19.01	108.4	0.00	83.79	-	-	0.00	0.00	-
K09	4,336	4,339	0	19.07	0.00	19.07	108.4	0.00	83.75	-	-	0.00	0.00	-
K10	6,068	6,070	0	15.43	0.00	15.43	108.4	0.00	86.66	-	-	0.00	0.00	-
K11	6,300	6,302	0	15.03	0.00	15.03	108.4	0.00	86.99	-	-	0.00	0.00	-
K12	6,018	6,020	0	15.52	0.00	15.52	108.4	0.00	86.59	-	-	0.00	0.00	-
K13	5,337	5,339	0	16.78	0.00	16.78	108.4	0.00	85.55	-	-	0.00	0.00	-
K14	5,148	5,150	0	17.16	0.00	17.16	108.4	0.00	85.24	-	-	0.00	0.00	-
Sum						29.75								

- Data undefined due to calculation with octave data

Noise sensitive area: S Noise sensitive point: Finnish normal frequency - User defined (287)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	1,798	1,807	0	27.63	2.00	29.63	106.9	0.00	76.14	-	-	0.00	0.00	-
Extension WTG 02	2,602	2,609	0	23.13	2.00	25.13	106.9	0.00	79.33	-	-	0.00	0.00	-
K01	4,379	4,382	0	18.95	0.00	18.95	108.4	0.00	83.83	-	-	0.00	0.00	-
K02	3,872	3,875	0	20.46	0.00	20.46	108.4	0.00	82.77	-	-	0.00	0.00	-
K03	3,239	3,243	0	22.64	0.00	22.64	108.4	0.00	81.22	-	-	0.00	0.00	-
K04	2,856	2,861	0	24.16	0.00	24.16	108.4	0.00	80.13	-	-	0.00	0.00	-
K05	2,346	2,352	0	26.50	0.00	26.50	108.4	0.00	78.43	-	-	0.00	0.00	-
K06	4,576	4,579	0	18.40	0.00	18.40	108.4	0.00	84.21	-	-	0.00	0.00	-
K07	4,650	4,654	0	18.22	0.00	18.22	108.4	0.00	84.36	-	-	0.00	0.00	-
K08	3,833	3,837	0	20.58	0.00	20.58	108.4	0.00	82.68	-	-	0.00	0.00	-
K09	3,400	3,404	0	22.05	0.00	22.05	108.4	0.00	81.64	-	-	0.00	0.00	-
K10	5,525	5,527	0	16.42	0.00	16.42	108.4	0.00	85.85	-	-	0.00	0.00	-
K11	6,192	6,194	0	15.21	0.00	15.21	108.4	0.00	86.84	-	-	0.00	0.00	-
K12	6,734	6,736	0	14.31	0.00	14.31	108.4	0.00	87.57	-	-	0.00	0.00	-
K13	5,905	5,907	0	15.72	0.00	15.72	108.4	0.00	86.43	-	-	0.00	0.00	-
K14	5,222	5,225	0	17.01	0.00	17.01	108.4	0.00	85.36	-	-	0.00	0.00	-
Sum						34.66								

- Data undefined due to calculation with octave data

Noise sensitive area: T Noise sensitive point: Finnish normal frequency - User defined (283)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	1,584	1,595	0	29.11	2.00	31.11	106.9	0.00	75.06	-	-	0.00	0.00	-
Extension WTG 02	2,339	2,346	0	24.45	2.00	26.45	106.9	0.00	78.41	-	-	0.00	0.00	-
K01	3,994	3,997	0	20.08	0.00	20.08	108.4	0.00	83.03	-	-	0.00	0.00	-
K02	3,494	3,498	0	21.71	0.00	21.71	108.4	0.00	81.88	-	-	0.00	0.00	-
K03	2,862	2,867	0	24.13	0.00	24.13	108.4	0.00	80.15	-	-	0.00	0.00	-
K04	2,530	2,535	0	25.61	0.00	25.61	108.4	0.00	79.08	-	-	0.00	0.00	-
K05	1,976	1,983	0	28.51	0.00	28.51	108.4	0.00	76.95	-	-	0.00	0.00	-
K06	4,224	4,228	0	19.39	0.00	19.39	108.4	0.00	83.52	-	-	0.00	0.00	-
K07	4,330	4,333	0	19.08	0.00	19.08	108.4	0.00	83.74	-	-	0.00	0.00	-
K08	3,495	3,499	0	21.71	0.00	21.71	108.4	0.00	81.88	-	-	0.00	0.00	-
K09	3,074	3,078	0	23.27	0.00	23.27	108.4	0.00	80.77	-	-	0.00	0.00	-
K10	5,131	5,133	0	17.20	0.00	17.20	108.4	0.00	85.21	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
K11	5,799	5,801	0	15.91	0.00	15.91	108.4	0.00	86.27	-	-	0.00	0.00	-
K12	6,351	6,353	0	14.94	0.00	14.94	108.4	0.00	87.06	-	-	0.00	0.00	-
K13	5,531	5,534	0	16.41	0.00	16.41	108.4	0.00	85.86	-	-	0.00	0.00	-
K14	4,848	4,851	0	17.78	0.00	17.78	108.4	0.00	84.72	-	-	0.00	0.00	-
Sum						36.10								

- Data undefined due to calculation with octave data

Noise sensitive area: U Noise sensitive point: Finnish normal frequency - User defined (265)

Wind speed: 8.0 m/s

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	3,834	3,838	0	18.19	2.00	20.19	106.9	0.00	82.68	-	-	0.00	0.00	-
Extension WTG 02	3,224	3,228	0	20.42	2.00	22.42	106.9	0.00	81.18	-	-	0.00	0.00	-
K01	4,194	4,197	0	19.48	0.00	19.48	108.4	0.00	83.46	-	-	0.00	0.00	-
K02	3,939	3,942	0	20.25	0.00	20.25	108.4	0.00	82.92	-	-	0.00	0.00	-
K03	3,993	3,996	0	20.08	0.00	20.08	108.4	0.00	83.03	-	-	0.00	0.00	-
K04	3,462	3,466	0	21.83	0.00	21.83	108.4	0.00	81.80	-	-	0.00	0.00	-
K05	4,185	4,188	0	19.50	0.00	19.50	108.4	0.00	83.44	-	-	0.00	0.00	-
K06	3,319	3,323	0	22.34	0.00	22.34	108.4	0.00	81.43	-	-	0.00	0.00	-
K07	2,698	2,703	0	24.84	0.00	24.84	108.4	0.00	79.64	-	-	0.00	0.00	-
K08	3,173	3,176	0	22.89	0.00	22.89	108.4	0.00	81.04	-	-	0.00	0.00	-
K09	3,174	3,178	0	22.89	0.00	22.89	108.4	0.00	81.04	-	-	0.00	0.00	-
K10	4,915	4,918	0	17.64	0.00	17.64	108.4	0.00	84.84	-	-	0.00	0.00	-
K11	5,187	5,189	0	17.08	0.00	17.08	108.4	0.00	85.30	-	-	0.00	0.00	-
K12	4,974	4,976	0	17.52	0.00	17.52	108.4	0.00	84.94	-	-	0.00	0.00	-
K13	4,237	4,239	0	19.35	0.00	19.35	108.4	0.00	83.55	-	-	0.00	0.00	-
K14	3,996	3,999	0	20.07	0.00	20.07	108.4	0.00	83.04	-	-	0.00	0.00	-
Sum						33.09								

- Data undefined due to calculation with octave data

Noise sensitive area: V Noise sensitive point: Finnish normal frequency - User defined (254)

Wind speed: 8.0 m/s

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,633	2,638	0	22.99	2.00	24.99	106.9	0.00	79.43	-	-	0.00	0.00	-
Extension WTG 02	2,016	2,023	0	26.27	2.00	28.27	106.9	0.00	77.12	-	-	0.00	0.00	-
K01	3,343	3,346	0	22.26	0.00	22.26	108.4	0.00	81.49	-	-	0.00	0.00	-
K02	2,985	2,989	0	23.63	0.00	23.63	108.4	0.00	80.51	-	-	0.00	0.00	-
K03	2,918	2,922	0	23.91	0.00	23.91	108.4	0.00	80.31	-	-	0.00	0.00	-
K04	2,302	2,307	0	26.73	0.00	26.73	108.4	0.00	78.26	-	-	0.00	0.00	-
K05	3,004	3,008	0	23.55	0.00	23.55	108.4	0.00	80.56	-	-	0.00	0.00	-
K06	2,576	2,581	0	25.40	0.00	25.40	108.4	0.00	79.24	-	-	0.00	0.00	-
K07	2,021	2,027	0	28.26	0.00	28.26	108.4	0.00	77.14	-	-	0.00	0.00	-
K08	2,206	2,211	0	27.24	0.00	27.24	108.4	0.00	77.89	-	-	0.00	0.00	-
K09	2,095	2,100	0	27.84	0.00	27.84	108.4	0.00	77.44	-	-	0.00	0.00	-
K10	4,266	4,269	0	19.27	0.00	19.27	108.4	0.00	83.61	-	-	0.00	0.00	-
K11	4,666	4,669	0	18.18	0.00	18.18	108.4	0.00	84.38	-	-	0.00	0.00	-
K12	4,644	4,646	0	18.23	0.00	18.23	108.4	0.00	84.34	-	-	0.00	0.00	-
K13	3,795	3,798	0	20.71	0.00	20.71	108.4	0.00	82.59	-	-	0.00	0.00	-
K14	3,385	3,388	0	22.11	0.00	22.11	108.4	0.00	81.60	-	-	0.00	0.00	-
Sum						36.97								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: W Noise sensitive point: Finnish normal frequency - User defined (282)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	1,517	1,529	0	29.61	2.00	31.61	106.9	0.00	74.69	-	-	0.00	0.00	-
Extension WTG 02	2,196	2,205	0	25.22	2.00	27.22	106.9	0.00	77.87	-	-	0.00	0.00	-
K01	3,694	3,698	0	21.03	0.00	21.03	108.4	0.00	82.36	-	-	0.00	0.00	-
K02	3,207	3,211	0	22.76	0.00	22.76	108.4	0.00	81.13	-	-	0.00	0.00	-
K03	2,578	2,584	0	25.38	0.00	25.38	108.4	0.00	79.24	-	-	0.00	0.00	-
K04	2,312	2,318	0	26.67	0.00	26.67	108.4	0.00	78.30	-	-	0.00	0.00	-
K05	1,706	1,715	0	30.19	0.00	30.19	108.4	0.00	75.69	-	-	0.00	0.00	-
K06	3,968	3,971	0	20.16	0.00	20.16	108.4	0.00	82.98	-	-	0.00	0.00	-
K07	4,109	4,112	0	19.73	0.00	19.73	108.4	0.00	83.28	-	-	0.00	0.00	-
K08	3,257	3,261	0	22.57	0.00	22.57	108.4	0.00	81.27	-	-	0.00	0.00	-
K09	2,851	2,856	0	24.18	0.00	24.18	108.4	0.00	80.12	-	-	0.00	0.00	-
K10	4,817	4,820	0	17.85	0.00	17.85	108.4	0.00	84.66	-	-	0.00	0.00	-
K11	5,486	5,489	0	16.49	0.00	16.49	108.4	0.00	85.79	-	-	0.00	0.00	-
K12	6,054	6,056	0	15.45	0.00	15.45	108.4	0.00	86.64	-	-	0.00	0.00	-
K13	5,245	5,248	0	16.96	0.00	16.96	108.4	0.00	85.40	-	-	0.00	0.00	-
K14	4,563	4,566	0	18.44	0.00	18.44	108.4	0.00	84.19	-	-	0.00	0.00	-
Sum						37.03								

- Data undefined due to calculation with octave data

Noise sensitive area: X Noise sensitive point: Finnish normal frequency - User defined (288)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	1,868	1,878	0	27.17	2.00	29.17	106.9	0.00	76.47	-	-	0.00	0.00	-
Extension WTG 02	2,424	2,431	0	24.01	2.00	26.01	106.9	0.00	78.72	-	-	0.00	0.00	-
K01	3,553	3,557	0	21.51	0.00	21.51	108.4	0.00	82.02	-	-	0.00	0.00	-
K02	3,109	3,114	0	23.13	0.00	23.13	108.4	0.00	80.87	-	-	0.00	0.00	-
K03	2,504	2,510	0	25.73	0.00	25.73	108.4	0.00	78.99	-	-	0.00	0.00	-
K04	2,406	2,412	0	26.20	0.00	26.20	108.4	0.00	78.65	-	-	0.00	0.00	-
K05	1,710	1,718	0	30.17	0.00	30.17	108.4	0.00	75.70	-	-	0.00	0.00	-
K06	3,942	3,945	0	20.24	0.00	20.24	108.4	0.00	82.92	-	-	0.00	0.00	-
K07	4,159	4,163	0	19.58	0.00	19.58	108.4	0.00	83.39	-	-	0.00	0.00	-
K08	3,283	3,288	0	22.47	0.00	22.47	108.4	0.00	81.34	-	-	0.00	0.00	-
K09	2,920	2,925	0	23.89	0.00	23.89	108.4	0.00	80.32	-	-	0.00	0.00	-
K10	4,614	4,618	0	18.30	0.00	18.30	108.4	0.00	84.29	-	-	0.00	0.00	-
K11	5,284	5,287	0	16.89	0.00	16.89	108.4	0.00	85.46	-	-	0.00	0.00	-
K12	5,900	5,902	0	15.73	0.00	15.73	108.4	0.00	86.42	-	-	0.00	0.00	-
K13	5,131	5,134	0	17.19	0.00	17.19	108.4	0.00	85.21	-	-	0.00	0.00	-
K14	4,457	4,460	0	18.73	0.00	18.73	108.4	0.00	83.99	-	-	0.00	0.00	-
Sum						36.34								

- Data undefined due to calculation with octave data

Noise sensitive area: Y Noise sensitive point: Finnish normal frequency - User defined (286)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	1,999	2,008	0	26.36	2.00	28.36	106.9	0.00	77.05	-	-	0.00	0.00	-
Extension WTG 02	2,414	2,422	0	24.06	2.00	26.06	106.9	0.00	78.68	-	-	0.00	0.00	-
K01	3,224	3,228	0	22.69	0.00	22.69	108.4	0.00	81.18	-	-	0.00	0.00	-
K02	2,816	2,821	0	24.33	0.00	24.33	108.4	0.00	80.01	-	-	0.00	0.00	-
K03	2,240	2,246	0	27.05	0.00	27.05	108.4	0.00	78.03	-	-	0.00	0.00	-
K04	2,280	2,286	0	26.84	0.00	26.84	108.4	0.00	78.18	-	-	0.00	0.00	-
K05	1,543	1,552	0	31.33	0.00	31.33	108.4	0.00	74.82	-	-	0.00	0.00	-
K06	3,689	3,693	0	21.05	0.00	21.05	108.4	0.00	82.35	-	-	0.00	0.00	-
K07	3,962	3,966	0	20.18	0.00	20.18	108.4	0.00	82.97	-	-	0.00	0.00	-
K08	3,080	3,084	0	23.25	0.00	23.25	108.4	0.00	80.78	-	-	0.00	0.00	-
K09	2,758	2,764	0	24.58	0.00	24.58	108.4	0.00	79.83	-	-	0.00	0.00	-
K10	4,242	4,245	0	19.34	0.00	19.34	108.4	0.00	83.56	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
K11	4,909	4,912	0	17.65	0.00	17.65	108.4	0.00	84.82	-	-	0.00	0.00	-
K12	5,550	5,553	0	16.37	0.00	16.37	108.4	0.00	85.89	-	-	0.00	0.00	-
K13	4,809	4,812	0	17.87	0.00	17.87	108.4	0.00	84.65	-	-	0.00	0.00	-
K14	4,143	4,147	0	19.63	0.00	19.63	108.4	0.00	83.35	-	-	0.00	0.00	-
Sum						36.96								

- Data undefined due to calculation with octave data

Noise sensitive area: Z Noise sensitive point: Finnish normal frequency - User defined (285)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,203	2,211	0	25.18	2.00	27.18	106.9	0.00	77.89	-	-	0.00	0.00	-
Extension WTG 02	2,507	2,514	0	23.59	2.00	25.59	106.9	0.00	79.01	-	-	0.00	0.00	-
K01	3,011	3,015	0	23.53	0.00	23.53	108.4	0.00	80.59	-	-	0.00	0.00	-
K02	2,644	2,649	0	25.08	0.00	25.08	108.4	0.00	79.46	-	-	0.00	0.00	-
K03	2,109	2,116	0	27.75	0.00	27.75	108.4	0.00	77.51	-	-	0.00	0.00	-
K04	2,280	2,286	0	26.84	0.00	26.84	108.4	0.00	78.18	-	-	0.00	0.00	-
K05	1,535	1,544	0	31.39	0.00	31.39	108.4	0.00	74.77	-	-	0.00	0.00	-
K06	3,548	3,552	0	21.53	0.00	21.53	108.4	0.00	82.01	-	-	0.00	0.00	-
K07	3,872	3,875	0	20.46	0.00	20.46	108.4	0.00	82.77	-	-	0.00	0.00	-
K08	2,993	2,997	0	23.60	0.00	23.60	108.4	0.00	80.53	-	-	0.00	0.00	-
K09	2,715	2,720	0	24.77	0.00	24.77	108.4	0.00	79.69	-	-	0.00	0.00	-
K10	3,975	3,978	0	20.14	0.00	20.14	108.4	0.00	82.99	-	-	0.00	0.00	-
K11	4,637	4,640	0	18.24	0.00	18.24	108.4	0.00	84.33	-	-	0.00	0.00	-
K12	5,304	5,307	0	16.85	0.00	16.85	108.4	0.00	85.50	-	-	0.00	0.00	-
K13	4,593	4,596	0	18.36	0.00	18.36	108.4	0.00	84.25	-	-	0.00	0.00	-
K14	3,939	3,942	0	20.25	0.00	20.25	108.4	0.00	82.92	-	-	0.00	0.00	-
Sum						37.04								

- Data undefined due to calculation with octave data

Noise sensitive area: AA Noise sensitive point: Finnish normal frequency - User defined (267)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	3,691	3,694	0	18.68	2.00	20.68	106.9	0.00	82.35	-	-	0.00	0.00	-
Extension WTG 02	2,862	2,867	0	21.94	2.00	23.94	106.9	0.00	80.15	-	-	0.00	0.00	-
K01	2,594	2,598	0	25.32	0.00	25.32	108.4	0.00	79.29	-	-	0.00	0.00	-
K02	2,538	2,543	0	25.58	0.00	25.58	108.4	0.00	79.11	-	-	0.00	0.00	-
K03	2,861	2,865	0	24.14	0.00	24.14	108.4	0.00	80.14	-	-	0.00	0.00	-
K04	2,717	2,721	0	24.76	0.00	24.76	108.4	0.00	79.69	-	-	0.00	0.00	-
K05	3,432	3,435	0	21.94	0.00	21.94	108.4	0.00	81.72	-	-	0.00	0.00	-
K06	1,679	1,685	0	30.39	0.00	30.39	108.4	0.00	75.53	-	-	0.00	0.00	-
K07	1,116	1,126	0	34.92	0.00	34.92	108.4	0.00	72.03	-	-	0.00	0.00	-
K08	1,941	1,946	0	28.73	0.00	28.73	108.4	0.00	76.78	-	-	0.00	0.00	-
K09	2,214	2,219	0	27.19	0.00	27.19	108.4	0.00	77.92	-	-	0.00	0.00	-
K10	3,068	3,071	0	23.30	0.00	23.30	108.4	0.00	80.75	-	-	0.00	0.00	-
K11	3,272	3,275	0	22.52	0.00	22.52	108.4	0.00	81.30	-	-	0.00	0.00	-
K12	3,041	3,045	0	23.41	0.00	23.41	108.4	0.00	80.67	-	-	0.00	0.00	-
K13	2,311	2,315	0	26.69	0.00	26.69	108.4	0.00	78.29	-	-	0.00	0.00	-
K14	2,156	2,161	0	27.50	0.00	27.50	108.4	0.00	77.69	-	-	0.00	0.00	-
Sum						39.49								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: AB Noise sensitive point: Finnish normal frequency - User defined (284)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,377	2,384	0	24.25	2.00	26.25	106.9	0.00	78.55	-	-	0.00	0.00	-
Extension WTG 02	2,592	2,599	0	23.17	2.00	25.17	106.9	0.00	79.30	-	-	0.00	0.00	-
K01	2,836	2,841	0	24.24	0.00	24.24	108.4	0.00	80.07	-	-	0.00	0.00	-
K02	2,509	2,515	0	25.71	0.00	25.71	108.4	0.00	79.01	-	-	0.00	0.00	-
K03	2,019	2,025	0	28.26	0.00	28.26	108.4	0.00	77.13	-	-	0.00	0.00	-
K04	2,295	2,301	0	26.76	0.00	26.76	108.4	0.00	78.24	-	-	0.00	0.00	-
K05	1,565	1,574	0	31.17	0.00	31.17	108.4	0.00	74.94	-	-	0.00	0.00	-
K06	3,432	3,436	0	21.93	0.00	21.93	108.4	0.00	81.72	-	-	0.00	0.00	-
K07	3,796	3,799	0	20.70	0.00	20.70	108.4	0.00	82.59	-	-	0.00	0.00	-
K08	2,927	2,932	0	23.86	0.00	23.86	108.4	0.00	80.34	-	-	0.00	0.00	-
K09	2,689	2,694	0	24.88	0.00	24.88	108.4	0.00	79.61	-	-	0.00	0.00	-
K10	3,751	3,755	0	20.85	0.00	20.85	108.4	0.00	82.49	-	-	0.00	0.00	-
K11	4,408	4,411	0	18.86	0.00	18.86	108.4	0.00	83.89	-	-	0.00	0.00	-
K12	5,094	5,097	0	17.27	0.00	17.27	108.4	0.00	85.15	-	-	0.00	0.00	-
K13	4,409	4,413	0	18.86	0.00	18.86	108.4	0.00	83.89	-	-	0.00	0.00	-
K14	3,768	3,771	0	20.79	0.00	20.79	108.4	0.00	82.53	-	-	0.00	0.00	-
Sum						37.09								

- Data undefined due to calculation with octave data

Noise sensitive area: AC Noise sensitive point: Finnish normal frequency - User defined (281)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,364	2,372	0	24.31	2.00	26.31	106.9	0.00	78.50	-	-	0.00	0.00	-
Extension WTG 02	2,448	2,455	0	23.88	2.00	25.88	106.9	0.00	78.80	-	-	0.00	0.00	-
K01	2,448	2,453	0	26.00	0.00	26.00	108.4	0.00	78.79	-	-	0.00	0.00	-
K02	2,142	2,149	0	27.57	0.00	27.57	108.4	0.00	77.64	-	-	0.00	0.00	-
K03	1,690	1,698	0	30.31	0.00	30.31	108.4	0.00	75.60	-	-	0.00	0.00	-
K04	2,070	2,077	0	27.97	0.00	27.97	108.4	0.00	77.35	-	-	0.00	0.00	-
K05	1,382	1,392	0	32.56	0.00	32.56	108.4	0.00	73.87	-	-	0.00	0.00	-
K06	3,073	3,078	0	23.28	0.00	23.28	108.4	0.00	80.76	-	-	0.00	0.00	-
K07	3,465	3,469	0	21.82	0.00	21.82	108.4	0.00	81.80	-	-	0.00	0.00	-
K08	2,609	2,615	0	25.24	0.00	25.24	108.4	0.00	79.35	-	-	0.00	0.00	-
K09	2,412	2,418	0	26.18	0.00	26.18	108.4	0.00	78.67	-	-	0.00	0.00	-
K10	3,355	3,359	0	22.21	0.00	22.21	108.4	0.00	81.52	-	-	0.00	0.00	-
K11	4,013	4,016	0	20.02	0.00	20.02	108.4	0.00	83.08	-	-	0.00	0.00	-
K12	4,697	4,700	0	18.11	0.00	18.11	108.4	0.00	84.44	-	-	0.00	0.00	-
K13	4,016	4,020	0	20.01	0.00	20.01	108.4	0.00	83.08	-	-	0.00	0.00	-
K14	3,379	3,383	0	22.13	0.00	22.13	108.4	0.00	81.59	-	-	0.00	0.00	-
Sum						38.45								

- Data undefined due to calculation with octave data

Noise sensitive area: AD Noise sensitive point: Finnish normal frequency - User defined (280)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	2,634	2,640	0	22.98	2.00	24.98	106.9	0.00	79.43	-	-	0.00	0.00	-
Extension WTG 02	2,607	2,613	0	23.10	2.00	25.10	106.9	0.00	79.34	-	-	0.00	0.00	-
K01	2,211	2,217	0	27.20	0.00	27.20	108.4	0.00	77.91	-	-	0.00	0.00	-
K02	1,980	1,987	0	28.49	0.00	28.49	108.4	0.00	76.97	-	-	0.00	0.00	-
K03	1,628	1,636	0	30.73	0.00	30.73	108.4	0.00	75.28	-	-	0.00	0.00	-
K04	2,151	2,158	0	27.52	0.00	27.52	108.4	0.00	77.68	-	-	0.00	0.00	-
K05	1,540	1,549	0	31.36	0.00	31.36	108.4	0.00	74.80	-	-	0.00	0.00	-
K06	2,918	2,923	0	23.90	0.00	23.90	108.4	0.00	80.32	-	-	0.00	0.00	-
K07	3,364	3,368	0	22.18	0.00	22.18	108.4	0.00	81.55	-	-	0.00	0.00	-
K08	2,544	2,549	0	25.55	0.00	25.55	108.4	0.00	79.13	-	-	0.00	0.00	-
K09	2,414	2,420	0	26.17	0.00	26.17	108.4	0.00	78.68	-	-	0.00	0.00	-
K10	3,032	3,037	0	23.44	0.00	23.44	108.4	0.00	80.65	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Penalty [dB]	From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
K11	3,681	3,685	0	21.08	0.00	21.08	108.4	0.00	82.33	-	-	0.00	0.00	-
K12	4,389	4,392	0	18.92	0.00	18.92	108.4	0.00	83.85	-	-	0.00	0.00	-
K13	3,748	3,752	0	20.86	0.00	20.86	108.4	0.00	82.49	-	-	0.00	0.00	-
K14	3,134	3,138	0	23.04	0.00	23.04	108.4	0.00	80.93	-	-	0.00	0.00	-
Sum						38.40								

- Data undefined due to calculation with octave data

Noise sensitive area: AE Noise sensitive point: Finnish normal frequency - User defined (266)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Penalty [dB]	From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
Extension WTG 01	4,340	4,343	0	16.58	2.00	18.58	106.9	0.00	83.76	-	-	0.00	0.00	-
Extension WTG 02	3,497	3,501	0	19.38	2.00	21.38	106.9	0.00	81.88	-	-	0.00	0.00	-
K01	2,416	2,420	0	26.16	0.00	26.16	108.4	0.00	78.68	-	-	0.00	0.00	-
K02	2,578	2,582	0	25.39	0.00	25.39	108.4	0.00	79.24	-	-	0.00	0.00	-
K03	3,074	3,077	0	23.28	0.00	23.28	108.4	0.00	80.76	-	-	0.00	0.00	-
K04	3,189	3,193	0	22.83	0.00	22.83	108.4	0.00	81.08	-	-	0.00	0.00	-
K05	3,820	3,823	0	20.63	0.00	20.63	108.4	0.00	82.65	-	-	0.00	0.00	-
K06	1,644	1,650	0	30.63	0.00	30.63	108.4	0.00	75.35	-	-	0.00	0.00	-
K07	1,389	1,397	0	32.52	0.00	32.52	108.4	0.00	73.91	-	-	0.00	0.00	-
K08	2,245	2,250	0	27.03	0.00	27.03	108.4	0.00	78.04	-	-	0.00	0.00	-
K09	2,646	2,650	0	25.08	0.00	25.08	108.4	0.00	79.46	-	-	0.00	0.00	-
K10	2,476	2,480	0	25.87	0.00	25.87	108.4	0.00	78.89	-	-	0.00	0.00	-
K11	2,507	2,511	0	25.73	0.00	25.73	108.4	0.00	79.00	-	-	0.00	0.00	-
K12	2,125	2,130	0	27.67	0.00	27.67	108.4	0.00	77.57	-	-	0.00	0.00	-
K13	1,546	1,553	0	31.32	0.00	31.32	108.4	0.00	74.82	-	-	0.00	0.00	-
K14	1,672	1,678	0	30.44	0.00	30.44	108.4	0.00	75.50	-	-	0.00	0.00	-
Sum						39.57								

- Data undefined due to calculation with octave data

Noise sensitive area: AF Noise sensitive point: Finnish normal frequency - User defined (278)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Penalty [dB]	From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
Extension WTG 01	2,928	2,934	0	21.65	2.00	23.65	106.9	0.00	80.35	-	-	0.00	0.00	-
Extension WTG 02	2,631	2,637	0	22.99	2.00	24.99	106.9	0.00	79.42	-	-	0.00	0.00	-
K01	1,412	1,421	0	32.33	0.00	32.33	108.4	0.00	74.05	-	-	0.00	0.00	-
K02	1,346	1,356	0	32.85	0.00	32.85	108.4	0.00	73.65	-	-	0.00	0.00	-
K03	1,282	1,293	0	33.39	0.00	33.39	108.4	0.00	73.23	-	-	0.00	0.00	-
K04	2,043	2,049	0	28.13	0.00	28.13	108.4	0.00	77.23	-	-	0.00	0.00	-
K05	1,704	1,712	0	30.21	0.00	30.21	108.4	0.00	75.67	-	-	0.00	0.00	-
K06	2,235	2,242	0	27.07	0.00	27.07	108.4	0.00	78.01	-	-	0.00	0.00	-
K07	2,767	2,772	0	24.54	0.00	24.54	108.4	0.00	79.86	-	-	0.00	0.00	-
K08	2,065	2,071	0	28.00	0.00	28.00	108.4	0.00	77.32	-	-	0.00	0.00	-
K09	2,097	2,103	0	27.82	0.00	27.82	108.4	0.00	77.46	-	-	0.00	0.00	-
K10	2,136	2,143	0	27.60	0.00	27.60	108.4	0.00	77.62	-	-	0.00	0.00	-
K11	2,785	2,790	0	24.46	0.00	24.46	108.4	0.00	79.91	-	-	0.00	0.00	-
K12	3,496	3,500	0	21.71	0.00	21.71	108.4	0.00	81.88	-	-	0.00	0.00	-
K13	2,884	2,889	0	24.04	0.00	24.04	108.4	0.00	80.21	-	-	0.00	0.00	-
K14	2,301	2,307	0	26.73	0.00	26.73	108.4	0.00	78.26	-	-	0.00	0.00	-
Sum						40.73								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: AG Noise sensitive point: Finnish normal frequency - User defined (276)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	3,095	3,100	0	20.94	2.00	22.94	106.9	0.00	80.83	-	-	0.00	0.00	-
Extension WTG 02	2,746	2,752	0	22.46	2.00	24.46	106.9	0.00	79.79	-	-	0.00	0.00	-
K01	1,270	1,280	0	33.50	0.00	33.50	108.4	0.00	73.15	-	-	0.00	0.00	-
K02	1,294	1,305	0	33.29	0.00	33.29	108.4	0.00	73.31	-	-	0.00	0.00	-
K03	1,345	1,355	0	32.86	0.00	32.86	108.4	0.00	73.64	-	-	0.00	0.00	-
K04	2,138	2,145	0	27.59	0.00	27.59	108.4	0.00	77.63	-	-	0.00	0.00	-
K05	1,870	1,877	0	29.15	0.00	29.15	108.4	0.00	76.47	-	-	0.00	0.00	-
K06	2,136	2,143	0	27.60	0.00	27.60	108.4	0.00	77.62	-	-	0.00	0.00	-
K07	2,695	2,701	0	24.85	0.00	24.85	108.4	0.00	79.63	-	-	0.00	0.00	-
K08	2,049	2,056	0	28.09	0.00	28.09	108.4	0.00	77.26	-	-	0.00	0.00	-
K09	2,134	2,140	0	27.62	0.00	27.62	108.4	0.00	77.61	-	-	0.00	0.00	-
K10	1,910	1,917	0	28.91	0.00	28.91	108.4	0.00	76.65	-	-	0.00	0.00	-
K11	2,554	2,559	0	25.50	0.00	25.50	108.4	0.00	79.16	-	-	0.00	0.00	-
K12	3,275	3,279	0	22.51	0.00	22.51	108.4	0.00	81.31	-	-	0.00	0.00	-
K13	2,687	2,692	0	24.89	0.00	24.89	108.4	0.00	79.60	-	-	0.00	0.00	-
K14	2,125	2,132	0	27.66	0.00	27.66	108.4	0.00	77.57	-	-	0.00	0.00	-
Sum						40.96								

- Data undefined due to calculation with octave data

Noise sensitive area: AH Noise sensitive point: Finnish normal frequency - User defined (275)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	3,235	3,240	0	20.38	2.00	22.38	106.9	0.00	81.21	-	-	0.00	0.00	-
Extension WTG 02	2,841	2,846	0	22.03	2.00	24.03	106.9	0.00	80.09	-	-	0.00	0.00	-
K01	1,149	1,160	0	34.59	0.00	34.59	108.4	0.00	72.29	-	-	0.00	0.00	-
K02	1,261	1,270	0	33.58	0.00	33.58	108.4	0.00	73.08	-	-	0.00	0.00	-
K03	1,411	1,420	0	32.34	0.00	32.34	108.4	0.00	74.04	-	-	0.00	0.00	-
K04	2,221	2,227	0	27.15	0.00	27.15	108.4	0.00	77.95	-	-	0.00	0.00	-
K05	2,014	2,020	0	28.30	0.00	28.30	108.4	0.00	77.11	-	-	0.00	0.00	-
K06	2,045	2,051	0	28.12	0.00	28.12	108.4	0.00	77.24	-	-	0.00	0.00	-
K07	2,625	2,630	0	25.17	0.00	25.17	108.4	0.00	79.40	-	-	0.00	0.00	-
K08	2,035	2,041	0	28.18	0.00	28.18	108.4	0.00	77.20	-	-	0.00	0.00	-
K09	2,165	2,170	0	27.45	0.00	27.45	108.4	0.00	77.73	-	-	0.00	0.00	-
K10	1,703	1,710	0	30.22	0.00	30.22	108.4	0.00	75.66	-	-	0.00	0.00	-
K11	2,343	2,348	0	26.52	0.00	26.52	108.4	0.00	78.42	-	-	0.00	0.00	-
K12	3,070	3,074	0	23.29	0.00	23.29	108.4	0.00	80.76	-	-	0.00	0.00	-
K13	2,503	2,508	0	25.74	0.00	25.74	108.4	0.00	78.99	-	-	0.00	0.00	-
K14	1,963	1,970	0	28.59	0.00	28.59	108.4	0.00	76.89	-	-	0.00	0.00	-
Sum						41.30								

- Data undefined due to calculation with octave data

Noise sensitive area: AI Noise sensitive point: Finnish normal frequency - User defined (257)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	4,389	4,393	0	16.43	2.00	18.43	106.9	0.00	83.85	-	-	0.00	0.00	-
Extension WTG 02	3,872	3,875	0	18.06	2.00	20.06	106.9	0.00	82.77	-	-	0.00	0.00	-
K01	1,539	1,546	0	31.37	0.00	31.37	108.4	0.00	74.79	-	-	0.00	0.00	-
K02	2,003	2,008	0	28.36	0.00	28.36	108.4	0.00	77.06	-	-	0.00	0.00	-
K03	2,439	2,444	0	26.05	0.00	26.05	108.4	0.00	78.76	-	-	0.00	0.00	-
K04	3,237	3,241	0	22.65	0.00	22.65	108.4	0.00	81.21	-	-	0.00	0.00	-
K05	3,197	3,201	0	22.80	0.00	22.80	108.4	0.00	81.10	-	-	0.00	0.00	-
K06	2,341	2,346	0	26.53	0.00	26.53	108.4	0.00	78.41	-	-	0.00	0.00	-
K07	2,960	2,964	0	23.73	0.00	23.73	108.4	0.00	80.44	-	-	0.00	0.00	-
K08	2,716	2,721	0	24.77	0.00	24.77	108.4	0.00	79.69	-	-	0.00	0.00	-
K09	3,012	3,016	0	23.52	0.00	23.52	108.4	0.00	80.59	-	-	0.00	0.00	-
K10	966	978	0	36.45	0.00	36.45	108.4	0.00	70.80	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
K11	1,373	1,381	0	32.65	0.00	32.65	108.4	0.00	73.80	-	-	0.00	0.00	-
K12	2,192	2,197	0	27.31	0.00	27.31	108.4	0.00	77.84	-	-	0.00	0.00	-
K13	1,975	1,980	0	28.53	0.00	28.53	108.4	0.00	76.94	-	-	0.00	0.00	-
K14	1,766	1,772	0	29.81	0.00	29.81	108.4	0.00	75.97	-	-	0.00	0.00	-
Sum						41.03								

- Data undefined due to calculation with octave data

Noise sensitive area: AJ Noise sensitive point: Finnish normal frequency - User defined (256)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	4,716	4,719	0	15.48	2.00	17.48	106.9	0.00	84.48	-	-	0.00	0.00	-
Extension WTG 02	4,174	4,177	0	17.08	2.00	19.08	106.9	0.00	83.42	-	-	0.00	0.00	-
K01	1,784	1,791	0	29.69	0.00	29.69	108.4	0.00	76.06	-	-	0.00	0.00	-
K02	2,282	2,287	0	26.83	0.00	26.83	108.4	0.00	78.19	-	-	0.00	0.00	-
K03	2,754	2,759	0	24.60	0.00	24.60	108.4	0.00	79.81	-	-	0.00	0.00	-
K04	3,541	3,544	0	21.55	0.00	21.55	108.4	0.00	81.99	-	-	0.00	0.00	-
K05	3,533	3,537	0	21.58	0.00	21.58	108.4	0.00	81.97	-	-	0.00	0.00	-
K06	2,515	2,520	0	25.68	0.00	25.68	108.4	0.00	79.03	-	-	0.00	0.00	-
K07	3,121	3,125	0	23.09	0.00	23.09	108.4	0.00	80.90	-	-	0.00	0.00	-
K08	2,962	2,966	0	23.72	0.00	23.72	108.4	0.00	80.44	-	-	0.00	0.00	-
K09	3,285	3,289	0	22.47	0.00	22.47	108.4	0.00	81.34	-	-	0.00	0.00	-
K10	953	965	0	36.59	0.00	36.59	108.4	0.00	70.69	-	-	0.00	0.00	-
K11	1,180	1,189	0	34.31	0.00	34.31	108.4	0.00	72.51	-	-	0.00	0.00	-
K12	1,998	2,004	0	28.39	0.00	28.39	108.4	0.00	77.04	-	-	0.00	0.00	-
K13	1,928	1,934	0	28.80	0.00	28.80	108.4	0.00	76.73	-	-	0.00	0.00	-
K14	1,845	1,852	0	29.31	0.00	29.31	108.4	0.00	76.35	-	-	0.00	0.00	-
Sum						41.03								

- Data undefined due to calculation with octave data

Noise sensitive area: AK Noise sensitive point: Finnish normal frequency - User defined (274)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,118	5,122	0	14.40	2.00	16.40	106.9	0.00	85.19	-	-	0.00	0.00	-
Extension WTG 02	4,598	4,602	0	15.81	2.00	17.81	106.9	0.00	84.26	-	-	0.00	0.00	-
K01	2,226	2,231	0	27.13	0.00	27.13	108.4	0.00	77.97	-	-	0.00	0.00	-
K02	2,716	2,721	0	24.76	0.00	24.76	108.4	0.00	79.69	-	-	0.00	0.00	-
K03	3,169	3,173	0	22.91	0.00	22.91	108.4	0.00	81.03	-	-	0.00	0.00	-
K04	3,964	3,967	0	20.17	0.00	20.17	108.4	0.00	82.97	-	-	0.00	0.00	-
K05	3,922	3,925	0	20.30	0.00	20.30	108.4	0.00	82.88	-	-	0.00	0.00	-
K06	2,953	2,958	0	23.76	0.00	23.76	108.4	0.00	80.42	-	-	0.00	0.00	-
K07	3,555	3,559	0	21.50	0.00	21.50	108.4	0.00	82.03	-	-	0.00	0.00	-
K08	3,404	3,408	0	22.04	0.00	22.04	108.4	0.00	81.65	-	-	0.00	0.00	-
K09	3,722	3,725	0	20.94	0.00	20.94	108.4	0.00	82.42	-	-	0.00	0.00	-
K10	1,344	1,354	0	32.87	0.00	32.87	108.4	0.00	73.63	-	-	0.00	0.00	-
K11	1,406	1,414	0	32.38	0.00	32.38	108.4	0.00	74.01	-	-	0.00	0.00	-
K12	2,182	2,188	0	27.36	0.00	27.36	108.4	0.00	77.80	-	-	0.00	0.00	-
K13	2,265	2,271	0	26.92	0.00	26.92	108.4	0.00	78.12	-	-	0.00	0.00	-
K14	2,257	2,263	0	26.96	0.00	26.96	108.4	0.00	78.09	-	-	0.00	0.00	-
Sum						38.57								

- Data undefined due to calculation with octave data

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

Noise sensitive area: AL Noise sensitive point: Finnish normal frequency - User defined (250)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	7,037	7,039	0	10.71	2.00	12.71	106.9	0.00	87.95	-	-	0.00	0.00	-
Extension WTG 02	6,218	6,220	0	12.16	2.00	14.16	106.9	0.00	86.88	-	-	0.00	0.00	-
K01	4,312	4,315	0	19.14	0.00	19.14	108.4	0.00	83.70	-	-	0.00	0.00	-
K02	4,753	4,755	0	18.00	0.00	18.00	108.4	0.00	84.54	-	-	0.00	0.00	-
K03	5,376	5,378	0	16.71	0.00	16.71	108.4	0.00	85.61	-	-	0.00	0.00	-
K04	5,778	5,780	0	15.95	0.00	15.95	108.4	0.00	86.24	-	-	0.00	0.00	-
K05	6,252	6,254	0	15.11	0.00	15.11	108.4	0.00	86.92	-	-	0.00	0.00	-
K06	4,027	4,030	0	19.98	0.00	19.98	108.4	0.00	83.11	-	-	0.00	0.00	-
K07	4,108	4,111	0	19.73	0.00	19.73	108.4	0.00	83.28	-	-	0.00	0.00	-
K08	4,796	4,798	0	17.91	0.00	17.91	108.4	0.00	84.62	-	-	0.00	0.00	-
K09	5,253	5,255	0	16.95	0.00	16.95	108.4	0.00	85.41	-	-	0.00	0.00	-
K10	3,451	3,454	0	21.87	0.00	21.87	108.4	0.00	81.77	-	-	0.00	0.00	-
K11	2,884	2,887	0	24.05	0.00	24.05	108.4	0.00	80.21	-	-	0.00	0.00	-
K12	2,083	2,088	0	27.91	0.00	27.91	108.4	0.00	77.40	-	-	0.00	0.00	-
K13	2,728	2,732	0	24.72	0.00	24.72	108.4	0.00	79.73	-	-	0.00	0.00	-
K14	3,400	3,403	0	22.05	0.00	22.05	108.4	0.00	81.64	-	-	0.00	0.00	-
Sum						33.21								

- Data undefined due to calculation with octave data

Noise sensitive area: AM Noise sensitive point: Finnish normal frequency - User defined (271)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	5,761	5,764	0	13.03	2.00	15.03	106.9	0.00	86.21	-	-	0.00	0.00	-
Extension WTG 02	5,203	5,206	0	14.19	2.00	16.19	106.9	0.00	85.33	-	-	0.00	0.00	-
K01	2,776	2,781	0	24.50	0.00	24.50	108.4	0.00	79.88	-	-	0.00	0.00	-
K02	3,299	3,302	0	22.42	0.00	22.42	108.4	0.00	81.38	-	-	0.00	0.00	-
K03	3,796	3,799	0	20.70	0.00	20.70	108.4	0.00	82.59	-	-	0.00	0.00	-
K04	4,573	4,576	0	18.41	0.00	18.41	108.4	0.00	84.21	-	-	0.00	0.00	-
K05	4,580	4,583	0	18.39	0.00	18.39	108.4	0.00	84.22	-	-	0.00	0.00	-
K06	3,398	3,402	0	22.06	0.00	22.06	108.4	0.00	81.63	-	-	0.00	0.00	-
K07	3,966	3,970	0	20.16	0.00	20.16	108.4	0.00	82.98	-	-	0.00	0.00	-
K08	3,935	3,938	0	20.26	0.00	20.26	108.4	0.00	82.91	-	-	0.00	0.00	-
K09	4,288	4,291	0	19.20	0.00	19.20	108.4	0.00	83.65	-	-	0.00	0.00	-
K10	1,707	1,715	0	30.19	0.00	30.19	108.4	0.00	75.68	-	-	0.00	0.00	-
K11	1,473	1,481	0	31.86	0.00	31.86	108.4	0.00	74.41	-	-	0.00	0.00	-
K12	2,083	2,089	0	27.90	0.00	27.90	108.4	0.00	77.40	-	-	0.00	0.00	-
K13	2,437	2,443	0	26.05	0.00	26.05	108.4	0.00	78.76	-	-	0.00	0.00	-
K14	2,612	2,617	0	25.23	0.00	25.23	108.4	0.00	79.35	-	-	0.00	0.00	-
Sum						37.14								

- Data undefined due to calculation with octave data

Noise sensitive area: AN Noise sensitive point: Finnish normal frequency - User defined (251)

Wind speed: 8.0 m/s

WTG

No.	Distance	Sound distance	Penalty	From WTGs	Uncertainty margin	WTG+Uncertainty margin	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A
	[m]	[m]	[dB]	[dB(A)]	[dB]	[dB]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Extension WTG 01	6,770	6,772	0	11.17	2.00	13.17	106.9	0.00	87.61	-	-	0.00	0.00	-
Extension WTG 02	5,999	6,002	0	12.57	2.00	14.57	106.9	0.00	86.57	-	-	0.00	0.00	-
K01	3,792	3,795	0	20.72	0.00	20.72	108.4	0.00	82.58	-	-	0.00	0.00	-
K02	4,303	4,305	0	19.16	0.00	19.16	108.4	0.00	83.68	-	-	0.00	0.00	-
K03	4,935	4,937	0	17.60	0.00	17.60	108.4	0.00	84.87	-	-	0.00	0.00	-
K04	5,477	5,479	0	16.51	0.00	16.51	108.4	0.00	85.77	-	-	0.00	0.00	-
K05	5,830	5,832	0	15.85	0.00	15.85	108.4	0.00	86.32	-	-	0.00	0.00	-
K06	3,765	3,767	0	20.81	0.00	20.81	108.4	0.00	82.52	-	-	0.00	0.00	-
K07	4,024	4,026	0	19.99	0.00	19.99	108.4	0.00	83.10	-	-	0.00	0.00	-
K08	4,537	4,539	0	18.51	0.00	18.51	108.4	0.00	84.14	-	-	0.00	0.00	-
K09	4,995	4,998	0	17.47	0.00	17.47	108.4	0.00	84.98	-	-	0.00	0.00	-
K10	2,723	2,727	0	24.74	0.00	24.74	108.4	0.00	79.71	-	-	0.00	0.00	-

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus Noise calculation model: ISO 9613-2 Finland 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Penalty [dB]	From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
K11	2,070	2,075	0	27.98	0.00	27.98	108.4	0.00	77.34	-	-	0.00	0.00	-
K12	1,438	1,445	0	32.14	0.00	32.14	108.4	0.00	74.20	-	-	0.00	0.00	-
K13	2,313	2,317	0	26.68	0.00	26.68	108.4	0.00	78.30	-	-	0.00	0.00	-
K14	2,979	2,982	0	23.66	0.00	23.66	108.4	0.00	80.49	-	-	0.00	0.00	-
Sum						36.02								

- Data undefined due to calculation with octave data

Noise sensitive area: AO Noise sensitive point: Finnish normal frequency - User defined (270)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Penalty [dB]	From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
Extension WTG 01	6,285	6,287	0	12.03	2.00	14.03	106.9	0.00	86.97	-	-	0.00	0.00	-
Extension WTG 02	5,674	5,676	0	13.21	2.00	15.21	106.9	0.00	86.08	-	-	0.00	0.00	-
K01	3,221	3,224	0	22.71	0.00	22.71	108.4	0.00	81.17	-	-	0.00	0.00	-
K02	3,765	3,768	0	20.80	0.00	20.80	108.4	0.00	82.52	-	-	0.00	0.00	-
K03	4,310	4,313	0	19.14	0.00	19.14	108.4	0.00	83.70	-	-	0.00	0.00	-
K04	5,055	5,057	0	17.35	0.00	17.35	108.4	0.00	85.08	-	-	0.00	0.00	-
K05	5,135	5,137	0	17.19	0.00	17.19	108.4	0.00	85.21	-	-	0.00	0.00	-
K06	3,710	3,713	0	20.99	0.00	20.99	108.4	0.00	82.39	-	-	0.00	0.00	-
K07	4,227	4,230	0	19.38	0.00	19.38	108.4	0.00	83.53	-	-	0.00	0.00	-
K08	4,329	4,332	0	19.09	0.00	19.09	108.4	0.00	83.73	-	-	0.00	0.00	-
K09	4,719	4,721	0	18.06	0.00	18.06	108.4	0.00	84.48	-	-	0.00	0.00	-
K10	2,045	2,051	0	28.12	0.00	28.12	108.4	0.00	77.24	-	-	0.00	0.00	-
K11	1,586	1,593	0	31.03	0.00	31.03	108.4	0.00	75.05	-	-	0.00	0.00	-
K12	1,930	1,936	0	28.79	0.00	28.79	108.4	0.00	76.74	-	-	0.00	0.00	-
K13	2,526	2,531	0	25.63	0.00	25.63	108.4	0.00	79.07	-	-	0.00	0.00	-
K14	2,866	2,870	0	24.12	0.00	24.12	108.4	0.00	80.16	-	-	0.00	0.00	-
Sum						36.24								

- Data undefined due to calculation with octave data

Noise sensitive area: AP Noise sensitive point: Finnish normal frequency - User defined (253)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Penalty [dB]	From WTGs [dB(A)]	Uncertainty margin [dB]	WTG+Uncertainty margin [dB]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
Extension WTG 01	6,854	6,856	0	11.02	2.00	13.02	106.9	0.00	87.72	-	-	0.00	0.00	-
Extension WTG 02	6,113	6,116	0	12.35	2.00	14.35	106.9	0.00	86.73	-	-	0.00	0.00	-
K01	3,805	3,808	0	20.68	0.00	20.68	108.4	0.00	82.61	-	-	0.00	0.00	-
K02	4,338	4,340	0	19.06	0.00	19.06	108.4	0.00	83.75	-	-	0.00	0.00	-
K03	4,963	4,965	0	17.54	0.00	17.54	108.4	0.00	84.92	-	-	0.00	0.00	-
K04	5,562	5,563	0	16.35	0.00	16.35	108.4	0.00	85.91	-	-	0.00	0.00	-
K05	5,854	5,856	0	15.81	0.00	15.81	108.4	0.00	86.35	-	-	0.00	0.00	-
K06	3,899	3,902	0	20.38	0.00	20.38	108.4	0.00	82.83	-	-	0.00	0.00	-
K07	4,226	4,228	0	19.39	0.00	19.39	108.4	0.00	83.52	-	-	0.00	0.00	-
K08	4,655	4,657	0	18.22	0.00	18.22	108.4	0.00	84.36	-	-	0.00	0.00	-
K09	5,106	5,109	0	17.25	0.00	17.25	108.4	0.00	85.17	-	-	0.00	0.00	-
K10	2,659	2,663	0	25.02	0.00	25.02	108.4	0.00	79.51	-	-	0.00	0.00	-
K11	1,989	1,994	0	28.45	0.00	28.45	108.4	0.00	76.99	-	-	0.00	0.00	-
K12	1,538	1,544	0	31.39	0.00	31.39	108.4	0.00	74.78	-	-	0.00	0.00	-
K13	2,443	2,447	0	26.03	0.00	26.03	108.4	0.00	78.77	-	-	0.00	0.00	-
K14	3,069	3,072	0	23.30	0.00	23.30	108.4	0.00	80.75	-	-	0.00	0.00	-
Sum						35.69								

- Data undefined due to calculation with octave data

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise calculation model:

ISO 9613-2 Finland

Wind speed (at 10 m height):

8.0 m/s

Ground attenuation:

General, Ground factor: 0.4

Meteorological coefficient, CO:

Selected option: Fixed value: 0.0 dB

Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

Pure tones:

Pure tones penalty is added to total noise impact at receptors

Noise sensitive area

Height above ground level, when no value in NSA object:

4.0 m; Don't allow override of model height with height from NSA object

Uncertainty margin:

Uncertainty added to source noise level of the WTGs in the calculation

Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0.0 dB(A)

Octave data required

Frequency dependent air absorption

63	125	250	500	1,000	2,000	4,000	8,000
[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]	[dB/km]
0.10	0.38	1.12	2.36	4.08	8.78	26.60	95.00

All coordinates are in

Finish TM ETRS-TM35FIN-ETRS89

WTG: NORDEX N163/6.X 6800 163.0 !O!

Noise: Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added

Source

Source/Date Creator Edited

F008_277_A17_EN_R02_Third-octave-sound-power-levels.pdf 2022-01-14 USER 2022-01-28 05:37

Data from client. Hub height 148 m

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	Octave data							
					63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
From Windcat	150.5	8.0	108.4	No	94.4	99.1	101.4	101.9	102.3	100.2	90.7	71.8
From Windcat	149.5	8.0	108.4	No	94.4	99.1	101.4	101.9	102.3	100.2	90.7	71.8
From Windcat	148.5	8.0	108.4	No	94.4	99.1	101.4	101.9	102.3	100.2	90.7	71.8

WTG: NORDEX Generic 180-169 6800 180.0 !-!

Noise: Third octave sound power levels for N175-6.X, Mode 0, STE

Source

Source/Date Creator Edited

11.03_Third octave sound power levels_F008_278_A17_EN_R03.pdf 2024-05-14 USER 2024-05-15 14:02

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Uncertainty [dB(A)]	Pure tones	Octave data							
						63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
From Windcat	169.0	8.0	106.9	2.0	No	89.7	96.5	99.9	100.4	101.3	99.2	89.9	73.4

Noise sensitive area: A Noise sensitive point: Finnish normal frequency - User defined (291)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise sensitive area: B Noise sensitive point: Finnish normal frequency - User defined (272)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: C Noise sensitive point: Finnish normal frequency - User defined (273)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: D Noise sensitive point: Finnish normal frequency - User defined (277)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: E Noise sensitive point: Finnish normal frequency - User defined (269)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: F Noise sensitive point: Finnish normal frequency - User defined (279)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: G Noise sensitive point: Finnish normal frequency - User defined (268)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: H Noise sensitive point: Finnish normal frequency - User defined (252)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: I Noise sensitive point: Finnish normal frequency - User defined (263)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: J Noise sensitive point: Finnish normal frequency - User defined (260)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: K Noise sensitive point: Finnish normal frequency - User defined (261)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: L Noise sensitive point: Finnish normal frequency - User defined (259)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: M Noise sensitive point: Finnish normal frequency - User defined (290)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: N Noise sensitive point: Finnish normal frequency - User defined (264)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: O Noise sensitive point: Finnish normal frequency - User defined (258)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: P Noise sensitive point: Finnish normal frequency - User defined (255)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise sensitive area: Q Noise sensitive point: Finnish normal frequency - User defined (289)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: R Noise sensitive point: Finnish normal frequency - User defined (262)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: S Noise sensitive point: Finnish normal frequency - User defined (287)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: T Noise sensitive point: Finnish normal frequency - User defined (283)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: U Noise sensitive point: Finnish normal frequency - User defined (265)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: V Noise sensitive point: Finnish normal frequency - User defined (254)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: W Noise sensitive point: Finnish normal frequency - User defined (282)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: X Noise sensitive point: Finnish normal frequency - User defined (288)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: Y Noise sensitive point: Finnish normal frequency - User defined (286)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: Z Noise sensitive point: Finnish normal frequency - User defined (285)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AA Noise sensitive point: Finnish normal frequency - User defined (267)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AB Noise sensitive point: Finnish normal frequency - User defined (284)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AC Noise sensitive point: Finnish normal frequency - User defined (281)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AD Noise sensitive point: Finnish normal frequency - User defined (280)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AE Noise sensitive point: Finnish normal frequency - User defined (266)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise sensitive area: AF Noise sensitive point: Finnish normal frequency - User defined (278)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AG Noise sensitive point: Finnish normal frequency - User defined (276)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AH Noise sensitive point: Finnish normal frequency - User defined (275)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AI Noise sensitive point: Finnish normal frequency - User defined (257)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AJ Noise sensitive point: Finnish normal frequency - User defined (256)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AK Noise sensitive point: Finnish normal frequency - User defined (274)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AL Noise sensitive point: Finnish normal frequency - User defined (250)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AM Noise sensitive point: Finnish normal frequency - User defined (271)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AN Noise sensitive point: Finnish normal frequency - User defined (251)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AO Noise sensitive point: Finnish normal frequency - User defined (270)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

Noise sensitive area: AP Noise sensitive point: Finnish normal frequency - User defined (253)

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

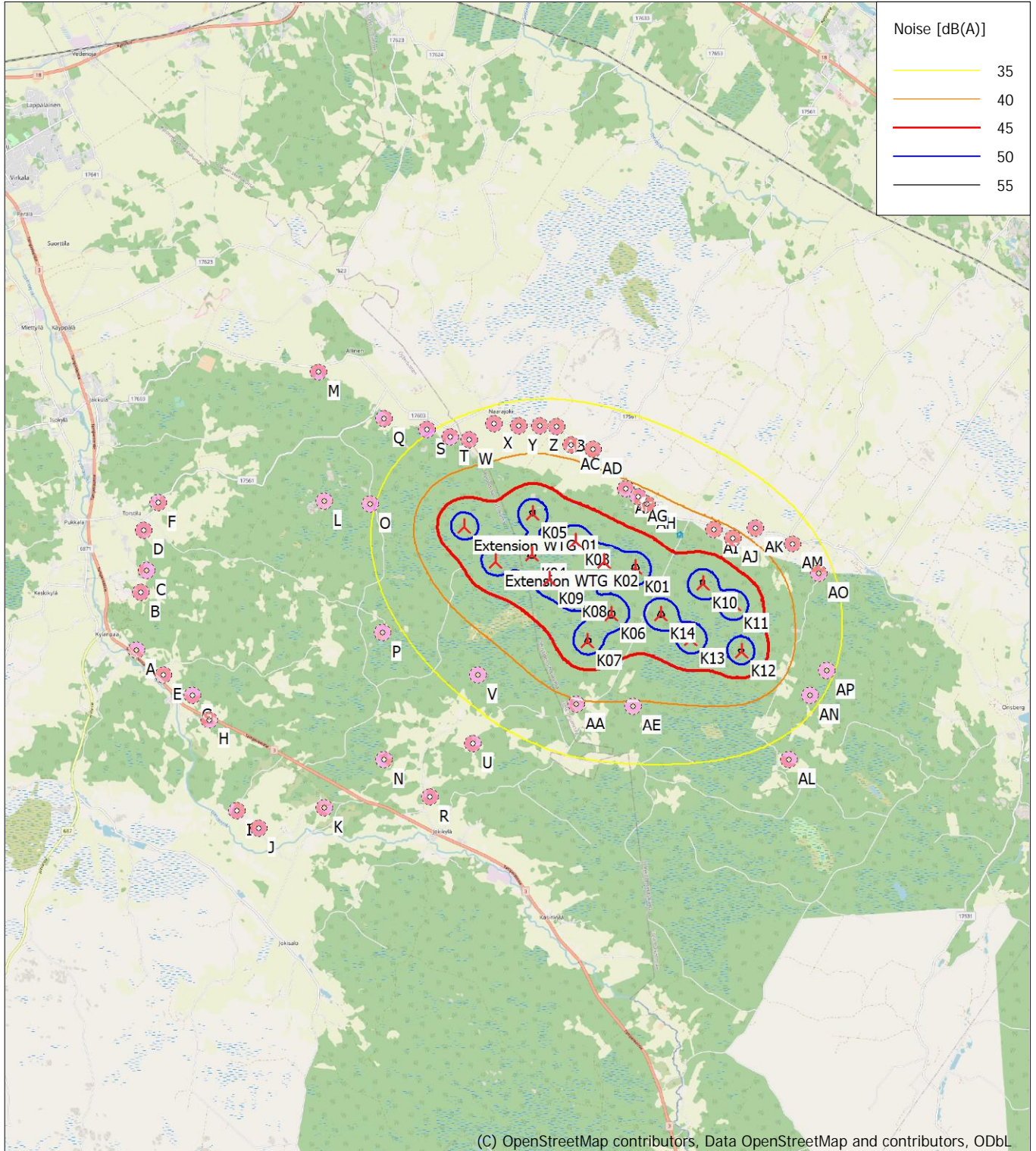
Noise demand: 40.0 dB(A)

No distance demand

Pure tone penalty: 0 dB

DECIBEL - Map 8.0 m/s

Calculation: VE1: Kattiharju + laajennus



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL



Map: EMD OpenStreetMap, Print scale 1:100,000, Map center Finish TM ETRS-TM35FIN-ETRS89 East: 256,593 North: 6,984,238

New WTG

Noise sensitive area

Noise calculation model: ISO 9613-2 Finland. Wind speed: 8.0 m/s
Height above sea level from active line object

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-23 15:15/4.0.531

DECIBEL - Main Result

Calculation: VE1: Kattiharju + laajennus low frequency

Noise calculation model:

Finland Low frequency

Wind speed (at 10 m height):

8.0 m/s

Spectral distribution:

From 20.0 Hz to 200.0 Hz

Meteorological coefficient, CO:

Selected option: Fixed value: 0.0 dB

Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

Pure tones:

Pure tone penalty is subtracted from demand

Model: 5.0 dB(A)

Height above ground level, when no value in NSA object:

4.0 m; Don't allow override of model height with height from NSA object

Uncertainty margin:

0.0 dB; Uncertainty margin in NSA has priority

Deviation from "official" noise demands. Negative is more

restrictive, positive is less restrictive.:

0.0 dB(A)

All coordinates are in

Finish TM ETRS-TM35FIN-ETRS89

All coordinates are in

Finish TM ETRS-TM35FIN-ETRS89

WTGs

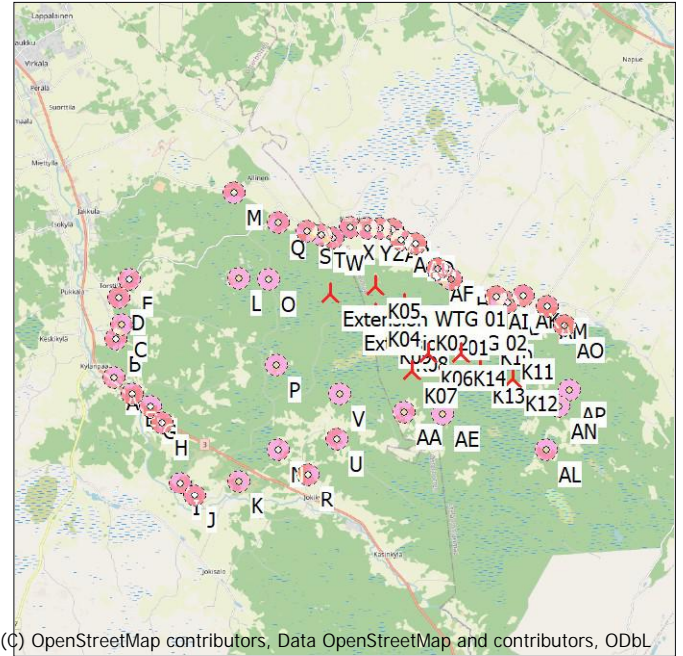
Table with columns: WTG type, Valid, Manufact., Type-generator, Power, Rotor diameter, Hub height, Noise data, Wind speed, Lwa,ref. Lists various WTG models like NORDEX and their specifications.

Calculation Results

Sound level

Table with columns: Noise sensitive area No., Name, East, North, Z, Immission height, Most critical demand Frequency, Noise, Predicted sound level WTG noise, Demands fulfilled? Noise. Lists noise sensitive points A through V with their coordinates and noise levels.

To be continued on next page...



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200,000

New WTG

Noise sensitive area

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

Assumptions

Cmet: Meteorological correction

Calculation Results

Noise sensitive area: A Noise sensitive point: Finnish normal frequency - User defined (291)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	6,146	6,149	20	33.52	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.10	75.2	0.12	5.40	8.30
Extension WTG 01			32	25.54	77.1	0.18	5.20	9.20
Extension WTG 01			40	20.52	78.3	0.31	5.00	10.30
Extension WTG 01			50	16.49	80.3	0.43	4.70	11.50
Extension WTG 01			63	14.65	84.6	0.68	4.30	13.00
Extension WTG 01			80	10.94	87.3	0.98	3.70	14.80
Extension WTG 01			100	5.89	88.9	1.54	3.00	16.80
Extension WTG 01			125	1.49	91.5	2.34	1.80	18.80
Extension WTG 01			160	-4.48	93.5	3.50	0.00	21.10
Extension WTG 01			200	-9.22	94.5	5.04	0.00	22.80
Extension WTG 02	6,492	6,495	20	33.05	71.8	0.00	5.60	7.60
Extension WTG 02			25	29.62	75.2	0.13	5.40	8.30
Extension WTG 02			32	25.05	77.1	0.19	5.20	9.20
Extension WTG 02			40	20.02	78.3	0.32	5.00	10.30
Extension WTG 02			50	15.99	80.3	0.45	4.70	11.50
Extension WTG 02			63	14.13	84.6	0.71	4.30	13.00
Extension WTG 02			80	10.41	87.3	1.04	3.70	14.80
Extension WTG 02			100	5.32	88.9	1.62	3.00	16.80
Extension WTG 02			125	0.88	91.5	2.47	1.80	18.80
Extension WTG 02			160	-5.15	93.5	3.70	0.00	21.10
Extension WTG 02			200	-9.98	94.5	5.33	0.00	22.80
K01	8,872	8,873	20	34.84	76.3	0.00	5.60	7.60
K01			25	31.36	79.7	0.18	5.40	8.30
K01			32	26.77	81.6	0.27	5.20	9.20
K01			40	21.69	82.8	0.44	5.00	10.30
K01			50	16.62	83.8	0.62	4.70	11.50
K01			63	16.66	90.1	0.98	4.30	13.00
K01			80	11.82	91.8	1.42	3.70	14.80
K01			100	5.52	92.4	2.22	3.00	16.80
K01			125	0.77	95.0	3.37	1.80	18.80
K01			160	-7.72	95.0	5.06	0.00	21.10
K01			200	-13.14	96.0	7.28	0.00	22.80
K02	8,359	8,360	20	35.36	76.3	0.00	5.60	7.60
K02			25	31.89	79.7	0.17	5.40	8.30
K02			32	27.30	81.6	0.25	5.20	9.20
K02			40	22.24	82.8	0.42	5.00	10.30
K02			50	17.17	83.8	0.59	4.70	11.50
K02			63	17.24	90.1	0.92	4.30	13.00
K02			80	12.42	91.8	1.34	3.70	14.80
K02			100	6.17	92.4	2.09	3.00	16.80
K02			125	1.48	95.0	3.18	1.80	18.80
K02			160	-6.91	95.0	4.77	0.00	21.10
K02			200	-12.20	96.0	6.86	0.00	22.80
K03	7,938	7,940	20	35.80	76.3	0.00	5.60	7.60
K03			25	32.34	79.7	0.16	5.40	8.30
K03			32	27.77	81.6	0.24	5.20	9.20
K03			40	22.71	82.8	0.40	5.00	10.30
K03			50	17.65	83.8	0.56	4.70	11.50
K03			63	17.73	90.1	0.87	4.30	13.00
K03			80	12.93	91.8	1.27	3.70	14.80
K03			100	6.72	92.4	1.99	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			125	2.09	95.0	3.02	1.80	18.80
K03			160	-6.22	95.0	4.53	0.00	21.10
K03			200	-11.41	96.0	6.51	0.00	22.80
K04	7,126	7,127						
K04			20	36.74	76.3	0.00	5.60	7.60
K04			25	33.30	79.7	0.14	5.40	8.30
K04			32	28.73	81.6	0.21	5.20	9.20
K04			40	23.68	82.8	0.36	5.00	10.30
K04			50	18.64	83.8	0.50	4.70	11.50
K04			63	18.76	90.1	0.78	4.30	13.00
K04			80	14.00	91.8	1.14	3.70	14.80
K04			100	7.86	92.4	1.78	3.00	16.80
K04			125	3.33	95.0	2.71	1.80	18.80
K04			160	-4.82	95.0	4.06	0.00	21.10
K04			200	-9.80	96.0	5.84	0.00	22.80
K05	7,355	7,357						
K05			20	36.47	76.3	0.00	5.60	7.60
K05			25	33.02	79.7	0.15	5.40	8.30
K05			32	28.45	81.6	0.22	5.20	9.20
K05			40	23.40	82.8	0.37	5.00	10.30
K05			50	18.35	83.8	0.51	4.70	11.50
K05			63	18.46	90.1	0.81	4.30	13.00
K05			80	13.69	91.8	1.18	3.70	14.80
K05			100	7.53	92.4	1.84	3.00	16.80
K05			125	2.97	95.0	2.80	1.80	18.80
K05			160	-5.23	95.0	4.19	0.00	21.10
K05			200	-10.27	96.0	6.03	0.00	22.80
K06	8,359	8,361						
K06			20	35.36	76.3	0.00	5.60	7.60
K06			25	31.89	79.7	0.17	5.40	8.30
K06			32	27.30	81.6	0.25	5.20	9.20
K06			40	22.24	82.8	0.42	5.00	10.30
K06			50	17.17	83.8	0.59	4.70	11.50
K06			63	17.24	90.1	0.92	4.30	13.00
K06			80	12.42	91.8	1.34	3.70	14.80
K06			100	6.16	92.4	2.09	3.00	16.80
K06			125	1.48	95.0	3.18	1.80	18.80
K06			160	-6.91	95.0	4.77	0.00	21.10
K06			200	-12.20	96.0	6.86	0.00	22.80
K07	7,919	7,921						
K07			20	35.82	76.3	0.00	5.60	7.60
K07			25	32.37	79.7	0.16	5.40	8.30
K07			32	27.79	81.6	0.24	5.20	9.20
K07			40	22.73	82.8	0.40	5.00	10.30
K07			50	17.67	83.8	0.55	4.70	11.50
K07			63	17.75	90.1	0.87	4.30	13.00
K07			80	12.96	91.8	1.27	3.70	14.80
K07			100	6.74	92.4	1.98	3.00	16.80
K07			125	2.11	95.0	3.01	1.80	18.80
K07			160	-6.19	95.0	4.51	0.00	21.10
K07			200	-11.37	96.0	6.50	0.00	22.80
K08	7,724	7,725						
K08			20	36.04	76.3	0.00	5.60	7.60
K08			25	32.59	79.7	0.15	5.40	8.30
K08			32	28.01	81.6	0.23	5.20	9.20
K08			40	22.96	82.8	0.39	5.00	10.30
K08			50	17.90	83.8	0.54	4.70	11.50
K08			63	17.99	90.1	0.85	4.30	13.00
K08			80	13.21	91.8	1.24	3.70	14.80
K08			100	7.01	92.4	1.93	3.00	16.80
K08			125	2.41	95.0	2.94	1.80	18.80
K08			160	-5.86	95.0	4.40	0.00	21.10
K08			200	-10.99	96.0	6.33	0.00	22.80
K09	7,360	7,362						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			20	36.46	76.3	0.00	5.60	7.60
K09			25	33.01	79.7	0.15	5.40	8.30
K09			32	28.44	81.6	0.22	5.20	9.20
K09			40	23.39	82.8	0.37	5.00	10.30
K09			50	18.34	83.8	0.52	4.70	11.50
K09			63	18.45	90.1	0.81	4.30	13.00
K09			80	13.68	91.8	1.18	3.70	14.80
K09			100	7.52	92.4	1.84	3.00	16.80
K09			125	2.96	95.0	2.80	1.80	18.80
K09			160	-5.24	95.0	4.20	0.00	21.10
K09			200	-10.28	96.0	6.04	0.00	22.80
K10	10,006	10,007	20	33.79	76.3	0.00	5.60	7.60
K10			25	30.29	79.7	0.20	5.40	8.30
K10			32	25.69	81.6	0.30	5.20	9.20
K10			40	20.59	82.8	0.50	5.00	10.30
K10			50	15.49	83.8	0.70	4.70	11.50
K10			63	15.49	90.1	1.10	4.30	13.00
K10			80	10.59	91.8	1.60	3.70	14.80
K10			100	4.19	92.4	2.50	3.00	16.80
K10			125	-0.71	95.0	3.80	1.80	18.80
K10			160	-9.41	95.0	5.70	0.00	21.10
K10			200	-15.11	96.0	8.21	0.00	22.80
K11	10,518	10,519	20	33.36	76.3	0.00	5.60	7.60
K11			25	29.85	79.7	0.21	5.40	8.30
K11			32	25.24	81.6	0.32	5.20	9.20
K11			40	20.13	82.8	0.53	5.00	10.30
K11			50	15.02	83.8	0.74	4.70	11.50
K11			63	15.00	90.1	1.16	4.30	13.00
K11			80	10.08	91.8	1.68	3.70	14.80
K11			100	3.63	92.4	2.63	3.00	16.80
K11			125	-1.34	95.0	4.00	1.80	18.80
K11			160	-10.14	95.0	6.00	0.00	21.10
K11			200	-15.97	96.0	8.63	0.00	22.80
K12	10,611	10,613	20	33.28	76.3	0.00	5.60	7.60
K12			25	29.77	79.7	0.21	5.40	8.30
K12			32	25.17	81.6	0.32	5.20	9.20
K12			40	20.05	82.8	0.53	5.00	10.30
K12			50	14.94	83.8	0.74	4.70	11.50
K12			63	14.92	90.1	1.17	4.30	13.00
K12			80	9.99	91.8	1.70	3.70	14.80
K12			100	3.53	92.4	2.65	3.00	16.80
K12			125	-1.45	95.0	4.03	1.80	18.80
K12			160	-10.27	95.0	6.05	0.00	21.10
K12			200	-16.12	96.0	8.70	0.00	22.80
K13	9,732	9,733	20	34.03	76.3	0.00	5.60	7.60
K13			25	30.54	79.7	0.19	5.40	8.30
K13			32	25.94	81.6	0.29	5.20	9.20
K13			40	20.85	82.8	0.49	5.00	10.30
K13			50	15.75	83.8	0.68	4.70	11.50
K13			63	15.76	90.1	1.07	4.30	13.00
K13			80	10.88	91.8	1.56	3.70	14.80
K13			100	4.50	92.4	2.43	3.00	16.80
K13			125	-0.36	95.0	3.70	1.80	18.80
K13			160	-9.01	95.0	5.55	0.00	21.10
K13			200	-14.65	96.0	7.98	0.00	22.80
K14	9,223	9,224	20	34.50	76.3	0.00	5.60	7.60
K14			25	31.02	79.7	0.18	5.40	8.30
K14			32	26.42	81.6	0.28	5.20	9.20
K14			40	21.34	82.8	0.46	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			50	16.26	83.8	0.65	4.70	11.50
K14			63	16.29	90.1	1.01	4.30	13.00
K14			80	11.43	91.8	1.48	3.70	14.80
K14			100	5.10	92.4	2.31	3.00	16.80
K14			125	0.30	95.0	3.51	1.80	18.80
K14			160	-8.26	95.0	5.26	0.00	21.10
K14			200	-13.76	96.0	7.56	0.00	22.80
Sum			20	47.11				
Sum			25	43.65				
Sum			32	39.07				
Sum			40	34.00				
Sum			50	29.04				
Sum			63	28.94				
Sum			80	24.21				
Sum			100	18.08				
Sum			125	13.43				
Sum			160	5.42				
Sum			200	0.27				

Noise sensitive area: B Noise sensitive point: Finnish normal frequency - User defined (272)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,791	5,794	20	34.04	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.62	75.2	0.12	5.40	8.30
Extension WTG 01			32	26.07	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.05	78.3	0.29	5.00	10.30
Extension WTG 01			50	17.04	80.3	0.41	4.70	11.50
Extension WTG 01			63	15.20	84.6	0.64	4.30	13.00
Extension WTG 01			80	11.51	87.3	0.93	3.70	14.80
Extension WTG 01			100	6.49	88.9	1.45	3.00	16.80
Extension WTG 01			125	2.14	91.5	2.20	1.80	18.80
Extension WTG 01			160	-3.76	93.5	3.30	0.00	21.10
Extension WTG 01			200	-8.41	94.5	4.75	0.00	22.80
Extension WTG 02	6,253	6,256	20	33.37	71.8	0.00	5.60	7.60
Extension WTG 02			25	29.95	75.2	0.13	5.40	8.30
Extension WTG 02			32	25.39	77.1	0.19	5.20	9.20
Extension WTG 02			40	20.36	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.34	80.3	0.44	4.70	11.50
Extension WTG 02			63	14.49	84.6	0.69	4.30	13.00
Extension WTG 02			80	10.77	87.3	1.00	3.70	14.80
Extension WTG 02			100	5.71	88.9	1.56	3.00	16.80
Extension WTG 02			125	1.30	91.5	2.38	1.80	18.80
Extension WTG 02			160	-4.69	93.5	3.57	0.00	21.10
Extension WTG 02			200	-9.46	94.5	5.13	0.00	22.80
K01	8,691	8,692	20	35.02	76.3	0.00	5.60	7.60
K01			25	31.54	79.7	0.17	5.40	8.30
K01			32	26.96	81.6	0.26	5.20	9.20
K01			40	21.88	82.8	0.43	5.00	10.30
K01			50	16.81	83.8	0.61	4.70	11.50
K01			63	16.86	90.1	0.96	4.30	13.00
K01			80	12.03	91.8	1.39	3.70	14.80
K01			100	5.74	92.4	2.17	3.00	16.80
K01			125	1.01	95.0	3.30	1.80	18.80
K01			160	-7.44	95.0	4.95	0.00	21.10
K01			200	-12.81	96.0	7.13	0.00	22.80
K02	8,158	8,159	20	35.57	76.3	0.00	5.60	7.60
K02			25	32.10	79.7	0.16	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			32	27.52	81.6	0.24	5.20	9.20
K02			40	22.46	82.8	0.41	5.00	10.30
K02			50	17.40	83.8	0.57	4.70	11.50
K02			63	17.47	90.1	0.90	4.30	13.00
K02			80	12.66	91.8	1.31	3.70	14.80
K02			100	6.43	92.4	2.04	3.00	16.80
K02			125	1.77	95.0	3.10	1.80	18.80
K02			160	-6.58	95.0	4.65	0.00	21.10
K02			200	-11.82	96.0	6.69	0.00	22.80
K03	7,682	7,684						
K03			20	36.09	76.3	0.00	5.60	7.60
K03			25	32.63	79.7	0.15	5.40	8.30
K03			32	28.06	81.6	0.23	5.20	9.20
K03			40	23.00	82.8	0.38	5.00	10.30
K03			50	17.95	83.8	0.54	4.70	11.50
K03			63	18.04	90.1	0.85	4.30	13.00
K03			80	13.26	91.8	1.23	3.70	14.80
K03			100	7.07	92.4	1.92	3.00	16.80
K03			125	2.47	95.0	2.92	1.80	18.80
K03			160	-5.79	95.0	4.38	0.00	21.10
K03			200	-10.91	96.0	6.30	0.00	22.80
K04	6,886	6,888						
K04			20	37.04	76.3	0.00	5.60	7.60
K04			25	33.60	79.7	0.14	5.40	8.30
K04			32	29.03	81.6	0.21	5.20	9.20
K04			40	23.99	82.8	0.34	5.00	10.30
K04			50	18.96	83.8	0.48	4.70	11.50
K04			63	19.08	90.1	0.76	4.30	13.00
K04			80	14.34	91.8	1.10	3.70	14.80
K04			100	8.22	92.4	1.72	3.00	16.80
K04			125	3.72	95.0	2.62	1.80	18.80
K04			160	-4.39	95.0	3.93	0.00	21.10
K04			200	-9.31	96.0	5.65	0.00	22.80
K05	7,016	7,018						
K05			20	36.88	76.3	0.00	5.60	7.60
K05			25	33.44	79.7	0.14	5.40	8.30
K05			32	28.86	81.6	0.21	5.20	9.20
K05			40	23.82	82.8	0.35	5.00	10.30
K05			50	18.78	83.8	0.49	4.70	11.50
K05			63	18.90	90.1	0.77	4.30	13.00
K05			80	14.15	91.8	1.12	3.70	14.80
K05			100	8.02	92.4	1.75	3.00	16.80
K05			125	3.51	95.0	2.67	1.80	18.80
K05			160	-4.62	95.0	4.00	0.00	21.10
K05			200	-9.58	96.0	5.75	0.00	22.80
K06	8,271	8,273						
K06			20	35.45	76.3	0.00	5.60	7.60
K06			25	31.98	79.7	0.17	5.40	8.30
K06			32	27.40	81.6	0.25	5.20	9.20
K06			40	22.33	82.8	0.41	5.00	10.30
K06			50	17.27	83.8	0.58	4.70	11.50
K06			63	17.34	90.1	0.91	4.30	13.00
K06			80	12.52	91.8	1.32	3.70	14.80
K06			100	6.28	92.4	2.07	3.00	16.80
K06			125	1.60	95.0	3.14	1.80	18.80
K06			160	-6.77	95.0	4.72	0.00	21.10
K06			200	-12.04	96.0	6.78	0.00	22.80
K07	7,889	7,891						
K07			20	35.86	76.3	0.00	5.60	7.60
K07			25	32.40	79.7	0.16	5.40	8.30
K07			32	27.82	81.6	0.24	5.20	9.20
K07			40	22.76	82.8	0.39	5.00	10.30
K07			50	17.70	83.8	0.55	4.70	11.50
K07			63	17.79	90.1	0.87	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K07			80	12.99	91.8	1.26	3.70	14.80
K07			100	6.78	92.4	1.97	3.00	16.80
K07			125	2.16	95.0	3.00	1.80	18.80
K07			160	-6.14	95.0	4.50	0.00	21.10
K07			200	-11.31	96.0	6.47	0.00	22.80
K08	7,584	7,586						
K08			20	36.20	76.3	0.00	5.60	7.60
K08			25	32.75	79.7	0.15	5.40	8.30
K08			32	28.17	81.6	0.23	5.20	9.20
K08			40	23.12	82.8	0.38	5.00	10.30
K08			50	18.07	83.8	0.53	4.70	11.50
K08			63	18.17	90.1	0.83	4.30	13.00
K08			80	13.39	91.8	1.21	3.70	14.80
K08			100	7.20	92.4	1.90	3.00	16.80
K08			125	2.62	95.0	2.88	1.80	18.80
K08			160	-5.62	95.0	4.32	0.00	21.10
K08			200	-10.72	96.0	6.22	0.00	22.80
K09	7,186	7,188						
K09			20	36.67	76.3	0.00	5.60	7.60
K09			25	33.22	79.7	0.14	5.40	8.30
K09			32	28.65	81.6	0.22	5.20	9.20
K09			40	23.61	82.8	0.36	5.00	10.30
K09			50	18.56	83.8	0.50	4.70	11.50
K09			63	18.68	90.1	0.79	4.30	13.00
K09			80	13.92	91.8	1.15	3.70	14.80
K09			100	7.77	92.4	1.80	3.00	16.80
K09			125	3.24	95.0	2.73	1.80	18.80
K09			160	-4.93	95.0	4.10	0.00	21.10
K09			200	-9.93	96.0	5.89	0.00	22.80
K10	9,863	9,865						
K10			20	33.92	76.3	0.00	5.60	7.60
K10			25	30.42	79.7	0.20	5.40	8.30
K10			32	25.82	81.6	0.30	5.20	9.20
K10			40	20.72	82.8	0.49	5.00	10.30
K10			50	15.63	83.8	0.69	4.70	11.50
K10			63	15.63	90.1	1.09	4.30	13.00
K10			80	10.74	91.8	1.58	3.70	14.80
K10			100	4.35	92.4	2.47	3.00	16.80
K10			125	-0.53	95.0	3.75	1.80	18.80
K10			160	-9.20	95.0	5.62	0.00	21.10
K10			200	-14.87	96.0	8.09	0.00	22.80
K11	10,416	10,417						
K11			20	33.45	76.3	0.00	5.60	7.60
K11			25	29.94	79.7	0.21	5.40	8.30
K11			32	25.33	81.6	0.31	5.20	9.20
K11			40	20.22	82.8	0.52	5.00	10.30
K11			50	15.12	83.8	0.73	4.70	11.50
K11			63	15.10	90.1	1.15	4.30	13.00
K11			80	10.18	91.8	1.67	3.70	14.80
K11			100	3.74	92.4	2.60	3.00	16.80
K11			125	-1.21	95.0	3.96	1.80	18.80
K11			160	-9.99	95.0	5.94	0.00	21.10
K11			200	-15.80	96.0	8.54	0.00	22.80
K12	10,587	10,588						
K12			20	33.30	76.3	0.00	5.60	7.60
K12			25	29.79	79.7	0.21	5.40	8.30
K12			32	25.19	81.6	0.32	5.20	9.20
K12			40	20.07	82.8	0.53	5.00	10.30
K12			50	14.96	83.8	0.74	4.70	11.50
K12			63	14.94	90.1	1.16	4.30	13.00
K12			80	10.01	91.8	1.69	3.70	14.80
K12			100	3.56	92.4	2.65	3.00	16.80
K12			125	-1.42	95.0	4.02	1.80	18.80
K12			160	-10.23	95.0	6.04	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			200	-16.08	96.0	8.68	0.00	22.80
K13	9,691	9,692						
K13			20	34.07	76.3	0.00	5.60	7.60
K13			25	30.58	79.7	0.19	5.40	8.30
K13			32	25.98	81.6	0.29	5.20	9.20
K13			40	20.89	82.8	0.48	5.00	10.30
K13			50	15.79	83.8	0.68	4.70	11.50
K13			63	15.81	90.1	1.07	4.30	13.00
K13			80	10.92	91.8	1.55	3.70	14.80
K13			100	4.55	92.4	2.42	3.00	16.80
K13			125	-0.31	95.0	3.68	1.80	18.80
K13			160	-8.95	95.0	5.52	0.00	21.10
K13			200	-14.58	96.0	7.95	0.00	22.80
K14	9,136	9,137						
K14			20	34.58	76.3	0.00	5.60	7.60
K14			25	31.10	79.7	0.18	5.40	8.30
K14			32	26.51	81.6	0.27	5.20	9.20
K14			40	21.43	82.8	0.46	5.00	10.30
K14			50	16.34	83.8	0.64	4.70	11.50
K14			63	16.38	90.1	1.01	4.30	13.00
K14			80	11.52	91.8	1.46	3.70	14.80
K14			100	5.20	92.4	2.28	3.00	16.80
K14			125	0.41	95.0	3.47	1.80	18.80
K14			160	-8.12	95.0	5.21	0.00	21.10
K14			200	-13.61	96.0	7.49	0.00	22.80
Sum								
Sum			20	47.32				
Sum			25	43.86				
Sum			32	39.28				
Sum			40	34.22				
Sum			50	29.26				
Sum			63	29.15				
Sum			80	24.44				
Sum			100	18.34				
Sum			125	13.72				
Sum			160	5.77				
Sum			200	0.68				

Noise sensitive area: C Noise sensitive point: Finnish normal frequency - User defined (273)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,611	5,614						
Extension WTG 01			20	34.31	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.90	75.2	0.11	5.40	8.30
Extension WTG 01			32	26.35	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.33	78.3	0.28	5.00	10.30
Extension WTG 01			50	17.32	80.3	0.39	4.70	11.50
Extension WTG 01			63	15.50	84.6	0.62	4.30	13.00
Extension WTG 01			80	11.82	87.3	0.90	3.70	14.80
Extension WTG 01			100	6.81	88.9	1.40	3.00	16.80
Extension WTG 01			125	2.48	91.5	2.13	1.80	18.80
Extension WTG 01			160	-3.39	93.5	3.20	0.00	21.10
Extension WTG 01			200	-7.99	94.5	4.60	0.00	22.80
Extension WTG 02	6,117	6,120						
Extension WTG 02			20	33.56	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.14	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.58	77.1	0.18	5.20	9.20
Extension WTG 02			40	20.56	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.54	80.3	0.43	4.70	11.50
Extension WTG 02			63	14.69	84.6	0.67	4.30	13.00
Extension WTG 02			80	10.99	87.3	0.98	3.70	14.80
Extension WTG 02			100	5.93	88.9	1.53	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			125	1.54	91.5	2.33	1.80	18.80
Extension WTG 02			160	-4.42	93.5	3.49	0.00	21.10
Extension WTG 02			200	-9.15	94.5	5.02	0.00	22.80
K01	8,566	8,568						
K01			20	35.14	76.3	0.00	5.60	7.60
K01			25	31.67	79.7	0.17	5.40	8.30
K01			32	27.09	81.6	0.26	5.20	9.20
K01			40	22.01	82.8	0.43	5.00	10.30
K01			50	16.94	83.8	0.60	4.70	11.50
K01			63	17.00	90.1	0.94	4.30	13.00
K01			80	12.17	91.8	1.37	3.70	14.80
K01			100	5.90	92.4	2.14	3.00	16.80
K01			125	1.19	95.0	3.26	1.80	18.80
K01			160	-7.24	95.0	4.88	0.00	21.10
K01			200	-12.58	96.0	7.03	0.00	22.80
K02	8,027	8,029						
K02			20	35.71	76.3	0.00	5.60	7.60
K02			25	32.25	79.7	0.16	5.40	8.30
K02			32	27.67	81.6	0.24	5.20	9.20
K02			40	22.61	82.8	0.40	5.00	10.30
K02			50	17.55	83.8	0.56	4.70	11.50
K02			63	17.62	90.1	0.88	4.30	13.00
K02			80	12.82	91.8	1.28	3.70	14.80
K02			100	6.60	92.4	2.01	3.00	16.80
K02			125	1.96	95.0	3.05	1.80	18.80
K02			160	-6.37	95.0	4.58	0.00	21.10
K02			200	-11.58	96.0	6.58	0.00	22.80
K03	7,532	7,534						
K03			20	36.26	76.3	0.00	5.60	7.60
K03			25	32.81	79.7	0.15	5.40	8.30
K03			32	28.23	81.6	0.23	5.20	9.20
K03			40	23.18	82.8	0.38	5.00	10.30
K03			50	18.13	83.8	0.53	4.70	11.50
K03			63	18.23	90.1	0.83	4.30	13.00
K03			80	13.45	91.8	1.21	3.70	14.80
K03			100	7.28	92.4	1.88	3.00	16.80
K03			125	2.70	95.0	2.86	1.80	18.80
K03			160	-5.53	95.0	4.29	0.00	21.10
K03			200	-10.62	96.0	6.18	0.00	22.80
K04	6,746	6,748						
K04			20	37.22	76.3	0.00	5.60	7.60
K04			25	33.78	79.7	0.13	5.40	8.30
K04			32	29.21	81.6	0.20	5.20	9.20
K04			40	24.18	82.8	0.34	5.00	10.30
K04			50	19.14	83.8	0.47	4.70	11.50
K04			63	19.27	90.1	0.74	4.30	13.00
K04			80	14.54	91.8	1.08	3.70	14.80
K04			100	8.43	92.4	1.69	3.00	16.80
K04			125	3.95	95.0	2.56	1.80	18.80
K04			160	-4.13	95.0	3.85	0.00	21.10
K04			200	-9.02	96.0	5.53	0.00	22.80
K05	6,836	6,838						
K05			20	37.10	76.3	0.00	5.60	7.60
K05			25	33.67	79.7	0.14	5.40	8.30
K05			32	29.10	81.6	0.21	5.20	9.20
K05			40	24.06	82.8	0.34	5.00	10.30
K05			50	19.02	83.8	0.48	4.70	11.50
K05			63	19.15	90.1	0.75	4.30	13.00
K05			80	14.41	91.8	1.09	3.70	14.80
K05			100	8.29	92.4	1.71	3.00	16.80
K05			125	3.80	95.0	2.60	1.80	18.80
K05			160	-4.30	95.0	3.90	0.00	21.10
K05			200	-9.20	96.0	5.61	0.00	22.80
K06	8,185	8,187						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			20	35.54	76.3	0.00	5.60	7.60
K06			25	32.07	79.7	0.16	5.40	8.30
K06			32	27.49	81.6	0.25	5.20	9.20
K06			40	22.43	82.8	0.41	5.00	10.30
K06			50	17.36	83.8	0.57	4.70	11.50
K06			63	17.44	90.1	0.90	4.30	13.00
K06			80	12.63	91.8	1.31	3.70	14.80
K06			100	6.39	92.4	2.05	3.00	16.80
K06			125	1.73	95.0	3.11	1.80	18.80
K06			160	-6.63	95.0	4.67	0.00	21.10
K06			200	-11.88	96.0	6.71	0.00	22.80
K07	7,829	7,831						
K07			20	35.92	76.3	0.00	5.60	7.60
K07			25	32.47	79.7	0.16	5.40	8.30
K07			32	27.89	81.6	0.23	5.20	9.20
K07			40	22.83	82.8	0.39	5.00	10.30
K07			50	17.78	83.8	0.55	4.70	11.50
K07			63	17.86	90.1	0.86	4.30	13.00
K07			80	13.07	91.8	1.25	3.70	14.80
K07			100	6.87	92.4	1.96	3.00	16.80
K07			125	2.25	95.0	2.98	1.80	18.80
K07			160	-6.04	95.0	4.46	0.00	21.10
K07			200	-11.20	96.0	6.42	0.00	22.80
K08	7,481	7,483						
K08			20	36.32	76.3	0.00	5.60	7.60
K08			25	32.87	79.7	0.15	5.40	8.30
K08			32	28.29	81.6	0.22	5.20	9.20
K08			40	23.24	82.8	0.37	5.00	10.30
K08			50	18.19	83.8	0.52	4.70	11.50
K08			63	18.30	90.1	0.82	4.30	13.00
K08			80	13.52	91.8	1.20	3.70	14.80
K08			100	7.35	92.4	1.87	3.00	16.80
K08			125	2.78	95.0	2.84	1.80	18.80
K08			160	-5.45	95.0	4.27	0.00	21.10
K08			200	-10.52	96.0	6.14	0.00	22.80
K09	7,071	7,073						
K09			20	36.81	76.3	0.00	5.60	7.60
K09			25	33.37	79.7	0.14	5.40	8.30
K09			32	28.80	81.6	0.21	5.20	9.20
K09			40	23.75	82.8	0.35	5.00	10.30
K09			50	18.71	83.8	0.50	4.70	11.50
K09			63	18.83	90.1	0.78	4.30	13.00
K09			80	14.08	91.8	1.13	3.70	14.80
K09			100	7.94	92.4	1.77	3.00	16.80
K09			125	3.42	95.0	2.69	1.80	18.80
K09			160	-4.72	95.0	4.03	0.00	21.10
K09			200	-9.69	96.0	5.80	0.00	22.80
K10	9,751	9,752						
K10			20	34.02	76.3	0.00	5.60	7.60
K10			25	30.52	79.7	0.20	5.40	8.30
K10			32	25.93	81.6	0.29	5.20	9.20
K10			40	20.83	82.8	0.49	5.00	10.30
K10			50	15.74	83.8	0.68	4.70	11.50
K10			63	15.75	90.1	1.07	4.30	13.00
K10			80	10.86	91.8	1.56	3.70	14.80
K10			100	4.48	92.4	2.44	3.00	16.80
K10			125	-0.39	95.0	3.71	1.80	18.80
K10			160	-9.04	95.0	5.56	0.00	21.10
K10			200	-14.68	96.0	8.00	0.00	22.80
K11	10,317	10,319						
K11			20	33.53	76.3	0.00	5.60	7.60
K11			25	30.02	79.7	0.21	5.40	8.30
K11			32	25.42	81.6	0.31	5.20	9.20
K11			40	20.31	82.8	0.52	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			50	15.21	83.8	0.72	4.70	11.50
K11			63	15.19	90.1	1.14	4.30	13.00
K11			80	10.28	91.8	1.65	3.70	14.80
K11			100	3.85	92.4	2.58	3.00	16.80
K11			125	-1.09	95.0	3.92	1.80	18.80
K11			160	-9.85	95.0	5.88	0.00	21.10
K11			200	-15.63	96.0	8.46	0.00	22.80
K12	10,520	10,521						
K12			20	33.36	76.3	0.00	5.60	7.60
K12			25	29.85	79.7	0.21	5.40	8.30
K12			32	25.24	81.6	0.32	5.20	9.20
K12			40	20.13	82.8	0.53	5.00	10.30
K12			50	15.02	83.8	0.74	4.70	11.50
K12			63	15.00	90.1	1.16	4.30	13.00
K12			80	10.08	91.8	1.68	3.70	14.80
K12			100	3.63	92.4	2.63	3.00	16.80
K12			125	-1.34	95.0	4.00	1.80	18.80
K12			160	-10.14	95.0	6.00	0.00	21.10
K12			200	-15.97	96.0	8.63	0.00	22.80
K13	9,619	9,620						
K13			20	34.14	76.3	0.00	5.60	7.60
K13			25	30.64	79.7	0.19	5.40	8.30
K13			32	26.05	81.6	0.29	5.20	9.20
K13			40	20.96	82.8	0.48	5.00	10.30
K13			50	15.86	83.8	0.67	4.70	11.50
K13			63	15.88	90.1	1.06	4.30	13.00
K13			80	11.00	91.8	1.54	3.70	14.80
K13			100	4.63	92.4	2.41	3.00	16.80
K13			125	-0.22	95.0	3.66	1.80	18.80
K13			160	-8.85	95.0	5.48	0.00	21.10
K13			200	-14.45	96.0	7.89	0.00	22.80
K14	9,048	9,049						
K14			20	34.67	76.3	0.00	5.60	7.60
K14			25	31.19	79.7	0.18	5.40	8.30
K14			32	26.60	81.6	0.27	5.20	9.20
K14			40	21.52	82.8	0.45	5.00	10.30
K14			50	16.43	83.8	0.63	4.70	11.50
K14			63	16.47	90.1	1.00	4.30	13.00
K14			80	11.62	91.8	1.45	3.70	14.80
K14			100	5.31	92.4	2.26	3.00	16.80
K14			125	0.53	95.0	3.44	1.80	18.80
K14			160	-7.99	95.0	5.16	0.00	21.10
K14			200	-13.45	96.0	7.42	0.00	22.80
Sum								
Sum			20	47.45				
Sum			25	44.00				
Sum			32	39.42				
Sum			40	34.36				
Sum			50	29.41				
Sum			63	29.30				
Sum			80	24.60				
Sum			100	18.51				
Sum			125	13.91				
Sum			160	6.00				
Sum			200	0.94				

Noise sensitive area: D Noise sensitive point: Finnish normal frequency - User defined (277)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,607	5,610						
Extension WTG 01			20	34.32	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.91	75.2	0.11	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01			32	26.35	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.34	78.3	0.28	5.00	10.30
Extension WTG 01			50	17.33	80.3	0.39	4.70	11.50
Extension WTG 01			63	15.50	84.6	0.62	4.30	13.00
Extension WTG 01			80	11.82	87.3	0.90	3.70	14.80
Extension WTG 01			100	6.82	88.9	1.40	3.00	16.80
Extension WTG 01			125	2.49	91.5	2.13	1.80	18.80
Extension WTG 01			160	-3.38	93.5	3.20	0.00	21.10
Extension WTG 01			200	-7.98	94.5	4.60	0.00	22.80
Extension WTG 02	6,191	6,193						
Extension WTG 02			20	33.46	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.04	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.48	77.1	0.19	5.20	9.20
Extension WTG 02			40	20.45	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.43	80.3	0.43	4.70	11.50
Extension WTG 02			63	14.58	84.6	0.68	4.30	13.00
Extension WTG 02			80	10.87	87.3	0.99	3.70	14.80
Extension WTG 02			100	5.81	88.9	1.55	3.00	16.80
Extension WTG 02			125	1.41	91.5	2.35	1.80	18.80
Extension WTG 02			160	-4.57	93.5	3.53	0.00	21.10
Extension WTG 02			200	-9.32	94.5	5.08	0.00	22.80
K01	8,642	8,644						
K01			20	35.07	76.3	0.00	5.60	7.60
K01			25	31.59	79.7	0.17	5.40	8.30
K01			32	27.01	81.6	0.26	5.20	9.20
K01			40	21.93	82.8	0.43	5.00	10.30
K01			50	16.86	83.8	0.61	4.70	11.50
K01			63	16.91	90.1	0.95	4.30	13.00
K01			80	12.08	91.8	1.38	3.70	14.80
K01			100	5.80	92.4	2.16	3.00	16.80
K01			125	1.08	95.0	3.28	1.80	18.80
K01			160	-7.36	95.0	4.93	0.00	21.10
K01			200	-12.72	96.0	7.09	0.00	22.80
K02	8,095	8,097						
K02			20	35.63	76.3	0.00	5.60	7.60
K02			25	32.17	79.7	0.16	5.40	8.30
K02			32	27.59	81.6	0.24	5.20	9.20
K02			40	22.53	82.8	0.40	5.00	10.30
K02			50	17.47	83.8	0.57	4.70	11.50
K02			63	17.54	90.1	0.89	4.30	13.00
K02			80	12.74	91.8	1.30	3.70	14.80
K02			100	6.51	92.4	2.02	3.00	16.80
K02			125	1.86	95.0	3.08	1.80	18.80
K02			160	-6.48	95.0	4.62	0.00	21.10
K02			200	-11.71	96.0	6.64	0.00	22.80
K03	7,566	7,568						
K03			20	36.22	76.3	0.00	5.60	7.60
K03			25	32.77	79.7	0.15	5.40	8.30
K03			32	28.19	81.6	0.23	5.20	9.20
K03			40	23.14	82.8	0.38	5.00	10.30
K03			50	18.09	83.8	0.53	4.70	11.50
K03			63	18.19	90.1	0.83	4.30	13.00
K03			80	13.41	91.8	1.21	3.70	14.80
K03			100	7.23	92.4	1.89	3.00	16.80
K03			125	2.64	95.0	2.88	1.80	18.80
K03			160	-5.59	95.0	4.31	0.00	21.10
K03			200	-10.69	96.0	6.21	0.00	22.80
K04	6,805	6,807						
K04			20	37.14	76.3	0.00	5.60	7.60
K04			25	33.70	79.7	0.14	5.40	8.30
K04			32	29.14	81.6	0.20	5.20	9.20
K04			40	24.10	82.8	0.34	5.00	10.30
K04			50	19.06	83.8	0.48	4.70	11.50
K04			63	19.19	90.1	0.75	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K04			80	14.45	91.8	1.09	3.70	14.80
K04			100	8.34	92.4	1.70	3.00	16.80
K04			125	3.85	95.0	2.59	1.80	18.80
K04			160	-4.24	95.0	3.88	0.00	21.10
K04			200	-9.14	96.0	5.58	0.00	22.80
K05	6,818	6,820						
K05			20	37.12	76.3	0.00	5.60	7.60
K05			25	33.69	79.7	0.14	5.40	8.30
K05			32	29.12	81.6	0.20	5.20	9.20
K05			40	24.08	82.8	0.34	5.00	10.30
K05			50	19.05	83.8	0.48	4.70	11.50
K05			63	19.17	90.1	0.75	4.30	13.00
K05			80	14.43	91.8	1.09	3.70	14.80
K05			100	8.32	92.4	1.71	3.00	16.80
K05			125	3.83	95.0	2.59	1.80	18.80
K05			160	-4.26	95.0	3.89	0.00	21.10
K05			200	-9.17	96.0	5.59	0.00	22.80
K06	8,332	8,334						
K06			20	35.38	76.3	0.00	5.60	7.60
K06			25	31.92	79.7	0.17	5.40	8.30
K06			32	27.33	81.6	0.25	5.20	9.20
K06			40	22.27	82.8	0.42	5.00	10.30
K06			50	17.20	83.8	0.58	4.70	11.50
K06			63	17.27	90.1	0.92	4.30	13.00
K06			80	12.45	91.8	1.33	3.70	14.80
K06			100	6.20	92.4	2.08	3.00	16.80
K06			125	1.52	95.0	3.17	1.80	18.80
K06			160	-6.87	95.0	4.75	0.00	21.10
K06			200	-12.15	96.0	6.83	0.00	22.80
K07	8,020	8,022						
K07			20	35.71	76.3	0.00	5.60	7.60
K07			25	32.25	79.7	0.16	5.40	8.30
K07			32	27.67	81.6	0.24	5.20	9.20
K07			40	22.61	82.8	0.40	5.00	10.30
K07			50	17.55	83.8	0.56	4.70	11.50
K07			63	17.63	90.1	0.88	4.30	13.00
K07			80	12.83	91.8	1.28	3.70	14.80
K07			100	6.61	92.4	2.01	3.00	16.80
K07			125	1.97	95.0	3.05	1.80	18.80
K07			160	-6.36	95.0	4.57	0.00	21.10
K07			200	-11.56	96.0	6.58	0.00	22.80
K08	7,601	7,603						
K08			20	36.18	76.3	0.00	5.60	7.60
K08			25	32.73	79.7	0.15	5.40	8.30
K08			32	28.15	81.6	0.23	5.20	9.20
K08			40	23.10	82.8	0.38	5.00	10.30
K08			50	18.05	83.8	0.53	4.70	11.50
K08			63	18.14	90.1	0.84	4.30	13.00
K08			80	13.36	91.8	1.22	3.70	14.80
K08			100	7.18	92.4	1.90	3.00	16.80
K08			125	2.59	95.0	2.89	1.80	18.80
K08			160	-5.65	95.0	4.33	0.00	21.10
K08			200	-10.75	96.0	6.23	0.00	22.80
K09	7,173	7,175						
K09			20	36.68	76.3	0.00	5.60	7.60
K09			25	33.24	79.7	0.14	5.40	8.30
K09			32	28.67	81.6	0.22	5.20	9.20
K09			40	23.63	82.8	0.36	5.00	10.30
K09			50	18.58	83.8	0.50	4.70	11.50
K09			63	18.69	90.1	0.79	4.30	13.00
K09			80	13.94	91.8	1.15	3.70	14.80
K09			100	7.79	92.4	1.79	3.00	16.80
K09			125	3.26	95.0	2.73	1.80	18.80
K09			160	-4.91	95.0	4.09	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			200	-9.90	96.0	5.88	0.00	22.80
K10	9,843	9,844						
K10			20	33.94	76.3	0.00	5.60	7.60
K10			25	30.44	79.7	0.20	5.40	8.30
K10			32	25.84	81.6	0.30	5.20	9.20
K10			40	20.74	82.8	0.49	5.00	10.30
K10			50	15.65	83.8	0.69	4.70	11.50
K10			63	15.65	90.1	1.08	4.30	13.00
K10			80	10.76	91.8	1.58	3.70	14.80
K10			100	4.38	92.4	2.46	3.00	16.80
K10			125	-0.50	95.0	3.74	1.80	18.80
K10			160	-9.17	95.0	5.61	0.00	21.10
K10			200	-14.84	96.0	8.07	0.00	22.80
K11	10,433	10,434						
K11			20	33.43	76.3	0.00	5.60	7.60
K11			25	29.92	79.7	0.21	5.40	8.30
K11			32	25.32	81.6	0.31	5.20	9.20
K11			40	20.21	82.8	0.52	5.00	10.30
K11			50	15.10	83.8	0.73	4.70	11.50
K11			63	15.08	90.1	1.15	4.30	13.00
K11			80	10.16	91.8	1.67	3.70	14.80
K11			100	3.72	92.4	2.61	3.00	16.80
K11			125	-1.23	95.0	3.96	1.80	18.80
K11			160	-10.02	95.0	5.95	0.00	21.10
K11			200	-15.82	96.0	8.56	0.00	22.80
K12	10,687	10,688						
K12			20	33.22	76.3	0.00	5.60	7.60
K12			25	29.71	79.7	0.21	5.40	8.30
K12			32	25.10	81.6	0.32	5.20	9.20
K12			40	19.99	82.8	0.53	5.00	10.30
K12			50	14.87	83.8	0.75	4.70	11.50
K12			63	14.85	90.1	1.18	4.30	13.00
K12			80	9.91	91.8	1.71	3.70	14.80
K12			100	3.45	92.4	2.67	3.00	16.80
K12			125	-1.54	95.0	4.06	1.80	18.80
K12			160	-10.37	95.0	6.09	0.00	21.10
K12			200	-16.24	96.0	8.76	0.00	22.80
K13	9,782	9,784						
K13			20	33.99	76.3	0.00	5.60	7.60
K13			25	30.49	79.7	0.20	5.40	8.30
K13			32	25.90	81.6	0.29	5.20	9.20
K13			40	20.80	82.8	0.49	5.00	10.30
K13			50	15.71	83.8	0.68	4.70	11.50
K13			63	15.71	90.1	1.08	4.30	13.00
K13			80	10.82	91.8	1.57	3.70	14.80
K13			100	4.44	92.4	2.45	3.00	16.80
K13			125	-0.43	95.0	3.72	1.80	18.80
K13			160	-9.09	95.0	5.58	0.00	21.10
K13			200	-14.73	96.0	8.02	0.00	22.80
K14	9,185	9,187						
K14			20	34.54	76.3	0.00	5.60	7.60
K14			25	31.05	79.7	0.18	5.40	8.30
K14			32	26.46	81.6	0.28	5.20	9.20
K14			40	21.38	82.8	0.46	5.00	10.30
K14			50	16.29	83.8	0.64	4.70	11.50
K14			63	16.33	90.1	1.01	4.30	13.00
K14			80	11.47	91.8	1.47	3.70	14.80
K14			100	5.14	92.4	2.30	3.00	16.80
K14			125	0.35	95.0	3.49	1.80	18.80
K14			160	-8.20	95.0	5.24	0.00	21.10
K14			200	-13.70	96.0	7.53	0.00	22.80
Sum								
Sum			20	47.36				
Sum			25	43.90				

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Sum			32	39.32				
Sum			40	34.26				
Sum			50	29.31				
Sum			63	29.20				
Sum			80	24.49				
Sum			100	18.40				
Sum			125	13.79				
Sum			160	5.87				
Sum			200	0.80				

Noise sensitive area: E Noise sensitive point: Finnish normal frequency - User defined (269)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,881	5,884	20	33.91	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.49	75.2	0.12	5.40	8.30
Extension WTG 01			32	25.93	77.1	0.18	5.20	9.20
Extension WTG 01			40	20.91	78.3	0.29	5.00	10.30
Extension WTG 01			50	16.90	80.3	0.41	4.70	11.50
Extension WTG 01			63	15.06	84.6	0.65	4.30	13.00
Extension WTG 01			80	11.37	87.3	0.94	3.70	14.80
Extension WTG 01			100	6.34	88.9	1.47	3.00	16.80
Extension WTG 01			125	1.97	91.5	2.24	1.80	18.80
Extension WTG 01			160	-3.95	93.5	3.35	0.00	21.10
Extension WTG 01			200	-8.62	94.5	4.82	0.00	22.80
Extension WTG 02	6,155	6,157	20	33.51	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.09	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.53	77.1	0.18	5.20	9.20
Extension WTG 02			40	20.50	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.48	80.3	0.43	4.70	11.50
Extension WTG 02			63	14.63	84.6	0.68	4.30	13.00
Extension WTG 02			80	10.93	87.3	0.99	3.70	14.80
Extension WTG 02			100	5.87	88.9	1.54	3.00	16.80
Extension WTG 02			125	1.47	91.5	2.34	1.80	18.80
Extension WTG 02			160	-4.50	93.5	3.51	0.00	21.10
Extension WTG 02			200	-9.24	94.5	5.05	0.00	22.80
K01	8,485	8,486	20	35.23	76.3	0.00	5.60	7.60
K01			25	31.76	79.7	0.17	5.40	8.30
K01			32	27.17	81.6	0.25	5.20	9.20
K01			40	22.10	82.8	0.42	5.00	10.30
K01			50	17.03	83.8	0.59	4.70	11.50
K01			63	17.09	90.1	0.93	4.30	13.00
K01			80	12.27	91.8	1.36	3.70	14.80
K01			100	6.00	92.4	2.12	3.00	16.80
K01			125	1.30	95.0	3.22	1.80	18.80
K01			160	-7.11	95.0	4.84	0.00	21.10
K01			200	-12.43	96.0	6.96	0.00	22.80
K02	7,986	7,987	20	35.75	76.3	0.00	5.60	7.60
K02			25	32.29	79.7	0.16	5.40	8.30
K02			32	27.71	81.6	0.24	5.20	9.20
K02			40	22.65	82.8	0.40	5.00	10.30
K02			50	17.59	83.8	0.56	4.70	11.50
K02			63	17.67	90.1	0.88	4.30	13.00
K02			80	12.87	91.8	1.28	3.70	14.80
K02			100	6.65	92.4	2.00	3.00	16.80
K02			125	2.02	95.0	3.04	1.80	18.80
K02			160	-6.30	95.0	4.55	0.00	21.10
K02			200	-11.50	96.0	6.55	0.00	22.80
K03	7,598	7,600						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			20	36.18	76.3	0.00	5.60	7.60
K03			25	32.73	79.7	0.15	5.40	8.30
K03			32	28.16	81.6	0.23	5.20	9.20
K03			40	23.10	82.8	0.38	5.00	10.30
K03			50	18.05	83.8	0.53	4.70	11.50
K03			63	18.15	90.1	0.84	4.30	13.00
K03			80	13.37	91.8	1.22	3.70	14.80
K03			100	7.18	92.4	1.90	3.00	16.80
K03			125	2.60	95.0	2.89	1.80	18.80
K03			160	-5.65	95.0	4.33	0.00	21.10
K03			200	-10.75	96.0	6.23	0.00	22.80
K04	6,782	6,784						
K04			20	37.17	76.3	0.00	5.60	7.60
K04			25	33.73	79.7	0.14	5.40	8.30
K04			32	29.17	81.6	0.20	5.20	9.20
K04			40	24.13	82.8	0.34	5.00	10.30
K04			50	19.09	83.8	0.47	4.70	11.50
K04			63	19.22	90.1	0.75	4.30	13.00
K04			80	14.48	91.8	1.09	3.70	14.80
K04			100	8.37	92.4	1.70	3.00	16.80
K04			125	3.89	95.0	2.58	1.80	18.80
K04			160	-4.20	95.0	3.87	0.00	21.10
K04			200	-9.09	96.0	5.56	0.00	22.80
K05	7,067	7,069						
K05			20	36.81	76.3	0.00	5.60	7.60
K05			25	33.37	79.7	0.14	5.40	8.30
K05			32	28.80	81.6	0.21	5.20	9.20
K05			40	23.76	82.8	0.35	5.00	10.30
K05			50	18.72	83.8	0.49	4.70	11.50
K05			63	18.83	90.1	0.78	4.30	13.00
K05			80	14.08	91.8	1.13	3.70	14.80
K05			100	7.95	92.4	1.77	3.00	16.80
K05			125	3.43	95.0	2.69	1.80	18.80
K05			160	-4.72	95.0	4.03	0.00	21.10
K05			200	-9.68	96.0	5.80	0.00	22.80
K06	7,928	7,930						
K06			20	35.81	76.3	0.00	5.60	7.60
K06			25	32.36	79.7	0.16	5.40	8.30
K06			32	27.78	81.6	0.24	5.20	9.20
K06			40	22.72	82.8	0.40	5.00	10.30
K06			50	17.66	83.8	0.56	4.70	11.50
K06			63	17.74	90.1	0.87	4.30	13.00
K06			80	12.95	91.8	1.27	3.70	14.80
K06			100	6.73	92.4	1.98	3.00	16.80
K06			125	2.10	95.0	3.01	1.80	18.80
K06			160	-6.21	95.0	4.52	0.00	21.10
K06			200	-11.39	96.0	6.50	0.00	22.80
K07	7,463	7,465						
K07			20	36.34	76.3	0.00	5.60	7.60
K07			25	32.89	79.7	0.15	5.40	8.30
K07			32	28.32	81.6	0.22	5.20	9.20
K07			40	23.27	82.8	0.37	5.00	10.30
K07			50	18.22	83.8	0.52	4.70	11.50
K07			63	18.32	90.1	0.82	4.30	13.00
K07			80	13.55	91.8	1.19	3.70	14.80
K07			100	7.37	92.4	1.87	3.00	16.80
K07			125	2.80	95.0	2.84	1.80	18.80
K07			160	-5.42	95.0	4.25	0.00	21.10
K07			200	-10.48	96.0	6.12	0.00	22.80
K08	7,322	7,324						
K08			20	36.51	76.3	0.00	5.60	7.60
K08			25	33.06	79.7	0.15	5.40	8.30
K08			32	28.49	81.6	0.22	5.20	9.20
K08			40	23.44	82.8	0.37	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			50	18.39	83.8	0.51	4.70	11.50
K08			63	18.50	90.1	0.81	4.30	13.00
K08			80	13.73	91.8	1.17	3.70	14.80
K08			100	7.57	92.4	1.83	3.00	16.80
K08			125	3.02	95.0	2.78	1.80	18.80
K08			160	-5.17	95.0	4.17	0.00	21.10
K08			200	-10.20	96.0	6.01	0.00	22.80
K09	6,979	6,981						
K09			20	36.92	76.3	0.00	5.60	7.60
K09			25	33.48	79.7	0.14	5.40	8.30
K09			32	28.91	81.6	0.21	5.20	9.20
K09			40	23.87	82.8	0.35	5.00	10.30
K09			50	18.83	83.8	0.49	4.70	11.50
K09			63	18.95	90.1	0.77	4.30	13.00
K09			80	14.20	91.8	1.12	3.70	14.80
K09			100	8.08	92.4	1.75	3.00	16.80
K09			125	3.57	95.0	2.65	1.80	18.80
K09			160	-4.56	95.0	3.98	0.00	21.10
K09			200	-9.50	96.0	5.72	0.00	22.80
K10	9,594	9,595						
K10			20	34.16	76.3	0.00	5.60	7.60
K10			25	30.67	79.7	0.19	5.40	8.30
K10			32	26.07	81.6	0.29	5.20	9.20
K10			40	20.98	82.8	0.48	5.00	10.30
K10			50	15.89	83.8	0.67	4.70	11.50
K10			63	15.90	90.1	1.06	4.30	13.00
K10			80	11.02	91.8	1.54	3.70	14.80
K10			100	4.66	92.4	2.40	3.00	16.80
K10			125	-0.19	95.0	3.65	1.80	18.80
K10			160	-8.81	95.0	5.47	0.00	21.10
K10			200	-14.41	96.0	7.87	0.00	22.80
K11	10,085	10,086						
K11			20	33.73	76.3	0.00	5.60	7.60
K11			25	30.22	79.7	0.20	5.40	8.30
K11			32	25.62	81.6	0.30	5.20	9.20
K11			40	20.52	82.8	0.50	5.00	10.30
K11			50	15.42	83.8	0.71	4.70	11.50
K11			63	15.42	90.1	1.11	4.30	13.00
K11			80	10.51	91.8	1.61	3.70	14.80
K11			100	4.10	92.4	2.52	3.00	16.80
K11			125	-0.81	95.0	3.83	1.80	18.80
K11			160	-9.52	95.0	5.75	0.00	21.10
K11			200	-15.24	96.0	8.27	0.00	22.80
K12	10,142	10,143						
K12			20	33.68	76.3	0.00	5.60	7.60
K12			25	30.17	79.7	0.20	5.40	8.30
K12			32	25.57	81.6	0.30	5.20	9.20
K12			40	20.47	82.8	0.51	5.00	10.30
K12			50	15.37	83.8	0.71	4.70	11.50
K12			63	15.36	90.1	1.12	4.30	13.00
K12			80	10.45	91.8	1.62	3.70	14.80
K12			100	4.04	92.4	2.54	3.00	16.80
K12			125	-0.88	95.0	3.85	1.80	18.80
K12			160	-9.60	95.0	5.78	0.00	21.10
K12			200	-15.34	96.0	8.32	0.00	22.80
K13	9,273	9,274						
K13			20	34.45	76.3	0.00	5.60	7.60
K13			25	30.97	79.7	0.19	5.40	8.30
K13			32	26.38	81.6	0.28	5.20	9.20
K13			40	21.29	82.8	0.46	5.00	10.30
K13			50	16.21	83.8	0.65	4.70	11.50
K13			63	16.23	90.1	1.02	4.30	13.00
K13			80	11.37	91.8	1.48	3.70	14.80
K13			100	5.04	92.4	2.32	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K13			125	0.23	95.0	3.52	1.80	18.80
K13			160	-8.33	95.0	5.29	0.00	21.10
K13			200	-13.85	96.0	7.60	0.00	22.80
K14	8,787	8,789						
K14			20	34.92	76.3	0.00	5.60	7.60
K14			25	31.45	79.7	0.18	5.40	8.30
K14			32	26.86	81.6	0.26	5.20	9.20
K14			40	21.78	82.8	0.44	5.00	10.30
K14			50	16.71	83.8	0.62	4.70	11.50
K14			63	16.75	90.1	0.97	4.30	13.00
K14			80	11.92	91.8	1.41	3.70	14.80
K14			100	5.62	92.4	2.20	3.00	16.80
K14			125	0.88	95.0	3.34	1.80	18.80
K14			160	-7.59	95.0	5.01	0.00	21.10
K14			200	-12.99	96.0	7.21	0.00	22.80
Sum								
Sum			20	47.53				
Sum			25	44.08				
Sum			32	39.50				
Sum			40	34.44				
Sum			50	29.48				
Sum			63	29.40				
Sum			80	24.69				
Sum			100	18.59				
Sum			125	13.99				
Sum			160	6.06				
Sum			200	0.99				

Noise sensitive area: F Noise sensitive point: Finnish normal frequency - User defined (279)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,357	5,360						
Extension WTG 01			20	34.72	71.8	0.00	5.60	7.60
Extension WTG 01			25	31.31	75.2	0.11	5.40	8.30
Extension WTG 01			32	26.76	77.1	0.16	5.20	9.20
Extension WTG 01			40	21.75	78.3	0.27	5.00	10.30
Extension WTG 01			50	17.74	80.3	0.38	4.70	11.50
Extension WTG 01			63	15.93	84.6	0.59	4.30	13.00
Extension WTG 01			80	12.26	87.3	0.86	3.70	14.80
Extension WTG 01			100	7.28	88.9	1.34	3.00	16.80
Extension WTG 01			125	2.98	91.5	2.04	1.80	18.80
Extension WTG 01			160	-2.84	93.5	3.06	0.00	21.10
Extension WTG 01			200	-7.38	94.5	4.40	0.00	22.80
Extension WTG 02	5,992	5,995						
Extension WTG 02			20	33.74	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.32	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.76	77.1	0.18	5.20	9.20
Extension WTG 02			40	20.74	78.3	0.30	5.00	10.30
Extension WTG 02			50	16.72	80.3	0.42	4.70	11.50
Extension WTG 02			63	14.88	84.6	0.66	4.30	13.00
Extension WTG 02			80	11.18	87.3	0.96	3.70	14.80
Extension WTG 02			100	6.15	88.9	1.50	3.00	16.80
Extension WTG 02			125	1.77	91.5	2.28	1.80	18.80
Extension WTG 02			160	-4.17	93.5	3.42	0.00	21.10
Extension WTG 02			200	-8.87	94.5	4.92	0.00	22.80
K01	8,431	8,433						
K01			20	35.28	76.3	0.00	5.60	7.60
K01			25	31.81	79.7	0.17	5.40	8.30
K01			32	27.23	81.6	0.25	5.20	9.20
K01			40	22.16	82.8	0.42	5.00	10.30
K01			50	17.09	83.8	0.59	4.70	11.50
K01			63	17.15	90.1	0.93	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K01			80	12.33	91.8	1.35	3.70	14.80
K01			100	6.07	92.4	2.11	3.00	16.80
K01			125	1.38	95.0	3.20	1.80	18.80
K01			160	-7.03	95.0	4.81	0.00	21.10
K01			200	-12.33	96.0	6.92	0.00	22.80
K02	7,881	7,882						
K02			20	35.87	76.3	0.00	5.60	7.60
K02			25	32.41	79.7	0.16	5.40	8.30
K02			32	27.83	81.6	0.24	5.20	9.20
K02			40	22.77	82.8	0.39	5.00	10.30
K02			50	17.72	83.8	0.55	4.70	11.50
K02			63	17.80	90.1	0.87	4.30	13.00
K02			80	13.01	91.8	1.26	3.70	14.80
K02			100	6.80	92.4	1.97	3.00	16.80
K02			125	2.17	95.0	3.00	1.80	18.80
K02			160	-6.13	95.0	4.49	0.00	21.10
K02			200	-11.30	96.0	6.46	0.00	22.80
K03	7,330	7,332						
K03			20	36.50	76.3	0.00	5.60	7.60
K03			25	33.05	79.7	0.15	5.40	8.30
K03			32	28.48	81.6	0.22	5.20	9.20
K03			40	23.43	82.8	0.37	5.00	10.30
K03			50	18.38	83.8	0.51	4.70	11.50
K03			63	18.49	90.1	0.81	4.30	13.00
K03			80	13.72	91.8	1.17	3.70	14.80
K03			100	7.56	92.4	1.83	3.00	16.80
K03			125	3.01	95.0	2.79	1.80	18.80
K03			160	-5.18	95.0	4.18	0.00	21.10
K03			200	-10.22	96.0	6.01	0.00	22.80
K04	6,592	6,594						
K04			20	37.42	76.3	0.00	5.60	7.60
K04			25	33.98	79.7	0.13	5.40	8.30
K04			32	29.42	81.6	0.20	5.20	9.20
K04			40	24.39	82.8	0.33	5.00	10.30
K04			50	19.35	83.8	0.46	4.70	11.50
K04			63	19.49	90.1	0.73	4.30	13.00
K04			80	14.76	91.8	1.06	3.70	14.80
K04			100	8.67	92.4	1.65	3.00	16.80
K04			125	4.21	95.0	2.51	1.80	18.80
K04			160	-3.84	95.0	3.76	0.00	21.10
K04			200	-8.69	96.0	5.41	0.00	22.80
K05	6,549	6,551						
K05			20	37.47	76.3	0.00	5.60	7.60
K05			25	34.04	79.7	0.13	5.40	8.30
K05			32	29.48	81.6	0.20	5.20	9.20
K05			40	24.45	82.8	0.33	5.00	10.30
K05			50	19.42	83.8	0.46	4.70	11.50
K05			63	19.55	90.1	0.72	4.30	13.00
K05			80	14.83	91.8	1.05	3.70	14.80
K05			100	8.74	92.4	1.64	3.00	16.80
K05			125	4.28	95.0	2.49	1.80	18.80
K05			160	-3.76	95.0	3.73	0.00	21.10
K05			200	-8.60	96.0	5.37	0.00	22.80
K06	8,176	8,178						
K06			20	35.55	76.3	0.00	5.60	7.60
K06			25	32.08	79.7	0.16	5.40	8.30
K06			32	27.50	81.6	0.25	5.20	9.20
K06			40	22.44	82.8	0.41	5.00	10.30
K06			50	17.37	83.8	0.57	4.70	11.50
K06			63	17.45	90.1	0.90	4.30	13.00
K06			80	12.64	91.8	1.31	3.70	14.80
K06			100	6.40	92.4	2.04	3.00	16.80
K06			125	1.74	95.0	3.11	1.80	18.80
K06			160	-6.61	95.0	4.66	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			200	-11.86	96.0	6.71	0.00	22.80
K07	7,901	7,903						
K07			20	35.84	76.3	0.00	5.60	7.60
K07			25	32.39	79.7	0.16	5.40	8.30
K07			32	27.81	81.6	0.24	5.20	9.20
K07			40	22.75	82.8	0.40	5.00	10.30
K07			50	17.69	83.8	0.55	4.70	11.50
K07			63	17.77	90.1	0.87	4.30	13.00
K07			80	12.98	91.8	1.26	3.70	14.80
K07			100	6.77	92.4	1.98	3.00	16.80
K07			125	2.14	95.0	3.00	1.80	18.80
K07			160	-6.16	95.0	4.50	0.00	21.10
K07			200	-11.34	96.0	6.48	0.00	22.80
K08	7,429	7,431						
K08			20	36.38	76.3	0.00	5.60	7.60
K08			25	32.93	79.7	0.15	5.40	8.30
K08			32	28.36	81.6	0.22	5.20	9.20
K08			40	23.31	82.8	0.37	5.00	10.30
K08			50	18.26	83.8	0.52	4.70	11.50
K08			63	18.36	90.1	0.82	4.30	13.00
K08			80	13.59	91.8	1.19	3.70	14.80
K08			100	7.42	92.4	1.86	3.00	16.80
K08			125	2.86	95.0	2.82	1.80	18.80
K08			160	-5.36	95.0	4.24	0.00	21.10
K08			200	-10.41	96.0	6.09	0.00	22.80
K09	6,989	6,991						
K09			20	36.91	76.3	0.00	5.60	7.60
K09			25	33.47	79.7	0.14	5.40	8.30
K09			32	28.90	81.6	0.21	5.20	9.20
K09			40	23.86	82.8	0.35	5.00	10.30
K09			50	18.82	83.8	0.49	4.70	11.50
K09			63	18.94	90.1	0.77	4.30	13.00
K09			80	14.19	91.8	1.12	3.70	14.80
K09			100	8.06	92.4	1.75	3.00	16.80
K09			125	3.55	95.0	2.66	1.80	18.80
K09			160	-4.58	95.0	3.98	0.00	21.10
K09			200	-9.52	96.0	5.73	0.00	22.80
K10	9,639	9,640						
K10			20	34.12	76.3	0.00	5.60	7.60
K10			25	30.63	79.7	0.19	5.40	8.30
K10			32	26.03	81.6	0.29	5.20	9.20
K10			40	20.94	82.8	0.48	5.00	10.30
K10			50	15.84	83.8	0.67	4.70	11.50
K10			63	15.86	90.1	1.06	4.30	13.00
K10			80	10.98	91.8	1.54	3.70	14.80
K10			100	4.61	92.4	2.41	3.00	16.80
K10			125	-0.24	95.0	3.66	1.80	18.80
K10			160	-8.88	95.0	5.49	0.00	21.10
K10			200	-14.49	96.0	7.90	0.00	22.80
K11	10,245	10,246						
K11			20	33.59	76.3	0.00	5.60	7.60
K11			25	30.08	79.7	0.20	5.40	8.30
K11			32	25.48	81.6	0.31	5.20	9.20
K11			40	20.38	82.8	0.51	5.00	10.30
K11			50	15.27	83.8	0.72	4.70	11.50
K11			63	15.26	90.1	1.13	4.30	13.00
K11			80	10.35	91.8	1.64	3.70	14.80
K11			100	3.93	92.4	2.56	3.00	16.80
K11			125	-1.00	95.0	3.89	1.80	18.80
K11			160	-9.75	95.0	5.84	0.00	21.10
K11			200	-15.51	96.0	8.40	0.00	22.80
K12	10,538	10,540						
K12			20	33.34	76.3	0.00	5.60	7.60
K12			25	29.83	79.7	0.21	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			32	25.23	81.6	0.32	5.20	9.20
K12			40	20.12	82.8	0.53	5.00	10.30
K12			50	15.01	83.8	0.74	4.70	11.50
K12			63	14.98	90.1	1.16	4.30	13.00
K12			80	10.06	91.8	1.69	3.70	14.80
K12			100	3.61	92.4	2.63	3.00	16.80
K12			125	-1.36	95.0	4.01	1.80	18.80
K12			160	-10.16	95.0	6.01	0.00	21.10
K12			200	-16.00	96.0	8.64	0.00	22.80
K13	9,634	9,635						
K13			20	34.12	76.3	0.00	5.60	7.60
K13			25	30.63	79.7	0.19	5.40	8.30
K13			32	26.03	81.6	0.29	5.20	9.20
K13			40	20.94	82.8	0.48	5.00	10.30
K13			50	15.85	83.8	0.67	4.70	11.50
K13			63	15.86	90.1	1.06	4.30	13.00
K13			80	10.98	91.8	1.54	3.70	14.80
K13			100	4.61	92.4	2.41	3.00	16.80
K13			125	-0.24	95.0	3.66	1.80	18.80
K13			160	-8.87	95.0	5.49	0.00	21.10
K13			200	-14.48	96.0	7.90	0.00	22.80
K14	9,018	9,020						
K14			20	34.70	76.3	0.00	5.60	7.60
K14			25	31.22	79.7	0.18	5.40	8.30
K14			32	26.63	81.6	0.27	5.20	9.20
K14			40	21.54	82.8	0.45	5.00	10.30
K14			50	16.46	83.8	0.63	4.70	11.50
K14			63	16.50	90.1	0.99	4.30	13.00
K14			80	11.65	91.8	1.44	3.70	14.80
K14			100	5.34	92.4	2.26	3.00	16.80
K14			125	0.57	95.0	3.43	1.80	18.80
K14			160	-7.95	95.0	5.14	0.00	21.10
K14			200	-13.40	96.0	7.40	0.00	22.80
Sum								
Sum			20	47.59				
Sum			25	44.13				
Sum			32	39.56				
Sum			40	34.50				
Sum			50	29.55				
Sum			63	29.45				
Sum			80	24.76				
Sum			100	18.68				
Sum			125	14.10				
Sum			160	6.24				
Sum			200	1.22				

Noise sensitive area: G Noise sensitive point: Finnish normal frequency - User defined (268)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,611	5,614						
Extension WTG 01			20	34.31	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.90	75.2	0.11	5.40	8.30
Extension WTG 01			32	26.35	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.33	78.3	0.28	5.00	10.30
Extension WTG 01			50	17.32	80.3	0.39	4.70	11.50
Extension WTG 01			63	15.50	84.6	0.62	4.30	13.00
Extension WTG 01			80	11.82	87.3	0.90	3.70	14.80
Extension WTG 01			100	6.81	88.9	1.40	3.00	16.80
Extension WTG 01			125	2.48	91.5	2.13	1.80	18.80
Extension WTG 01			160	-3.39	93.5	3.20	0.00	21.10
Extension WTG 01			200	-7.99	94.5	4.60	0.00	22.80
Extension WTG 02	5,813	5,816						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			20	34.01	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.59	75.2	0.12	5.40	8.30
Extension WTG 02			32	26.03	77.1	0.17	5.20	9.20
Extension WTG 02			40	21.02	78.3	0.29	5.00	10.30
Extension WTG 02			50	17.00	80.3	0.41	4.70	11.50
Extension WTG 02			63	15.17	84.6	0.64	4.30	13.00
Extension WTG 02			80	11.48	87.3	0.93	3.70	14.80
Extension WTG 02			100	6.45	88.9	1.45	3.00	16.80
Extension WTG 02			125	2.10	91.5	2.21	1.80	18.80
Extension WTG 02			160	-3.81	93.5	3.31	0.00	21.10
Extension WTG 02			200	-8.46	94.5	4.77	0.00	22.80
K01	8,085	8,086						
K01			20	35.64	76.3	0.00	5.60	7.60
K01			25	32.18	79.7	0.16	5.40	8.30
K01			32	27.60	81.6	0.24	5.20	9.20
K01			40	22.54	82.8	0.40	5.00	10.30
K01			50	17.48	83.8	0.57	4.70	11.50
K01			63	17.56	90.1	0.89	4.30	13.00
K01			80	12.75	91.8	1.29	3.70	14.80
K01			100	6.52	92.4	2.02	3.00	16.80
K01			125	1.87	95.0	3.07	1.80	18.80
K01			160	-6.46	95.0	4.61	0.00	21.10
K01			200	-11.69	96.0	6.63	0.00	22.80
K02	7,600	7,602						
K02			20	36.18	76.3	0.00	5.60	7.60
K02			25	32.73	79.7	0.15	5.40	8.30
K02			32	28.15	81.6	0.23	5.20	9.20
K02			40	23.10	82.8	0.38	5.00	10.30
K02			50	18.05	83.8	0.53	4.70	11.50
K02			63	18.15	90.1	0.84	4.30	13.00
K02			80	13.37	91.8	1.22	3.70	14.80
K02			100	7.18	92.4	1.90	3.00	16.80
K02			125	2.59	95.0	2.89	1.80	18.80
K02			160	-5.65	95.0	4.33	0.00	21.10
K02			200	-10.75	96.0	6.23	0.00	22.80
K03	7,246	7,247						
K03			20	36.60	76.3	0.00	5.60	7.60
K03			25	33.15	79.7	0.14	5.40	8.30
K03			32	28.58	81.6	0.22	5.20	9.20
K03			40	23.53	82.8	0.36	5.00	10.30
K03			50	18.49	83.8	0.51	4.70	11.50
K03			63	18.60	90.1	0.80	4.30	13.00
K03			80	13.84	91.8	1.16	3.70	14.80
K03			100	7.68	92.4	1.81	3.00	16.80
K03			125	3.14	95.0	2.75	1.80	18.80
K03			160	-5.03	95.0	4.13	0.00	21.10
K03			200	-10.05	96.0	5.94	0.00	22.80
K04	6,431	6,433						
K04			20	37.63	76.3	0.00	5.60	7.60
K04			25	34.20	79.7	0.13	5.40	8.30
K04			32	29.64	81.6	0.19	5.20	9.20
K04			40	24.61	82.8	0.32	5.00	10.30
K04			50	19.58	83.8	0.45	4.70	11.50
K04			63	19.72	90.1	0.71	4.30	13.00
K04			80	15.00	91.8	1.03	3.70	14.80
K04			100	8.92	92.4	1.61	3.00	16.80
K04			125	4.49	95.0	2.44	1.80	18.80
K04			160	-3.54	95.0	3.67	0.00	21.10
K04			200	-8.34	96.0	5.28	0.00	22.80
K05	6,768	6,769						
K05			20	37.19	76.3	0.00	5.60	7.60
K05			25	33.75	79.7	0.14	5.40	8.30
K05			32	29.19	81.6	0.20	5.20	9.20
K05			40	24.15	82.8	0.34	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			50	19.12	83.8	0.47	4.70	11.50
K05			63	19.24	90.1	0.74	4.30	13.00
K05			80	14.51	91.8	1.08	3.70	14.80
K05			100	8.40	92.4	1.69	3.00	16.80
K05			125	3.92	95.0	2.57	1.80	18.80
K05			160	-4.17	95.0	3.86	0.00	21.10
K05			200	-9.06	96.0	5.55	0.00	22.80
K06	7,489	7,491						
K06			20	36.31	76.3	0.00	5.60	7.60
K06			25	32.86	79.7	0.15	5.40	8.30
K06			32	28.28	81.6	0.22	5.20	9.20
K06			40	23.23	82.8	0.37	5.00	10.30
K06			50	18.19	83.8	0.52	4.70	11.50
K06			63	18.29	90.1	0.82	4.30	13.00
K06			80	13.51	91.8	1.20	3.70	14.80
K06			100	7.34	92.4	1.87	3.00	16.80
K06			125	2.76	95.0	2.85	1.80	18.80
K06			160	-5.46	95.0	4.27	0.00	21.10
K06			200	-10.53	96.0	6.14	0.00	22.80
K07	7,002	7,004						
K07			20	36.89	76.3	0.00	5.60	7.60
K07			25	33.45	79.7	0.14	5.40	8.30
K07			32	28.88	81.6	0.21	5.20	9.20
K07			40	23.84	82.8	0.35	5.00	10.30
K07			50	18.80	83.8	0.49	4.70	11.50
K07			63	18.92	90.1	0.77	4.30	13.00
K07			80	14.17	91.8	1.12	3.70	14.80
K07			100	8.04	92.4	1.75	3.00	16.80
K07			125	3.53	95.0	2.66	1.80	18.80
K07			160	-4.60	95.0	3.99	0.00	21.10
K07			200	-9.55	96.0	5.74	0.00	22.80
K08	6,913	6,915						
K08			20	37.00	76.3	0.00	5.60	7.60
K08			25	33.57	79.7	0.14	5.40	8.30
K08			32	29.00	81.6	0.21	5.20	9.20
K08			40	23.96	82.8	0.35	5.00	10.30
K08			50	18.92	83.8	0.48	4.70	11.50
K08			63	19.04	90.1	0.76	4.30	13.00
K08			80	14.30	91.8	1.11	3.70	14.80
K08			100	8.18	92.4	1.73	3.00	16.80
K08			125	3.68	95.0	2.63	1.80	18.80
K08			160	-4.44	95.0	3.94	0.00	21.10
K08			200	-9.37	96.0	5.67	0.00	22.80
K09	6,591	6,593						
K09			20	37.42	76.3	0.00	5.60	7.60
K09			25	33.99	79.7	0.13	5.40	8.30
K09			32	29.42	81.6	0.20	5.20	9.20
K09			40	24.39	82.8	0.33	5.00	10.30
K09			50	19.36	83.8	0.46	4.70	11.50
K09			63	19.49	90.1	0.73	4.30	13.00
K09			80	14.76	91.8	1.05	3.70	14.80
K09			100	8.67	92.4	1.65	3.00	16.80
K09			125	4.21	95.0	2.51	1.80	18.80
K09			160	-3.84	95.0	3.76	0.00	21.10
K09			200	-8.69	96.0	5.41	0.00	22.80
K10	9,168	9,169						
K10			20	34.55	76.3	0.00	5.60	7.60
K10			25	31.07	79.7	0.18	5.40	8.30
K10			32	26.48	81.6	0.28	5.20	9.20
K10			40	21.39	82.8	0.46	5.00	10.30
K10			50	16.31	83.8	0.64	4.70	11.50
K10			63	16.34	90.1	1.01	4.30	13.00
K10			80	11.49	91.8	1.47	3.70	14.80
K10			100	5.16	92.4	2.29	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K10			125	0.37	95.0	3.48	1.80	18.80
K10			160	-8.17	95.0	5.23	0.00	21.10
K10			200	-13.67	96.0	7.52	0.00	22.80
K11	9,638	9,639						
K11			20	34.12	76.3	0.00	5.60	7.60
K11			25	30.63	79.7	0.19	5.40	8.30
K11			32	26.03	81.6	0.29	5.20	9.20
K11			40	20.94	82.8	0.48	5.00	10.30
K11			50	15.84	83.8	0.67	4.70	11.50
K11			63	15.86	90.1	1.06	4.30	13.00
K11			80	10.98	91.8	1.54	3.70	14.80
K11			100	4.61	92.4	2.41	3.00	16.80
K11			125	-0.24	95.0	3.66	1.80	18.80
K11			160	-8.88	95.0	5.49	0.00	21.10
K11			200	-14.49	96.0	7.90	0.00	22.80
K12	9,662	9,664						
K12			20	34.10	76.3	0.00	5.60	7.60
K12			25	30.60	79.7	0.19	5.40	8.30
K12			32	26.01	81.6	0.29	5.20	9.20
K12			40	20.91	82.8	0.48	5.00	10.30
K12			50	15.82	83.8	0.68	4.70	11.50
K12			63	15.83	90.1	1.06	4.30	13.00
K12			80	10.95	91.8	1.55	3.70	14.80
K12			100	4.58	92.4	2.42	3.00	16.80
K12			125	-0.28	95.0	3.67	1.80	18.80
K12			160	-8.91	95.0	5.51	0.00	21.10
K12			200	-14.53	96.0	7.92	0.00	22.80
K13	8,805	8,806						
K13			20	34.90	76.3	0.00	5.60	7.60
K13			25	31.43	79.7	0.18	5.40	8.30
K13			32	26.84	81.6	0.26	5.20	9.20
K13			40	21.76	82.8	0.44	5.00	10.30
K13			50	16.69	83.8	0.62	4.70	11.50
K13			63	16.74	90.1	0.97	4.30	13.00
K13			80	11.90	91.8	1.41	3.70	14.80
K13			100	5.60	92.4	2.20	3.00	16.80
K13			125	0.86	95.0	3.35	1.80	18.80
K13			160	-7.62	95.0	5.02	0.00	21.10
K13			200	-13.02	96.0	7.22	0.00	22.80
K14	8,341	8,343						
K14			20	35.37	76.3	0.00	5.60	7.60
K14			25	31.91	79.7	0.17	5.40	8.30
K14			32	27.32	81.6	0.25	5.20	9.20
K14			40	22.26	82.8	0.42	5.00	10.30
K14			50	17.19	83.8	0.58	4.70	11.50
K14			63	17.26	90.1	0.92	4.30	13.00
K14			80	12.44	91.8	1.33	3.70	14.80
K14			100	6.19	92.4	2.09	3.00	16.80
K14			125	1.50	95.0	3.17	1.80	18.80
K14			160	-6.88	95.0	4.76	0.00	21.10
K14			200	-12.17	96.0	6.84	0.00	22.80
Sum								
Sum			20	47.99				
Sum			25	44.54				
Sum			32	39.96				
Sum			40	34.91				
Sum			50	29.96				
Sum			63	29.89				
Sum			80	25.20				
Sum			100	19.14				
Sum			125	14.59				
Sum			160	6.73				
Sum			200	1.75				

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

Noise sensitive area: H Noise sensitive point: Finnish normal frequency - User defined (252)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,621	5,623						
Extension WTG 01			20	34.30	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.89	75.2	0.11	5.40	8.30
Extension WTG 01			32	26.33	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.32	78.3	0.28	5.00	10.30
Extension WTG 01			50	17.31	80.3	0.39	4.70	11.50
Extension WTG 01			63	15.48	84.6	0.62	4.30	13.00
Extension WTG 01			80	11.80	87.3	0.90	3.70	14.80
Extension WTG 01			100	6.79	88.9	1.41	3.00	16.80
Extension WTG 01			125	2.46	91.5	2.14	1.80	18.80
Extension WTG 01			160	-3.41	93.5	3.21	0.00	21.10
Extension WTG 01			200	-8.01	94.5	4.61	0.00	22.80
Extension WTG 02	5,746	5,749						
Extension WTG 02			20	34.11	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.69	75.2	0.11	5.40	8.30
Extension WTG 02			32	26.14	77.1	0.17	5.20	9.20
Extension WTG 02			40	21.12	78.3	0.29	5.00	10.30
Extension WTG 02			50	17.11	80.3	0.40	4.70	11.50
Extension WTG 02			63	15.28	84.6	0.63	4.30	13.00
Extension WTG 02			80	11.59	87.3	0.92	3.70	14.80
Extension WTG 02			100	6.57	88.9	1.44	3.00	16.80
Extension WTG 02			125	2.22	91.5	2.18	1.80	18.80
Extension WTG 02			160	-3.67	93.5	3.28	0.00	21.10
Extension WTG 02			200	-8.30	94.5	4.71	0.00	22.80
K01	7,941	7,943						
K01			20	35.80	76.3	0.00	5.60	7.60
K01			25	32.34	79.7	0.16	5.40	8.30
K01			32	27.76	81.6	0.24	5.20	9.20
K01			40	22.70	82.8	0.40	5.00	10.30
K01			50	17.64	83.8	0.56	4.70	11.50
K01			63	17.73	90.1	0.87	4.30	13.00
K01			80	12.93	91.8	1.27	3.70	14.80
K01			100	6.72	92.4	1.99	3.00	16.80
K01			125	2.08	95.0	3.02	1.80	18.80
K01			160	-6.23	95.0	4.53	0.00	21.10
K01			200	-11.41	96.0	6.51	0.00	22.80
K02	7,475	7,477						
K02			20	36.33	76.3	0.00	5.60	7.60
K02			25	32.88	79.7	0.15	5.40	8.30
K02			32	28.30	81.6	0.22	5.20	9.20
K02			40	23.25	82.8	0.37	5.00	10.30
K02			50	18.20	83.8	0.52	4.70	11.50
K02			63	18.30	90.1	0.82	4.30	13.00
K02			80	13.53	91.8	1.20	3.70	14.80
K02			100	7.36	92.4	1.87	3.00	16.80
K02			125	2.78	95.0	2.84	1.80	18.80
K02			160	-5.44	95.0	4.26	0.00	21.10
K02			200	-10.51	96.0	6.13	0.00	22.80
K03	7,158	7,159						
K03			20	36.70	76.3	0.00	5.60	7.60
K03			25	33.26	79.7	0.14	5.40	8.30
K03			32	28.69	81.6	0.21	5.20	9.20
K03			40	23.64	82.8	0.36	5.00	10.30
K03			50	18.60	83.8	0.50	4.70	11.50
K03			63	18.71	90.1	0.79	4.30	13.00
K03			80	13.96	91.8	1.15	3.70	14.80
K03			100	7.81	92.4	1.79	3.00	16.80
K03			125	3.28	95.0	2.72	1.80	18.80
K03			160	-4.88	95.0	4.08	0.00	21.10
K03			200	-9.87	96.0	5.87	0.00	22.80
K04	6,350	6,352						
K04			20	37.74	76.3	0.00	5.60	7.60
K04			25	34.32	79.7	0.13	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K04			32	29.75	81.6	0.19	5.20	9.20
K04			40	24.72	82.8	0.32	5.00	10.30
K04			50	19.70	83.8	0.44	4.70	11.50
K04			63	19.84	90.1	0.70	4.30	13.00
K04			80	15.13	91.8	1.02	3.70	14.80
K04			100	9.05	92.4	1.59	3.00	16.80
K04			125	4.63	95.0	2.41	1.80	18.80
K04			160	-3.38	95.0	3.62	0.00	21.10
K04			200	-8.17	96.0	5.21	0.00	22.80
K05	6,738	6,740						
K05			20	37.23	76.3	0.00	5.60	7.60
K05			25	33.79	79.7	0.13	5.40	8.30
K05			32	29.22	81.6	0.20	5.20	9.20
K05			40	24.19	82.8	0.34	5.00	10.30
K05			50	19.16	83.8	0.47	4.70	11.50
K05			63	19.29	90.1	0.74	4.30	13.00
K05			80	14.55	91.8	1.08	3.70	14.80
K05			100	8.44	92.4	1.68	3.00	16.80
K05			125	3.97	95.0	2.56	1.80	18.80
K05			160	-4.11	95.0	3.84	0.00	21.10
K05			200	-9.00	96.0	5.53	0.00	22.80
K06	7,301	7,303						
K06			20	36.53	76.3	0.00	5.60	7.60
K06			25	33.08	79.7	0.15	5.40	8.30
K06			32	28.51	81.6	0.22	5.20	9.20
K06			40	23.46	82.8	0.37	5.00	10.30
K06			50	18.42	83.8	0.51	4.70	11.50
K06			63	18.53	90.1	0.80	4.30	13.00
K06			80	13.76	91.8	1.17	3.70	14.80
K06			100	7.60	92.4	1.83	3.00	16.80
K06			125	3.05	95.0	2.78	1.80	18.80
K06			160	-5.13	95.0	4.16	0.00	21.10
K06			200	-10.16	96.0	5.99	0.00	22.80
K07	6,788	6,790						
K07			20	37.16	76.3	0.00	5.60	7.60
K07			25	33.73	79.7	0.14	5.40	8.30
K07			32	29.16	81.6	0.20	5.20	9.20
K07			40	24.12	82.8	0.34	5.00	10.30
K07			50	19.09	83.8	0.48	4.70	11.50
K07			63	19.22	90.1	0.75	4.30	13.00
K07			80	14.48	91.8	1.09	3.70	14.80
K07			100	8.36	92.4	1.70	3.00	16.80
K07			125	3.88	95.0	2.58	1.80	18.80
K07			160	-4.21	95.0	3.87	0.00	21.10
K07			200	-9.11	96.0	5.57	0.00	22.80
K08	6,763	6,765						
K08			20	37.19	76.3	0.00	5.60	7.60
K08			25	33.76	79.7	0.14	5.40	8.30
K08			32	29.19	81.6	0.20	5.20	9.20
K08			40	24.16	82.8	0.34	5.00	10.30
K08			50	19.12	83.8	0.47	4.70	11.50
K08			63	19.25	90.1	0.74	4.30	13.00
K08			80	14.51	91.8	1.08	3.70	14.80
K08			100	8.40	92.4	1.69	3.00	16.80
K08			125	3.92	95.0	2.57	1.80	18.80
K08			160	-4.16	95.0	3.86	0.00	21.10
K08			200	-9.05	96.0	5.55	0.00	22.80
K09	6,467	6,469						
K09			20	37.58	76.3	0.00	5.60	7.60
K09			25	34.15	79.7	0.13	5.40	8.30
K09			32	29.59	81.6	0.19	5.20	9.20
K09			40	24.56	82.8	0.32	5.00	10.30
K09			50	19.53	83.8	0.45	4.70	11.50
K09			63	19.67	90.1	0.71	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			80	14.95	91.8	1.04	3.70	14.80
K09			100	8.87	92.4	1.62	3.00	16.80
K09			125	4.42	95.0	2.46	1.80	18.80
K09			160	-3.60	95.0	3.69	0.00	21.10
K09			200	-8.42	96.0	5.30	0.00	22.80
K10	8,990	8,992						
K10			20	34.72	76.3	0.00	5.60	7.60
K10			25	31.24	79.7	0.18	5.40	8.30
K10			32	26.65	81.6	0.27	5.20	9.20
K10			40	21.57	82.8	0.45	5.00	10.30
K10			50	16.49	83.8	0.63	4.70	11.50
K10			63	16.53	90.1	0.99	4.30	13.00
K10			80	11.68	91.8	1.44	3.70	14.80
K10			100	5.37	92.4	2.25	3.00	16.80
K10			125	0.61	95.0	3.42	1.80	18.80
K10			160	-7.90	95.0	5.13	0.00	21.10
K10			200	-13.35	96.0	7.37	0.00	22.80
K11	9,435	9,436						
K11			20	34.30	76.3	0.00	5.60	7.60
K11			25	30.82	79.7	0.19	5.40	8.30
K11			32	26.22	81.6	0.28	5.20	9.20
K11			40	21.13	82.8	0.47	5.00	10.30
K11			50	16.04	83.8	0.66	4.70	11.50
K11			63	16.07	90.1	1.04	4.30	13.00
K11			80	11.19	91.8	1.51	3.70	14.80
K11			100	4.85	92.4	2.36	3.00	16.80
K11			125	0.02	95.0	3.59	1.80	18.80
K11			160	-8.57	95.0	5.38	0.00	21.10
K11			200	-14.13	96.0	7.74	0.00	22.80
K12	9,418	9,419						
K12			20	34.32	76.3	0.00	5.60	7.60
K12			25	30.83	79.7	0.19	5.40	8.30
K12			32	26.24	81.6	0.28	5.20	9.20
K12			40	21.15	82.8	0.47	5.00	10.30
K12			50	16.06	83.8	0.66	4.70	11.50
K12			63	16.08	90.1	1.04	4.30	13.00
K12			80	11.21	91.8	1.51	3.70	14.80
K12			100	4.86	92.4	2.35	3.00	16.80
K12			125	0.04	95.0	3.58	1.80	18.80
K12			160	-8.55	95.0	5.37	0.00	21.10
K12			200	-14.10	96.0	7.72	0.00	22.80
K13	8,576	8,578						
K13			20	35.13	76.3	0.00	5.60	7.60
K13			25	31.66	79.7	0.17	5.40	8.30
K13			32	27.08	81.6	0.26	5.20	9.20
K13			40	22.00	82.8	0.43	5.00	10.30
K13			50	16.93	83.8	0.60	4.70	11.50
K13			63	16.99	90.1	0.94	4.30	13.00
K13			80	12.16	91.8	1.37	3.70	14.80
K13			100	5.89	92.4	2.14	3.00	16.80
K13			125	1.17	95.0	3.26	1.80	18.80
K13			160	-7.26	95.0	4.89	0.00	21.10
K13			200	-12.60	96.0	7.03	0.00	22.80
K14	8,142	8,144						
K14			20	35.58	76.3	0.00	5.60	7.60
K14			25	32.12	79.7	0.16	5.40	8.30
K14			32	27.54	81.6	0.24	5.20	9.20
K14			40	22.48	82.8	0.41	5.00	10.30
K14			50	17.41	83.8	0.57	4.70	11.50
K14			63	17.49	90.1	0.90	4.30	13.00
K14			80	12.68	91.8	1.30	3.70	14.80
K14			100	6.45	92.4	2.04	3.00	16.80
K14			125	1.79	95.0	3.09	1.80	18.80
K14			160	-6.56	95.0	4.64	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			200	-11.79	96.0	6.68	0.00	22.80
Sum			20	48.14				
Sum			25	44.70				
Sum			32	40.12				
Sum			40	35.08				
Sum			50	30.12				
Sum			63	30.07				
Sum			80	25.38				
Sum			100	19.33				
Sum			125	14.79				
Sum			160	6.94				
Sum			200	1.99				

Noise sensitive area: I Noise sensitive point: Finnish normal frequency - User defined (263)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	6,389	6,392	20	33.19	71.8	0.00	5.60	7.60
Extension WTG 01			25	29.76	75.2	0.13	5.40	8.30
Extension WTG 01			32	25.20	77.1	0.19	5.20	9.20
Extension WTG 01			40	20.17	78.3	0.32	5.00	10.30
Extension WTG 01			50	16.14	80.3	0.45	4.70	11.50
Extension WTG 01			63	14.28	84.6	0.70	4.30	13.00
Extension WTG 01			80	10.56	87.3	1.02	3.70	14.80
Extension WTG 01			100	5.49	88.9	1.60	3.00	16.80
Extension WTG 01			125	1.06	91.5	2.43	1.80	18.80
Extension WTG 01			160	-4.96	93.5	3.64	0.00	21.10
Extension WTG 01			200	-9.75	94.5	5.24	0.00	22.80
Extension WTG 02	6,301	6,303	20	33.31	71.8	0.00	5.60	7.60
Extension WTG 02			25	29.88	75.2	0.13	5.40	8.30
Extension WTG 02			32	25.32	77.1	0.19	5.20	9.20
Extension WTG 02			40	20.29	78.3	0.32	5.00	10.30
Extension WTG 02			50	16.27	80.3	0.44	4.70	11.50
Extension WTG 02			63	14.42	84.6	0.69	4.30	13.00
Extension WTG 02			80	10.70	87.3	1.01	3.70	14.80
Extension WTG 02			100	5.63	88.9	1.58	3.00	16.80
Extension WTG 02			125	1.21	91.5	2.40	1.80	18.80
Extension WTG 02			160	-4.78	93.5	3.59	0.00	21.10
Extension WTG 02			200	-9.56	94.5	5.17	0.00	22.80
K01	8,185	8,187	20	35.54	76.3	0.00	5.60	7.60
K01			25	32.07	79.7	0.16	5.40	8.30
K01			32	27.49	81.6	0.25	5.20	9.20
K01			40	22.43	82.8	0.41	5.00	10.30
K01			50	17.36	83.8	0.57	4.70	11.50
K01			63	17.44	90.1	0.90	4.30	13.00
K01			80	12.63	91.8	1.31	3.70	14.80
K01			100	6.39	92.4	2.05	3.00	16.80
K01			125	1.73	95.0	3.11	1.80	18.80
K01			160	-6.63	95.0	4.67	0.00	21.10
K01			200	-11.88	96.0	6.71	0.00	22.80
K02	7,791	7,792	20	35.97	76.3	0.00	5.60	7.60
K02			25	32.51	79.7	0.16	5.40	8.30
K02			32	27.93	81.6	0.23	5.20	9.20
K02			40	22.88	82.8	0.39	5.00	10.30
K02			50	17.82	83.8	0.55	4.70	11.50
K02			63	17.91	90.1	0.86	4.30	13.00
K02			80	13.12	91.8	1.25	3.70	14.80
K02			100	6.92	92.4	1.95	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			125	2.31	95.0	2.96	1.80	18.80
K02			160	-5.98	95.0	4.44	0.00	21.10
K02			200	-11.12	96.0	6.39	0.00	22.80
K03	7,598	7,600						
K03			20	36.18	76.3	0.00	5.60	7.60
K03			25	32.73	79.7	0.15	5.40	8.30
K03			32	28.16	81.6	0.23	5.20	9.20
K03			40	23.10	82.8	0.38	5.00	10.30
K03			50	18.05	83.8	0.53	4.70	11.50
K03			63	18.15	90.1	0.84	4.30	13.00
K03			80	13.37	91.8	1.22	3.70	14.80
K03			100	7.18	92.4	1.90	3.00	16.80
K03			125	2.60	95.0	2.89	1.80	18.80
K03			160	-5.65	95.0	4.33	0.00	21.10
K03			200	-10.75	96.0	6.23	0.00	22.80
K04	6,837	6,839						
K04			20	37.10	76.3	0.00	5.60	7.60
K04			25	33.66	79.7	0.14	5.40	8.30
K04			32	29.10	81.6	0.21	5.20	9.20
K04			40	24.06	82.8	0.34	5.00	10.30
K04			50	19.02	83.8	0.48	4.70	11.50
K04			63	19.15	90.1	0.75	4.30	13.00
K04			80	14.41	91.8	1.09	3.70	14.80
K04			100	8.29	92.4	1.71	3.00	16.80
K04			125	3.80	95.0	2.60	1.80	18.80
K04			160	-4.30	95.0	3.90	0.00	21.10
K04			200	-9.21	96.0	5.61	0.00	22.80
K05	7,360	7,362						
K05			20	36.46	76.3	0.00	5.60	7.60
K05			25	33.01	79.7	0.15	5.40	8.30
K05			32	28.44	81.6	0.22	5.20	9.20
K05			40	23.39	82.8	0.37	5.00	10.30
K05			50	18.34	83.8	0.52	4.70	11.50
K05			63	18.45	90.1	0.81	4.30	13.00
K05			80	13.68	91.8	1.18	3.70	14.80
K05			100	7.52	92.4	1.84	3.00	16.80
K05			125	2.96	95.0	2.80	1.80	18.80
K05			160	-5.24	95.0	4.20	0.00	21.10
K05			200	-10.28	96.0	6.04	0.00	22.80
K06	7,420	7,422						
K06			20	36.39	76.3	0.00	5.60	7.60
K06			25	32.94	79.7	0.15	5.40	8.30
K06			32	28.37	81.6	0.22	5.20	9.20
K06			40	23.32	82.8	0.37	5.00	10.30
K06			50	18.27	83.8	0.52	4.70	11.50
K06			63	18.37	90.1	0.82	4.30	13.00
K06			80	13.60	91.8	1.19	3.70	14.80
K06			100	7.43	92.4	1.86	3.00	16.80
K06			125	2.87	95.0	2.82	1.80	18.80
K06			160	-5.34	95.0	4.23	0.00	21.10
K06			200	-10.40	96.0	6.09	0.00	22.80
K07	6,839	6,841						
K07			20	37.10	76.3	0.00	5.60	7.60
K07			25	33.66	79.7	0.14	5.40	8.30
K07			32	29.09	81.6	0.21	5.20	9.20
K07			40	24.06	82.8	0.34	5.00	10.30
K07			50	19.02	83.8	0.48	4.70	11.50
K07			63	19.15	90.1	0.75	4.30	13.00
K07			80	14.40	91.8	1.09	3.70	14.80
K07			100	8.29	92.4	1.71	3.00	16.80
K07			125	3.80	95.0	2.60	1.80	18.80
K07			160	-4.30	95.0	3.90	0.00	21.10
K07			200	-9.21	96.0	5.61	0.00	22.80
K08	7,025	7,027						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			20	36.86	76.3	0.00	5.60	7.60
K08			25	33.42	79.7	0.14	5.40	8.30
K08			32	28.85	81.6	0.21	5.20	9.20
K08			40	23.81	82.8	0.35	5.00	10.30
K08			50	18.77	83.8	0.49	4.70	11.50
K08			63	18.89	90.1	0.77	4.30	13.00
K08			80	14.14	91.8	1.12	3.70	14.80
K08			100	8.01	92.4	1.76	3.00	16.80
K08			125	3.49	95.0	2.67	1.80	18.80
K08			160	-4.64	95.0	4.01	0.00	21.10
K08			200	-9.60	96.0	5.76	0.00	22.80
K09	6,823	6,825						
K09			20	37.12	76.3	0.00	5.60	7.60
K09			25	33.68	79.7	0.14	5.40	8.30
K09			32	29.11	81.6	0.20	5.20	9.20
K09			40	24.08	82.8	0.34	5.00	10.30
K09			50	19.04	83.8	0.48	4.70	11.50
K09			63	19.17	90.1	0.75	4.30	13.00
K09			80	14.43	91.8	1.09	3.70	14.80
K09			100	8.31	92.4	1.71	3.00	16.80
K09			125	3.83	95.0	2.59	1.80	18.80
K09			160	-4.27	95.0	3.89	0.00	21.10
K09			200	-9.18	96.0	5.60	0.00	22.80
K10	9,099	9,100						
K10			20	34.62	76.3	0.00	5.60	7.60
K10			25	31.14	79.7	0.18	5.40	8.30
K10			32	26.55	81.6	0.27	5.20	9.20
K10			40	21.46	82.8	0.46	5.00	10.30
K10			50	16.38	83.8	0.64	4.70	11.50
K10			63	16.42	90.1	1.00	4.30	13.00
K10			80	11.56	91.8	1.46	3.70	14.80
K10			100	5.24	92.4	2.28	3.00	16.80
K10			125	0.46	95.0	3.46	1.80	18.80
K10			160	-8.07	95.0	5.19	0.00	21.10
K10			200	-13.54	96.0	7.46	0.00	22.80
K11	9,446	9,447						
K11			20	34.29	76.3	0.00	5.60	7.60
K11			25	30.80	79.7	0.19	5.40	8.30
K11			32	26.21	81.6	0.28	5.20	9.20
K11			40	21.12	82.8	0.47	5.00	10.30
K11			50	16.03	83.8	0.66	4.70	11.50
K11			63	16.05	90.1	1.04	4.30	13.00
K11			80	11.18	91.8	1.51	3.70	14.80
K11			100	4.83	92.4	2.36	3.00	16.80
K11			125	0.00	95.0	3.59	1.80	18.80
K11			160	-8.59	95.0	5.38	0.00	21.10
K11			200	-14.15	96.0	7.75	0.00	22.80
K12	9,285	9,286						
K12			20	34.44	76.3	0.00	5.60	7.60
K12			25	30.96	79.7	0.19	5.40	8.30
K12			32	26.36	81.6	0.28	5.20	9.20
K12			40	21.28	82.8	0.46	5.00	10.30
K12			50	16.19	83.8	0.65	4.70	11.50
K12			63	16.22	90.1	1.02	4.30	13.00
K12			80	11.36	91.8	1.49	3.70	14.80
K12			100	5.02	92.4	2.32	3.00	16.80
K12			125	0.21	95.0	3.53	1.80	18.80
K12			160	-8.35	95.0	5.29	0.00	21.10
K12			200	-13.87	96.0	7.61	0.00	22.80
K13	8,519	8,520						
K13			20	35.19	76.3	0.00	5.60	7.60
K13			25	31.72	79.7	0.17	5.40	8.30
K13			32	27.14	81.6	0.26	5.20	9.20
K13			40	22.06	82.8	0.43	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K13			50	16.99	83.8	0.60	4.70	11.50
K13			63	17.05	90.1	0.94	4.30	13.00
K13			80	12.23	91.8	1.36	3.70	14.80
K13			100	5.96	92.4	2.13	3.00	16.80
K13			125	1.25	95.0	3.24	1.80	18.80
K13			160	-7.17	95.0	4.86	0.00	21.10
K13			200	-12.50	96.0	6.99	0.00	22.80
K14	8,198	8,199						
K14			20	35.52	76.3	0.00	5.60	7.60
K14			25	32.06	79.7	0.16	5.40	8.30
K14			32	27.48	81.6	0.25	5.20	9.20
K14			40	22.41	82.8	0.41	5.00	10.30
K14			50	17.35	83.8	0.57	4.70	11.50
K14			63	17.42	90.1	0.90	4.30	13.00
K14			80	12.61	91.8	1.31	3.70	14.80
K14			100	6.37	92.4	2.05	3.00	16.80
K14			125	1.71	95.0	3.12	1.80	18.80
K14			160	-6.65	95.0	4.67	0.00	21.10
K14			200	-11.90	96.0	6.72	0.00	22.80
Sum								
Sum			20	47.80				
Sum			25	44.34				
Sum			32	39.77				
Sum			40	34.72				
Sum			50	29.74				
Sum			63	29.69				
Sum			80	24.98				
Sum			100	18.88				
Sum			125	14.30				
Sum			160	6.33				
Sum			200	1.28				

Noise sensitive area: J Noise sensitive point: Finnish normal frequency - User defined (260)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	6,411	6,414						
Extension WTG 01			20	33.16	71.8	0.00	5.60	7.60
Extension WTG 01			25	29.73	75.2	0.13	5.40	8.30
Extension WTG 01			32	25.17	77.1	0.19	5.20	9.20
Extension WTG 01			40	20.14	78.3	0.32	5.00	10.30
Extension WTG 01			50	16.11	80.3	0.45	4.70	11.50
Extension WTG 01			63	14.25	84.6	0.71	4.30	13.00
Extension WTG 01			80	10.53	87.3	1.03	3.70	14.80
Extension WTG 01			100	5.45	88.9	1.60	3.00	16.80
Extension WTG 01			125	1.02	91.5	2.44	1.80	18.80
Extension WTG 01			160	-5.00	93.5	3.66	0.00	21.10
Extension WTG 01			200	-9.80	94.5	5.26	0.00	22.80
Extension WTG 02	6,256	6,259						
Extension WTG 02			20	33.37	71.8	0.00	5.60	7.60
Extension WTG 02			25	29.94	75.2	0.13	5.40	8.30
Extension WTG 02			32	25.38	77.1	0.19	5.20	9.20
Extension WTG 02			40	20.36	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.33	80.3	0.44	4.70	11.50
Extension WTG 02			63	14.48	84.6	0.69	4.30	13.00
Extension WTG 02			80	10.77	87.3	1.00	3.70	14.80
Extension WTG 02			100	5.71	88.9	1.56	3.00	16.80
Extension WTG 02			125	1.29	91.5	2.38	1.80	18.80
Extension WTG 02			160	-4.70	93.5	3.57	0.00	21.10
Extension WTG 02			200	-9.46	94.5	5.13	0.00	22.80
K01	8,028	8,029						
K01			20	35.71	76.3	0.00	5.60	7.60
K01			25	32.25	79.7	0.16	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K01			32	27.67	81.6	0.24	5.20	9.20
K01			40	22.60	82.8	0.40	5.00	10.30
K01			50	17.54	83.8	0.56	4.70	11.50
K01			63	17.62	90.1	0.88	4.30	13.00
K01			80	12.82	91.8	1.28	3.70	14.80
K01			100	6.60	92.4	2.01	3.00	16.80
K01			125	1.96	95.0	3.05	1.80	18.80
K01			160	-6.37	95.0	4.58	0.00	21.10
K01			200	-11.58	96.0	6.58	0.00	22.80
K02	7,658	7,659						
K02			20	36.12	76.3	0.00	5.60	7.60
K02			25	32.66	79.7	0.15	5.40	8.30
K02			32	28.09	81.6	0.23	5.20	9.20
K02			40	23.03	82.8	0.38	5.00	10.30
K02			50	17.98	83.8	0.54	4.70	11.50
K02			63	18.07	90.1	0.84	4.30	13.00
K02			80	13.29	91.8	1.23	3.70	14.80
K02			100	7.10	92.4	1.91	3.00	16.80
K02			125	2.51	95.0	2.91	1.80	18.80
K02			160	-5.75	95.0	4.37	0.00	21.10
K02			200	-10.86	96.0	6.28	0.00	22.80
K03	7,504	7,506						
K03			20	36.29	76.3	0.00	5.60	7.60
K03			25	32.84	79.7	0.15	5.40	8.30
K03			32	28.27	81.6	0.23	5.20	9.20
K03			40	23.22	82.8	0.38	5.00	10.30
K03			50	18.17	83.8	0.53	4.70	11.50
K03			63	18.27	90.1	0.83	4.30	13.00
K03			80	13.49	91.8	1.20	3.70	14.80
K03			100	7.32	92.4	1.88	3.00	16.80
K03			125	2.74	95.0	2.85	1.80	18.80
K03			160	-5.49	95.0	4.28	0.00	21.10
K03			200	-10.56	96.0	6.16	0.00	22.80
K04	6,765	6,767						
K04			20	37.19	76.3	0.00	5.60	7.60
K04			25	33.76	79.7	0.14	5.40	8.30
K04			32	29.19	81.6	0.20	5.20	9.20
K04			40	24.15	82.8	0.34	5.00	10.30
K04			50	19.12	83.8	0.47	4.70	11.50
K04			63	19.25	90.1	0.74	4.30	13.00
K04			80	14.51	91.8	1.08	3.70	14.80
K04			100	8.40	92.4	1.69	3.00	16.80
K04			125	3.92	95.0	2.57	1.80	18.80
K04			160	-4.17	95.0	3.86	0.00	21.10
K04			200	-9.06	96.0	5.55	0.00	22.80
K05	7,325	7,327						
K05			20	36.50	76.3	0.00	5.60	7.60
K05			25	33.06	79.7	0.15	5.40	8.30
K05			32	28.48	81.6	0.22	5.20	9.20
K05			40	23.44	82.8	0.37	5.00	10.30
K05			50	18.39	83.8	0.51	4.70	11.50
K05			63	18.50	90.1	0.81	4.30	13.00
K05			80	13.73	91.8	1.17	3.70	14.80
K05			100	7.57	92.4	1.83	3.00	16.80
K05			125	3.02	95.0	2.78	1.80	18.80
K05			160	-5.17	95.0	4.18	0.00	21.10
K05			200	-10.21	96.0	6.01	0.00	22.80
K06	7,233	7,235						
K06			20	36.61	76.3	0.00	5.60	7.60
K06			25	33.17	79.7	0.14	5.40	8.30
K06			32	28.59	81.6	0.22	5.20	9.20
K06			40	23.55	82.8	0.36	5.00	10.30
K06			50	18.51	83.8	0.51	4.70	11.50
K06			63	18.62	90.1	0.80	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			80	13.85	91.8	1.16	3.70	14.80
K06			100	7.70	92.4	1.81	3.00	16.80
K06			125	3.16	95.0	2.75	1.80	18.80
K06			160	-5.01	95.0	4.12	0.00	21.10
K06			200	-10.02	96.0	5.93	0.00	22.80
K07	6,638	6,640						
K07			20	37.36	76.3	0.00	5.60	7.60
K07			25	33.92	79.7	0.13	5.40	8.30
K07			32	29.36	81.6	0.20	5.20	9.20
K07			40	24.32	82.8	0.33	5.00	10.30
K07			50	19.29	83.8	0.46	4.70	11.50
K07			63	19.43	90.1	0.73	4.30	13.00
K07			80	14.69	91.8	1.06	3.70	14.80
K07			100	8.60	92.4	1.66	3.00	16.80
K07			125	4.13	95.0	2.52	1.80	18.80
K07			160	-3.93	95.0	3.78	0.00	21.10
K07			200	-8.79	96.0	5.44	0.00	22.80
K08	6,884	6,886						
K08			20	37.04	76.3	0.00	5.60	7.60
K08			25	33.60	79.7	0.14	5.40	8.30
K08			32	29.03	81.6	0.21	5.20	9.20
K08			40	24.00	82.8	0.34	5.00	10.30
K08			50	18.96	83.8	0.48	4.70	11.50
K08			63	19.08	90.1	0.76	4.30	13.00
K08			80	14.34	91.8	1.10	3.70	14.80
K08			100	8.22	92.4	1.72	3.00	16.80
K08			125	3.72	95.0	2.62	1.80	18.80
K08			160	-4.38	95.0	3.92	0.00	21.10
K08			200	-9.31	96.0	5.65	0.00	22.80
K09	6,711	6,713						
K09			20	37.26	76.3	0.00	5.60	7.60
K09			25	33.83	79.7	0.13	5.40	8.30
K09			32	29.26	81.6	0.20	5.20	9.20
K09			40	24.23	82.8	0.34	5.00	10.30
K09			50	19.19	83.8	0.47	4.70	11.50
K09			63	19.32	90.1	0.74	4.30	13.00
K09			80	14.59	91.8	1.07	3.70	14.80
K09			100	8.48	92.4	1.68	3.00	16.80
K09			125	4.01	95.0	2.55	1.80	18.80
K09			160	-4.07	95.0	3.83	0.00	21.10
K09			200	-8.94	96.0	5.50	0.00	22.80
K10	8,896	8,898						
K10			20	34.81	76.3	0.00	5.60	7.60
K10			25	31.34	79.7	0.18	5.40	8.30
K10			32	26.75	81.6	0.27	5.20	9.20
K10			40	21.67	82.8	0.44	5.00	10.30
K10			50	16.59	83.8	0.62	4.70	11.50
K10			63	16.64	90.1	0.98	4.30	13.00
K10			80	11.79	91.8	1.42	3.70	14.80
K10			100	5.49	92.4	2.22	3.00	16.80
K10			125	0.73	95.0	3.38	1.80	18.80
K10			160	-7.76	95.0	5.07	0.00	21.10
K10			200	-13.18	96.0	7.30	0.00	22.80
K11	9,215	9,216						
K11			20	34.51	76.3	0.00	5.60	7.60
K11			25	31.02	79.7	0.18	5.40	8.30
K11			32	26.43	81.6	0.28	5.20	9.20
K11			40	21.35	82.8	0.46	5.00	10.30
K11			50	16.26	83.8	0.65	4.70	11.50
K11			63	16.30	90.1	1.01	4.30	13.00
K11			80	11.43	91.8	1.47	3.70	14.80
K11			100	5.11	92.4	2.30	3.00	16.80
K11			125	0.31	95.0	3.50	1.80	18.80
K11			160	-8.24	95.0	5.25	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			200	-13.75	96.0	7.56	0.00	22.80
K12	9,016	9,017						
K12			20	34.70	76.3	0.00	5.60	7.60
K12			25	31.22	79.7	0.18	5.40	8.30
K12			32	26.63	81.6	0.27	5.20	9.20
K12			40	21.55	82.8	0.45	5.00	10.30
K12			50	16.47	83.8	0.63	4.70	11.50
K12			63	16.51	90.1	0.99	4.30	13.00
K12			80	11.66	91.8	1.44	3.70	14.80
K12			100	5.34	92.4	2.25	3.00	16.80
K12			125	0.57	95.0	3.43	1.80	18.80
K12			160	-7.94	95.0	5.14	0.00	21.10
K12			200	-13.40	96.0	7.39	0.00	22.80
K13	8,274	8,276						
K13			20	35.44	76.3	0.00	5.60	7.60
K13			25	31.98	79.7	0.17	5.40	8.30
K13			32	27.40	81.6	0.25	5.20	9.20
K13			40	22.33	82.8	0.41	5.00	10.30
K13			50	17.26	83.8	0.58	4.70	11.50
K13			63	17.33	90.1	0.91	4.30	13.00
K13			80	12.52	91.8	1.32	3.70	14.80
K13			100	6.27	92.4	2.07	3.00	16.80
K13			125	1.60	95.0	3.14	1.80	18.80
K13			160	-6.77	95.0	4.72	0.00	21.10
K13			200	-12.04	96.0	6.79	0.00	22.80
K14	7,986	7,988						
K14			20	35.75	76.3	0.00	5.60	7.60
K14			25	32.29	79.7	0.16	5.40	8.30
K14			32	27.71	81.6	0.24	5.20	9.20
K14			40	22.65	82.8	0.40	5.00	10.30
K14			50	17.59	83.8	0.56	4.70	11.50
K14			63	17.67	90.1	0.88	4.30	13.00
K14			80	12.87	91.8	1.28	3.70	14.80
K14			100	6.65	92.4	2.00	3.00	16.80
K14			125	2.02	95.0	3.04	1.80	18.80
K14			160	-6.30	95.0	4.55	0.00	21.10
K14			200	-11.50	96.0	6.55	0.00	22.80
Sum								
Sum			20	47.96				
Sum			25	44.51				
Sum			32	39.93				
Sum			40	34.88				
Sum			50	29.91				
Sum			63	29.87				
Sum			80	25.17				
Sum			100	19.08				
Sum			125	14.51				
Sum			160	6.55				
Sum			200	1.53				

Noise sensitive area: K Noise sensitive point: Finnish normal frequency - User defined (261)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,509	5,512						
Extension WTG 01			20	34.47	71.8	0.00	5.60	7.60
Extension WTG 01			25	31.06	75.2	0.11	5.40	8.30
Extension WTG 01			32	26.51	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.50	78.3	0.28	5.00	10.30
Extension WTG 01			50	17.49	80.3	0.39	4.70	11.50
Extension WTG 01			63	15.67	84.6	0.61	4.30	13.00
Extension WTG 01			80	11.99	87.3	0.88	3.70	14.80
Extension WTG 01			100	7.00	88.9	1.38	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01			125	2.68	91.5	2.09	1.80	18.80
Extension WTG 01			160	-3.17	93.5	3.14	0.00	21.10
Extension WTG 01			200	-7.74	94.5	4.52	0.00	22.80
Extension WTG 02	5,251	5,254						
Extension WTG 02			20	34.89	71.8	0.00	5.60	7.60
Extension WTG 02			25	31.49	75.2	0.11	5.40	8.30
Extension WTG 02			32	26.93	77.1	0.16	5.20	9.20
Extension WTG 02			40	21.93	78.3	0.26	5.00	10.30
Extension WTG 02			50	17.92	80.3	0.37	4.70	11.50
Extension WTG 02			63	16.11	84.6	0.58	4.30	13.00
Extension WTG 02			80	12.45	87.3	0.84	3.70	14.80
Extension WTG 02			100	7.48	88.9	1.31	3.00	16.80
Extension WTG 02			125	3.19	91.5	2.00	1.80	18.80
Extension WTG 02			160	-2.60	93.5	2.99	0.00	21.10
Extension WTG 02			200	-7.12	94.5	4.31	0.00	22.80
K01	6,881	6,883						
K01			20	37.04	76.3	0.00	5.60	7.60
K01			25	33.61	79.7	0.14	5.40	8.30
K01			32	29.04	81.6	0.21	5.20	9.20
K01			40	24.00	82.8	0.34	5.00	10.30
K01			50	18.96	83.8	0.48	4.70	11.50
K01			63	19.09	90.1	0.76	4.30	13.00
K01			80	14.34	91.8	1.10	3.70	14.80
K01			100	8.22	92.4	1.72	3.00	16.80
K01			125	3.73	95.0	2.62	1.80	18.80
K01			160	-4.38	95.0	3.92	0.00	21.10
K01			200	-9.30	96.0	5.64	0.00	22.80
K02	6,535	6,536						
K02			20	37.49	76.3	0.00	5.60	7.60
K02			25	34.06	79.7	0.13	5.40	8.30
K02			32	29.50	81.6	0.20	5.20	9.20
K02			40	24.47	82.8	0.33	5.00	10.30
K02			50	19.44	83.8	0.46	4.70	11.50
K02			63	19.57	90.1	0.72	4.30	13.00
K02			80	14.85	91.8	1.05	3.70	14.80
K02			100	8.76	92.4	1.63	3.00	16.80
K02			125	4.31	95.0	2.48	1.80	18.80
K02			160	-3.73	95.0	3.73	0.00	21.10
K02			200	-8.57	96.0	5.36	0.00	22.80
K03	6,424	6,426						
K03			20	37.64	76.3	0.00	5.60	7.60
K03			25	34.21	79.7	0.13	5.40	8.30
K03			32	29.65	81.6	0.19	5.20	9.20
K03			40	24.62	82.8	0.32	5.00	10.30
K03			50	19.59	83.8	0.45	4.70	11.50
K03			63	19.73	90.1	0.71	4.30	13.00
K03			80	15.01	91.8	1.03	3.70	14.80
K03			100	8.93	92.4	1.61	3.00	16.80
K03			125	4.50	95.0	2.44	1.80	18.80
K03			160	-3.52	95.0	3.66	0.00	21.10
K03			200	-8.33	96.0	5.27	0.00	22.80
K04	5,717	5,719						
K04			20	38.65	76.3	0.00	5.60	7.60
K04			25	35.24	79.7	0.11	5.40	8.30
K04			32	30.68	81.6	0.17	5.20	9.20
K04			40	25.67	82.8	0.29	5.00	10.30
K04			50	20.65	83.8	0.40	4.70	11.50
K04			63	20.82	90.1	0.63	4.30	13.00
K04			80	16.14	91.8	0.92	3.70	14.80
K04			100	10.12	92.4	1.43	3.00	16.80
K04			125	5.78	95.0	2.17	1.80	18.80
K04			160	-2.11	95.0	3.26	0.00	21.10
K04			200	-6.74	96.0	4.69	0.00	22.80
K05	6,322	6,324						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			20	37.78	76.3	0.00	5.60	7.60
K05			25	34.35	79.7	0.13	5.40	8.30
K05			32	29.79	81.6	0.19	5.20	9.20
K05			40	24.76	82.8	0.32	5.00	10.30
K05			50	19.74	83.8	0.44	4.70	11.50
K05			63	19.88	90.1	0.70	4.30	13.00
K05			80	15.17	91.8	1.01	3.70	14.80
K05			100	9.10	92.4	1.58	3.00	16.80
K05			125	4.68	95.0	2.40	1.80	18.80
K05			160	-3.32	95.0	3.60	0.00	21.10
K05			200	-8.11	96.0	5.19	0.00	22.80
K06	6,065	6,067						
K06			20	38.14	76.3	0.00	5.60	7.60
K06			25	34.72	79.7	0.12	5.40	8.30
K06			32	30.16	81.6	0.18	5.20	9.20
K06			40	25.14	82.8	0.30	5.00	10.30
K06			50	20.12	83.8	0.42	4.70	11.50
K06			63	20.27	90.1	0.67	4.30	13.00
K06			80	15.57	91.8	0.97	3.70	14.80
K06			100	9.52	92.4	1.52	3.00	16.80
K06			125	5.13	95.0	2.31	1.80	18.80
K06			160	-2.82	95.0	3.46	0.00	21.10
K06			200	-7.53	96.0	4.98	0.00	22.80
K07	5,463	5,465						
K07			20	39.05	76.3	0.00	5.60	7.60
K07			25	35.64	79.7	0.11	5.40	8.30
K07			32	31.08	81.6	0.16	5.20	9.20
K07			40	26.08	82.8	0.27	5.00	10.30
K07			50	21.07	83.8	0.38	4.70	11.50
K07			63	21.25	90.1	0.60	4.30	13.00
K07			80	16.57	91.8	0.87	3.70	14.80
K07			100	10.58	92.4	1.37	3.00	16.80
K07			125	6.27	95.0	2.08	1.80	18.80
K07			160	-1.57	95.0	3.12	0.00	21.10
K07			200	-6.13	96.0	4.48	0.00	22.80
K08	5,756	5,758						
K08			20	38.60	76.3	0.00	5.60	7.60
K08			25	35.18	79.7	0.12	5.40	8.30
K08			32	30.62	81.6	0.17	5.20	9.20
K08			40	25.61	82.8	0.29	5.00	10.30
K08			50	20.59	83.8	0.40	4.70	11.50
K08			63	20.76	90.1	0.63	4.30	13.00
K08			80	16.07	91.8	0.92	3.70	14.80
K08			100	10.06	92.4	1.44	3.00	16.80
K08			125	5.71	95.0	2.19	1.80	18.80
K08			160	-2.19	95.0	3.28	0.00	21.10
K08			200	-6.83	96.0	4.72	0.00	22.80
K09	5,615	5,618						
K09			20	38.81	76.3	0.00	5.60	7.60
K09			25	35.40	79.7	0.11	5.40	8.30
K09			32	30.84	81.6	0.17	5.20	9.20
K09			40	25.83	82.8	0.28	5.00	10.30
K09			50	20.82	83.8	0.39	4.70	11.50
K09			63	20.99	90.1	0.62	4.30	13.00
K09			80	16.31	91.8	0.90	3.70	14.80
K09			100	10.30	92.4	1.40	3.00	16.80
K09			125	5.97	95.0	2.13	1.80	18.80
K09			160	-1.89	95.0	3.20	0.00	21.10
K09			200	-6.50	96.0	4.61	0.00	22.80
K10	7,716	7,717						
K10			20	36.05	76.3	0.00	5.60	7.60
K10			25	32.60	79.7	0.15	5.40	8.30
K10			32	28.02	81.6	0.23	5.20	9.20
K10			40	22.96	82.8	0.39	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K10			50	17.91	83.8	0.54	4.70	11.50
K10			63	18.00	90.1	0.85	4.30	13.00
K10			80	13.22	91.8	1.23	3.70	14.80
K10			100	7.02	92.4	1.93	3.00	16.80
K10			125	2.42	95.0	2.93	1.80	18.80
K10			160	-5.85	95.0	4.40	0.00	21.10
K10			200	-10.98	96.0	6.33	0.00	22.80
K11	8,020	8,022						
K11			20	35.71	76.3	0.00	5.60	7.60
K11			25	32.25	79.7	0.16	5.40	8.30
K11			32	27.67	81.6	0.24	5.20	9.20
K11			40	22.61	82.8	0.40	5.00	10.30
K11			50	17.55	83.8	0.56	4.70	11.50
K11			63	17.63	90.1	0.88	4.30	13.00
K11			80	12.83	91.8	1.28	3.70	14.80
K11			100	6.61	92.4	2.01	3.00	16.80
K11			125	1.97	95.0	3.05	1.80	18.80
K11			160	-6.36	95.0	4.57	0.00	21.10
K11			200	-11.56	96.0	6.58	0.00	22.80
K12	7,811	7,813						
K12			20	35.94	76.3	0.00	5.60	7.60
K12			25	32.49	79.7	0.16	5.40	8.30
K12			32	27.91	81.6	0.23	5.20	9.20
K12			40	22.85	82.8	0.39	5.00	10.30
K12			50	17.80	83.8	0.55	4.70	11.50
K12			63	17.88	90.1	0.86	4.30	13.00
K12			80	13.09	91.8	1.25	3.70	14.80
K12			100	6.89	92.4	1.95	3.00	16.80
K12			125	2.27	95.0	2.97	1.80	18.80
K12			160	-6.01	95.0	4.45	0.00	21.10
K12			200	-11.16	96.0	6.41	0.00	22.80
K13	7,076	7,077						
K13			20	36.80	76.3	0.00	5.60	7.60
K13			25	33.36	79.7	0.14	5.40	8.30
K13			32	28.79	81.6	0.21	5.20	9.20
K13			40	23.75	82.8	0.35	5.00	10.30
K13			50	18.71	83.8	0.50	4.70	11.50
K13			63	18.82	90.1	0.78	4.30	13.00
K13			80	14.07	91.8	1.13	3.70	14.80
K13			100	7.93	92.4	1.77	3.00	16.80
K13			125	3.41	95.0	2.69	1.80	18.80
K13			160	-4.73	95.0	4.03	0.00	21.10
K13			200	-9.70	96.0	5.80	0.00	22.80
K14	6,802	6,804						
K14			20	37.14	76.3	0.00	5.60	7.60
K14			25	33.71	79.7	0.14	5.40	8.30
K14			32	29.14	81.6	0.20	5.20	9.20
K14			40	24.10	82.8	0.34	5.00	10.30
K14			50	19.07	83.8	0.48	4.70	11.50
K14			63	19.20	90.1	0.75	4.30	13.00
K14			80	14.46	91.8	1.09	3.70	14.80
K14			100	8.34	92.4	1.70	3.00	16.80
K14			125	3.86	95.0	2.59	1.80	18.80
K14			160	-4.23	95.0	3.88	0.00	21.10
K14			200	-9.13	96.0	5.58	0.00	22.80
Sum								
Sum			20	49.38				
Sum			25	45.96				
Sum			32	41.39				
Sum			40	36.37				
Sum			50	31.42				
Sum			63	31.42				
Sum			80	26.77				
Sum			100	20.78				

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Sum			125	16.37				
Sum			160	8.62				
Sum			200	3.87				

Noise sensitive area: L Noise sensitive point: Finnish normal frequency - User defined (259)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,471	2,477						
Extension WTG 01			20	41.42	71.8	0.00	5.60	7.60
Extension WTG 01			25	38.07	75.2	0.05	5.40	8.30
Extension WTG 01			32	33.55	77.1	0.07	5.20	9.20
Extension WTG 01			40	28.60	78.3	0.12	5.00	10.30
Extension WTG 01			50	24.65	80.3	0.17	4.70	11.50
Extension WTG 01			63	22.95	84.6	0.27	4.30	13.00
Extension WTG 01			80	19.43	87.3	0.40	3.70	14.80
Extension WTG 01			100	14.70	88.9	0.62	3.00	16.80
Extension WTG 01			125	10.78	91.5	0.94	1.80	18.80
Extension WTG 01			160	5.51	93.5	1.41	0.00	21.10
Extension WTG 01			200	1.69	94.5	2.03	0.00	22.80
Extension WTG 02	3,174	3,178						
Extension WTG 02			20	39.26	71.8	0.00	5.60	7.60
Extension WTG 02			25	35.89	75.2	0.06	5.40	8.30
Extension WTG 02			32	31.36	77.1	0.10	5.20	9.20
Extension WTG 02			40	26.40	78.3	0.16	5.00	10.30
Extension WTG 02			50	22.43	80.3	0.22	4.70	11.50
Extension WTG 02			63	20.71	84.6	0.35	4.30	13.00
Extension WTG 02			80	17.15	87.3	0.51	3.70	14.80
Extension WTG 02			100	12.36	88.9	0.79	3.00	16.80
Extension WTG 02			125	8.35	91.5	1.21	1.80	18.80
Extension WTG 02			160	2.95	93.5	1.81	0.00	21.10
Extension WTG 02			200	-1.05	94.5	2.61	0.00	22.80
K01	5,569	5,570						
K01			20	38.88	76.3	0.00	5.60	7.60
K01			25	35.47	79.7	0.11	5.40	8.30
K01			32	30.92	81.6	0.17	5.20	9.20
K01			40	25.90	82.8	0.28	5.00	10.30
K01			50	20.89	83.8	0.39	4.70	11.50
K01			63	21.07	90.1	0.61	4.30	13.00
K01			80	16.39	91.8	0.89	3.70	14.80
K01			100	10.39	92.4	1.39	3.00	16.80
K01			125	6.07	95.0	2.12	1.80	18.80
K01			160	-1.79	95.0	3.18	0.00	21.10
K01			200	-6.39	96.0	4.57	0.00	22.80
K02	5,016	5,019						
K02			20	39.79	76.3	0.00	5.60	7.60
K02			25	36.39	79.7	0.10	5.40	8.30
K02			32	31.84	81.6	0.15	5.20	9.20
K02			40	26.84	82.8	0.25	5.00	10.30
K02			50	21.84	83.8	0.35	4.70	11.50
K02			63	22.04	90.1	0.55	4.30	13.00
K02			80	17.39	91.8	0.80	3.70	14.80
K02			100	11.43	92.4	1.25	3.00	16.80
K02			125	7.18	95.0	1.91	1.80	18.80
K02			160	-0.57	95.0	2.86	0.00	21.10
K02			200	-5.03	96.0	4.12	0.00	22.80
K03	4,445	4,447						
K03			20	40.84	76.3	0.00	5.60	7.60
K03			25	37.45	79.7	0.09	5.40	8.30
K03			32	32.90	81.6	0.13	5.20	9.20
K03			40	27.92	82.8	0.22	5.00	10.30
K03			50	22.93	83.8	0.31	4.70	11.50
K03			63	23.15	90.1	0.49	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			80	18.53	91.8	0.71	3.70	14.80
K03			100	12.63	92.4	1.11	3.00	16.80
K03			125	8.45	95.0	1.69	1.80	18.80
K03			160	0.80	95.0	2.54	0.00	21.10
K03			200	-3.51	96.0	3.65	0.00	22.80
K04	3,740	3,743						
K04			20	42.34	76.3	0.00	5.60	7.60
K04			25	38.96	79.7	0.07	5.40	8.30
K04			32	34.42	81.6	0.11	5.20	9.20
K04			40	29.45	82.8	0.19	5.00	10.30
K04			50	24.47	83.8	0.26	4.70	11.50
K04			63	24.72	90.1	0.41	4.30	13.00
K04			80	20.14	91.8	0.60	3.70	14.80
K04			100	14.30	92.4	0.94	3.00	16.80
K04			125	10.21	95.0	1.42	1.80	18.80
K04			160	2.70	95.0	2.13	0.00	21.10
K04			200	-1.43	96.0	3.07	0.00	22.80
K05	3,645	3,648						
K05			20	42.56	76.3	0.00	5.60	7.60
K05			25	39.19	79.7	0.07	5.40	8.30
K05			32	34.65	81.6	0.11	5.20	9.20
K05			40	29.68	82.8	0.18	5.00	10.30
K05			50	24.70	83.8	0.26	4.70	11.50
K05			63	24.96	90.1	0.40	4.30	13.00
K05			80	20.38	91.8	0.58	3.70	14.80
K05			100	14.55	92.4	0.91	3.00	16.80
K05			125	10.47	95.0	1.39	1.80	18.80
K05			160	2.98	95.0	2.08	0.00	21.10
K05			200	-1.13	96.0	2.99	0.00	22.80
K06	5,404	5,407						
K06			20	39.14	76.3	0.00	5.60	7.60
K06			25	35.73	79.7	0.11	5.40	8.30
K06			32	31.18	81.6	0.16	5.20	9.20
K06			40	26.17	82.8	0.27	5.00	10.30
K06			50	21.16	83.8	0.38	4.70	11.50
K06			63	21.35	90.1	0.59	4.30	13.00
K06			80	16.68	91.8	0.87	3.70	14.80
K06			100	10.69	92.4	1.35	3.00	16.80
K06			125	6.39	95.0	2.05	1.80	18.80
K06			160	-1.44	95.0	3.08	0.00	21.10
K06			200	-5.99	96.0	4.43	0.00	22.80
K07	5,218	5,220						
K07			20	39.45	76.3	0.00	5.60	7.60
K07			25	36.04	79.7	0.10	5.40	8.30
K07			32	31.49	81.6	0.16	5.20	9.20
K07			40	26.49	82.8	0.26	5.00	10.30
K07			50	21.48	83.8	0.37	4.70	11.50
K07			63	21.67	90.1	0.57	4.30	13.00
K07			80	17.01	91.8	0.84	3.70	14.80
K07			100	11.04	92.4	1.31	3.00	16.80
K07			125	6.76	95.0	1.98	1.80	18.80
K07			160	-1.03	95.0	2.98	0.00	21.10
K07			200	-5.53	96.0	4.28	0.00	22.80
K08	4,635	4,638						
K08			20	40.47	76.3	0.00	5.60	7.60
K08			25	37.08	79.7	0.09	5.40	8.30
K08			32	32.54	81.6	0.14	5.20	9.20
K08			40	27.54	82.8	0.23	5.00	10.30
K08			50	22.55	83.8	0.32	4.70	11.50
K08			63	22.76	90.1	0.51	4.30	13.00
K08			80	18.13	91.8	0.74	3.70	14.80
K08			100	12.21	92.4	1.16	3.00	16.80
K08			125	8.01	95.0	1.76	1.80	18.80
K08			160	0.33	95.0	2.64	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			200	-4.03	96.0	3.80	0.00	22.80
K09	4,180	4,183						
K09			20	41.37	76.3	0.00	5.60	7.60
K09			25	37.99	79.7	0.08	5.40	8.30
K09			32	33.44	81.6	0.13	5.20	9.20
K09			40	28.46	82.8	0.21	5.00	10.30
K09			50	23.48	83.8	0.29	4.70	11.50
K09			63	23.71	90.1	0.46	4.30	13.00
K09			80	19.10	91.8	0.67	3.70	14.80
K09			100	13.22	92.4	1.05	3.00	16.80
K09			125	9.08	95.0	1.59	1.80	18.80
K09			160	1.49	95.0	2.38	0.00	21.10
K09			200	-2.76	96.0	3.43	0.00	22.80
K10	6,779	6,781						
K10			20	37.17	76.3	0.00	5.60	7.60
K10			25	33.74	79.7	0.14	5.40	8.30
K10			32	29.17	81.6	0.20	5.20	9.20
K10			40	24.14	82.8	0.34	5.00	10.30
K10			50	19.10	83.8	0.47	4.70	11.50
K10			63	19.23	90.1	0.75	4.30	13.00
K10			80	14.49	91.8	1.08	3.70	14.80
K10			100	8.38	92.4	1.70	3.00	16.80
K10			125	3.90	95.0	2.58	1.80	18.80
K10			160	-4.19	95.0	3.87	0.00	21.10
K10			200	-9.09	96.0	5.56	0.00	22.80
K11	7,403	7,404						
K11			20	36.41	76.3	0.00	5.60	7.60
K11			25	32.96	79.7	0.15	5.40	8.30
K11			32	28.39	81.6	0.22	5.20	9.20
K11			40	23.34	82.8	0.37	5.00	10.30
K11			50	18.29	83.8	0.52	4.70	11.50
K11			63	18.40	90.1	0.81	4.30	13.00
K11			80	13.63	91.8	1.18	3.70	14.80
K11			100	7.46	92.4	1.85	3.00	16.80
K11			125	2.90	95.0	2.81	1.80	18.80
K11			160	-5.31	95.0	4.22	0.00	21.10
K11			200	-10.36	96.0	6.07	0.00	22.80
K12	7,759	7,760						
K12			20	36.00	76.3	0.00	5.60	7.60
K12			25	32.55	79.7	0.16	5.40	8.30
K12			32	27.97	81.6	0.23	5.20	9.20
K12			40	22.91	82.8	0.39	5.00	10.30
K12			50	17.86	83.8	0.54	4.70	11.50
K12			63	17.95	90.1	0.85	4.30	13.00
K12			80	13.16	91.8	1.24	3.70	14.80
K12			100	6.96	92.4	1.94	3.00	16.80
K12			125	2.35	95.0	2.95	1.80	18.80
K12			160	-5.92	95.0	4.42	0.00	21.10
K12			200	-11.06	96.0	6.36	0.00	22.80
K13	6,861	6,862						
K13			20	37.07	76.3	0.00	5.60	7.60
K13			25	33.63	79.7	0.14	5.40	8.30
K13			32	29.06	81.6	0.21	5.20	9.20
K13			40	24.03	82.8	0.34	5.00	10.30
K13			50	18.99	83.8	0.48	4.70	11.50
K13			63	19.12	90.1	0.75	4.30	13.00
K13			80	14.37	91.8	1.10	3.70	14.80
K13			100	8.25	92.4	1.72	3.00	16.80
K13			125	3.76	95.0	2.61	1.80	18.80
K13			160	-4.34	95.0	3.91	0.00	21.10
K13			200	-9.26	96.0	5.63	0.00	22.80
K14	6,218	6,220						
K14			20	37.92	76.3	0.00	5.60	7.60
K14			25	34.50	79.7	0.12	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			32	29.94	81.6	0.19	5.20	9.20
K14			40	24.91	82.8	0.31	5.00	10.30
K14			50	19.89	83.8	0.44	4.70	11.50
K14			63	20.04	90.1	0.68	4.30	13.00
K14			80	15.33	91.8	1.00	3.70	14.80
K14			100	9.27	92.4	1.55	3.00	16.80
K14			125	4.86	95.0	2.36	1.80	18.80
K14			160	-3.12	95.0	3.55	0.00	21.10
K14			200	-7.88	96.0	5.10	0.00	22.80
Sum								
Sum			20	51.86				
Sum			25	48.47				
Sum			32	43.93				
Sum			40	38.93				
Sum			50	34.11				
Sum			63	34.02				
Sum			80	29.53				
Sum			100	23.80				
Sum			125	19.63				
Sum			160	12.53				
Sum			200	8.31				

Noise sensitive area: M Noise sensitive point: Finnish normal frequency - User defined (290)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	3,706	3,711						
Extension WTG 01			20	37.91	71.8	0.00	5.60	7.60
Extension WTG 01			25	34.54	75.2	0.07	5.40	8.30
Extension WTG 01			32	30.00	77.1	0.11	5.20	9.20
Extension WTG 01			40	25.02	78.3	0.19	5.00	10.30
Extension WTG 01			50	21.05	80.3	0.26	4.70	11.50
Extension WTG 01			63	19.30	84.6	0.41	4.30	13.00
Extension WTG 01			80	15.72	87.3	0.59	3.70	14.80
Extension WTG 01			100	10.88	88.9	0.93	3.00	16.80
Extension WTG 01			125	6.80	91.5	1.41	1.80	18.80
Extension WTG 01			160	1.29	93.5	2.12	0.00	21.10
Extension WTG 01			200	-2.83	94.5	3.04	0.00	22.80
Extension WTG 02	4,549	4,553						
Extension WTG 02			20	36.13	71.8	0.00	5.60	7.60
Extension WTG 02			25	32.74	75.2	0.09	5.40	8.30
Extension WTG 02			32	28.20	77.1	0.14	5.20	9.20
Extension WTG 02			40	23.21	78.3	0.23	5.00	10.30
Extension WTG 02			50	19.22	80.3	0.32	4.70	11.50
Extension WTG 02			63	17.43	84.6	0.50	4.30	13.00
Extension WTG 02			80	13.81	87.3	0.73	3.70	14.80
Extension WTG 02			100	8.90	88.9	1.14	3.00	16.80
Extension WTG 02			125	4.70	91.5	1.73	1.80	18.80
Extension WTG 02			160	-0.96	93.5	2.60	0.00	21.10
Extension WTG 02			200	-5.30	94.5	3.73	0.00	22.80
K01	6,534	6,536						
K01			20	37.49	76.3	0.00	5.60	7.60
K01			25	34.06	79.7	0.13	5.40	8.30
K01			32	29.50	81.6	0.20	5.20	9.20
K01			40	24.47	82.8	0.33	5.00	10.30
K01			50	19.44	83.8	0.46	4.70	11.50
K01			63	19.58	90.1	0.72	4.30	13.00
K01			80	14.85	91.8	1.05	3.70	14.80
K01			100	8.76	92.4	1.63	3.00	16.80
K01			125	4.31	95.0	2.48	1.80	18.80
K01			160	-3.73	95.0	3.73	0.00	21.10
K01			200	-8.57	96.0	5.36	0.00	22.80
K02	6,018	6,020						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			20	38.21	76.3	0.00	5.60	7.60
K02			25	34.79	79.7	0.12	5.40	8.30
K02			32	30.23	81.6	0.18	5.20	9.20
K02			40	25.21	82.8	0.30	5.00	10.30
K02			50	20.19	83.8	0.42	4.70	11.50
K02			63	20.35	90.1	0.66	4.30	13.00
K02			80	15.64	91.8	0.96	3.70	14.80
K02			100	9.60	92.4	1.51	3.00	16.80
K02			125	5.22	95.0	2.29	1.80	18.80
K02			160	-2.72	95.0	3.43	0.00	21.10
K02			200	-7.43	96.0	4.94	0.00	22.80
K03	5,385	5,388						
K03			20	39.17	76.3	0.00	5.60	7.60
K03			25	35.76	79.7	0.11	5.40	8.30
K03			32	31.21	81.6	0.16	5.20	9.20
K03			40	26.20	82.8	0.27	5.00	10.30
K03			50	21.19	83.8	0.38	4.70	11.50
K03			63	21.38	90.1	0.59	4.30	13.00
K03			80	16.71	91.8	0.86	3.70	14.80
K03			100	10.72	92.4	1.35	3.00	16.80
K03			125	6.42	95.0	2.05	1.80	18.80
K03			160	-1.40	95.0	3.07	0.00	21.10
K03			200	-5.95	96.0	4.42	0.00	22.80
K04	4,924	4,927						
K04			20	39.95	76.3	0.00	5.60	7.60
K04			25	36.55	79.7	0.10	5.40	8.30
K04			32	32.00	81.6	0.15	5.20	9.20
K04			40	27.00	82.8	0.25	5.00	10.30
K04			50	22.00	83.8	0.34	4.70	11.50
K04			63	22.21	90.1	0.54	4.30	13.00
K04			80	17.56	91.8	0.79	3.70	14.80
K04			100	11.62	92.4	1.23	3.00	16.80
K04			125	7.38	95.0	1.87	1.80	18.80
K04			160	-0.36	95.0	2.81	0.00	21.10
K04			200	-4.79	96.0	4.04	0.00	22.80
K05	4,490	4,493						
K05			20	40.75	76.3	0.00	5.60	7.60
K05			25	37.36	79.7	0.09	5.40	8.30
K05			32	32.81	81.6	0.13	5.20	9.20
K05			40	27.82	82.8	0.22	5.00	10.30
K05			50	22.83	83.8	0.31	4.70	11.50
K05			63	23.05	90.1	0.49	4.30	13.00
K05			80	18.43	91.8	0.72	3.70	14.80
K05			100	12.53	92.4	1.12	3.00	16.80
K05			125	8.34	95.0	1.71	1.80	18.80
K05			160	0.69	95.0	2.56	0.00	21.10
K05			200	-3.64	96.0	3.68	0.00	22.80
K06	6,672	6,674						
K06			20	37.31	76.3	0.00	5.60	7.60
K06			25	33.88	79.7	0.13	5.40	8.30
K06			32	29.31	81.6	0.20	5.20	9.20
K06			40	24.28	82.8	0.33	5.00	10.30
K06			50	19.25	83.8	0.47	4.70	11.50
K06			63	19.38	90.1	0.73	4.30	13.00
K06			80	14.64	91.8	1.07	3.70	14.80
K06			100	8.54	92.4	1.67	3.00	16.80
K06			125	4.08	95.0	2.54	1.80	18.80
K06			160	-3.99	95.0	3.80	0.00	21.10
K06			200	-8.86	96.0	5.47	0.00	22.80
K07	6,674	6,676						
K07			20	37.31	76.3	0.00	5.60	7.60
K07			25	33.88	79.7	0.13	5.40	8.30
K07			32	29.31	81.6	0.20	5.20	9.20
K07			40	24.28	82.8	0.33	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K07			50	19.24	83.8	0.47	4.70	11.50
K07			63	19.38	90.1	0.73	4.30	13.00
K07			80	14.64	91.8	1.07	3.70	14.80
K07			100	8.54	92.4	1.67	3.00	16.80
K07			125	4.07	95.0	2.54	1.80	18.80
K07			160	-4.00	95.0	3.81	0.00	21.10
K07			200	-8.86	96.0	5.47	0.00	22.80
K08	5,908	5,911						
K08			20	38.37	76.3	0.00	5.60	7.60
K08			25	34.95	79.7	0.12	5.40	8.30
K08			32	30.39	81.6	0.18	5.20	9.20
K08			40	25.37	82.8	0.30	5.00	10.30
K08			50	20.35	83.8	0.41	4.70	11.50
K08			63	20.52	90.1	0.65	4.30	13.00
K08			80	15.82	91.8	0.95	3.70	14.80
K08			100	9.79	92.4	1.48	3.00	16.80
K08			125	5.42	95.0	2.25	1.80	18.80
K08			160	-2.50	95.0	3.37	0.00	21.10
K08			200	-7.18	96.0	4.85	0.00	22.80
K09	5,457	5,460						
K09			20	39.06	76.3	0.00	5.60	7.60
K09			25	35.65	79.7	0.11	5.40	8.30
K09			32	31.09	81.6	0.16	5.20	9.20
K09			40	26.08	82.8	0.27	5.00	10.30
K09			50	21.07	83.8	0.38	4.70	11.50
K09			63	21.26	90.1	0.60	4.30	13.00
K09			80	16.58	91.8	0.87	3.70	14.80
K09			100	10.59	92.4	1.36	3.00	16.80
K09			125	6.28	95.0	2.07	1.80	18.80
K09			160	-1.56	95.0	3.11	0.00	21.10
K09			200	-6.12	96.0	4.48	0.00	22.80
K10	7,686	7,688						
K10			20	36.08	76.3	0.00	5.60	7.60
K10			25	32.63	79.7	0.15	5.40	8.30
K10			32	28.05	81.6	0.23	5.20	9.20
K10			40	23.00	82.8	0.38	5.00	10.30
K10			50	17.95	83.8	0.54	4.70	11.50
K10			63	18.04	90.1	0.85	4.30	13.00
K10			80	13.25	91.8	1.23	3.70	14.80
K10			100	7.06	92.4	1.92	3.00	16.80
K10			125	2.46	95.0	2.92	1.80	18.80
K10			160	-5.80	95.0	4.38	0.00	21.10
K10			200	-10.92	96.0	6.30	0.00	22.80
K11	8,353	8,355						
K11			20	35.36	76.3	0.00	5.60	7.60
K11			25	31.89	79.7	0.17	5.40	8.30
K11			32	27.31	81.6	0.25	5.20	9.20
K11			40	22.24	82.8	0.42	5.00	10.30
K11			50	17.18	83.8	0.58	4.70	11.50
K11			63	17.24	90.1	0.92	4.30	13.00
K11			80	12.42	91.8	1.34	3.70	14.80
K11			100	6.17	92.4	2.09	3.00	16.80
K11			125	1.49	95.0	3.17	1.80	18.80
K11			160	-6.90	95.0	4.76	0.00	21.10
K11			200	-12.19	96.0	6.85	0.00	22.80
K12	8,882	8,884						
K12			20	34.83	76.3	0.00	5.60	7.60
K12			25	31.35	79.7	0.18	5.40	8.30
K12			32	26.76	81.6	0.27	5.20	9.20
K12			40	21.68	82.8	0.44	5.00	10.30
K12			50	16.61	83.8	0.62	4.70	11.50
K12			63	16.65	90.1	0.98	4.30	13.00
K12			80	11.81	91.8	1.42	3.70	14.80
K12			100	5.51	92.4	2.22	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			125	0.75	95.0	3.38	1.80	18.80
K12			160	-7.74	95.0	5.06	0.00	21.10
K12			200	-13.16	96.0	7.28	0.00	22.80
K13	8,040	8,042						
K13			20	35.69	76.3	0.00	5.60	7.60
K13			25	32.23	79.7	0.16	5.40	8.30
K13			32	27.65	81.6	0.24	5.20	9.20
K13			40	22.59	82.8	0.40	5.00	10.30
K13			50	17.53	83.8	0.56	4.70	11.50
K13			63	17.61	90.1	0.88	4.30	13.00
K13			80	12.81	91.8	1.29	3.70	14.80
K13			100	6.58	92.4	2.01	3.00	16.80
K13			125	1.94	95.0	3.06	1.80	18.80
K13			160	-6.39	95.0	4.58	0.00	21.10
K13			200	-11.60	96.0	6.59	0.00	22.80
K14	7,359	7,361						
K14			20	36.46	76.3	0.00	5.60	7.60
K14			25	33.01	79.7	0.15	5.40	8.30
K14			32	28.44	81.6	0.22	5.20	9.20
K14			40	23.39	82.8	0.37	5.00	10.30
K14			50	18.35	83.8	0.52	4.70	11.50
K14			63	18.45	90.1	0.81	4.30	13.00
K14			80	13.68	91.8	1.18	3.70	14.80
K14			100	7.52	92.4	1.84	3.00	16.80
K14			125	2.96	95.0	2.80	1.80	18.80
K14			160	-5.23	95.0	4.20	0.00	21.10
K14			200	-10.27	96.0	6.04	0.00	22.80
Sum								
Sum			20	49.86				
Sum			25	46.45				
Sum			32	41.89				
Sum			40	36.87				
Sum			50	31.97				
Sum			63	31.92				
Sum			80	27.33				
Sum			100	21.43				
Sum			125	17.09				
Sum			160	9.61				
Sum			200	5.06				

Noise sensitive area: N Noise sensitive point: Finnish normal frequency - User defined (264)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	4,338	4,341						
Extension WTG 01			20	36.55	71.8	0.00	5.60	7.60
Extension WTG 01			25	33.16	75.2	0.09	5.40	8.30
Extension WTG 01			32	28.62	77.1	0.13	5.20	9.20
Extension WTG 01			40	23.63	78.3	0.22	5.00	10.30
Extension WTG 01			50	19.64	80.3	0.30	4.70	11.50
Extension WTG 01			63	17.87	84.6	0.48	4.30	13.00
Extension WTG 01			80	14.25	87.3	0.69	3.70	14.80
Extension WTG 01			100	9.36	88.9	1.09	3.00	16.80
Extension WTG 01			125	5.20	91.5	1.65	1.80	18.80
Extension WTG 01			160	-0.43	93.5	2.47	0.00	21.10
Extension WTG 01			200	-4.71	94.5	3.56	0.00	22.80
Extension WTG 02	3,988	3,992						
Extension WTG 02			20	37.28	71.8	0.00	5.60	7.60
Extension WTG 02			25	33.90	75.2	0.08	5.40	8.30
Extension WTG 02			32	29.36	77.1	0.12	5.20	9.20
Extension WTG 02			40	24.38	78.3	0.20	5.00	10.30
Extension WTG 02			50	20.40	80.3	0.28	4.70	11.50
Extension WTG 02			63	18.64	84.6	0.44	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			80	15.04	87.3	0.64	3.70	14.80
Extension WTG 02			100	10.18	88.9	1.00	3.00	16.80
Extension WTG 02			125	6.06	91.5	1.52	1.80	18.80
Extension WTG 02			160	0.50	93.5	2.28	0.00	21.10
Extension WTG 02			200	-3.70	94.5	3.27	0.00	22.80
K01	5,540	5,542						
K01			20	38.93	76.3	0.00	5.60	7.60
K01			25	35.52	79.7	0.11	5.40	8.30
K01			32	30.96	81.6	0.17	5.20	9.20
K01			40	25.95	82.8	0.28	5.00	10.30
K01			50	20.94	83.8	0.39	4.70	11.50
K01			63	21.12	90.1	0.61	4.30	13.00
K01			80	16.44	91.8	0.89	3.70	14.80
K01			100	10.44	92.4	1.39	3.00	16.80
K01			125	6.12	95.0	2.11	1.80	18.80
K01			160	-1.73	95.0	3.16	0.00	21.10
K01			200	-6.32	96.0	4.54	0.00	22.80
K02	5,195	5,198						
K02			20	39.48	76.3	0.00	5.60	7.60
K02			25	36.08	79.7	0.10	5.40	8.30
K02			32	31.53	81.6	0.16	5.20	9.20
K02			40	26.52	82.8	0.26	5.00	10.30
K02			50	21.52	83.8	0.36	4.70	11.50
K02			63	21.71	90.1	0.57	4.30	13.00
K02			80	17.05	91.8	0.83	3.70	14.80
K02			100	11.08	92.4	1.30	3.00	16.80
K02			125	6.81	95.0	1.98	1.80	18.80
K02			160	-0.98	95.0	2.96	0.00	21.10
K02			200	-5.48	96.0	4.26	0.00	22.80
K03	5,102	5,104						
K03			20	39.64	76.3	0.00	5.60	7.60
K03			25	36.24	79.7	0.10	5.40	8.30
K03			32	31.69	81.6	0.15	5.20	9.20
K03			40	26.69	82.8	0.26	5.00	10.30
K03			50	21.68	83.8	0.36	4.70	11.50
K03			63	21.88	90.1	0.56	4.30	13.00
K03			80	17.22	91.8	0.82	3.70	14.80
K03			100	11.27	92.4	1.28	3.00	16.80
K03			125	7.00	95.0	1.94	1.80	18.80
K03			160	-0.77	95.0	2.91	0.00	21.10
K03			200	-5.24	96.0	4.19	0.00	22.80
K04	4,417	4,420						
K04			20	40.89	76.3	0.00	5.60	7.60
K04			25	37.50	79.7	0.09	5.40	8.30
K04			32	32.96	81.6	0.13	5.20	9.20
K04			40	27.97	82.8	0.22	5.00	10.30
K04			50	22.98	83.8	0.31	4.70	11.50
K04			63	23.21	90.1	0.49	4.30	13.00
K04			80	18.58	91.8	0.71	3.70	14.80
K04			100	12.69	92.4	1.10	3.00	16.80
K04			125	8.51	95.0	1.68	1.80	18.80
K04			160	0.87	95.0	2.52	0.00	21.10
K04			200	-3.43	96.0	3.62	0.00	22.80
K05	5,052	5,054						
K05			20	39.73	76.3	0.00	5.60	7.60
K05			25	36.33	79.7	0.10	5.40	8.30
K05			32	31.78	81.6	0.15	5.20	9.20
K05			40	26.77	82.8	0.25	5.00	10.30
K05			50	21.77	83.8	0.35	4.70	11.50
K05			63	21.97	90.1	0.56	4.30	13.00
K05			80	17.32	91.8	0.81	3.70	14.80
K05			100	11.36	92.4	1.26	3.00	16.80
K05			125	7.11	95.0	1.92	1.80	18.80
K05			160	-0.65	95.0	2.88	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			200	-5.12	96.0	4.14	0.00	22.80
K06	4,728	4,731						
K06			20	40.30	76.3	0.00	5.60	7.60
K06			25	36.91	79.7	0.09	5.40	8.30
K06			32	32.36	81.6	0.14	5.20	9.20
K06			40	27.36	82.8	0.24	5.00	10.30
K06			50	22.37	83.8	0.33	4.70	11.50
K06			63	22.58	90.1	0.52	4.30	13.00
K06			80	17.94	91.8	0.76	3.70	14.80
K06			100	12.02	92.4	1.18	3.00	16.80
K06			125	7.80	95.0	1.80	1.80	18.80
K06			160	0.10	95.0	2.70	0.00	21.10
K06			200	-4.28	96.0	3.88	0.00	22.80
K07	4,130	4,133						
K07			20	41.47	76.3	0.00	5.60	7.60
K07			25	38.09	79.7	0.08	5.40	8.30
K07			32	33.55	81.6	0.12	5.20	9.20
K07			40	28.57	82.8	0.21	5.00	10.30
K07			50	23.59	83.8	0.29	4.70	11.50
K07			63	23.82	90.1	0.45	4.30	13.00
K07			80	19.21	91.8	0.66	3.70	14.80
K07			100	13.34	92.4	1.03	3.00	16.80
K07			125	9.20	95.0	1.57	1.80	18.80
K07			160	1.62	95.0	2.36	0.00	21.10
K07			200	-2.61	96.0	3.39	0.00	22.80
K08	4,416	4,419						
K08			20	40.89	76.3	0.00	5.60	7.60
K08			25	37.51	79.7	0.09	5.40	8.30
K08			32	32.96	81.6	0.13	5.20	9.20
K08			40	27.97	82.8	0.22	5.00	10.30
K08			50	22.99	83.8	0.31	4.70	11.50
K08			63	23.21	90.1	0.49	4.30	13.00
K08			80	18.59	91.8	0.71	3.70	14.80
K08			100	12.69	92.4	1.10	3.00	16.80
K08			125	8.52	95.0	1.68	1.80	18.80
K08			160	0.88	95.0	2.52	0.00	21.10
K08			200	-3.43	96.0	3.62	0.00	22.80
K09	4,287	4,290						
K09			20	41.15	76.3	0.00	5.60	7.60
K09			25	37.76	79.7	0.09	5.40	8.30
K09			32	33.22	81.6	0.13	5.20	9.20
K09			40	28.24	82.8	0.21	5.00	10.30
K09			50	23.25	83.8	0.30	4.70	11.50
K09			63	23.48	90.1	0.47	4.30	13.00
K09			80	18.86	91.8	0.69	3.70	14.80
K09			100	12.98	92.4	1.07	3.00	16.80
K09			125	8.82	95.0	1.63	1.80	18.80
K09			160	1.21	95.0	2.45	0.00	21.10
K09			200	-3.07	96.0	3.52	0.00	22.80
K10	6,388	6,390						
K10			20	37.69	76.3	0.00	5.60	7.60
K10			25	34.26	79.7	0.13	5.40	8.30
K10			32	29.70	81.6	0.19	5.20	9.20
K10			40	24.67	82.8	0.32	5.00	10.30
K10			50	19.64	83.8	0.45	4.70	11.50
K10			63	19.79	90.1	0.70	4.30	13.00
K10			80	15.07	91.8	1.02	3.70	14.80
K10			100	8.99	92.4	1.60	3.00	16.80
K10			125	4.56	95.0	2.43	1.80	18.80
K10			160	-3.45	95.0	3.64	0.00	21.10
K10			200	-8.25	96.0	5.24	0.00	22.80
K11	6,712	6,714						
K11			20	37.26	76.3	0.00	5.60	7.60
K11			25	33.83	79.7	0.13	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			32	29.26	81.6	0.20	5.20	9.20
K11			40	24.23	82.8	0.34	5.00	10.30
K11			50	19.19	83.8	0.47	4.70	11.50
K11			63	19.32	90.1	0.74	4.30	13.00
K11			80	14.59	91.8	1.07	3.70	14.80
K11			100	8.48	92.4	1.68	3.00	16.80
K11			125	4.01	95.0	2.55	1.80	18.80
K11			160	-4.07	95.0	3.83	0.00	21.10
K11			200	-8.94	96.0	5.51	0.00	22.80
K12	6,544	6,546						
K12			20	37.48	76.3	0.00	5.60	7.60
K12			25	34.05	79.7	0.13	5.40	8.30
K12			32	29.48	81.6	0.20	5.20	9.20
K12			40	24.45	82.8	0.33	5.00	10.30
K12			50	19.42	83.8	0.46	4.70	11.50
K12			63	19.56	90.1	0.72	4.30	13.00
K12			80	14.83	91.8	1.05	3.70	14.80
K12			100	8.74	92.4	1.64	3.00	16.80
K12			125	4.29	95.0	2.49	1.80	18.80
K12			160	-3.75	95.0	3.73	0.00	21.10
K12			200	-8.59	96.0	5.37	0.00	22.80
K13	5,779	5,781						
K13			20	38.56	76.3	0.00	5.60	7.60
K13			25	35.14	79.7	0.12	5.40	8.30
K13			32	30.59	81.6	0.17	5.20	9.20
K13			40	25.57	82.8	0.29	5.00	10.30
K13			50	20.56	83.8	0.40	4.70	11.50
K13			63	20.72	90.1	0.64	4.30	13.00
K13			80	16.03	91.8	0.92	3.70	14.80
K13			100	10.01	92.4	1.45	3.00	16.80
K13			125	5.66	95.0	2.20	1.80	18.80
K13			160	-2.24	95.0	3.30	0.00	21.10
K13			200	-6.88	96.0	4.74	0.00	22.80
K14	5,478	5,480						
K14			20	39.02	76.3	0.00	5.60	7.60
K14			25	35.61	79.7	0.11	5.40	8.30
K14			32	31.06	81.6	0.16	5.20	9.20
K14			40	26.05	82.8	0.27	5.00	10.30
K14			50	21.04	83.8	0.38	4.70	11.50
K14			63	21.22	90.1	0.60	4.30	13.00
K14			80	16.55	91.8	0.88	3.70	14.80
K14			100	10.55	92.4	1.37	3.00	16.80
K14			125	6.24	95.0	2.08	1.80	18.80
K14			160	-1.60	95.0	3.12	0.00	21.10
K14			200	-6.17	96.0	4.49	0.00	22.80
Sum								
Sum			20	51.44				
Sum			25	48.05				
Sum			32	43.50				
Sum			40	38.50				
Sum			50	33.58				
Sum			63	33.63				
Sum			80	29.05				
Sum			100	23.19				
Sum			125	18.95				
Sum			160	11.46				
Sum			200	7.05				

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

Noise sensitive area: O Noise sensitive point: Finnish normal frequency - User defined (258)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	1,679	1,687						
Extension WTG 01			20	44.76	71.8	0.00	5.60	7.60
Extension WTG 01			25	41.42	75.2	0.03	5.40	8.30
Extension WTG 01			32	36.91	77.1	0.05	5.20	9.20
Extension WTG 01			40	31.97	78.3	0.08	5.00	10.30
Extension WTG 01			50	28.04	80.3	0.12	4.70	11.50
Extension WTG 01			63	26.37	84.6	0.19	4.30	13.00
Extension WTG 01			80	22.89	87.3	0.27	3.70	14.80
Extension WTG 01			100	18.24	88.9	0.42	3.00	16.80
Extension WTG 01			125	14.42	91.5	0.64	1.80	18.80
Extension WTG 01			160	9.30	93.5	0.96	0.00	21.10
Extension WTG 01			200	5.67	94.5	1.38	0.00	22.80
Extension WTG 02	2,416	2,421						
Extension WTG 02			20	41.62	71.8	0.00	5.60	7.60
Extension WTG 02			25	38.27	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.75	77.1	0.07	5.20	9.20
Extension WTG 02			40	28.80	78.3	0.12	5.00	10.30
Extension WTG 02			50	24.85	80.3	0.17	4.70	11.50
Extension WTG 02			63	23.15	84.6	0.27	4.30	13.00
Extension WTG 02			80	19.63	87.3	0.39	3.70	14.80
Extension WTG 02			100	14.91	88.9	0.61	3.00	16.80
Extension WTG 02			125	11.00	91.5	0.92	1.80	18.80
Extension WTG 02			160	5.74	93.5	1.38	0.00	21.10
Extension WTG 02			200	1.93	94.5	1.99	0.00	22.80
K01	4,780	4,782						
K01			20	40.21	76.3	0.00	5.60	7.60
K01			25	36.81	79.7	0.10	5.40	8.30
K01			32	32.26	81.6	0.14	5.20	9.20
K01			40	27.27	82.8	0.24	5.00	10.30
K01			50	22.27	83.8	0.33	4.70	11.50
K01			63	22.48	90.1	0.53	4.30	13.00
K01			80	17.84	91.8	0.77	3.70	14.80
K01			100	11.91	92.4	1.20	3.00	16.80
K01			125	7.69	95.0	1.82	1.80	18.80
K01			160	-0.02	95.0	2.73	0.00	21.10
K01			200	-4.41	96.0	3.92	0.00	22.80
K02	4,228	4,231						
K02			20	41.27	76.3	0.00	5.60	7.60
K02			25	37.89	79.7	0.08	5.40	8.30
K02			32	33.34	81.6	0.13	5.20	9.20
K02			40	28.36	82.8	0.21	5.00	10.30
K02			50	23.38	83.8	0.30	4.70	11.50
K02			63	23.61	90.1	0.47	4.30	13.00
K02			80	18.99	91.8	0.68	3.70	14.80
K02			100	13.11	92.4	1.06	3.00	16.80
K02			125	8.96	95.0	1.61	1.80	18.80
K02			160	1.36	95.0	2.41	0.00	21.10
K02			200	-2.90	96.0	3.47	0.00	22.80
K03	3,650	3,653						
K03			20	42.55	76.3	0.00	5.60	7.60
K03			25	39.17	79.7	0.07	5.40	8.30
K03			32	34.64	81.6	0.11	5.20	9.20
K03			40	29.66	82.8	0.18	5.00	10.30
K03			50	24.69	83.8	0.26	4.70	11.50
K03			63	24.95	90.1	0.40	4.30	13.00
K03			80	20.36	91.8	0.58	3.70	14.80
K03			100	14.53	92.4	0.91	3.00	16.80
K03			125	10.46	95.0	1.39	1.80	18.80
K03			160	2.97	95.0	2.08	0.00	21.10
K03			200	-1.15	96.0	3.00	0.00	22.80
K04	2,960	2,964						
K04			20	44.36	76.3	0.00	5.60	7.60
K04			25	41.00	79.7	0.06	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K04			32	36.47	81.6	0.09	5.20	9.20
K04			40	31.52	82.8	0.15	5.00	10.30
K04			50	26.56	83.8	0.21	4.70	11.50
K04			63	26.84	90.1	0.33	4.30	13.00
K04			80	22.29	91.8	0.47	3.70	14.80
K04			100	16.52	92.4	0.74	3.00	16.80
K04			125	12.54	95.0	1.13	1.80	18.80
K04			160	5.17	95.0	1.69	0.00	21.10
K04			200	1.23	96.0	2.43	0.00	22.80
K05	2,845	2,849						
K05			20	44.71	76.3	0.00	5.60	7.60
K05			25	41.35	79.7	0.06	5.40	8.30
K05			32	36.82	81.6	0.09	5.20	9.20
K05			40	31.86	82.8	0.14	5.00	10.30
K05			50	26.91	83.8	0.20	4.70	11.50
K05			63	27.19	90.1	0.31	4.30	13.00
K05			80	22.65	91.8	0.46	3.70	14.80
K05			100	16.89	92.4	0.71	3.00	16.80
K05			125	12.92	95.0	1.08	1.80	18.80
K05			160	5.58	95.0	1.62	0.00	21.10
K05			200	1.67	96.0	2.34	0.00	22.80
K06	4,652	4,654						
K06			20	40.44	76.3	0.00	5.60	7.60
K06			25	37.05	79.7	0.09	5.40	8.30
K06			32	32.50	81.6	0.14	5.20	9.20
K06			40	27.51	82.8	0.23	5.00	10.30
K06			50	22.52	83.8	0.33	4.70	11.50
K06			63	22.73	90.1	0.51	4.30	13.00
K06			80	18.10	91.8	0.74	3.70	14.80
K06			100	12.18	92.4	1.16	3.00	16.80
K06			125	7.97	95.0	1.77	1.80	18.80
K06			160	0.29	95.0	2.65	0.00	21.10
K06			200	-4.07	96.0	3.82	0.00	22.80
K07	4,504	4,506						
K07			20	40.72	76.3	0.00	5.60	7.60
K07			25	37.33	79.7	0.09	5.40	8.30
K07			32	32.79	81.6	0.14	5.20	9.20
K07			40	27.80	82.8	0.23	5.00	10.30
K07			50	22.81	83.8	0.32	4.70	11.50
K07			63	23.03	90.1	0.50	4.30	13.00
K07			80	18.40	91.8	0.72	3.70	14.80
K07			100	12.50	92.4	1.13	3.00	16.80
K07			125	8.31	95.0	1.71	1.80	18.80
K07			160	0.65	95.0	2.57	0.00	21.10
K07			200	-3.67	96.0	3.70	0.00	22.80
K08	3,878	3,880						
K08			20	42.02	76.3	0.00	5.60	7.60
K08			25	38.65	79.7	0.08	5.40	8.30
K08			32	34.11	81.6	0.12	5.20	9.20
K08			40	29.13	82.8	0.19	5.00	10.30
K08			50	24.15	83.8	0.27	4.70	11.50
K08			63	24.40	90.1	0.43	4.30	13.00
K08			80	19.80	91.8	0.62	3.70	14.80
K08			100	13.95	92.4	0.97	3.00	16.80
K08			125	9.85	95.0	1.47	1.80	18.80
K08			160	2.31	95.0	2.21	0.00	21.10
K08			200	-1.86	96.0	3.18	0.00	22.80
K09	3,419	3,422						
K09			20	43.11	76.3	0.00	5.60	7.60
K09			25	39.75	79.7	0.07	5.40	8.30
K09			32	35.21	81.6	0.10	5.20	9.20
K09			40	30.24	82.8	0.17	5.00	10.30
K09			50	25.27	83.8	0.24	4.70	11.50
K09			63	25.54	90.1	0.38	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			80	20.97	91.8	0.55	3.70	14.80
K09			100	15.16	92.4	0.86	3.00	16.80
K09			125	11.11	95.0	1.30	1.80	18.80
K09			160	3.66	95.0	1.95	0.00	21.10
K09			200	-0.39	96.0	2.81	0.00	22.80
K10	5,991	5,992						
K10			20	38.25	76.3	0.00	5.60	7.60
K10			25	34.83	79.7	0.12	5.40	8.30
K10			32	30.27	81.6	0.18	5.20	9.20
K10			40	25.25	82.8	0.30	5.00	10.30
K10			50	20.23	83.8	0.42	4.70	11.50
K10			63	20.39	90.1	0.66	4.30	13.00
K10			80	15.69	91.8	0.96	3.70	14.80
K10			100	9.65	92.4	1.50	3.00	16.80
K10			125	5.27	95.0	2.28	1.80	18.80
K10			160	-2.67	95.0	3.42	0.00	21.10
K10			200	-7.37	96.0	4.91	0.00	22.80
K11	6,620	6,621						
K11			20	37.38	76.3	0.00	5.60	7.60
K11			25	33.95	79.7	0.13	5.40	8.30
K11			32	29.38	81.6	0.20	5.20	9.20
K11			40	24.35	82.8	0.33	5.00	10.30
K11			50	19.32	83.8	0.46	4.70	11.50
K11			63	19.45	90.1	0.73	4.30	13.00
K11			80	14.72	91.8	1.06	3.70	14.80
K11			100	8.63	92.4	1.66	3.00	16.80
K11			125	4.17	95.0	2.52	1.80	18.80
K11			160	-3.89	95.0	3.77	0.00	21.10
K11			200	-8.75	96.0	5.43	0.00	22.80
K12	6,996	6,997						
K12			20	36.90	76.3	0.00	5.60	7.60
K12			25	33.46	79.7	0.14	5.40	8.30
K12			32	28.89	81.6	0.21	5.20	9.20
K12			40	23.85	82.8	0.35	5.00	10.30
K12			50	18.81	83.8	0.49	4.70	11.50
K12			63	18.93	90.1	0.77	4.30	13.00
K12			80	14.18	91.8	1.12	3.70	14.80
K12			100	8.05	92.4	1.75	3.00	16.80
K12			125	3.54	95.0	2.66	1.80	18.80
K12			160	-4.59	95.0	3.99	0.00	21.10
K12			200	-9.54	96.0	5.74	0.00	22.80
K13	6,102	6,104						
K13			20	38.09	76.3	0.00	5.60	7.60
K13			25	34.67	79.7	0.12	5.40	8.30
K13			32	30.10	81.6	0.18	5.20	9.20
K13			40	25.08	82.8	0.31	5.00	10.30
K13			50	20.06	83.8	0.43	4.70	11.50
K13			63	20.22	90.1	0.67	4.30	13.00
K13			80	15.51	91.8	0.98	3.70	14.80
K13			100	9.46	92.4	1.53	3.00	16.80
K13			125	5.07	95.0	2.32	1.80	18.80
K13			160	-2.89	95.0	3.48	0.00	21.10
K13			200	-7.62	96.0	5.01	0.00	22.80
K14	5,451	5,453						
K14			20	39.07	76.3	0.00	5.60	7.60
K14			25	35.66	79.7	0.11	5.40	8.30
K14			32	31.10	81.6	0.16	5.20	9.20
K14			40	26.10	82.8	0.27	5.00	10.30
K14			50	21.09	83.8	0.38	4.70	11.50
K14			63	21.27	90.1	0.60	4.30	13.00
K14			80	16.60	91.8	0.87	3.70	14.80
K14			100	10.60	92.4	1.36	3.00	16.80
K14			125	6.30	95.0	2.07	1.80	18.80
K14			160	-1.54	95.0	3.11	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
WTG								
K14			200	-6.10	96.0	4.47	0.00	22.80
Sum								
Sum			20	53.69				
Sum			25	50.32				
Sum			32	45.78				
Sum			40	40.81				
Sum			50	36.05				
Sum			63	35.91				
Sum			80	31.51				
Sum			100	25.92				
Sum			125	21.87				
Sum			160	15.09				
Sum			200	11.12				

Noise sensitive area: P Noise sensitive point: Finnish normal frequency - User defined (255)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
WTG								
Extension WTG 01	2,364	2,370						
Extension WTG 01			20	41.81	71.8	0.00	5.60	7.60
Extension WTG 01			25	38.46	75.2	0.05	5.40	8.30
Extension WTG 01			32	33.94	77.1	0.07	5.20	9.20
Extension WTG 01			40	28.99	78.3	0.12	5.00	10.30
Extension WTG 01			50	25.04	80.3	0.17	4.70	11.50
Extension WTG 01			63	23.35	84.6	0.26	4.30	13.00
Extension WTG 01			80	19.83	87.3	0.38	3.70	14.80
Extension WTG 01			100	15.11	88.9	0.59	3.00	16.80
Extension WTG 01			125	11.21	91.5	0.90	1.80	18.80
Extension WTG 01			160	5.96	93.5	1.35	0.00	21.10
Extension WTG 01			200	2.16	94.5	1.94	0.00	22.80
Extension WTG 02	2,352	2,358						
Extension WTG 02			20	41.85	71.8	0.00	5.60	7.60
Extension WTG 02			25	38.50	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.98	77.1	0.07	5.20	9.20
Extension WTG 02			40	29.03	78.3	0.12	5.00	10.30
Extension WTG 02			50	25.08	80.3	0.17	4.70	11.50
Extension WTG 02			63	23.39	84.6	0.26	4.30	13.00
Extension WTG 02			80	19.87	87.3	0.38	3.70	14.80
Extension WTG 02			100	15.16	88.9	0.59	3.00	16.80
Extension WTG 02			125	11.25	91.5	0.90	1.80	18.80
Extension WTG 02			160	6.01	93.5	1.34	0.00	21.10
Extension WTG 02			200	2.22	94.5	1.93	0.00	22.80
K01	4,586	4,588						
K01			20	40.57	76.3	0.00	5.60	7.60
K01			25	37.18	79.7	0.09	5.40	8.30
K01			32	32.63	81.6	0.14	5.20	9.20
K01			40	27.64	82.8	0.23	5.00	10.30
K01			50	22.65	83.8	0.32	4.70	11.50
K01			63	22.86	90.1	0.50	4.30	13.00
K01			80	18.23	91.8	0.73	3.70	14.80
K01			100	12.32	92.4	1.15	3.00	16.80
K01			125	8.12	95.0	1.74	1.80	18.80
K01			160	0.45	95.0	2.62	0.00	21.10
K01			200	-3.90	96.0	3.76	0.00	22.80
K02	4,097	4,100						
K02			20	41.54	76.3	0.00	5.60	7.60
K02			25	38.16	79.7	0.08	5.40	8.30
K02			32	33.62	81.6	0.12	5.20	9.20
K02			40	28.64	82.8	0.20	5.00	10.30
K02			50	23.66	83.8	0.29	4.70	11.50
K02			63	23.89	90.1	0.45	4.30	13.00
K02			80	19.29	91.8	0.66	3.70	14.80
K02			100	13.42	92.4	1.02	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			125	9.29	95.0	1.56	1.80	18.80
K02			160	1.71	95.0	2.34	0.00	21.10
K02			200	-2.52	96.0	3.36	0.00	22.80
K03	3,758	3,761						
K03			20	42.29	76.3	0.00	5.60	7.60
K03			25	38.92	79.7	0.08	5.40	8.30
K03			32	34.38	81.6	0.11	5.20	9.20
K03			40	29.41	82.8	0.19	5.00	10.30
K03			50	24.43	83.8	0.26	4.70	11.50
K03			63	24.68	90.1	0.41	4.30	13.00
K03			80	20.09	91.8	0.60	3.70	14.80
K03			100	14.25	92.4	0.94	3.00	16.80
K03			125	10.17	95.0	1.43	1.80	18.80
K03			160	2.65	95.0	2.14	0.00	21.10
K03			200	-1.49	96.0	3.08	0.00	22.80
K04	2,949	2,953						
K04			20	44.39	76.3	0.00	5.60	7.60
K04			25	41.03	79.7	0.06	5.40	8.30
K04			32	36.51	81.6	0.09	5.20	9.20
K04			40	31.55	82.8	0.15	5.00	10.30
K04			50	26.59	83.8	0.21	4.70	11.50
K04			63	26.87	90.1	0.32	4.30	13.00
K04			80	22.32	91.8	0.47	3.70	14.80
K04			100	16.56	92.4	0.74	3.00	16.80
K04			125	12.57	95.0	1.12	1.80	18.80
K04			160	5.21	95.0	1.68	0.00	21.10
K04			200	1.27	96.0	2.42	0.00	22.80
K05	3,374	3,378						
K05			20	43.23	76.3	0.00	5.60	7.60
K05			25	39.86	79.7	0.07	5.40	8.30
K05			32	35.33	81.6	0.10	5.20	9.20
K05			40	30.36	82.8	0.17	5.00	10.30
K05			50	25.39	83.8	0.24	4.70	11.50
K05			63	25.66	90.1	0.37	4.30	13.00
K05			80	21.09	91.8	0.54	3.70	14.80
K05			100	15.28	92.4	0.84	3.00	16.80
K05			125	11.24	95.0	1.28	1.80	18.80
K05			160	3.80	95.0	1.93	0.00	21.10
K05			200	-0.24	96.0	2.77	0.00	22.80
K06	4,038	4,041						
K06			20	41.67	76.3	0.00	5.60	7.60
K06			25	38.29	79.7	0.08	5.40	8.30
K06			32	33.75	81.6	0.12	5.20	9.20
K06			40	28.77	82.8	0.20	5.00	10.30
K06			50	23.79	83.8	0.28	4.70	11.50
K06			63	24.03	90.1	0.44	4.30	13.00
K06			80	19.42	91.8	0.65	3.70	14.80
K06			100	13.56	92.4	1.01	3.00	16.80
K06			125	9.43	95.0	1.54	1.80	18.80
K06			160	1.87	95.0	2.30	0.00	21.10
K06			200	-2.34	96.0	3.31	0.00	22.80
K07	3,610	3,614						
K07			20	42.64	76.3	0.00	5.60	7.60
K07			25	39.27	79.7	0.07	5.40	8.30
K07			32	34.73	81.6	0.11	5.20	9.20
K07			40	29.76	82.8	0.18	5.00	10.30
K07			50	24.79	83.8	0.25	4.70	11.50
K07			63	25.04	90.1	0.40	4.30	13.00
K07			80	20.46	91.8	0.58	3.70	14.80
K07			100	14.64	92.4	0.90	3.00	16.80
K07			125	10.57	95.0	1.37	1.80	18.80
K07			160	3.08	95.0	2.06	0.00	21.10
K07			200	-1.02	96.0	2.96	0.00	22.80
K08	3,420	3,423						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			20	43.11	76.3	0.00	5.60	7.60
K08			25	39.74	79.7	0.07	5.40	8.30
K08			32	35.21	81.6	0.10	5.20	9.20
K08			40	30.24	82.8	0.17	5.00	10.30
K08			50	25.27	83.8	0.24	4.70	11.50
K08			63	25.54	90.1	0.38	4.30	13.00
K08			80	20.96	91.8	0.55	3.70	14.80
K08			100	15.16	92.4	0.86	3.00	16.80
K08			125	11.11	95.0	1.30	1.80	18.80
K08			160	3.66	95.0	1.95	0.00	21.10
K08			200	-0.40	96.0	2.81	0.00	22.80
K09	3,088	3,091						
K09			20	44.00	76.3	0.00	5.60	7.60
K09			25	40.64	79.7	0.06	5.40	8.30
K09			32	36.10	81.6	0.09	5.20	9.20
K09			40	31.14	82.8	0.15	5.00	10.30
K09			50	26.18	83.8	0.22	4.70	11.50
K09			63	26.46	90.1	0.34	4.30	13.00
K09			80	21.90	91.8	0.49	3.70	14.80
K09			100	16.12	92.4	0.77	3.00	16.80
K09			125	12.12	95.0	1.17	1.80	18.80
K09			160	4.73	95.0	1.76	0.00	21.10
K09			200	0.76	96.0	2.53	0.00	22.80
K10	5,693	5,695						
K10			20	38.69	76.3	0.00	5.60	7.60
K10			25	35.28	79.7	0.11	5.40	8.30
K10			32	30.72	81.6	0.17	5.20	9.20
K10			40	25.71	82.8	0.28	5.00	10.30
K10			50	20.69	83.8	0.40	4.70	11.50
K10			63	20.86	90.1	0.63	4.30	13.00
K10			80	16.18	91.8	0.91	3.70	14.80
K10			100	10.17	92.4	1.42	3.00	16.80
K10			125	5.83	95.0	2.16	1.80	18.80
K10			160	-2.06	95.0	3.25	0.00	21.10
K10			200	-6.68	96.0	4.67	0.00	22.80
K11	6,197	6,199						
K11			20	37.95	76.3	0.00	5.60	7.60
K11			25	34.53	79.7	0.12	5.40	8.30
K11			32	29.97	81.6	0.19	5.20	9.20
K11			40	24.94	82.8	0.31	5.00	10.30
K11			50	19.92	83.8	0.43	4.70	11.50
K11			63	20.07	90.1	0.68	4.30	13.00
K11			80	15.36	91.8	0.99	3.70	14.80
K11			100	9.30	92.4	1.55	3.00	16.80
K11			125	4.90	95.0	2.36	1.80	18.80
K11			160	-3.08	95.0	3.53	0.00	21.10
K11			200	-7.83	96.0	5.08	0.00	22.80
K12	6,309	6,311						
K12			20	37.80	76.3	0.00	5.60	7.60
K12			25	34.37	79.7	0.13	5.40	8.30
K12			32	29.81	81.6	0.19	5.20	9.20
K12			40	24.78	82.8	0.32	5.00	10.30
K12			50	19.76	83.8	0.44	4.70	11.50
K12			63	19.90	90.1	0.69	4.30	13.00
K12			80	15.19	91.8	1.01	3.70	14.80
K12			100	9.12	92.4	1.58	3.00	16.80
K12			125	4.70	95.0	2.40	1.80	18.80
K12			160	-3.30	95.0	3.60	0.00	21.10
K12			200	-8.08	96.0	5.18	0.00	22.80
K13	5,421	5,423						
K13			20	39.11	76.3	0.00	5.60	7.60
K13			25	35.71	79.7	0.11	5.40	8.30
K13			32	31.15	81.6	0.16	5.20	9.20
K13			40	26.14	82.8	0.27	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K13			50	21.13	83.8	0.38	4.70	11.50
K13			63	21.32	90.1	0.60	4.30	13.00
K13			80	16.65	91.8	0.87	3.70	14.80
K13			100	10.66	92.4	1.36	3.00	16.80
K13			125	6.35	95.0	2.06	1.80	18.80
K13			160	-1.48	95.0	3.09	0.00	21.10
K13			200	-6.03	96.0	4.45	0.00	22.80
K14	4,902	4,904						
K14			20	39.99	76.3	0.00	5.60	7.60
K14			25	36.59	79.7	0.10	5.40	8.30
K14			32	32.04	81.6	0.15	5.20	9.20
K14			40	27.04	82.8	0.25	5.00	10.30
K14			50	22.05	83.8	0.34	4.70	11.50
K14			63	22.25	90.1	0.54	4.30	13.00
K14			80	17.60	91.8	0.78	3.70	14.80
K14			100	11.66	92.4	1.23	3.00	16.80
K14			125	7.42	95.0	1.86	1.80	18.80
K14			160	-0.31	95.0	2.80	0.00	21.10
K14			200	-4.73	96.0	4.02	0.00	22.80
Sum								
Sum			20	53.77				
Sum			25	50.39				
Sum			32	45.86				
Sum			40	40.88				
Sum			50	36.05				
Sum			63	36.04				
Sum			80	31.58				
Sum			100	25.90				
Sum			125	21.83				
Sum			160	14.80				
Sum			200	10.75				

Noise sensitive area: Q Noise sensitive point: Finnish normal frequency - User defined (289)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,335	2,343						
Extension WTG 01			20	41.91	71.8	0.00	5.60	7.60
Extension WTG 01			25	38.56	75.2	0.05	5.40	8.30
Extension WTG 01			32	34.04	77.1	0.07	5.20	9.20
Extension WTG 01			40	29.09	78.3	0.12	5.00	10.30
Extension WTG 01			50	25.14	80.3	0.16	4.70	11.50
Extension WTG 01			63	23.45	84.6	0.26	4.30	13.00
Extension WTG 01			80	19.93	87.3	0.37	3.70	14.80
Extension WTG 01			100	15.22	88.9	0.59	3.00	16.80
Extension WTG 01			125	11.32	91.5	0.89	1.80	18.80
Extension WTG 01			160	6.07	93.5	1.34	0.00	21.10
Extension WTG 01			200	2.28	94.5	1.92	0.00	22.80
Extension WTG 02	3,176	3,181						
Extension WTG 02			20	39.25	71.8	0.00	5.60	7.60
Extension WTG 02			25	35.88	75.2	0.06	5.40	8.30
Extension WTG 02			32	31.35	77.1	0.10	5.20	9.20
Extension WTG 02			40	26.39	78.3	0.16	5.00	10.30
Extension WTG 02			50	22.43	80.3	0.22	4.70	11.50
Extension WTG 02			63	20.70	84.6	0.35	4.30	13.00
Extension WTG 02			80	17.14	87.3	0.51	3.70	14.80
Extension WTG 02			100	12.35	88.9	0.80	3.00	16.80
Extension WTG 02			125	8.34	91.5	1.21	1.80	18.80
Extension WTG 02			160	2.93	93.5	1.81	0.00	21.10
Extension WTG 02			200	-1.06	94.5	2.61	0.00	22.80
K01	5,124	5,127						
K01			20	39.60	76.3	0.00	5.60	7.60
K01			25	36.20	79.7	0.10	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K01			32	31.65	81.6	0.15	5.20	9.20
K01			40	26.65	82.8	0.26	5.00	10.30
K01			50	21.64	83.8	0.36	4.70	11.50
K01			63	21.84	90.1	0.56	4.30	13.00
K01			80	17.18	91.8	0.82	3.70	14.80
K01			100	11.22	92.4	1.28	3.00	16.80
K01			125	6.96	95.0	1.95	1.80	18.80
K01			160	-0.82	95.0	2.92	0.00	21.10
K01			200	-5.30	96.0	4.20	0.00	22.80
K02	4,605	4,608						
K02			20	40.53	76.3	0.00	5.60	7.60
K02			25	37.14	79.7	0.09	5.40	8.30
K02			32	32.59	81.6	0.14	5.20	9.20
K02			40	27.60	82.8	0.23	5.00	10.30
K02			50	22.61	83.8	0.32	4.70	11.50
K02			63	22.82	90.1	0.51	4.30	13.00
K02			80	18.19	91.8	0.74	3.70	14.80
K02			100	12.28	92.4	1.15	3.00	16.80
K02			125	8.08	95.0	1.75	1.80	18.80
K02			160	0.40	95.0	2.63	0.00	21.10
K02			200	-3.95	96.0	3.78	0.00	22.80
K03	3,973	3,977						
K03			20	41.81	76.3	0.00	5.60	7.60
K03			25	38.43	79.7	0.08	5.40	8.30
K03			32	33.89	81.6	0.12	5.20	9.20
K03			40	28.91	82.8	0.20	5.00	10.30
K03			50	23.93	83.8	0.28	4.70	11.50
K03			63	24.17	90.1	0.44	4.30	13.00
K03			80	19.57	91.8	0.64	3.70	14.80
K03			100	13.72	92.4	0.99	3.00	16.80
K03			125	9.60	95.0	1.51	1.80	18.80
K03			160	2.04	95.0	2.27	0.00	21.10
K03			200	-2.15	96.0	3.26	0.00	22.80
K04	3,519	3,523						
K04			20	42.86	76.3	0.00	5.60	7.60
K04			25	39.49	79.7	0.07	5.40	8.30
K04			32	34.96	81.6	0.11	5.20	9.20
K04			40	29.99	82.8	0.18	5.00	10.30
K04			50	25.02	83.8	0.25	4.70	11.50
K04			63	25.28	90.1	0.39	4.30	13.00
K04			80	20.70	91.8	0.56	3.70	14.80
K04			100	14.88	92.4	0.88	3.00	16.80
K04			125	10.82	95.0	1.34	1.80	18.80
K04			160	3.35	95.0	2.01	0.00	21.10
K04			200	-0.73	96.0	2.89	0.00	22.80
K05	3,078	3,082						
K05			20	44.02	76.3	0.00	5.60	7.60
K05			25	40.66	79.7	0.06	5.40	8.30
K05			32	36.13	81.6	0.09	5.20	9.20
K05			40	31.17	82.8	0.15	5.00	10.30
K05			50	26.21	83.8	0.22	4.70	11.50
K05			63	26.48	90.1	0.34	4.30	13.00
K05			80	21.93	91.8	0.49	3.70	14.80
K05			100	16.15	92.4	0.77	3.00	16.80
K05			125	12.15	95.0	1.17	1.80	18.80
K05			160	4.77	95.0	1.76	0.00	21.10
K05			200	0.79	96.0	2.53	0.00	22.80
K06	5,263	5,266						
K06			20	39.37	76.3	0.00	5.60	7.60
K06			25	35.97	79.7	0.11	5.40	8.30
K06			32	31.41	81.6	0.16	5.20	9.20
K06			40	26.41	82.8	0.26	5.00	10.30
K06			50	21.40	83.8	0.37	4.70	11.50
K06			63	21.59	90.1	0.58	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			80	16.93	91.8	0.84	3.70	14.80
K06			100	10.95	92.4	1.32	3.00	16.80
K06			125	6.67	95.0	2.00	1.80	18.80
K06			160	-1.13	95.0	3.00	0.00	21.10
K06			200	-5.65	96.0	4.32	0.00	22.80
K07	5,285	5,288						
K07			20	39.33	76.3	0.00	5.60	7.60
K07			25	35.93	79.7	0.11	5.40	8.30
K07			32	31.38	81.6	0.16	5.20	9.20
K07			40	26.37	82.8	0.26	5.00	10.30
K07			50	21.36	83.8	0.37	4.70	11.50
K07			63	21.55	90.1	0.58	4.30	13.00
K07			80	16.89	91.8	0.85	3.70	14.80
K07			100	10.91	92.4	1.32	3.00	16.80
K07			125	6.63	95.0	2.01	1.80	18.80
K07			160	-1.18	95.0	3.01	0.00	21.10
K07			200	-5.70	96.0	4.34	0.00	22.80
K08	4,503	4,506						
K08			20	40.72	76.3	0.00	5.60	7.60
K08			25	37.33	79.7	0.09	5.40	8.30
K08			32	32.79	81.6	0.14	5.20	9.20
K08			40	27.80	82.8	0.23	5.00	10.30
K08			50	22.81	83.8	0.32	4.70	11.50
K08			63	23.03	90.1	0.50	4.30	13.00
K08			80	18.40	91.8	0.72	3.70	14.80
K08			100	12.50	92.4	1.13	3.00	16.80
K08			125	8.31	95.0	1.71	1.80	18.80
K08			160	0.66	95.0	2.57	0.00	21.10
K08			200	-3.67	96.0	3.70	0.00	22.80
K09	4,056	4,059						
K09			20	41.63	76.3	0.00	5.60	7.60
K09			25	38.25	79.7	0.08	5.40	8.30
K09			32	33.71	81.6	0.12	5.20	9.20
K09			40	28.73	82.8	0.20	5.00	10.30
K09			50	23.75	83.8	0.28	4.70	11.50
K09			63	23.98	90.1	0.45	4.30	13.00
K09			80	19.38	91.8	0.65	3.70	14.80
K09			100	13.52	92.4	1.01	3.00	16.80
K09			125	9.39	95.0	1.54	1.80	18.80
K09			160	1.82	95.0	2.31	0.00	21.10
K09			200	-2.40	96.0	3.33	0.00	22.80
K10	6,285	6,287						
K10			20	37.83	76.3	0.00	5.60	7.60
K10			25	34.40	79.7	0.13	5.40	8.30
K10			32	29.84	81.6	0.19	5.20	9.20
K10			40	24.82	82.8	0.31	5.00	10.30
K10			50	19.79	83.8	0.44	4.70	11.50
K10			63	19.94	90.1	0.69	4.30	13.00
K10			80	15.22	91.8	1.01	3.70	14.80
K10			100	9.16	92.4	1.57	3.00	16.80
K10			125	4.74	95.0	2.39	1.80	18.80
K10			160	-3.25	95.0	3.58	0.00	21.10
K10			200	-8.02	96.0	5.16	0.00	22.80
K11	6,950	6,952						
K11			20	36.96	76.3	0.00	5.60	7.60
K11			25	33.52	79.7	0.14	5.40	8.30
K11			32	28.95	81.6	0.21	5.20	9.20
K11			40	23.91	82.8	0.35	5.00	10.30
K11			50	18.87	83.8	0.49	4.70	11.50
K11			63	18.99	90.1	0.76	4.30	13.00
K11			80	14.25	91.8	1.11	3.70	14.80
K11			100	8.12	92.4	1.74	3.00	16.80
K11			125	3.62	95.0	2.64	1.80	18.80
K11			160	-4.51	95.0	3.96	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			200	-9.44	96.0	5.70	0.00	22.80
K12	7,470	7,472						
K12			20	36.33	76.3	0.00	5.60	7.60
K12			25	32.88	79.7	0.15	5.40	8.30
K12			32	28.31	81.6	0.22	5.20	9.20
K12			40	23.26	82.8	0.37	5.00	10.30
K12			50	18.21	83.8	0.52	4.70	11.50
K12			63	18.31	90.1	0.82	4.30	13.00
K12			80	13.54	91.8	1.20	3.70	14.80
K12			100	7.36	92.4	1.87	3.00	16.80
K12			125	2.79	95.0	2.84	1.80	18.80
K12			160	-5.43	95.0	4.26	0.00	21.10
K12			200	-10.50	96.0	6.13	0.00	22.80
K13	6,627	6,629						
K13			20	37.37	76.3	0.00	5.60	7.60
K13			25	33.94	79.7	0.13	5.40	8.30
K13			32	29.37	81.6	0.20	5.20	9.20
K13			40	24.34	82.8	0.33	5.00	10.30
K13			50	19.31	83.8	0.46	4.70	11.50
K13			63	19.44	90.1	0.73	4.30	13.00
K13			80	14.71	91.8	1.06	3.70	14.80
K13			100	8.61	92.4	1.66	3.00	16.80
K13			125	4.15	95.0	2.52	1.80	18.80
K13			160	-3.91	95.0	3.78	0.00	21.10
K13			200	-8.76	96.0	5.44	0.00	22.80
K14	5,945	5,948						
K14			20	38.31	76.3	0.00	5.60	7.60
K14			25	34.89	79.7	0.12	5.40	8.30
K14			32	30.33	81.6	0.18	5.20	9.20
K14			40	25.32	82.8	0.30	5.00	10.30
K14			50	20.30	83.8	0.42	4.70	11.50
K14			63	20.46	90.1	0.65	4.30	13.00
K14			80	15.76	91.8	0.95	3.70	14.80
K14			100	9.73	92.4	1.49	3.00	16.80
K14			125	5.35	95.0	2.26	1.80	18.80
K14			160	-2.58	95.0	3.39	0.00	21.10
K14			200	-7.26	96.0	4.88	0.00	22.80
Sum								
Sum			20	52.44				
Sum			25	49.05				
Sum			32	44.51				
Sum			40	39.52				
Sum			50	34.69				
Sum			63	34.64				
Sum			80	30.15				
Sum			100	24.44				
Sum			125	20.31				
Sum			160	13.22				
Sum			200	9.06				

Noise sensitive area: R Noise sensitive point: Finnish normal frequency - User defined (262)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	4,786	4,789						
Extension WTG 01			20	35.69	71.8	0.00	5.60	7.60
Extension WTG 01			25	32.30	75.2	0.10	5.40	8.30
Extension WTG 01			32	27.75	77.1	0.14	5.20	9.20
Extension WTG 01			40	22.75	78.3	0.24	5.00	10.30
Extension WTG 01			50	18.76	80.3	0.34	4.70	11.50
Extension WTG 01			63	16.97	84.6	0.53	4.30	13.00
Extension WTG 01			80	13.33	87.3	0.77	3.70	14.80
Extension WTG 01			100	8.40	88.9	1.20	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01			125	4.17	91.5	1.82	1.80	18.80
Extension WTG 01			160	-1.54	93.5	2.73	0.00	21.10
Extension WTG 01			200	-5.93	94.5	3.93	0.00	22.80
Extension WTG 02	4,276	4,279						
Extension WTG 02			20	36.67	71.8	0.00	5.60	7.60
Extension WTG 02			25	33.29	75.2	0.09	5.40	8.30
Extension WTG 02			32	28.74	77.1	0.13	5.20	9.20
Extension WTG 02			40	23.76	78.3	0.21	5.00	10.30
Extension WTG 02			50	19.77	80.3	0.30	4.70	11.50
Extension WTG 02			63	18.00	84.6	0.47	4.30	13.00
Extension WTG 02			80	14.39	87.3	0.68	3.70	14.80
Extension WTG 02			100	9.50	88.9	1.07	3.00	16.80
Extension WTG 02			125	5.35	91.5	1.63	1.80	18.80
Extension WTG 02			160	-0.27	93.5	2.44	0.00	21.10
Extension WTG 02			200	-4.54	94.5	3.51	0.00	22.80
K01	5,381	5,383						
K01			20	39.18	76.3	0.00	5.60	7.60
K01			25	35.77	79.7	0.11	5.40	8.30
K01			32	31.22	81.6	0.16	5.20	9.20
K01			40	26.21	82.8	0.27	5.00	10.30
K01			50	21.20	83.8	0.38	4.70	11.50
K01			63	21.39	90.1	0.59	4.30	13.00
K01			80	16.72	91.8	0.86	3.70	14.80
K01			100	10.73	92.4	1.35	3.00	16.80
K01			125	6.43	95.0	2.05	1.80	18.80
K01			160	-1.39	95.0	3.07	0.00	21.10
K01			200	-5.93	96.0	4.41	0.00	22.80
K02	5,126	5,128						
K02			20	39.60	76.3	0.00	5.60	7.60
K02			25	36.20	79.7	0.10	5.40	8.30
K02			32	31.65	81.6	0.15	5.20	9.20
K02			40	26.64	82.8	0.26	5.00	10.30
K02			50	21.64	83.8	0.36	4.70	11.50
K02			63	21.84	90.1	0.56	4.30	13.00
K02			80	17.18	91.8	0.82	3.70	14.80
K02			100	11.22	92.4	1.28	3.00	16.80
K02			125	6.95	95.0	1.95	1.80	18.80
K02			160	-0.82	95.0	2.92	0.00	21.10
K02			200	-5.30	96.0	4.21	0.00	22.80
K03	5,159	5,162						
K03			20	39.54	76.3	0.00	5.60	7.60
K03			25	36.14	79.7	0.10	5.40	8.30
K03			32	31.59	81.6	0.15	5.20	9.20
K03			40	26.59	82.8	0.26	5.00	10.30
K03			50	21.58	83.8	0.36	4.70	11.50
K03			63	21.78	90.1	0.57	4.30	13.00
K03			80	17.12	91.8	0.83	3.70	14.80
K03			100	11.15	92.4	1.29	3.00	16.80
K03			125	6.88	95.0	1.96	1.80	18.80
K03			160	-0.90	95.0	2.94	0.00	21.10
K03			200	-5.39	96.0	4.23	0.00	22.80
K04	4,584	4,587						
K04			20	40.57	76.3	0.00	5.60	7.60
K04			25	37.18	79.7	0.09	5.40	8.30
K04			32	32.63	81.6	0.14	5.20	9.20
K04			40	27.64	82.8	0.23	5.00	10.30
K04			50	22.65	83.8	0.32	4.70	11.50
K04			63	22.86	90.1	0.50	4.30	13.00
K04			80	18.24	91.8	0.73	3.70	14.80
K04			100	12.32	92.4	1.15	3.00	16.80
K04			125	8.13	95.0	1.74	1.80	18.80
K04			160	0.45	95.0	2.61	0.00	21.10
K04			200	-3.89	96.0	3.76	0.00	22.80
K05	5,287	5,289						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05	4,500	4,502	20	39.33	76.3	0.00	5.60	7.60
K05			25	35.93	79.7	0.11	5.40	8.30
K05			32	31.37	81.6	0.16	5.20	9.20
K05			40	26.37	82.8	0.26	5.00	10.30
K05			50	21.36	83.8	0.37	4.70	11.50
K05			63	21.55	90.1	0.58	4.30	13.00
K05			80	16.89	91.8	0.85	3.70	14.80
K05			100	10.91	92.4	1.32	3.00	16.80
K05			125	6.62	95.0	2.01	1.80	18.80
K05			160	-1.18	95.0	3.01	0.00	21.10
K05			200	-5.70	96.0	4.34	0.00	22.80
K06			3,877	3,880	20	40.73	76.3	0.00
K06	25	37.34			79.7	0.09	5.40	8.30
K06	32	32.80			81.6	0.14	5.20	9.20
K06	40	27.81			82.8	0.23	5.00	10.30
K06	50	22.82			83.8	0.32	4.70	11.50
K06	63	23.04			90.1	0.50	4.30	13.00
K06	80	18.41			91.8	0.72	3.70	14.80
K06	100	12.51			92.4	1.13	3.00	16.80
K06	125	8.32			95.0	1.71	1.80	18.80
K06	160	0.66			95.0	2.57	0.00	21.10
K06	200	-3.66			96.0	3.69	0.00	22.80
K07	4,356	4,359			20	42.02	76.3	0.00
K07			25	38.64	79.7	0.08	5.40	8.30
K07			32	34.11	81.6	0.12	5.20	9.20
K07			40	29.13	82.8	0.19	5.00	10.30
K07			50	24.15	83.8	0.27	4.70	11.50
K07			63	24.40	90.1	0.43	4.30	13.00
K07			80	19.80	91.8	0.62	3.70	14.80
K07			100	13.95	92.4	0.97	3.00	16.80
K07			125	9.85	95.0	1.47	1.80	18.80
K07			160	2.31	95.0	2.21	0.00	21.10
K07			200	-1.86	96.0	3.18	0.00	22.80
K08			4,336	4,339	20	41.01	76.3	0.00
K08	25	37.63			79.7	0.09	5.40	8.30
K08	32	33.08			81.6	0.13	5.20	9.20
K08	40	28.09			82.8	0.22	5.00	10.30
K08	50	23.11			83.8	0.31	4.70	11.50
K08	63	23.33			90.1	0.48	4.30	13.00
K08	80	18.71			91.8	0.70	3.70	14.80
K08	100	12.82			92.4	1.09	3.00	16.80
K08	125	8.66			95.0	1.66	1.80	18.80
K08	160	1.03			95.0	2.48	0.00	21.10
K08	200	-3.26			96.0	3.57	0.00	22.80
K09	6,068	6,070			20	41.05	76.3	0.00
K09			25	37.67	79.7	0.09	5.40	8.30
K09			32	33.12	81.6	0.13	5.20	9.20
K09			40	28.14	82.8	0.22	5.00	10.30
K09			50	23.15	83.8	0.30	4.70	11.50
K09			63	23.38	90.1	0.48	4.30	13.00
K09			80	18.76	91.8	0.69	3.70	14.80
K09			100	12.87	92.4	1.08	3.00	16.80
K09			125	8.70	95.0	1.65	1.80	18.80
K09			160	1.08	95.0	2.47	0.00	21.10
K09			200	-3.20	96.0	3.56	0.00	22.80
K10					20	38.14	76.3	0.00
K10	25	34.71			79.7	0.12	5.40	8.30
K10	32	30.15			81.6	0.18	5.20	9.20
K10	40	25.13			82.8	0.30	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K10			50	20.11	83.8	0.42	4.70	11.50
K10			63	20.27	90.1	0.67	4.30	13.00
K10			80	15.57	91.8	0.97	3.70	14.80
K10			100	9.52	92.4	1.52	3.00	16.80
K10			125	5.13	95.0	2.31	1.80	18.80
K10			160	-2.82	95.0	3.46	0.00	21.10
K10			200	-7.54	96.0	4.98	0.00	22.80
K11	6,300	6,302						
K11			20	37.81	76.3	0.00	5.60	7.60
K11			25	34.38	79.7	0.13	5.40	8.30
K11			32	29.82	81.6	0.19	5.20	9.20
K11			40	24.80	82.8	0.32	5.00	10.30
K11			50	19.77	83.8	0.44	4.70	11.50
K11			63	19.92	90.1	0.69	4.30	13.00
K11			80	15.20	91.8	1.01	3.70	14.80
K11			100	9.14	92.4	1.58	3.00	16.80
K11			125	4.72	95.0	2.39	1.80	18.80
K11			160	-3.28	95.0	3.59	0.00	21.10
K11			200	-8.06	96.0	5.17	0.00	22.80
K12	6,018	6,020						
K12			20	38.21	76.3	0.00	5.60	7.60
K12			25	34.79	79.7	0.12	5.40	8.30
K12			32	30.23	81.6	0.18	5.20	9.20
K12			40	25.21	82.8	0.30	5.00	10.30
K12			50	20.19	83.8	0.42	4.70	11.50
K12			63	20.35	90.1	0.66	4.30	13.00
K12			80	15.64	91.8	0.96	3.70	14.80
K12			100	9.60	92.4	1.51	3.00	16.80
K12			125	5.22	95.0	2.29	1.80	18.80
K12			160	-2.72	95.0	3.43	0.00	21.10
K12			200	-7.43	96.0	4.94	0.00	22.80
K13	5,337	5,339						
K13			20	39.25	76.3	0.00	5.60	7.60
K13			25	35.84	79.7	0.11	5.40	8.30
K13			32	31.29	81.6	0.16	5.20	9.20
K13			40	26.28	82.8	0.27	5.00	10.30
K13			50	21.28	83.8	0.37	4.70	11.50
K13			63	21.46	90.1	0.59	4.30	13.00
K13			80	16.80	91.8	0.85	3.70	14.80
K13			100	10.82	92.4	1.33	3.00	16.80
K13			125	6.52	95.0	2.03	1.80	18.80
K13			160	-1.29	95.0	3.04	0.00	21.10
K13			200	-5.83	96.0	4.38	0.00	22.80
K14	5,148	5,150						
K14			20	39.56	76.3	0.00	5.60	7.60
K14			25	36.16	79.7	0.10	5.40	8.30
K14			32	31.61	81.6	0.15	5.20	9.20
K14			40	26.61	82.8	0.26	5.00	10.30
K14			50	21.60	83.8	0.36	4.70	11.50
K14			63	21.80	90.1	0.57	4.30	13.00
K14			80	17.14	91.8	0.82	3.70	14.80
K14			100	11.18	92.4	1.29	3.00	16.80
K14			125	6.91	95.0	1.96	1.80	18.80
K14			160	-0.87	95.0	2.94	0.00	21.10
K14			200	-5.36	96.0	4.22	0.00	22.80
Sum								
Sum			20	51.60				
Sum			25	48.20				
Sum			32	43.65				
Sum			40	38.65				
Sum			50	33.72				
Sum			63	33.81				
Sum			80	29.22				
Sum			100	23.34				

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Sum			125	19.11				
Sum			160	11.58				
Sum			200	7.18				

Noise sensitive area: S Noise sensitive point: Finnish normal frequency - User defined (287)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	1,798	1,807						
Extension WTG 01			20	44.16	71.8	0.00	5.60	7.60
Extension WTG 01			25	40.82	75.2	0.04	5.40	8.30
Extension WTG 01			32	36.31	77.1	0.05	5.20	9.20
Extension WTG 01			40	31.37	78.3	0.09	5.00	10.30
Extension WTG 01			50	27.43	80.3	0.13	4.70	11.50
Extension WTG 01			63	25.76	84.6	0.20	4.30	13.00
Extension WTG 01			80	22.27	87.3	0.29	3.70	14.80
Extension WTG 01			100	17.61	88.9	0.45	3.00	16.80
Extension WTG 01			125	13.77	91.5	0.69	1.80	18.80
Extension WTG 01			160	8.63	93.5	1.03	0.00	21.10
Extension WTG 01			200	4.98	94.5	1.48	0.00	22.80
Extension WTG 02	2,602	2,609						
Extension WTG 02			20	40.97	71.8	0.00	5.60	7.60
Extension WTG 02			25	37.62	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.09	77.1	0.08	5.20	9.20
Extension WTG 02			40	28.14	78.3	0.13	5.00	10.30
Extension WTG 02			50	24.19	80.3	0.18	4.70	11.50
Extension WTG 02			63	22.48	84.6	0.29	4.30	13.00
Extension WTG 02			80	18.95	87.3	0.42	3.70	14.80
Extension WTG 02			100	14.22	88.9	0.65	3.00	16.80
Extension WTG 02			125	10.28	91.5	0.99	1.80	18.80
Extension WTG 02			160	4.98	93.5	1.49	0.00	21.10
Extension WTG 02			200	1.13	94.5	2.14	0.00	22.80
K01	4,379	4,382						
K01			20	40.97	76.3	0.00	5.60	7.60
K01			25	37.58	79.7	0.09	5.40	8.30
K01			32	33.04	81.6	0.13	5.20	9.20
K01			40	28.05	82.8	0.22	5.00	10.30
K01			50	23.06	83.8	0.31	4.70	11.50
K01			63	23.28	90.1	0.48	4.30	13.00
K01			80	18.67	91.8	0.70	3.70	14.80
K01			100	12.77	92.4	1.10	3.00	16.80
K01			125	8.60	95.0	1.67	1.80	18.80
K01			160	0.97	95.0	2.50	0.00	21.10
K01			200	-3.33	96.0	3.59	0.00	22.80
K02	3,872	3,875						
K02			20	42.03	76.3	0.00	5.60	7.60
K02			25	38.66	79.7	0.08	5.40	8.30
K02			32	34.12	81.6	0.12	5.20	9.20
K02			40	29.14	82.8	0.19	5.00	10.30
K02			50	24.16	83.8	0.27	4.70	11.50
K02			63	24.41	90.1	0.43	4.30	13.00
K02			80	19.81	91.8	0.62	3.70	14.80
K02			100	13.96	92.4	0.97	3.00	16.80
K02			125	9.86	95.0	1.47	1.80	18.80
K02			160	2.32	95.0	2.21	0.00	21.10
K02			200	-1.84	96.0	3.18	0.00	22.80
K03	3,239	3,243						
K03			20	43.58	76.3	0.00	5.60	7.60
K03			25	40.22	79.7	0.06	5.40	8.30
K03			32	35.68	81.6	0.10	5.20	9.20
K03			40	30.72	82.8	0.16	5.00	10.30
K03			50	25.75	83.8	0.23	4.70	11.50
K03			63	26.02	90.1	0.36	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			80	21.46	91.8	0.52	3.70	14.80
K03			100	15.67	92.4	0.81	3.00	16.80
K03			125	11.65	95.0	1.23	1.80	18.80
K03			160	4.23	95.0	1.85	0.00	21.10
K03			200	0.22	96.0	2.66	0.00	22.80
K04	2,856	2,861						
K04			20	44.67	76.3	0.00	5.60	7.60
K04			25	41.31	79.7	0.06	5.40	8.30
K04			32	36.78	81.6	0.09	5.20	9.20
K04			40	31.83	82.8	0.14	5.00	10.30
K04			50	26.87	83.8	0.20	4.70	11.50
K04			63	27.15	90.1	0.31	4.30	13.00
K04			80	22.61	91.8	0.46	3.70	14.80
K04			100	16.85	92.4	0.72	3.00	16.80
K04			125	12.88	95.0	1.09	1.80	18.80
K04			160	5.54	95.0	1.63	0.00	21.10
K04			200	1.62	96.0	2.35	0.00	22.80
K05	2,346	2,352						
K05			20	46.37	76.3	0.00	5.60	7.60
K05			25	43.02	79.7	0.05	5.40	8.30
K05			32	38.50	81.6	0.07	5.20	9.20
K05			40	33.55	82.8	0.12	5.00	10.30
K05			50	28.61	83.8	0.16	4.70	11.50
K05			63	28.91	90.1	0.26	4.30	13.00
K05			80	24.39	91.8	0.38	3.70	14.80
K05			100	18.68	92.4	0.59	3.00	16.80
K05			125	14.78	95.0	0.89	1.80	18.80
K05			160	7.53	95.0	1.34	0.00	21.10
K05			200	3.74	96.0	1.93	0.00	22.80
K06	4,576	4,579						
K06			20	40.59	76.3	0.00	5.60	7.60
K06			25	37.19	79.7	0.09	5.40	8.30
K06			32	32.65	81.6	0.14	5.20	9.20
K06			40	27.66	82.8	0.23	5.00	10.30
K06			50	22.66	83.8	0.32	4.70	11.50
K06			63	22.88	90.1	0.50	4.30	13.00
K06			80	18.25	91.8	0.73	3.70	14.80
K06			100	12.34	92.4	1.14	3.00	16.80
K06			125	8.15	95.0	1.74	1.80	18.80
K06			160	0.48	95.0	2.61	0.00	21.10
K06			200	-3.87	96.0	3.75	0.00	22.80
K07	4,650	4,654						
K07			20	40.44	76.3	0.00	5.60	7.60
K07			25	37.05	79.7	0.09	5.40	8.30
K07			32	32.50	81.6	0.14	5.20	9.20
K07			40	27.51	82.8	0.23	5.00	10.30
K07			50	22.52	83.8	0.33	4.70	11.50
K07			63	22.73	90.1	0.51	4.30	13.00
K07			80	18.10	91.8	0.74	3.70	14.80
K07			100	12.18	92.4	1.16	3.00	16.80
K07			125	7.98	95.0	1.77	1.80	18.80
K07			160	0.29	95.0	2.65	0.00	21.10
K07			200	-4.07	96.0	3.82	0.00	22.80
K08	3,833	3,837						
K08			20	42.12	76.3	0.00	5.60	7.60
K08			25	38.74	79.7	0.08	5.40	8.30
K08			32	34.21	81.6	0.12	5.20	9.20
K08			40	29.23	82.8	0.19	5.00	10.30
K08			50	24.25	83.8	0.27	4.70	11.50
K08			63	24.50	90.1	0.42	4.30	13.00
K08			80	19.91	91.8	0.61	3.70	14.80
K08			100	14.06	92.4	0.96	3.00	16.80
K08			125	9.96	95.0	1.46	1.80	18.80
K08			160	2.43	95.0	2.19	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			200	-1.73	96.0	3.15	0.00	22.80
K09	3,400	3,404						
K09			20	43.16	76.3	0.00	5.60	7.60
K09			25	39.79	79.7	0.07	5.40	8.30
K09			32	35.26	81.6	0.10	5.20	9.20
K09			40	30.29	82.8	0.17	5.00	10.30
K09			50	25.32	83.8	0.24	4.70	11.50
K09			63	25.58	90.1	0.37	4.30	13.00
K09			80	21.01	91.8	0.54	3.70	14.80
K09			100	15.21	92.4	0.85	3.00	16.80
K09			125	11.17	95.0	1.29	1.80	18.80
K09			160	3.72	95.0	1.94	0.00	21.10
K09			200	-0.33	96.0	2.79	0.00	22.80
K10	5,525	5,527						
K10			20	38.95	76.3	0.00	5.60	7.60
K10			25	35.54	79.7	0.11	5.40	8.30
K10			32	30.98	81.6	0.17	5.20	9.20
K10			40	25.97	82.8	0.28	5.00	10.30
K10			50	20.96	83.8	0.39	4.70	11.50
K10			63	21.14	90.1	0.61	4.30	13.00
K10			80	16.47	91.8	0.88	3.70	14.80
K10			100	10.47	92.4	1.38	3.00	16.80
K10			125	6.15	95.0	2.10	1.80	18.80
K10			160	-1.70	95.0	3.15	0.00	21.10
K10			200	-6.28	96.0	4.53	0.00	22.80
K11	6,192	6,194						
K11			20	37.96	76.3	0.00	5.60	7.60
K11			25	34.54	79.7	0.12	5.40	8.30
K11			32	29.97	81.6	0.19	5.20	9.20
K11			40	24.95	82.8	0.31	5.00	10.30
K11			50	19.93	83.8	0.43	4.70	11.50
K11			63	20.08	90.1	0.68	4.30	13.00
K11			80	15.37	91.8	0.99	3.70	14.80
K11			100	9.31	92.4	1.55	3.00	16.80
K11			125	4.91	95.0	2.35	1.80	18.80
K11			160	-3.07	95.0	3.53	0.00	21.10
K11			200	-7.82	96.0	5.08	0.00	22.80
K12	6,734	6,736						
K12			20	37.23	76.3	0.00	5.60	7.60
K12			25	33.80	79.7	0.13	5.40	8.30
K12			32	29.23	81.6	0.20	5.20	9.20
K12			40	24.20	82.8	0.34	5.00	10.30
K12			50	19.16	83.8	0.47	4.70	11.50
K12			63	19.29	90.1	0.74	4.30	13.00
K12			80	14.55	91.8	1.08	3.70	14.80
K12			100	8.45	92.4	1.68	3.00	16.80
K12			125	3.97	95.0	2.56	1.80	18.80
K12			160	-4.11	95.0	3.84	0.00	21.10
K12			200	-8.99	96.0	5.52	0.00	22.80
K13	5,905	5,907						
K13			20	38.37	76.3	0.00	5.60	7.60
K13			25	34.95	79.7	0.12	5.40	8.30
K13			32	30.40	81.6	0.18	5.20	9.20
K13			40	25.38	82.8	0.30	5.00	10.30
K13			50	20.36	83.8	0.41	4.70	11.50
K13			63	20.52	90.1	0.65	4.30	13.00
K13			80	15.83	91.8	0.95	3.70	14.80
K13			100	9.80	92.4	1.48	3.00	16.80
K13			125	5.43	95.0	2.24	1.80	18.80
K13			160	-2.49	95.0	3.37	0.00	21.10
K13			200	-7.17	96.0	4.84	0.00	22.80
K14	5,222	5,225						
K14			20	39.44	76.3	0.00	5.60	7.60
K14			25	36.03	79.7	0.10	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			32	31.48	81.6	0.16	5.20	9.20
K14			40	26.48	82.8	0.26	5.00	10.30
K14			50	21.47	83.8	0.37	4.70	11.50
K14			63	21.66	90.1	0.57	4.30	13.00
K14			80	17.00	91.8	0.84	3.70	14.80
K14			100	11.03	92.4	1.31	3.00	16.80
K14			125	6.75	95.0	1.99	1.80	18.80
K14			160	-1.04	95.0	2.98	0.00	21.10
K14			200	-5.55	96.0	4.28	0.00	22.80
Sum								
Sum			20	54.10				
Sum			25	50.73				
Sum			32	46.20				
Sum			40	41.23				
Sum			50	36.43				
Sum			63	36.38				
Sum			80	31.95				
Sum			100	26.32				
Sum			125	22.28				
Sum			160	15.38				
Sum			200	11.41				

Noise sensitive area: T Noise sensitive point: Finnish normal frequency - User defined (283)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	1,584	1,595						
Extension WTG 01			20	45.24	71.8	0.00	5.60	7.60
Extension WTG 01			25	41.91	75.2	0.03	5.40	8.30
Extension WTG 01			32	37.40	77.1	0.05	5.20	9.20
Extension WTG 01			40	32.46	78.3	0.08	5.00	10.30
Extension WTG 01			50	28.53	80.3	0.11	4.70	11.50
Extension WTG 01			63	26.87	84.6	0.18	4.30	13.00
Extension WTG 01			80	23.39	87.3	0.26	3.70	14.80
Extension WTG 01			100	18.75	88.9	0.40	3.00	16.80
Extension WTG 01			125	14.94	91.5	0.61	1.80	18.80
Extension WTG 01			160	9.84	93.5	0.91	0.00	21.10
Extension WTG 01			200	6.24	94.5	1.31	0.00	22.80
Extension WTG 02	2,339	2,346						
Extension WTG 02			20	41.89	71.8	0.00	5.60	7.60
Extension WTG 02			25	38.55	75.2	0.05	5.40	8.30
Extension WTG 02			32	34.02	77.1	0.07	5.20	9.20
Extension WTG 02			40	29.08	78.3	0.12	5.00	10.30
Extension WTG 02			50	25.13	80.3	0.16	4.70	11.50
Extension WTG 02			63	23.43	84.6	0.26	4.30	13.00
Extension WTG 02			80	19.92	87.3	0.38	3.70	14.80
Extension WTG 02			100	15.21	88.9	0.59	3.00	16.80
Extension WTG 02			125	11.30	91.5	0.89	1.80	18.80
Extension WTG 02			160	6.06	93.5	1.34	0.00	21.10
Extension WTG 02			200	2.27	94.5	1.92	0.00	22.80
K01	3,994	3,997						
K01			20	41.77	76.3	0.00	5.60	7.60
K01			25	38.39	79.7	0.08	5.40	8.30
K01			32	33.85	81.6	0.12	5.20	9.20
K01			40	28.87	82.8	0.20	5.00	10.30
K01			50	23.89	83.8	0.28	4.70	11.50
K01			63	24.13	90.1	0.44	4.30	13.00
K01			80	19.53	91.8	0.64	3.70	14.80
K01			100	13.67	92.4	1.00	3.00	16.80
K01			125	9.55	95.0	1.52	1.80	18.80
K01			160	1.99	95.0	2.28	0.00	21.10
K01			200	-2.21	96.0	3.28	0.00	22.80
K02	3,494	3,498						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			20	42.92	76.3	0.00	5.60	7.60
K02			25	39.55	79.7	0.07	5.40	8.30
K02			32	35.02	81.6	0.10	5.20	9.20
K02			40	30.05	82.8	0.17	5.00	10.30
K02			50	25.08	83.8	0.24	4.70	11.50
K02			63	25.34	90.1	0.38	4.30	13.00
K02			80	20.76	91.8	0.56	3.70	14.80
K02			100	14.95	92.4	0.87	3.00	16.80
K02			125	10.89	95.0	1.33	1.80	18.80
K02			160	3.43	95.0	1.99	0.00	21.10
K02			200	-0.65	96.0	2.87	0.00	22.80
K03	2,862	2,867						
K03			20	44.65	76.3	0.00	5.60	7.60
K03			25	41.29	79.7	0.06	5.40	8.30
K03			32	36.76	81.6	0.09	5.20	9.20
K03			40	31.81	82.8	0.14	5.00	10.30
K03			50	26.85	83.8	0.20	4.70	11.50
K03			63	27.14	90.1	0.32	4.30	13.00
K03			80	22.59	91.8	0.46	3.70	14.80
K03			100	16.83	92.4	0.72	3.00	16.80
K03			125	12.86	95.0	1.09	1.80	18.80
K03			160	5.52	95.0	1.63	0.00	21.10
K03			200	1.60	96.0	2.35	0.00	22.80
K04	2,530	2,535						
K04			20	45.72	76.3	0.00	5.60	7.60
K04			25	42.37	79.7	0.05	5.40	8.30
K04			32	37.84	81.6	0.08	5.20	9.20
K04			40	32.89	82.8	0.13	5.00	10.30
K04			50	27.94	83.8	0.18	4.70	11.50
K04			63	28.24	90.1	0.28	4.30	13.00
K04			80	23.71	91.8	0.41	3.70	14.80
K04			100	17.99	92.4	0.63	3.00	16.80
K04			125	14.06	95.0	0.96	1.80	18.80
K04			160	6.77	95.0	1.45	0.00	21.10
K04			200	2.94	96.0	2.08	0.00	22.80
K05	1,976	1,983						
K05			20	47.85	76.3	0.00	5.60	7.60
K05			25	44.51	79.7	0.04	5.40	8.30
K05			32	39.99	81.6	0.06	5.20	9.20
K05			40	35.05	82.8	0.10	5.00	10.30
K05			50	30.11	83.8	0.14	4.70	11.50
K05			63	30.43	90.1	0.22	4.30	13.00
K05			80	25.94	91.8	0.32	3.70	14.80
K05			100	20.26	92.4	0.50	3.00	16.80
K05			125	16.40	95.0	0.75	1.80	18.80
K05			160	9.22	95.0	1.13	0.00	21.10
K05			200	5.53	96.0	1.63	0.00	22.80
K06	4,224	4,228						
K06			20	41.28	76.3	0.00	5.60	7.60
K06			25	37.89	79.7	0.08	5.40	8.30
K06			32	33.35	81.6	0.13	5.20	9.20
K06			40	28.37	82.8	0.21	5.00	10.30
K06			50	23.38	83.8	0.30	4.70	11.50
K06			63	23.61	90.1	0.47	4.30	13.00
K06			80	19.00	91.8	0.68	3.70	14.80
K06			100	13.12	92.4	1.06	3.00	16.80
K06			125	8.97	95.0	1.61	1.80	18.80
K06			160	1.37	95.0	2.41	0.00	21.10
K06			200	-2.89	96.0	3.47	0.00	22.80
K07	4,330	4,333						
K07			20	41.06	76.3	0.00	5.60	7.60
K07			25	37.68	79.7	0.09	5.40	8.30
K07			32	33.13	81.6	0.13	5.20	9.20
K07			40	28.15	82.8	0.22	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K07			50	23.16	83.8	0.30	4.70	11.50
K07			63	23.39	90.1	0.48	4.30	13.00
K07			80	18.77	91.8	0.69	3.70	14.80
K07			100	12.88	92.4	1.08	3.00	16.80
K07			125	8.72	95.0	1.65	1.80	18.80
K07			160	1.09	95.0	2.47	0.00	21.10
K07			200	-3.19	96.0	3.55	0.00	22.80
K08	3,495	3,499						
K08			20	42.92	76.3	0.00	5.60	7.60
K08			25	39.55	79.7	0.07	5.40	8.30
K08			32	35.02	81.6	0.10	5.20	9.20
K08			40	30.05	82.8	0.17	5.00	10.30
K08			50	25.08	83.8	0.24	4.70	11.50
K08			63	25.34	90.1	0.38	4.30	13.00
K08			80	20.76	91.8	0.56	3.70	14.80
K08			100	14.95	92.4	0.87	3.00	16.80
K08			125	10.89	95.0	1.33	1.80	18.80
K08			160	3.43	95.0	1.99	0.00	21.10
K08			200	-0.65	96.0	2.87	0.00	22.80
K09	3,074	3,078						
K09			20	44.03	76.3	0.00	5.60	7.60
K09			25	40.67	79.7	0.06	5.40	8.30
K09			32	36.14	81.6	0.09	5.20	9.20
K09			40	31.18	82.8	0.15	5.00	10.30
K09			50	26.22	83.8	0.22	4.70	11.50
K09			63	26.50	90.1	0.34	4.30	13.00
K09			80	21.94	91.8	0.49	3.70	14.80
K09			100	16.16	92.4	0.77	3.00	16.80
K09			125	12.16	95.0	1.17	1.80	18.80
K09			160	4.78	95.0	1.75	0.00	21.10
K09			200	0.81	96.0	2.52	0.00	22.80
K10	5,131	5,133						
K10			20	39.59	76.3	0.00	5.60	7.60
K10			25	36.19	79.7	0.10	5.40	8.30
K10			32	31.64	81.6	0.15	5.20	9.20
K10			40	26.64	82.8	0.26	5.00	10.30
K10			50	21.63	83.8	0.36	4.70	11.50
K10			63	21.83	90.1	0.56	4.30	13.00
K10			80	17.17	91.8	0.82	3.70	14.80
K10			100	11.21	92.4	1.28	3.00	16.80
K10			125	6.94	95.0	1.95	1.80	18.80
K10			160	-0.83	95.0	2.93	0.00	21.10
K10			200	-5.32	96.0	4.21	0.00	22.80
K11	5,799	5,801						
K11			20	38.53	76.3	0.00	5.60	7.60
K11			25	35.11	79.7	0.12	5.40	8.30
K11			32	30.56	81.6	0.17	5.20	9.20
K11			40	25.54	82.8	0.29	5.00	10.30
K11			50	20.52	83.8	0.41	4.70	11.50
K11			63	20.69	90.1	0.64	4.30	13.00
K11			80	16.00	91.8	0.93	3.70	14.80
K11			100	9.98	92.4	1.45	3.00	16.80
K11			125	5.63	95.0	2.20	1.80	18.80
K11			160	-2.28	95.0	3.31	0.00	21.10
K11			200	-6.93	96.0	4.76	0.00	22.80
K12	6,351	6,353						
K12			20	37.74	76.3	0.00	5.60	7.60
K12			25	34.31	79.7	0.13	5.40	8.30
K12			32	29.75	81.6	0.19	5.20	9.20
K12			40	24.72	82.8	0.32	5.00	10.30
K12			50	19.70	83.8	0.44	4.70	11.50
K12			63	19.84	90.1	0.70	4.30	13.00
K12			80	15.12	91.8	1.02	3.70	14.80
K12			100	9.05	92.4	1.59	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			125	4.63	95.0	2.41	1.80	18.80
K12			160	-3.38	95.0	3.62	0.00	21.10
K12			200	-8.17	96.0	5.21	0.00	22.80
K13	5,531	5,534						
K13			20	38.94	76.3	0.00	5.60	7.60
K13			25	35.53	79.7	0.11	5.40	8.30
K13			32	30.97	81.6	0.17	5.20	9.20
K13			40	25.96	82.8	0.28	5.00	10.30
K13			50	20.95	83.8	0.39	4.70	11.50
K13			63	21.13	90.1	0.61	4.30	13.00
K13			80	16.45	91.8	0.89	3.70	14.80
K13			100	10.46	92.4	1.38	3.00	16.80
K13			125	6.14	95.0	2.10	1.80	18.80
K13			160	-1.71	95.0	3.15	0.00	21.10
K13			200	-6.30	96.0	4.54	0.00	22.80
K14	4,848	4,851						
K14			20	40.08	76.3	0.00	5.60	7.60
K14			25	36.69	79.7	0.10	5.40	8.30
K14			32	32.14	81.6	0.15	5.20	9.20
K14			40	27.14	82.8	0.24	5.00	10.30
K14			50	22.14	83.8	0.34	4.70	11.50
K14			63	22.35	90.1	0.53	4.30	13.00
K14			80	17.71	91.8	0.78	3.70	14.80
K14			100	11.77	92.4	1.21	3.00	16.80
K14			125	7.54	95.0	1.84	1.80	18.80
K14			160	-0.18	95.0	2.77	0.00	21.10
K14			200	-4.60	96.0	3.98	0.00	22.80
Sum								
Sum			20	55.08				
Sum			25	51.72				
Sum			32	47.19				
Sum			40	42.23				
Sum			50	37.44				
Sum			63	37.40				
Sum			80	32.99				
Sum			100	27.40				
Sum			125	23.42				
Sum			160	16.58				
Sum			200	12.70				

Noise sensitive area: U Noise sensitive point: Finnish normal frequency - User defined (265)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	3,834	3,838						
Extension WTG 01			20	37.62	71.8	0.00	5.60	7.60
Extension WTG 01			25	34.24	75.2	0.08	5.40	8.30
Extension WTG 01			32	29.70	77.1	0.12	5.20	9.20
Extension WTG 01			40	24.73	78.3	0.19	5.00	10.30
Extension WTG 01			50	20.75	80.3	0.27	4.70	11.50
Extension WTG 01			63	19.00	84.6	0.42	4.30	13.00
Extension WTG 01			80	15.40	87.3	0.61	3.70	14.80
Extension WTG 01			100	10.56	88.9	0.96	3.00	16.80
Extension WTG 01			125	6.46	91.5	1.46	1.80	18.80
Extension WTG 01			160	0.93	93.5	2.19	0.00	21.10
Extension WTG 01			200	-3.23	94.5	3.15	0.00	22.80
Extension WTG 02	3,224	3,228						
Extension WTG 02			20	39.12	71.8	0.00	5.60	7.60
Extension WTG 02			25	35.76	75.2	0.06	5.40	8.30
Extension WTG 02			32	31.22	77.1	0.10	5.20	9.20
Extension WTG 02			40	26.26	78.3	0.16	5.00	10.30
Extension WTG 02			50	22.29	80.3	0.23	4.70	11.50
Extension WTG 02			63	20.57	84.6	0.36	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			80	17.00	87.3	0.52	3.70	14.80
Extension WTG 02			100	12.21	88.9	0.81	3.00	16.80
Extension WTG 02			125	8.19	91.5	1.23	1.80	18.80
Extension WTG 02			160	2.78	93.5	1.84	0.00	21.10
Extension WTG 02			200	-1.23	94.5	2.65	0.00	22.80
K01	4,194	4,197						
K01			20	41.34	76.3	0.00	5.60	7.60
K01			25	37.96	79.7	0.08	5.40	8.30
K01			32	33.42	81.6	0.13	5.20	9.20
K01			40	28.43	82.8	0.21	5.00	10.30
K01			50	23.45	83.8	0.29	4.70	11.50
K01			63	23.68	90.1	0.46	4.30	13.00
K01			80	19.07	91.8	0.67	3.70	14.80
K01			100	13.19	92.4	1.05	3.00	16.80
K01			125	9.05	95.0	1.59	1.80	18.80
K01			160	1.45	95.0	2.39	0.00	21.10
K01			200	-2.80	96.0	3.44	0.00	22.80
K02	3,939	3,942						
K02			20	41.88	76.3	0.00	5.60	7.60
K02			25	38.51	79.7	0.08	5.40	8.30
K02			32	33.97	81.6	0.12	5.20	9.20
K02			40	28.99	82.8	0.20	5.00	10.30
K02			50	24.01	83.8	0.28	4.70	11.50
K02			63	24.25	90.1	0.43	4.30	13.00
K02			80	19.65	91.8	0.63	3.70	14.80
K02			100	13.80	92.4	0.99	3.00	16.80
K02			125	9.69	95.0	1.50	1.80	18.80
K02			160	2.14	95.0	2.25	0.00	21.10
K02			200	-2.05	96.0	3.23	0.00	22.80
K03	3,993	3,996						
K03			20	41.77	76.3	0.00	5.60	7.60
K03			25	38.39	79.7	0.08	5.40	8.30
K03			32	33.85	81.6	0.12	5.20	9.20
K03			40	28.87	82.8	0.20	5.00	10.30
K03			50	23.89	83.8	0.28	4.70	11.50
K03			63	24.13	90.1	0.44	4.30	13.00
K03			80	19.53	91.8	0.64	3.70	14.80
K03			100	13.67	92.4	1.00	3.00	16.80
K03			125	9.55	95.0	1.52	1.80	18.80
K03			160	1.99	95.0	2.28	0.00	21.10
K03			200	-2.21	96.0	3.28	0.00	22.80
K04	3,462	3,466						
K04			20	43.00	76.3	0.00	5.60	7.60
K04			25	39.63	79.7	0.07	5.40	8.30
K04			32	35.10	81.6	0.10	5.20	9.20
K04			40	30.13	82.8	0.17	5.00	10.30
K04			50	25.16	83.8	0.24	4.70	11.50
K04			63	25.42	90.1	0.38	4.30	13.00
K04			80	20.85	91.8	0.55	3.70	14.80
K04			100	15.04	92.4	0.87	3.00	16.80
K04			125	10.99	95.0	1.32	1.80	18.80
K04			160	3.53	95.0	1.98	0.00	21.10
K04			200	-0.54	96.0	2.84	0.00	22.80
K05	4,185	4,188						
K05			20	41.36	76.3	0.00	5.60	7.60
K05			25	37.98	79.7	0.08	5.40	8.30
K05			32	33.43	81.6	0.13	5.20	9.20
K05			40	28.45	82.8	0.21	5.00	10.30
K05			50	23.47	83.8	0.29	4.70	11.50
K05			63	23.70	90.1	0.46	4.30	13.00
K05			80	19.09	91.8	0.67	3.70	14.80
K05			100	13.21	92.4	1.05	3.00	16.80
K05			125	9.07	95.0	1.59	1.80	18.80
K05			160	1.47	95.0	2.39	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			200	-2.77	96.0	3.43	0.00	22.80
K06	3,319	3,323	20	43.37	76.3	0.00	5.60	7.60
K06			25	40.00	79.7	0.07	5.40	8.30
K06			32	35.47	81.6	0.10	5.20	9.20
K06			40	30.50	82.8	0.17	5.00	10.30
K06			50	25.54	83.8	0.23	4.70	11.50
K06			63	25.80	90.1	0.37	4.30	13.00
K06			80	21.24	91.8	0.53	3.70	14.80
K06			100	15.44	92.4	0.83	3.00	16.80
K06			125	11.41	95.0	1.26	1.80	18.80
K06			160	3.98	95.0	1.89	0.00	21.10
K06			200	-0.05	96.0	2.72	0.00	22.80
K07	2,698	2,703	20	45.16	76.3	0.00	5.60	7.60
K07			25	41.81	79.7	0.05	5.40	8.30
K07			32	37.28	81.6	0.08	5.20	9.20
K07			40	32.33	82.8	0.14	5.00	10.30
K07			50	27.37	83.8	0.19	4.70	11.50
K07			63	27.67	90.1	0.30	4.30	13.00
K07			80	23.13	91.8	0.43	3.70	14.80
K07			100	17.39	92.4	0.68	3.00	16.80
K07			125	13.44	95.0	1.03	1.80	18.80
K07			160	6.12	95.0	1.54	0.00	21.10
K07			200	2.25	96.0	2.22	0.00	22.80
K08	3,173	3,176	20	43.76	76.3	0.00	5.60	7.60
K08			25	40.40	79.7	0.06	5.40	8.30
K08			32	35.87	81.6	0.10	5.20	9.20
K08			40	30.90	82.8	0.16	5.00	10.30
K08			50	25.94	83.8	0.22	4.70	11.50
K08			63	26.21	90.1	0.35	4.30	13.00
K08			80	21.65	91.8	0.51	3.70	14.80
K08			100	15.87	92.4	0.79	3.00	16.80
K08			125	11.85	95.0	1.21	1.80	18.80
K08			160	4.45	95.0	1.81	0.00	21.10
K08			200	0.46	96.0	2.60	0.00	22.80
K09	3,174	3,178	20	43.76	76.3	0.00	5.60	7.60
K09			25	40.39	79.7	0.06	5.40	8.30
K09			32	35.86	81.6	0.10	5.20	9.20
K09			40	30.90	82.8	0.16	5.00	10.30
K09			50	25.94	83.8	0.22	4.70	11.50
K09			63	26.21	90.1	0.35	4.30	13.00
K09			80	21.65	91.8	0.51	3.70	14.80
K09			100	15.86	92.4	0.79	3.00	16.80
K09			125	11.85	95.0	1.21	1.80	18.80
K09			160	4.45	95.0	1.81	0.00	21.10
K09			200	0.45	96.0	2.61	0.00	22.80
K10	4,915	4,918	20	39.96	76.3	0.00	5.60	7.60
K10			25	36.57	79.7	0.10	5.40	8.30
K10			32	32.02	81.6	0.15	5.20	9.20
K10			40	27.02	82.8	0.25	5.00	10.30
K10			50	22.02	83.8	0.34	4.70	11.50
K10			63	22.22	90.1	0.54	4.30	13.00
K10			80	17.58	91.8	0.79	3.70	14.80
K10			100	11.63	92.4	1.23	3.00	16.80
K10			125	7.40	95.0	1.87	1.80	18.80
K10			160	-0.34	95.0	2.80	0.00	21.10
K10			200	-4.77	96.0	4.03	0.00	22.80
K11	5,187	5,189	20	39.50	76.3	0.00	5.60	7.60
K11			25	36.10	79.7	0.10	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			32	31.54	81.6	0.16	5.20	9.20
K11			40	26.54	82.8	0.26	5.00	10.30
K11			50	21.54	83.8	0.36	4.70	11.50
K11			63	21.73	90.1	0.57	4.30	13.00
K11			80	17.07	91.8	0.83	3.70	14.80
K11			100	11.10	92.4	1.30	3.00	16.80
K11			125	6.83	95.0	1.97	1.80	18.80
K11			160	-0.96	95.0	2.96	0.00	21.10
K11			200	-5.46	96.0	4.25	0.00	22.80
K12	4,974	4,976						
K12			20	39.86	76.3	0.00	5.60	7.60
K12			25	36.46	79.7	0.10	5.40	8.30
K12			32	31.91	81.6	0.15	5.20	9.20
K12			40	26.91	82.8	0.25	5.00	10.30
K12			50	21.91	83.8	0.35	4.70	11.50
K12			63	22.11	90.1	0.55	4.30	13.00
K12			80	17.47	91.8	0.80	3.70	14.80
K12			100	11.52	92.4	1.24	3.00	16.80
K12			125	7.27	95.0	1.89	1.80	18.80
K12			160	-0.47	95.0	2.84	0.00	21.10
K12			200	-4.92	96.0	4.08	0.00	22.80
K13	4,237	4,239						
K13			20	41.25	76.3	0.00	5.60	7.60
K13			25	37.87	79.7	0.08	5.40	8.30
K13			32	33.33	81.6	0.13	5.20	9.20
K13			40	28.34	82.8	0.21	5.00	10.30
K13			50	23.36	83.8	0.30	4.70	11.50
K13			63	23.59	90.1	0.47	4.30	13.00
K13			80	18.98	91.8	0.68	3.70	14.80
K13			100	13.09	92.4	1.06	3.00	16.80
K13			125	8.94	95.0	1.61	1.80	18.80
K13			160	1.34	95.0	2.42	0.00	21.10
K13			200	-2.92	96.0	3.48	0.00	22.80
K14	3,996	3,999						
K14			20	41.76	76.3	0.00	5.60	7.60
K14			25	38.38	79.7	0.08	5.40	8.30
K14			32	33.84	81.6	0.12	5.20	9.20
K14			40	28.86	82.8	0.20	5.00	10.30
K14			50	23.88	83.8	0.28	4.70	11.50
K14			63	24.12	90.1	0.44	4.30	13.00
K14			80	19.52	91.8	0.64	3.70	14.80
K14			100	13.66	92.4	1.00	3.00	16.80
K14			125	9.54	95.0	1.52	1.80	18.80
K14			160	1.98	95.0	2.28	0.00	21.10
K14			200	-2.22	96.0	3.28	0.00	22.80
Sum								
Sum			20	53.99				
Sum			25	50.62				
Sum			32	46.08				
Sum			40	41.11				
Sum			50	36.19				
Sum			63	36.33				
Sum			80	31.80				
Sum			100	26.03				
Sum			125	21.96				
Sum			160	14.64				
Sum			200	10.54				

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
Noise sensitive area: V Noise sensitive point: Finnish normal frequency - User defined (254)

Wind speed: 8.0 m/s
WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,633	2,638						
Extension WTG 01			20	40.87	71.8	0.00	5.60	7.60
Extension WTG 01			25	37.52	75.2	0.05	5.40	8.30
Extension WTG 01			32	33.00	77.1	0.08	5.20	9.20
Extension WTG 01			40	28.04	78.3	0.13	5.00	10.30
Extension WTG 01			50	24.09	80.3	0.18	4.70	11.50
Extension WTG 01			63	22.38	84.6	0.29	4.30	13.00
Extension WTG 01			80	18.85	87.3	0.42	3.70	14.80
Extension WTG 01			100	14.11	88.9	0.66	3.00	16.80
Extension WTG 01			125	10.17	91.5	1.00	1.80	18.80
Extension WTG 01			160	4.87	93.5	1.50	0.00	21.10
Extension WTG 01			200	1.01	94.5	2.16	0.00	22.80
Extension WTG 02	2,016	2,023						
Extension WTG 02			20	43.18	71.8	0.00	5.60	7.60
Extension WTG 02			25	39.84	75.2	0.04	5.40	8.30
Extension WTG 02			32	35.32	77.1	0.06	5.20	9.20
Extension WTG 02			40	30.38	78.3	0.10	5.00	10.30
Extension WTG 02			50	26.44	80.3	0.14	4.70	11.50
Extension WTG 02			63	24.76	84.6	0.22	4.30	13.00
Extension WTG 02			80	21.26	87.3	0.32	3.70	14.80
Extension WTG 02			100	16.57	88.9	0.51	3.00	16.80
Extension WTG 02			125	12.71	91.5	0.77	1.80	18.80
Extension WTG 02			160	7.53	93.5	1.15	0.00	21.10
Extension WTG 02			200	3.82	94.5	1.66	0.00	22.80
K01	3,343	3,346						
K01			20	43.31	76.3	0.00	5.60	7.60
K01			25	39.94	79.7	0.07	5.40	8.30
K01			32	35.41	81.6	0.10	5.20	9.20
K01			40	30.44	82.8	0.17	5.00	10.30
K01			50	25.48	83.8	0.23	4.70	11.50
K01			63	25.74	90.1	0.37	4.30	13.00
K01			80	21.17	91.8	0.54	3.70	14.80
K01			100	15.37	92.4	0.84	3.00	16.80
K01			125	11.34	95.0	1.27	1.80	18.80
K01			160	3.90	95.0	1.91	0.00	21.10
K01			200	-0.13	96.0	2.74	0.00	22.80
K02	2,985	2,989						
K02			20	44.29	76.3	0.00	5.60	7.60
K02			25	40.93	79.7	0.06	5.40	8.30
K02			32	36.40	81.6	0.09	5.20	9.20
K02			40	31.44	82.8	0.15	5.00	10.30
K02			50	26.48	83.8	0.21	4.70	11.50
K02			63	26.76	90.1	0.33	4.30	13.00
K02			80	22.21	91.8	0.48	3.70	14.80
K02			100	16.44	92.4	0.75	3.00	16.80
K02			125	12.45	95.0	1.14	1.80	18.80
K02			160	5.09	95.0	1.70	0.00	21.10
K02			200	1.14	96.0	2.45	0.00	22.80
K03	2,918	2,922						
K03			20	44.49	76.3	0.00	5.60	7.60
K03			25	41.13	79.7	0.06	5.40	8.30
K03			32	36.60	81.6	0.09	5.20	9.20
K03			40	31.64	82.8	0.15	5.00	10.30
K03			50	26.68	83.8	0.20	4.70	11.50
K03			63	26.97	90.1	0.32	4.30	13.00
K03			80	22.42	91.8	0.47	3.70	14.80
K03			100	16.66	92.4	0.73	3.00	16.80
K03			125	12.68	95.0	1.11	1.80	18.80
K03			160	5.32	95.0	1.67	0.00	21.10
K03			200	1.39	96.0	2.40	0.00	22.80
K04	2,302	2,307						
K04			20	46.54	76.3	0.00	5.60	7.60
K04			25	43.19	79.7	0.05	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K04			32	38.67	81.6	0.07	5.20	9.20
K04			40	33.72	82.8	0.12	5.00	10.30
K04			50	28.78	83.8	0.16	4.70	11.50
K04			63	29.09	90.1	0.25	4.30	13.00
K04			80	24.57	91.8	0.37	3.70	14.80
K04			100	18.86	92.4	0.58	3.00	16.80
K04			125	14.96	95.0	0.88	1.80	18.80
K04			160	7.72	95.0	1.31	0.00	21.10
K04			200	3.95	96.0	1.89	0.00	22.80
K05	3,004	3,008						
K05			20	44.24	76.3	0.00	5.60	7.60
K05			25	40.88	79.7	0.06	5.40	8.30
K05			32	36.35	81.6	0.09	5.20	9.20
K05			40	31.39	82.8	0.15	5.00	10.30
K05			50	26.42	83.8	0.21	4.70	11.50
K05			63	26.70	90.1	0.33	4.30	13.00
K05			80	22.15	91.8	0.48	3.70	14.80
K05			100	16.38	92.4	0.75	3.00	16.80
K05			125	12.39	95.0	1.14	1.80	18.80
K05			160	5.02	95.0	1.71	0.00	21.10
K05			200	1.07	96.0	2.47	0.00	22.80
K06	2,576	2,581						
K06			20	45.56	76.3	0.00	5.60	7.60
K06			25	42.21	79.7	0.05	5.40	8.30
K06			32	37.69	81.6	0.08	5.20	9.20
K06			40	32.74	82.8	0.13	5.00	10.30
K06			50	27.78	83.8	0.18	4.70	11.50
K06			63	28.08	90.1	0.28	4.30	13.00
K06			80	23.55	91.8	0.41	3.70	14.80
K06			100	17.82	92.4	0.65	3.00	16.80
K06			125	13.88	95.0	0.98	1.80	18.80
K06			160	6.59	95.0	1.47	0.00	21.10
K06			200	2.75	96.0	2.12	0.00	22.80
K07	2,021	2,027						
K07			20	47.66	76.3	0.00	5.60	7.60
K07			25	44.32	79.7	0.04	5.40	8.30
K07			32	39.80	81.6	0.06	5.20	9.20
K07			40	34.86	82.8	0.10	5.00	10.30
K07			50	29.92	83.8	0.14	4.70	11.50
K07			63	30.24	90.1	0.22	4.30	13.00
K07			80	25.74	91.8	0.32	3.70	14.80
K07			100	20.06	92.4	0.51	3.00	16.80
K07			125	16.19	95.0	0.77	1.80	18.80
K07			160	9.01	95.0	1.16	0.00	21.10
K07			200	5.30	96.0	1.66	0.00	22.80
K08	2,206	2,211						
K08			20	46.91	76.3	0.00	5.60	7.60
K08			25	43.56	79.7	0.04	5.40	8.30
K08			32	39.04	81.6	0.07	5.20	9.20
K08			40	34.10	82.8	0.11	5.00	10.30
K08			50	29.15	83.8	0.15	4.70	11.50
K08			63	29.47	90.1	0.24	4.30	13.00
K08			80	24.95	91.8	0.35	3.70	14.80
K08			100	19.26	92.4	0.55	3.00	16.80
K08			125	15.37	95.0	0.84	1.80	18.80
K08			160	8.15	95.0	1.26	0.00	21.10
K08			200	4.40	96.0	1.81	0.00	22.80
K09	2,095	2,100						
K09			20	47.36	76.3	0.00	5.60	7.60
K09			25	44.01	79.7	0.04	5.40	8.30
K09			32	39.49	81.6	0.06	5.20	9.20
K09			40	34.55	82.8	0.11	5.00	10.30
K09			50	29.61	83.8	0.15	4.70	11.50
K09			63	29.92	90.1	0.23	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			80	25.42	91.8	0.34	3.70	14.80
K09			100	19.73	92.4	0.53	3.00	16.80
K09			125	15.86	95.0	0.80	1.80	18.80
K09			160	8.66	95.0	1.20	0.00	21.10
K09			200	4.93	96.0	1.72	0.00	22.80
K10	4,266	4,269						
K10			20	41.19	76.3	0.00	5.60	7.60
K10			25	37.81	79.7	0.09	5.40	8.30
K10			32	33.27	81.6	0.13	5.20	9.20
K10			40	28.28	82.8	0.21	5.00	10.30
K10			50	23.30	83.8	0.30	4.70	11.50
K10			63	23.52	90.1	0.47	4.30	13.00
K10			80	18.91	91.8	0.68	3.70	14.80
K10			100	13.03	92.4	1.07	3.00	16.80
K10			125	8.87	95.0	1.62	1.80	18.80
K10			160	1.26	95.0	2.43	0.00	21.10
K10			200	-3.01	96.0	3.50	0.00	22.80
K11	4,666	4,669						
K11			20	40.42	76.3	0.00	5.60	7.60
K11			25	37.02	79.7	0.09	5.40	8.30
K11			32	32.48	81.6	0.14	5.20	9.20
K11			40	27.48	82.8	0.23	5.00	10.30
K11			50	22.49	83.8	0.33	4.70	11.50
K11			63	22.70	90.1	0.51	4.30	13.00
K11			80	18.07	91.8	0.75	3.70	14.80
K11			100	12.15	92.4	1.17	3.00	16.80
K11			125	7.94	95.0	1.77	1.80	18.80
K11			160	0.25	95.0	2.66	0.00	21.10
K11			200	-4.11	96.0	3.83	0.00	22.80
K12	4,644	4,646						
K12			20	40.46	76.3	0.00	5.60	7.60
K12			25	37.07	79.7	0.09	5.40	8.30
K12			32	32.52	81.6	0.14	5.20	9.20
K12			40	27.53	82.8	0.23	5.00	10.30
K12			50	22.53	83.8	0.33	4.70	11.50
K12			63	22.75	90.1	0.51	4.30	13.00
K12			80	18.12	91.8	0.74	3.70	14.80
K12			100	12.20	92.4	1.16	3.00	16.80
K12			125	7.99	95.0	1.77	1.80	18.80
K12			160	0.31	95.0	2.65	0.00	21.10
K12			200	-4.05	96.0	3.81	0.00	22.80
K13	3,795	3,798						
K13			20	42.21	76.3	0.00	5.60	7.60
K13			25	38.83	79.7	0.08	5.40	8.30
K13			32	34.29	81.6	0.11	5.20	9.20
K13			40	29.32	82.8	0.19	5.00	10.30
K13			50	24.34	83.8	0.27	4.70	11.50
K13			63	24.59	90.1	0.42	4.30	13.00
K13			80	20.00	91.8	0.61	3.70	14.80
K13			100	14.16	92.4	0.95	3.00	16.80
K13			125	10.06	95.0	1.44	1.80	18.80
K13			160	2.54	95.0	2.17	0.00	21.10
K13			200	-1.61	96.0	3.11	0.00	22.80
K14	3,385	3,388						
K14			20	43.20	76.3	0.00	5.60	7.60
K14			25	39.83	79.7	0.07	5.40	8.30
K14			32	35.30	81.6	0.10	5.20	9.20
K14			40	30.33	82.8	0.17	5.00	10.30
K14			50	25.36	83.8	0.24	4.70	11.50
K14			63	25.63	90.1	0.37	4.30	13.00
K14			80	21.06	91.8	0.54	3.70	14.80
K14			100	15.25	92.4	0.85	3.00	16.80
K14			125	11.21	95.0	1.29	1.80	18.80
K14			160	3.77	95.0	1.93	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			200	-0.28	96.0	2.78	0.00	22.80
Sum			20	56.55				
Sum			25	53.19				
Sum			32	48.67				
Sum			40	43.71				
Sum			50	38.84				
Sum			63	38.99				
Sum			80	34.52				
Sum			100	28.86				
Sum			125	24.92				
Sum			160	17.85				
Sum			200	14.00				

Noise sensitive area: W Noise sensitive point: Finnish normal frequency - User defined (282)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	1,517	1,529	20	45.61	71.8	0.00	5.60	7.60
Extension WTG 01			25	42.28	75.2	0.03	5.40	8.30
Extension WTG 01			32	37.76	77.1	0.05	5.20	9.20
Extension WTG 01			40	32.83	78.3	0.08	5.00	10.30
Extension WTG 01			50	28.90	80.3	0.11	4.70	11.50
Extension WTG 01			63	27.24	84.6	0.17	4.30	13.00
Extension WTG 01			80	23.77	87.3	0.24	3.70	14.80
Extension WTG 01			100	19.13	88.9	0.38	3.00	16.80
Extension WTG 01			125	15.33	91.5	0.58	1.80	18.80
Extension WTG 01			160	10.24	93.5	0.87	0.00	21.10
Extension WTG 01			200	6.66	94.5	1.25	0.00	22.80
Extension WTG 02	2,196	2,205	20	42.43	71.8	0.00	5.60	7.60
Extension WTG 02			25	39.09	75.2	0.04	5.40	8.30
Extension WTG 02			32	34.57	77.1	0.07	5.20	9.20
Extension WTG 02			40	29.62	78.3	0.11	5.00	10.30
Extension WTG 02			50	25.68	80.3	0.15	4.70	11.50
Extension WTG 02			63	23.99	84.6	0.24	4.30	13.00
Extension WTG 02			80	20.48	87.3	0.35	3.70	14.80
Extension WTG 02			100	15.78	88.9	0.55	3.00	16.80
Extension WTG 02			125	11.90	91.5	0.84	1.80	18.80
Extension WTG 02			160	6.68	93.5	1.26	0.00	21.10
Extension WTG 02			200	2.93	94.5	1.81	0.00	22.80
K01	3,694	3,698	20	42.44	76.3	0.00	5.60	7.60
K01			25	39.07	79.7	0.07	5.40	8.30
K01			32	34.53	81.6	0.11	5.20	9.20
K01			40	29.56	82.8	0.18	5.00	10.30
K01			50	24.58	83.8	0.26	4.70	11.50
K01			63	24.83	90.1	0.41	4.30	13.00
K01			80	20.25	91.8	0.59	3.70	14.80
K01			100	14.42	92.4	0.92	3.00	16.80
K01			125	10.34	95.0	1.41	1.80	18.80
K01			160	2.83	95.0	2.11	0.00	21.10
K01			200	-1.29	96.0	3.03	0.00	22.80
K02	3,207	3,211	20	43.67	76.3	0.00	5.60	7.60
K02			25	40.30	79.7	0.06	5.40	8.30
K02			32	35.77	81.6	0.10	5.20	9.20
K02			40	30.81	82.8	0.16	5.00	10.30
K02			50	25.84	83.8	0.22	4.70	11.50
K02			63	26.11	90.1	0.35	4.30	13.00
K02			80	21.55	91.8	0.51	3.70	14.80
K02			100	15.76	92.4	0.80	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			125	11.75	95.0	1.22	1.80	18.80
K02			160	4.34	95.0	1.83	0.00	21.10
K02			200	0.33	96.0	2.63	0.00	22.80
K03	2,578	2,584						
K03			20	45.56	76.3	0.00	5.60	7.60
K03			25	42.20	79.7	0.05	5.40	8.30
K03			32	37.68	81.6	0.08	5.20	9.20
K03			40	32.73	82.8	0.13	5.00	10.30
K03			50	27.77	83.8	0.18	4.70	11.50
K03			63	28.07	90.1	0.28	4.30	13.00
K03			80	23.54	91.8	0.41	3.70	14.80
K03			100	17.81	92.4	0.65	3.00	16.80
K03			125	13.87	95.0	0.98	1.80	18.80
K03			160	6.58	95.0	1.47	0.00	21.10
K03			200	2.74	96.0	2.12	0.00	22.80
K04	2,312	2,318						
K04			20	46.50	76.3	0.00	5.60	7.60
K04			25	43.15	79.7	0.05	5.40	8.30
K04			32	38.63	81.6	0.07	5.20	9.20
K04			40	33.68	82.8	0.12	5.00	10.30
K04			50	28.73	83.8	0.16	4.70	11.50
K04			63	29.04	90.1	0.26	4.30	13.00
K04			80	24.53	91.8	0.37	3.70	14.80
K04			100	18.82	92.4	0.58	3.00	16.80
K04			125	14.92	95.0	0.88	1.80	18.80
K04			160	7.68	95.0	1.32	0.00	21.10
K04			200	3.90	96.0	1.90	0.00	22.80
K05	1,706	1,715						
K05			20	49.11	76.3	0.00	5.60	7.60
K05			25	45.78	79.7	0.03	5.40	8.30
K05			32	41.26	81.6	0.05	5.20	9.20
K05			40	36.33	82.8	0.09	5.00	10.30
K05			50	31.39	83.8	0.12	4.70	11.50
K05			63	31.73	90.1	0.19	4.30	13.00
K05			80	27.24	91.8	0.27	3.70	14.80
K05			100	21.59	92.4	0.43	3.00	16.80
K05			125	17.76	95.0	0.65	1.80	18.80
K05			160	10.64	95.0	0.98	0.00	21.10
K05			200	7.01	96.0	1.41	0.00	22.80
K06	3,968	3,971						
K06			20	41.82	76.3	0.00	5.60	7.60
K06			25	38.44	79.7	0.08	5.40	8.30
K06			32	33.90	81.6	0.12	5.20	9.20
K06			40	28.92	82.8	0.20	5.00	10.30
K06			50	23.94	83.8	0.28	4.70	11.50
K06			63	24.18	90.1	0.44	4.30	13.00
K06			80	19.59	91.8	0.64	3.70	14.80
K06			100	13.73	92.4	0.99	3.00	16.80
K06			125	9.61	95.0	1.51	1.80	18.80
K06			160	2.06	95.0	2.26	0.00	21.10
K06			200	-2.14	96.0	3.26	0.00	22.80
K07	4,109	4,112						
K07			20	41.52	76.3	0.00	5.60	7.60
K07			25	38.14	79.7	0.08	5.40	8.30
K07			32	33.59	81.6	0.12	5.20	9.20
K07			40	28.61	82.8	0.21	5.00	10.30
K07			50	23.63	83.8	0.29	4.70	11.50
K07			63	23.87	90.1	0.45	4.30	13.00
K07			80	19.26	91.8	0.66	3.70	14.80
K07			100	13.39	92.4	1.03	3.00	16.80
K07			125	9.26	95.0	1.56	1.80	18.80
K07			160	1.67	95.0	2.34	0.00	21.10
K07			200	-2.55	96.0	3.37	0.00	22.80
K08	3,257	3,261						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			20	43.53	76.3	0.00	5.60	7.60
K08			25	40.17	79.7	0.07	5.40	8.30
K08			32	35.64	81.6	0.10	5.20	9.20
K08			40	30.67	82.8	0.16	5.00	10.30
K08			50	25.70	83.8	0.23	4.70	11.50
K08			63	25.97	90.1	0.36	4.30	13.00
K08			80	21.41	91.8	0.52	3.70	14.80
K08			100	15.62	92.4	0.82	3.00	16.80
K08			125	11.59	95.0	1.24	1.80	18.80
K08			160	4.17	95.0	1.86	0.00	21.10
K08			200	0.16	96.0	2.67	0.00	22.80
K09	2,851	2,856						
K09			20	44.68	76.3	0.00	5.60	7.60
K09			25	41.33	79.7	0.06	5.40	8.30
K09			32	36.80	81.6	0.09	5.20	9.20
K09			40	31.84	82.8	0.14	5.00	10.30
K09			50	26.88	83.8	0.20	4.70	11.50
K09			63	27.17	90.1	0.31	4.30	13.00
K09			80	22.63	91.8	0.46	3.70	14.80
K09			100	16.87	92.4	0.71	3.00	16.80
K09			125	12.90	95.0	1.09	1.80	18.80
K09			160	5.56	95.0	1.63	0.00	21.10
K09			200	1.64	96.0	2.34	0.00	22.80
K10	4,817	4,820						
K10			20	40.14	76.3	0.00	5.60	7.60
K10			25	36.74	79.7	0.10	5.40	8.30
K10			32	32.19	81.6	0.14	5.20	9.20
K10			40	27.20	82.8	0.24	5.00	10.30
K10			50	22.20	83.8	0.34	4.70	11.50
K10			63	22.41	90.1	0.53	4.30	13.00
K10			80	17.77	91.8	0.77	3.70	14.80
K10			100	11.83	92.4	1.20	3.00	16.80
K10			125	7.61	95.0	1.83	1.80	18.80
K10			160	-0.11	95.0	2.75	0.00	21.10
K10			200	-4.51	96.0	3.95	0.00	22.80
K11	5,486	5,489						
K11			20	39.01	76.3	0.00	5.60	7.60
K11			25	35.60	79.7	0.11	5.40	8.30
K11			32	31.05	81.6	0.16	5.20	9.20
K11			40	26.04	82.8	0.27	5.00	10.30
K11			50	21.03	83.8	0.38	4.70	11.50
K11			63	21.21	90.1	0.60	4.30	13.00
K11			80	16.53	91.8	0.88	3.70	14.80
K11			100	10.54	92.4	1.37	3.00	16.80
K11			125	6.22	95.0	2.09	1.80	18.80
K11			160	-1.62	95.0	3.13	0.00	21.10
K11			200	-6.19	96.0	4.50	0.00	22.80
K12	6,054	6,056						
K12			20	38.16	76.3	0.00	5.60	7.60
K12			25	34.74	79.7	0.12	5.40	8.30
K12			32	30.17	81.6	0.18	5.20	9.20
K12			40	25.15	82.8	0.30	5.00	10.30
K12			50	20.13	83.8	0.42	4.70	11.50
K12			63	20.29	90.1	0.67	4.30	13.00
K12			80	15.59	91.8	0.97	3.70	14.80
K12			100	9.54	92.4	1.51	3.00	16.80
K12			125	5.16	95.0	2.30	1.80	18.80
K12			160	-2.80	95.0	3.45	0.00	21.10
K12			200	-7.51	96.0	4.97	0.00	22.80
K13	5,245	5,248						
K13			20	39.40	76.3	0.00	5.60	7.60
K13			25	36.00	79.7	0.10	5.40	8.30
K13			32	31.44	81.6	0.16	5.20	9.20
K13			40	26.44	82.8	0.26	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K13			50	21.43	83.8	0.37	4.70	11.50
K13			63	21.62	90.1	0.58	4.30	13.00
K13			80	16.96	91.8	0.84	3.70	14.80
K13			100	10.99	92.4	1.31	3.00	16.80
K13			125	6.71	95.0	1.99	1.80	18.80
K13			160	-1.09	95.0	2.99	0.00	21.10
K13			200	-5.60	96.0	4.30	0.00	22.80
K14	4,563	4,566						
K14			20	40.61	76.3	0.00	5.60	7.60
K14			25	37.22	79.7	0.09	5.40	8.30
K14			32	32.67	81.6	0.14	5.20	9.20
K14			40	27.68	82.8	0.23	5.00	10.30
K14			50	22.69	83.8	0.32	4.70	11.50
K14			63	22.91	90.1	0.50	4.30	13.00
K14			80	18.28	91.8	0.73	3.70	14.80
K14			100	12.37	92.4	1.14	3.00	16.80
K14			125	8.17	95.0	1.74	1.80	18.80
K14			160	0.51	95.0	2.60	0.00	21.10
K14			200	-3.84	96.0	3.74	0.00	22.80
Sum								
Sum			20	55.83				
Sum			25	52.48				
Sum			32	47.95				
Sum			40	42.99				
Sum			50	38.20				
Sum			63	38.20				
Sum			80	33.79				
Sum			100	28.21				
Sum			125	24.26				
Sum			160	17.42				
Sum			200	13.60				

Noise sensitive area: X Noise sensitive point: Finnish normal frequency - User defined (288)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	1,868	1,878						
Extension WTG 01			20	43.83	71.8	0.00	5.60	7.60
Extension WTG 01			25	40.49	75.2	0.04	5.40	8.30
Extension WTG 01			32	35.97	77.1	0.06	5.20	9.20
Extension WTG 01			40	31.03	78.3	0.09	5.00	10.30
Extension WTG 01			50	27.10	80.3	0.13	4.70	11.50
Extension WTG 01			63	25.42	84.6	0.21	4.30	13.00
Extension WTG 01			80	21.93	87.3	0.30	3.70	14.80
Extension WTG 01			100	17.26	88.9	0.47	3.00	16.80
Extension WTG 01			125	13.41	91.5	0.71	1.80	18.80
Extension WTG 01			160	8.26	93.5	1.07	0.00	21.10
Extension WTG 01			200	4.59	94.5	1.54	0.00	22.80
Extension WTG 02	2,424	2,431						
Extension WTG 02			20	41.58	71.8	0.00	5.60	7.60
Extension WTG 02			25	38.24	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.71	77.1	0.07	5.20	9.20
Extension WTG 02			40	28.76	78.3	0.12	5.00	10.30
Extension WTG 02			50	24.81	80.3	0.17	4.70	11.50
Extension WTG 02			63	23.12	84.6	0.27	4.30	13.00
Extension WTG 02			80	19.59	87.3	0.39	3.70	14.80
Extension WTG 02			100	14.88	88.9	0.61	3.00	16.80
Extension WTG 02			125	10.96	91.5	0.92	1.80	18.80
Extension WTG 02			160	5.70	93.5	1.39	0.00	21.10
Extension WTG 02			200	1.89	94.5	1.99	0.00	22.80
K01	3,553	3,557						
K01			20	42.78	76.3	0.00	5.60	7.60
K01			25	39.41	79.7	0.07	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K01			32	34.87	81.6	0.11	5.20	9.20
K01			40	29.90	82.8	0.18	5.00	10.30
K01			50	24.93	83.8	0.25	4.70	11.50
K01			63	25.19	90.1	0.39	4.30	13.00
K01			80	20.61	91.8	0.57	3.70	14.80
K01			100	14.79	92.4	0.89	3.00	16.80
K01			125	10.73	95.0	1.35	1.80	18.80
K01			160	3.25	95.0	2.03	0.00	21.10
K01			200	-0.84	96.0	2.92	0.00	22.80
K02	3,109	3,114						
K02			20	43.93	76.3	0.00	5.60	7.60
K02			25	40.57	79.7	0.06	5.40	8.30
K02			32	36.04	81.6	0.09	5.20	9.20
K02			40	31.08	82.8	0.16	5.00	10.30
K02			50	26.12	83.8	0.22	4.70	11.50
K02			63	26.39	90.1	0.34	4.30	13.00
K02			80	21.83	91.8	0.50	3.70	14.80
K02			100	16.05	92.4	0.78	3.00	16.80
K02			125	12.05	95.0	1.18	1.80	18.80
K02			160	4.66	95.0	1.78	0.00	21.10
K02			200	0.68	96.0	2.55	0.00	22.80
K03	2,504	2,510						
K03			20	45.81	76.3	0.00	5.60	7.60
K03			25	42.46	79.7	0.05	5.40	8.30
K03			32	37.93	81.6	0.08	5.20	9.20
K03			40	32.98	82.8	0.13	5.00	10.30
K03			50	28.03	83.8	0.18	4.70	11.50
K03			63	28.33	90.1	0.28	4.30	13.00
K03			80	23.81	91.8	0.40	3.70	14.80
K03			100	18.08	92.4	0.63	3.00	16.80
K03			125	14.15	95.0	0.95	1.80	18.80
K03			160	6.88	95.0	1.43	0.00	21.10
K03			200	3.05	96.0	2.06	0.00	22.80
K04	2,406	2,412						
K04			20	46.15	76.3	0.00	5.60	7.60
K04			25	42.80	79.7	0.05	5.40	8.30
K04			32	38.28	81.6	0.07	5.20	9.20
K04			40	33.33	82.8	0.12	5.00	10.30
K04			50	28.38	83.8	0.17	4.70	11.50
K04			63	28.69	90.1	0.27	4.30	13.00
K04			80	24.17	91.8	0.39	3.70	14.80
K04			100	18.45	92.4	0.60	3.00	16.80
K04			125	14.54	95.0	0.92	1.80	18.80
K04			160	7.28	95.0	1.37	0.00	21.10
K04			200	3.47	96.0	1.98	0.00	22.80
K05	1,710	1,718						
K05			20	49.10	76.3	0.00	5.60	7.60
K05			25	45.76	79.7	0.03	5.40	8.30
K05			32	41.25	81.6	0.05	5.20	9.20
K05			40	36.31	82.8	0.09	5.00	10.30
K05			50	31.38	83.8	0.12	4.70	11.50
K05			63	31.71	90.1	0.19	4.30	13.00
K05			80	27.22	91.8	0.27	3.70	14.80
K05			100	21.57	92.4	0.43	3.00	16.80
K05			125	17.74	95.0	0.65	1.80	18.80
K05			160	10.62	95.0	0.98	0.00	21.10
K05			200	6.99	96.0	1.41	0.00	22.80
K06	3,942	3,945						
K06			20	41.88	76.3	0.00	5.60	7.60
K06			25	38.50	79.7	0.08	5.40	8.30
K06			32	33.96	81.6	0.12	5.20	9.20
K06			40	28.98	82.8	0.20	5.00	10.30
K06			50	24.00	83.8	0.28	4.70	11.50
K06			63	24.24	90.1	0.43	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			80	19.65	91.8	0.63	3.70	14.80
K06			100	13.79	92.4	0.99	3.00	16.80
K06			125	9.68	95.0	1.50	1.80	18.80
K06			160	2.13	95.0	2.25	0.00	21.10
K06			200	-2.06	96.0	3.24	0.00	22.80
K07	4,159	4,163						
K07			20	41.41	76.3	0.00	5.60	7.60
K07			25	38.03	79.7	0.08	5.40	8.30
K07			32	33.49	81.6	0.12	5.20	9.20
K07			40	28.50	82.8	0.21	5.00	10.30
K07			50	23.52	83.8	0.29	4.70	11.50
K07			63	23.75	90.1	0.46	4.30	13.00
K07			80	19.15	91.8	0.67	3.70	14.80
K07			100	13.27	92.4	1.04	3.00	16.80
K07			125	9.13	95.0	1.58	1.80	18.80
K07			160	1.54	95.0	2.37	0.00	21.10
K07			200	-2.70	96.0	3.41	0.00	22.80
K08	3,283	3,288						
K08			20	43.46	76.3	0.00	5.60	7.60
K08			25	40.10	79.7	0.07	5.40	8.30
K08			32	35.56	81.6	0.10	5.20	9.20
K08			40	30.60	82.8	0.16	5.00	10.30
K08			50	25.63	83.8	0.23	4.70	11.50
K08			63	25.90	90.1	0.36	4.30	13.00
K08			80	21.34	91.8	0.53	3.70	14.80
K08			100	15.54	92.4	0.82	3.00	16.80
K08			125	11.51	95.0	1.25	1.80	18.80
K08			160	4.09	95.0	1.87	0.00	21.10
K08			200	0.07	96.0	2.70	0.00	22.80
K09	2,920	2,925						
K09			20	44.48	76.3	0.00	5.60	7.60
K09			25	41.12	79.7	0.06	5.40	8.30
K09			32	36.59	81.6	0.09	5.20	9.20
K09			40	31.63	82.8	0.15	5.00	10.30
K09			50	26.67	83.8	0.20	4.70	11.50
K09			63	26.95	90.1	0.32	4.30	13.00
K09			80	22.41	91.8	0.47	3.70	14.80
K09			100	16.65	92.4	0.73	3.00	16.80
K09			125	12.66	95.0	1.11	1.80	18.80
K09			160	5.31	95.0	1.67	0.00	21.10
K09			200	1.38	96.0	2.40	0.00	22.80
K10	4,614	4,618						
K10			20	40.51	76.3	0.00	5.60	7.60
K10			25	37.12	79.7	0.09	5.40	8.30
K10			32	32.57	81.6	0.14	5.20	9.20
K10			40	27.58	82.8	0.23	5.00	10.30
K10			50	22.59	83.8	0.32	4.70	11.50
K10			63	22.80	90.1	0.51	4.30	13.00
K10			80	18.17	91.8	0.74	3.70	14.80
K10			100	12.26	92.4	1.15	3.00	16.80
K10			125	8.06	95.0	1.75	1.80	18.80
K10			160	0.38	95.0	2.63	0.00	21.10
K10			200	-3.97	96.0	3.79	0.00	22.80
K11	5,284	5,287						
K11			20	39.34	76.3	0.00	5.60	7.60
K11			25	35.93	79.7	0.11	5.40	8.30
K11			32	31.38	81.6	0.16	5.20	9.20
K11			40	26.37	82.8	0.26	5.00	10.30
K11			50	21.37	83.8	0.37	4.70	11.50
K11			63	21.55	90.1	0.58	4.30	13.00
K11			80	16.89	91.8	0.85	3.70	14.80
K11			100	10.91	92.4	1.32	3.00	16.80
K11			125	6.63	95.0	2.01	1.80	18.80
K11			160	-1.18	95.0	3.01	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			200	-5.70	96.0	4.34	0.00	22.80
K12	5,900	5,902						
K12			20	38.38	76.3	0.00	5.60	7.60
K12			25	34.96	79.7	0.12	5.40	8.30
K12			32	30.40	81.6	0.18	5.20	9.20
K12			40	25.38	82.8	0.30	5.00	10.30
K12			50	20.37	83.8	0.41	4.70	11.50
K12			63	20.53	90.1	0.65	4.30	13.00
K12			80	15.83	91.8	0.94	3.70	14.80
K12			100	9.80	92.4	1.48	3.00	16.80
K12			125	5.44	95.0	2.24	1.80	18.80
K12			160	-2.49	95.0	3.36	0.00	21.10
K12			200	-7.16	96.0	4.84	0.00	22.80
K13	5,131	5,134						
K13			20	39.59	76.3	0.00	5.60	7.60
K13			25	36.19	79.7	0.10	5.40	8.30
K13			32	31.64	81.6	0.15	5.20	9.20
K13			40	26.63	82.8	0.26	5.00	10.30
K13			50	21.63	83.8	0.36	4.70	11.50
K13			63	21.83	90.1	0.56	4.30	13.00
K13			80	17.17	91.8	0.82	3.70	14.80
K13			100	11.21	92.4	1.28	3.00	16.80
K13			125	6.94	95.0	1.95	1.80	18.80
K13			160	-0.84	95.0	2.93	0.00	21.10
K13			200	-5.32	96.0	4.21	0.00	22.80
K14	4,457	4,460						
K14			20	40.81	76.3	0.00	5.60	7.60
K14			25	37.42	79.7	0.09	5.40	8.30
K14			32	32.88	81.6	0.13	5.20	9.20
K14			40	27.89	82.8	0.22	5.00	10.30
K14			50	22.90	83.8	0.31	4.70	11.50
K14			63	23.12	90.1	0.49	4.30	13.00
K14			80	18.50	91.8	0.71	3.70	14.80
K14			100	12.60	92.4	1.12	3.00	16.80
K14			125	8.42	95.0	1.69	1.80	18.80
K14			160	0.77	95.0	2.54	0.00	21.10
K14			200	-3.54	96.0	3.66	0.00	22.80
Sum								
Sum			20	55.68				
Sum			25	52.33				
Sum			32	47.80				
Sum			40	42.84				
Sum			50	38.00				
Sum			63	38.07				
Sum			80	33.62				
Sum			100	27.99				
Sum			125	24.03				
Sum			160	17.05				
Sum			200	13.18				

Noise sensitive area: Y Noise sensitive point: Finnish normal frequency - User defined (286)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	1,999	2,008						
Extension WTG 01			20	43.25	71.8	0.00	5.60	7.60
Extension WTG 01			25	39.91	75.2	0.04	5.40	8.30
Extension WTG 01			32	35.39	77.1	0.06	5.20	9.20
Extension WTG 01			40	30.45	78.3	0.10	5.00	10.30
Extension WTG 01			50	26.51	80.3	0.14	4.70	11.50
Extension WTG 01			63	24.83	84.6	0.22	4.30	13.00
Extension WTG 01			80	21.33	87.3	0.32	3.70	14.80
Extension WTG 01			100	16.65	88.9	0.50	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01			125	12.78	91.5	0.76	1.80	18.80
Extension WTG 01			160	7.60	93.5	1.14	0.00	21.10
Extension WTG 01			200	3.90	94.5	1.65	0.00	22.80
Extension WTG 02	2,414	2,422						
Extension WTG 02			20	41.62	71.8	0.00	5.60	7.60
Extension WTG 02			25	38.27	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.75	77.1	0.07	5.20	9.20
Extension WTG 02			40	28.80	78.3	0.12	5.00	10.30
Extension WTG 02			50	24.85	80.3	0.17	4.70	11.50
Extension WTG 02			63	23.15	84.6	0.27	4.30	13.00
Extension WTG 02			80	19.63	87.3	0.39	3.70	14.80
Extension WTG 02			100	14.91	88.9	0.61	3.00	16.80
Extension WTG 02			125	11.00	91.5	0.92	1.80	18.80
Extension WTG 02			160	5.74	93.5	1.38	0.00	21.10
Extension WTG 02			200	1.93	94.5	1.99	0.00	22.80
K01	3,224	3,228						
K01			20	43.62	76.3	0.00	5.60	7.60
K01			25	40.26	79.7	0.06	5.40	8.30
K01			32	35.72	81.6	0.10	5.20	9.20
K01			40	30.76	82.8	0.16	5.00	10.30
K01			50	25.79	83.8	0.23	4.70	11.50
K01			63	26.06	90.1	0.36	4.30	13.00
K01			80	21.50	91.8	0.52	3.70	14.80
K01			100	15.71	92.4	0.81	3.00	16.80
K01			125	11.69	95.0	1.23	1.80	18.80
K01			160	4.28	95.0	1.84	0.00	21.10
K01			200	0.27	96.0	2.65	0.00	22.80
K02	2,816	2,821						
K02			20	44.79	76.3	0.00	5.60	7.60
K02			25	41.44	79.7	0.06	5.40	8.30
K02			32	36.91	81.6	0.08	5.20	9.20
K02			40	31.95	82.8	0.14	5.00	10.30
K02			50	26.99	83.8	0.20	4.70	11.50
K02			63	27.28	90.1	0.31	4.30	13.00
K02			80	22.74	91.8	0.45	3.70	14.80
K02			100	16.99	92.4	0.71	3.00	16.80
K02			125	13.02	95.0	1.07	1.80	18.80
K02			160	5.68	95.0	1.61	0.00	21.10
K02			200	1.78	96.0	2.31	0.00	22.80
K03	2,240	2,246						
K03			20	46.77	76.3	0.00	5.60	7.60
K03			25	43.43	79.7	0.04	5.40	8.30
K03			32	38.90	81.6	0.07	5.20	9.20
K03			40	33.96	82.8	0.11	5.00	10.30
K03			50	29.01	83.8	0.16	4.70	11.50
K03			63	29.32	90.1	0.25	4.30	13.00
K03			80	24.81	91.8	0.36	3.70	14.80
K03			100	19.11	92.4	0.56	3.00	16.80
K03			125	15.22	95.0	0.85	1.80	18.80
K03			160	7.99	95.0	1.28	0.00	21.10
K03			200	4.23	96.0	1.84	0.00	22.80
K04	2,280	2,286						
K04			20	46.62	76.3	0.00	5.60	7.60
K04			25	43.27	79.7	0.05	5.40	8.30
K04			32	38.75	81.6	0.07	5.20	9.20
K04			40	33.80	82.8	0.11	5.00	10.30
K04			50	28.86	83.8	0.16	4.70	11.50
K04			63	29.17	90.1	0.25	4.30	13.00
K04			80	24.65	91.8	0.37	3.70	14.80
K04			100	18.95	92.4	0.57	3.00	16.80
K04			125	15.05	95.0	0.87	1.80	18.80
K04			160	7.81	95.0	1.30	0.00	21.10
K04			200	4.04	96.0	1.87	0.00	22.80
K05	1,543	1,552						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			20	49.98	76.3	0.00	5.60	7.60
K05			25	46.65	79.7	0.03	5.40	8.30
K05			32	42.13	81.6	0.05	5.20	9.20
K05			40	37.20	82.8	0.08	5.00	10.30
K05			50	32.27	83.8	0.11	4.70	11.50
K05			63	32.61	90.1	0.17	4.30	13.00
K05			80	28.13	91.8	0.25	3.70	14.80
K05			100	22.49	92.4	0.39	3.00	16.80
K05			125	18.69	95.0	0.59	1.80	18.80
K05			160	11.60	95.0	0.88	0.00	21.10
K05			200	8.01	96.0	1.27	0.00	22.80
K06	3,689	3,693						
K06			20	42.45	76.3	0.00	5.60	7.60
K06			25	39.08	79.7	0.07	5.40	8.30
K06			32	34.54	81.6	0.11	5.20	9.20
K06			40	29.57	82.8	0.18	5.00	10.30
K06			50	24.59	83.8	0.26	4.70	11.50
K06			63	24.85	90.1	0.41	4.30	13.00
K06			80	20.26	91.8	0.59	3.70	14.80
K06			100	14.43	92.4	0.92	3.00	16.80
K06			125	10.35	95.0	1.40	1.80	18.80
K06			160	2.85	95.0	2.10	0.00	21.10
K06			200	-1.27	96.0	3.03	0.00	22.80
K07	3,962	3,966						
K07			20	41.83	76.3	0.00	5.60	7.60
K07			25	38.45	79.7	0.08	5.40	8.30
K07			32	33.91	81.6	0.12	5.20	9.20
K07			40	28.94	82.8	0.20	5.00	10.30
K07			50	23.96	83.8	0.28	4.70	11.50
K07			63	24.20	90.1	0.44	4.30	13.00
K07			80	19.60	91.8	0.63	3.70	14.80
K07			100	13.74	92.4	0.99	3.00	16.80
K07			125	9.63	95.0	1.51	1.80	18.80
K07			160	2.07	95.0	2.26	0.00	21.10
K07			200	-2.12	96.0	3.25	0.00	22.80
K08	3,080	3,084						
K08			20	44.02	76.3	0.00	5.60	7.60
K08			25	40.66	79.7	0.06	5.40	8.30
K08			32	36.12	81.6	0.09	5.20	9.20
K08			40	31.16	82.8	0.15	5.00	10.30
K08			50	26.20	83.8	0.22	4.70	11.50
K08			63	26.48	90.1	0.34	4.30	13.00
K08			80	21.92	91.8	0.49	3.70	14.80
K08			100	16.15	92.4	0.77	3.00	16.80
K08			125	12.14	95.0	1.17	1.80	18.80
K08			160	4.76	95.0	1.76	0.00	21.10
K08			200	0.79	96.0	2.53	0.00	22.80
K09	2,758	2,764						
K09			20	44.97	76.3	0.00	5.60	7.60
K09			25	41.62	79.7	0.06	5.40	8.30
K09			32	37.09	81.6	0.08	5.20	9.20
K09			40	32.13	82.8	0.14	5.00	10.30
K09			50	27.18	83.8	0.19	4.70	11.50
K09			63	27.47	90.1	0.30	4.30	13.00
K09			80	22.93	91.8	0.44	3.70	14.80
K09			100	17.18	92.4	0.69	3.00	16.80
K09			125	13.22	95.0	1.05	1.80	18.80
K09			160	5.90	95.0	1.58	0.00	21.10
K09			200	2.00	96.0	2.27	0.00	22.80
K10	4,242	4,245						
K10			20	41.24	76.3	0.00	5.60	7.60
K10			25	37.86	79.7	0.08	5.40	8.30
K10			32	33.31	81.6	0.13	5.20	9.20
K10			40	28.33	82.8	0.21	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K10			50	23.34	83.8	0.30	4.70	11.50
K10			63	23.57	90.1	0.47	4.30	13.00
K10			80	18.96	91.8	0.68	3.70	14.80
K10			100	13.08	92.4	1.06	3.00	16.80
K10			125	8.93	95.0	1.61	1.80	18.80
K10			160	1.32	95.0	2.42	0.00	21.10
K10			200	-2.94	96.0	3.48	0.00	22.80
K11	4,909	4,912						
K11			20	39.98	76.3	0.00	5.60	7.60
K11			25	36.58	79.7	0.10	5.40	8.30
K11			32	32.03	81.6	0.15	5.20	9.20
K11			40	27.03	82.8	0.25	5.00	10.30
K11			50	22.03	83.8	0.34	4.70	11.50
K11			63	22.23	90.1	0.54	4.30	13.00
K11			80	17.59	91.8	0.79	3.70	14.80
K11			100	11.65	92.4	1.23	3.00	16.80
K11			125	7.41	95.0	1.87	1.80	18.80
K11			160	-0.32	95.0	2.80	0.00	21.10
K11			200	-4.75	96.0	4.03	0.00	22.80
K12	5,550	5,553						
K12			20	38.91	76.3	0.00	5.60	7.60
K12			25	35.50	79.7	0.11	5.40	8.30
K12			32	30.94	81.6	0.17	5.20	9.20
K12			40	25.93	82.8	0.28	5.00	10.30
K12			50	20.92	83.8	0.39	4.70	11.50
K12			63	21.10	90.1	0.61	4.30	13.00
K12			80	16.42	91.8	0.89	3.70	14.80
K12			100	10.42	92.4	1.39	3.00	16.80
K12			125	6.10	95.0	2.11	1.80	18.80
K12			160	-1.76	95.0	3.17	0.00	21.10
K12			200	-6.34	96.0	4.55	0.00	22.80
K13	4,809	4,812						
K13			20	40.15	76.3	0.00	5.60	7.60
K13			25	36.76	79.7	0.10	5.40	8.30
K13			32	32.21	81.6	0.14	5.20	9.20
K13			40	27.21	82.8	0.24	5.00	10.30
K13			50	22.22	83.8	0.34	4.70	11.50
K13			63	22.42	90.1	0.53	4.30	13.00
K13			80	17.78	91.8	0.77	3.70	14.80
K13			100	11.85	92.4	1.20	3.00	16.80
K13			125	7.62	95.0	1.83	1.80	18.80
K13			160	-0.09	95.0	2.74	0.00	21.10
K13			200	-4.49	96.0	3.95	0.00	22.80
K14	4,143	4,147						
K14			20	41.45	76.3	0.00	5.60	7.60
K14			25	38.06	79.7	0.08	5.40	8.30
K14			32	33.52	81.6	0.12	5.20	9.20
K14			40	28.54	82.8	0.21	5.00	10.30
K14			50	23.56	83.8	0.29	4.70	11.50
K14			63	23.79	90.1	0.46	4.30	13.00
K14			80	19.18	91.8	0.66	3.70	14.80
K14			100	13.31	92.4	1.04	3.00	16.80
K14			125	9.17	95.0	1.58	1.80	18.80
K14			160	1.58	95.0	2.36	0.00	21.10
K14			200	-2.65	96.0	3.40	0.00	22.80
Sum								
Sum			20	56.30				
Sum			25	52.95				
Sum			32	48.42				
Sum			40	43.47				
Sum			50	38.61				
Sum			63	38.73				
Sum			80	34.27				
Sum			100	28.63				

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Sum			125	24.69				
Sum			160	17.67				
Sum			200	13.84				

Noise sensitive area: Z Noise sensitive point: Finnish normal frequency - User defined (285)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,203	2,211						
Extension WTG 01			20	42.41	71.8	0.00	5.60	7.60
Extension WTG 01			25	39.06	75.2	0.04	5.40	8.30
Extension WTG 01			32	34.54	77.1	0.07	5.20	9.20
Extension WTG 01			40	29.60	78.3	0.11	5.00	10.30
Extension WTG 01			50	25.65	80.3	0.15	4.70	11.50
Extension WTG 01			63	23.97	84.6	0.24	4.30	13.00
Extension WTG 01			80	20.45	87.3	0.35	3.70	14.80
Extension WTG 01			100	15.76	88.9	0.55	3.00	16.80
Extension WTG 01			125	11.87	91.5	0.84	1.80	18.80
Extension WTG 01			160	6.65	93.5	1.26	0.00	21.10
Extension WTG 01			200	2.90	94.5	1.81	0.00	22.80
Extension WTG 02	2,507	2,514						
Extension WTG 02			20	41.29	71.8	0.00	5.60	7.60
Extension WTG 02			25	37.94	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.42	77.1	0.08	5.20	9.20
Extension WTG 02			40	28.47	78.3	0.13	5.00	10.30
Extension WTG 02			50	24.52	80.3	0.18	4.70	11.50
Extension WTG 02			63	22.82	84.6	0.28	4.30	13.00
Extension WTG 02			80	19.29	87.3	0.40	3.70	14.80
Extension WTG 02			100	14.56	88.9	0.63	3.00	16.80
Extension WTG 02			125	10.64	91.5	0.96	1.80	18.80
Extension WTG 02			160	5.36	93.5	1.43	0.00	21.10
Extension WTG 02			200	1.53	94.5	2.06	0.00	22.80
K01	3,011	3,015						
K01			20	44.21	76.3	0.00	5.60	7.60
K01			25	40.85	79.7	0.06	5.40	8.30
K01			32	36.32	81.6	0.09	5.20	9.20
K01			40	31.36	82.8	0.15	5.00	10.30
K01			50	26.40	83.8	0.21	4.70	11.50
K01			63	26.68	90.1	0.33	4.30	13.00
K01			80	22.13	91.8	0.48	3.70	14.80
K01			100	16.36	92.4	0.75	3.00	16.80
K01			125	12.37	95.0	1.15	1.80	18.80
K01			160	5.00	95.0	1.72	0.00	21.10
K01			200	1.04	96.0	2.47	0.00	22.80
K02	2,644	2,649						
K02			20	45.34	76.3	0.00	5.60	7.60
K02			25	41.98	79.7	0.05	5.40	8.30
K02			32	37.46	81.6	0.08	5.20	9.20
K02			40	32.51	82.8	0.13	5.00	10.30
K02			50	27.55	83.8	0.19	4.70	11.50
K02			63	27.85	90.1	0.29	4.30	13.00
K02			80	23.31	91.8	0.42	3.70	14.80
K02			100	17.58	92.4	0.66	3.00	16.80
K02			125	13.63	95.0	1.01	1.80	18.80
K02			160	6.33	95.0	1.51	0.00	21.10
K02			200	2.47	96.0	2.17	0.00	22.80
K03	2,109	2,116						
K03			20	47.29	76.3	0.00	5.60	7.60
K03			25	43.95	79.7	0.04	5.40	8.30
K03			32	39.43	81.6	0.06	5.20	9.20
K03			40	34.49	82.8	0.11	5.00	10.30
K03			50	29.54	83.8	0.15	4.70	11.50
K03			63	29.86	90.1	0.23	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			80	25.35	91.8	0.34	3.70	14.80
K03			100	19.66	92.4	0.53	3.00	16.80
K03			125	15.79	95.0	0.80	1.80	18.80
K03			160	8.58	95.0	1.21	0.00	21.10
K03			200	4.86	96.0	1.73	0.00	22.80
K04	2,280	2,286						
K04			20	46.62	76.3	0.00	5.60	7.60
K04			25	43.27	79.7	0.05	5.40	8.30
K04			32	38.75	81.6	0.07	5.20	9.20
K04			40	33.80	82.8	0.11	5.00	10.30
K04			50	28.86	83.8	0.16	4.70	11.50
K04			63	29.17	90.1	0.25	4.30	13.00
K04			80	24.65	91.8	0.37	3.70	14.80
K04			100	18.95	92.4	0.57	3.00	16.80
K04			125	15.05	95.0	0.87	1.80	18.80
K04			160	7.82	95.0	1.30	0.00	21.10
K04			200	4.04	96.0	1.87	0.00	22.80
K05	1,535	1,544						
K05			20	50.03	76.3	0.00	5.60	7.60
K05			25	46.70	79.7	0.03	5.40	8.30
K05			32	42.18	81.6	0.05	5.20	9.20
K05			40	37.25	82.8	0.08	5.00	10.30
K05			50	32.32	83.8	0.11	4.70	11.50
K05			63	32.66	90.1	0.17	4.30	13.00
K05			80	28.18	91.8	0.25	3.70	14.80
K05			100	22.54	92.4	0.39	3.00	16.80
K05			125	18.74	95.0	0.59	1.80	18.80
K05			160	11.65	95.0	0.88	0.00	21.10
K05			200	8.06	96.0	1.27	0.00	22.80
K06	3,548	3,552						
K06			20	42.79	76.3	0.00	5.60	7.60
K06			25	39.42	79.7	0.07	5.40	8.30
K06			32	34.88	81.6	0.11	5.20	9.20
K06			40	29.91	82.8	0.18	5.00	10.30
K06			50	24.94	83.8	0.25	4.70	11.50
K06			63	25.20	90.1	0.39	4.30	13.00
K06			80	20.62	91.8	0.57	3.70	14.80
K06			100	14.80	92.4	0.89	3.00	16.80
K06			125	10.74	95.0	1.35	1.80	18.80
K06			160	3.27	95.0	2.02	0.00	21.10
K06			200	-0.82	96.0	2.91	0.00	22.80
K07	3,872	3,875						
K07			20	42.03	76.3	0.00	5.60	7.60
K07			25	38.66	79.7	0.08	5.40	8.30
K07			32	34.12	81.6	0.12	5.20	9.20
K07			40	29.14	82.8	0.19	5.00	10.30
K07			50	24.16	83.8	0.27	4.70	11.50
K07			63	24.41	90.1	0.43	4.30	13.00
K07			80	19.81	91.8	0.62	3.70	14.80
K07			100	13.96	92.4	0.97	3.00	16.80
K07			125	9.86	95.0	1.47	1.80	18.80
K07			160	2.32	95.0	2.21	0.00	21.10
K07			200	-1.84	96.0	3.18	0.00	22.80
K08	2,993	2,997						
K08			20	44.27	76.3	0.00	5.60	7.60
K08			25	40.91	79.7	0.06	5.40	8.30
K08			32	36.38	81.6	0.09	5.20	9.20
K08			40	31.42	82.8	0.15	5.00	10.30
K08			50	26.46	83.8	0.21	4.70	11.50
K08			63	26.74	90.1	0.33	4.30	13.00
K08			80	22.19	91.8	0.48	3.70	14.80
K08			100	16.42	92.4	0.75	3.00	16.80
K08			125	12.43	95.0	1.14	1.80	18.80
K08			160	5.06	95.0	1.71	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			200	1.11	96.0	2.46	0.00	22.80
K09	2,715	2,720						
K09			20	45.11	76.3	0.00	5.60	7.60
K09			25	41.75	79.7	0.05	5.40	8.30
K09			32	37.23	81.6	0.08	5.20	9.20
K09			40	32.27	82.8	0.14	5.00	10.30
K09			50	27.32	83.8	0.19	4.70	11.50
K09			63	27.61	90.1	0.30	4.30	13.00
K09			80	23.07	91.8	0.44	3.70	14.80
K09			100	17.33	92.4	0.68	3.00	16.80
K09			125	13.37	95.0	1.03	1.80	18.80
K09			160	6.06	95.0	1.55	0.00	21.10
K09			200	2.18	96.0	2.23	0.00	22.80
K10	3,975	3,978						
K10			20	41.81	76.3	0.00	5.60	7.60
K10			25	38.43	79.7	0.08	5.40	8.30
K10			32	33.89	81.6	0.12	5.20	9.20
K10			40	28.91	82.8	0.20	5.00	10.30
K10			50	23.93	83.8	0.28	4.70	11.50
K10			63	24.17	90.1	0.44	4.30	13.00
K10			80	19.57	91.8	0.64	3.70	14.80
K10			100	13.71	92.4	0.99	3.00	16.80
K10			125	9.59	95.0	1.51	1.80	18.80
K10			160	2.04	95.0	2.27	0.00	21.10
K10			200	-2.16	96.0	3.26	0.00	22.80
K11	4,637	4,640						
K11			20	40.47	76.3	0.00	5.60	7.60
K11			25	37.08	79.7	0.09	5.40	8.30
K11			32	32.53	81.6	0.14	5.20	9.20
K11			40	27.54	82.8	0.23	5.00	10.30
K11			50	22.54	83.8	0.32	4.70	11.50
K11			63	22.76	90.1	0.51	4.30	13.00
K11			80	18.13	91.8	0.74	3.70	14.80
K11			100	12.21	92.4	1.16	3.00	16.80
K11			125	8.01	95.0	1.76	1.80	18.80
K11			160	0.32	95.0	2.64	0.00	21.10
K11			200	-4.04	96.0	3.81	0.00	22.80
K12	5,304	5,307						
K12			20	39.30	76.3	0.00	5.60	7.60
K12			25	35.90	79.7	0.11	5.40	8.30
K12			32	31.34	81.6	0.16	5.20	9.20
K12			40	26.34	82.8	0.27	5.00	10.30
K12			50	21.33	83.8	0.37	4.70	11.50
K12			63	21.52	90.1	0.58	4.30	13.00
K12			80	16.85	91.8	0.85	3.70	14.80
K12			100	10.88	92.4	1.33	3.00	16.80
K12			125	6.59	95.0	2.02	1.80	18.80
K12			160	-1.22	95.0	3.02	0.00	21.10
K12			200	-5.75	96.0	4.35	0.00	22.80
K13	4,593	4,596						
K13			20	40.55	76.3	0.00	5.60	7.60
K13			25	37.16	79.7	0.09	5.40	8.30
K13			32	32.61	81.6	0.14	5.20	9.20
K13			40	27.62	82.8	0.23	5.00	10.30
K13			50	22.63	83.8	0.32	4.70	11.50
K13			63	22.85	90.1	0.51	4.30	13.00
K13			80	18.22	91.8	0.74	3.70	14.80
K13			100	12.30	92.4	1.15	3.00	16.80
K13			125	8.11	95.0	1.75	1.80	18.80
K13			160	0.43	95.0	2.62	0.00	21.10
K13			200	-3.92	96.0	3.77	0.00	22.80
K14	3,939	3,942						
K14			20	41.88	76.3	0.00	5.60	7.60
K14			25	38.51	79.7	0.08	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			32	33.97	81.6	0.12	5.20	9.20
K14			40	28.99	82.8	0.20	5.00	10.30
K14			50	24.01	83.8	0.28	4.70	11.50
K14			63	24.25	90.1	0.43	4.30	13.00
K14			80	19.65	91.8	0.63	3.70	14.80
K14			100	13.80	92.4	0.99	3.00	16.80
K14			125	9.69	95.0	1.50	1.80	18.80
K14			160	2.14	95.0	2.25	0.00	21.10
K14			200	-2.05	96.0	3.23	0.00	22.80
Sum								
Sum			20	56.51				
Sum			25	53.15				
Sum			32	48.63				
Sum			40	43.67				
Sum			50	38.80				
Sum			63	38.95				
Sum			80	34.48				
Sum			100	28.83				
Sum			125	24.89				
Sum			160	17.83				
Sum			200	14.00				

Noise sensitive area: AA Noise sensitive point: Finnish normal frequency - User defined (267)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	3,691	3,694						
Extension WTG 01			20	37.95	71.8	0.00	5.60	7.60
Extension WTG 01			25	34.58	75.2	0.07	5.40	8.30
Extension WTG 01			32	30.04	77.1	0.11	5.20	9.20
Extension WTG 01			40	25.06	78.3	0.18	5.00	10.30
Extension WTG 01			50	21.09	80.3	0.26	4.70	11.50
Extension WTG 01			63	19.34	84.6	0.41	4.30	13.00
Extension WTG 01			80	15.76	87.3	0.59	3.70	14.80
Extension WTG 01			100	10.93	88.9	0.92	3.00	16.80
Extension WTG 01			125	6.85	91.5	1.40	1.80	18.80
Extension WTG 01			160	1.34	93.5	2.11	0.00	21.10
Extension WTG 01			200	-2.78	94.5	3.03	0.00	22.80
Extension WTG 02	2,862	2,867						
Extension WTG 02			20	40.15	71.8	0.00	5.60	7.60
Extension WTG 02			25	36.79	75.2	0.06	5.40	8.30
Extension WTG 02			32	32.27	77.1	0.09	5.20	9.20
Extension WTG 02			40	27.31	78.3	0.14	5.00	10.30
Extension WTG 02			50	23.35	80.3	0.20	4.70	11.50
Extension WTG 02			63	21.64	84.6	0.32	4.30	13.00
Extension WTG 02			80	18.09	87.3	0.46	3.70	14.80
Extension WTG 02			100	13.33	88.9	0.72	3.00	16.80
Extension WTG 02			125	9.36	91.5	1.09	1.80	18.80
Extension WTG 02			160	4.02	93.5	1.63	0.00	21.10
Extension WTG 02			200	0.10	94.5	2.35	0.00	22.80
K01	2,594	2,598						
K01			20	45.51	76.3	0.00	5.60	7.60
K01			25	42.16	79.7	0.05	5.40	8.30
K01			32	37.63	81.6	0.08	5.20	9.20
K01			40	32.68	82.8	0.13	5.00	10.30
K01			50	27.73	83.8	0.18	4.70	11.50
K01			63	28.02	90.1	0.29	4.30	13.00
K01			80	23.49	91.8	0.42	3.70	14.80
K01			100	17.76	92.4	0.65	3.00	16.80
K01			125	13.82	95.0	0.99	1.80	18.80
K01			160	6.53	95.0	1.48	0.00	21.10
K01			200	2.68	96.0	2.13	0.00	22.80
K02	2,538	2,543						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			20	45.69	76.3	0.00	5.60	7.60
K02			25	42.34	79.7	0.05	5.40	8.30
K02			32	37.82	81.6	0.08	5.20	9.20
K02			40	32.87	82.8	0.13	5.00	10.30
K02			50	27.92	83.8	0.18	4.70	11.50
K02			63	28.21	90.1	0.28	4.30	13.00
K02			80	23.69	91.8	0.41	3.70	14.80
K02			100	17.96	92.4	0.64	3.00	16.80
K02			125	14.03	95.0	0.97	1.80	18.80
K02			160	6.75	95.0	1.45	0.00	21.10
K02			200	2.91	96.0	2.08	0.00	22.80
K03	2,861	2,865						
K03			20	44.66	76.3	0.00	5.60	7.60
K03			25	41.30	79.7	0.06	5.40	8.30
K03			32	36.77	81.6	0.09	5.20	9.20
K03			40	31.81	82.8	0.14	5.00	10.30
K03			50	26.86	83.8	0.20	4.70	11.50
K03			63	27.14	90.1	0.32	4.30	13.00
K03			80	22.60	91.8	0.46	3.70	14.80
K03			100	16.84	92.4	0.72	3.00	16.80
K03			125	12.87	95.0	1.09	1.80	18.80
K03			160	5.52	95.0	1.63	0.00	21.10
K03			200	1.61	96.0	2.35	0.00	22.80
K04	2,717	2,721						
K04			20	45.11	76.3	0.00	5.60	7.60
K04			25	41.75	79.7	0.05	5.40	8.30
K04			32	37.22	81.6	0.08	5.20	9.20
K04			40	32.27	82.8	0.14	5.00	10.30
K04			50	27.32	83.8	0.19	4.70	11.50
K04			63	27.61	90.1	0.30	4.30	13.00
K04			80	23.07	91.8	0.44	3.70	14.80
K04			100	17.33	92.4	0.68	3.00	16.80
K04			125	13.37	95.0	1.03	1.80	18.80
K04			160	6.06	95.0	1.55	0.00	21.10
K04			200	2.18	96.0	2.23	0.00	22.80
K05	3,432	3,435						
K05			20	43.08	76.3	0.00	5.60	7.60
K05			25	39.71	79.7	0.07	5.40	8.30
K05			32	35.18	81.6	0.10	5.20	9.20
K05			40	30.21	82.8	0.17	5.00	10.30
K05			50	25.24	83.8	0.24	4.70	11.50
K05			63	25.50	90.1	0.38	4.30	13.00
K05			80	20.93	91.8	0.55	3.70	14.80
K05			100	15.12	92.4	0.86	3.00	16.80
K05			125	11.08	95.0	1.31	1.80	18.80
K05			160	3.62	95.0	1.96	0.00	21.10
K05			200	-0.44	96.0	2.82	0.00	22.80
K06	1,679	1,685						
K06			20	49.27	76.3	0.00	5.60	7.60
K06			25	45.93	79.7	0.03	5.40	8.30
K06			32	41.42	81.6	0.05	5.20	9.20
K06			40	36.48	82.8	0.08	5.00	10.30
K06			50	31.55	83.8	0.12	4.70	11.50
K06			63	31.88	90.1	0.19	4.30	13.00
K06			80	27.40	91.8	0.27	3.70	14.80
K06			100	21.75	92.4	0.42	3.00	16.80
K06			125	17.93	95.0	0.64	1.80	18.80
K06			160	10.81	95.0	0.96	0.00	21.10
K06			200	7.19	96.0	1.38	0.00	22.80
K07	1,116	1,126						
K07			20	52.77	76.3	0.00	5.60	7.60
K07			25	49.45	79.7	0.02	5.40	8.30
K07			32	44.94	81.6	0.03	5.20	9.20
K07			40	40.02	82.8	0.06	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K07			50	35.09	83.8	0.08	4.70	11.50
K07			63	35.45	90.1	0.12	4.30	13.00
K07			80	30.99	91.8	0.18	3.70	14.80
K07			100	25.39	92.4	0.28	3.00	16.80
K07			125	21.64	95.0	0.43	1.80	18.80
K07			160	14.63	95.0	0.64	0.00	21.10
K07			200	11.15	96.0	0.92	0.00	22.80
K08	1,941	1,946						
K08			20	48.02	76.3	0.00	5.60	7.60
K08			25	44.68	79.7	0.04	5.40	8.30
K08			32	40.16	81.6	0.06	5.20	9.20
K08			40	35.22	82.8	0.10	5.00	10.30
K08			50	30.28	83.8	0.14	4.70	11.50
K08			63	30.60	90.1	0.21	4.30	13.00
K08			80	26.10	91.8	0.31	3.70	14.80
K08			100	20.43	92.4	0.49	3.00	16.80
K08			125	16.58	95.0	0.74	1.80	18.80
K08			160	9.41	95.0	1.11	0.00	21.10
K08			200	5.72	96.0	1.60	0.00	22.80
K09	2,214	2,219						
K09			20	46.88	76.3	0.00	5.60	7.60
K09			25	43.53	79.7	0.04	5.40	8.30
K09			32	39.01	81.6	0.07	5.20	9.20
K09			40	34.07	82.8	0.11	5.00	10.30
K09			50	29.12	83.8	0.16	4.70	11.50
K09			63	29.43	90.1	0.24	4.30	13.00
K09			80	24.92	91.8	0.36	3.70	14.80
K09			100	19.22	92.4	0.55	3.00	16.80
K09			125	15.33	95.0	0.84	1.80	18.80
K09			160	8.11	95.0	1.26	0.00	21.10
K09			200	4.36	96.0	1.82	0.00	22.80
K10	3,068	3,071						
K10			20	44.05	76.3	0.00	5.60	7.60
K10			25	40.69	79.7	0.06	5.40	8.30
K10			32	36.16	81.6	0.09	5.20	9.20
K10			40	31.20	82.8	0.15	5.00	10.30
K10			50	26.24	83.8	0.21	4.70	11.50
K10			63	26.52	90.1	0.34	4.30	13.00
K10			80	21.96	91.8	0.49	3.70	14.80
K10			100	16.19	92.4	0.77	3.00	16.80
K10			125	12.19	95.0	1.17	1.80	18.80
K10			160	4.80	95.0	1.75	0.00	21.10
K10			200	0.83	96.0	2.52	0.00	22.80
K11	3,272	3,275						
K11			20	43.50	76.3	0.00	5.60	7.60
K11			25	40.13	79.7	0.07	5.40	8.30
K11			32	35.60	81.6	0.10	5.20	9.20
K11			40	30.63	82.8	0.16	5.00	10.30
K11			50	25.67	83.8	0.23	4.70	11.50
K11			63	25.94	90.1	0.36	4.30	13.00
K11			80	21.37	91.8	0.52	3.70	14.80
K11			100	15.58	92.4	0.82	3.00	16.80
K11			125	11.55	95.0	1.24	1.80	18.80
K11			160	4.13	95.0	1.87	0.00	21.10
K11			200	0.11	96.0	2.69	0.00	22.80
K12	3,041	3,045						
K12			20	44.13	76.3	0.00	5.60	7.60
K12			25	40.77	79.7	0.06	5.40	8.30
K12			32	36.24	81.6	0.09	5.20	9.20
K12			40	31.28	82.8	0.15	5.00	10.30
K12			50	26.32	83.8	0.21	4.70	11.50
K12			63	26.59	90.1	0.33	4.30	13.00
K12			80	22.04	91.8	0.49	3.70	14.80
K12			100	16.27	92.4	0.76	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			125	12.27	95.0	1.16	1.80	18.80
K12			160	4.89	95.0	1.74	0.00	21.10
K12			200	0.93	96.0	2.50	0.00	22.80
K13	2,311	2,315						
K13			20	46.51	76.3	0.00	5.60	7.60
K13			25	43.16	79.7	0.05	5.40	8.30
K13			32	38.64	81.6	0.07	5.20	9.20
K13			40	33.69	82.8	0.12	5.00	10.30
K13			50	28.75	83.8	0.16	4.70	11.50
K13			63	29.05	90.1	0.25	4.30	13.00
K13			80	24.54	91.8	0.37	3.70	14.80
K13			100	18.83	92.4	0.58	3.00	16.80
K13			125	14.93	95.0	0.88	1.80	18.80
K13			160	7.69	95.0	1.32	0.00	21.10
K13			200	3.91	96.0	1.90	0.00	22.80
K14	2,156	2,161						
K14			20	47.11	76.3	0.00	5.60	7.60
K14			25	43.76	79.7	0.04	5.40	8.30
K14			32	39.24	81.6	0.06	5.20	9.20
K14			40	34.30	82.8	0.11	5.00	10.30
K14			50	29.36	83.8	0.15	4.70	11.50
K14			63	29.67	90.1	0.24	4.30	13.00
K14			80	25.16	91.8	0.35	3.70	14.80
K14			100	19.47	92.4	0.54	3.00	16.80
K14			125	15.59	95.0	0.82	1.80	18.80
K14			160	8.38	95.0	1.23	0.00	21.10
K14			200	4.64	96.0	1.77	0.00	22.80
Sum								
Sum			20	58.61				
Sum			25	55.27				
Sum			32	50.75				
Sum			40	45.81				
Sum			50	40.89				
Sum			63	41.17				
Sum			80	36.68				
Sum			100	31.02				
Sum			125	27.16				
Sum			160	20.03				
Sum			200	16.33				

Noise sensitive area: AB Noise sensitive point: Finnish normal frequency - User defined (284)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,377	2,384						
Extension WTG 01			20	41.75	71.8	0.00	5.60	7.60
Extension WTG 01			25	38.41	75.2	0.05	5.40	8.30
Extension WTG 01			32	33.88	77.1	0.07	5.20	9.20
Extension WTG 01			40	28.94	78.3	0.12	5.00	10.30
Extension WTG 01			50	24.99	80.3	0.17	4.70	11.50
Extension WTG 01			63	23.29	84.6	0.26	4.30	13.00
Extension WTG 01			80	19.77	87.3	0.38	3.70	14.80
Extension WTG 01			100	15.06	88.9	0.60	3.00	16.80
Extension WTG 01			125	11.15	91.5	0.91	1.80	18.80
Extension WTG 01			160	5.90	93.5	1.36	0.00	21.10
Extension WTG 01			200	2.10	94.5	1.95	0.00	22.80
Extension WTG 02	2,592	2,599						
Extension WTG 02			20	41.00	71.8	0.00	5.60	7.60
Extension WTG 02			25	37.65	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.13	77.1	0.08	5.20	9.20
Extension WTG 02			40	28.17	78.3	0.13	5.00	10.30
Extension WTG 02			50	24.22	80.3	0.18	4.70	11.50
Extension WTG 02			63	22.52	84.6	0.29	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			80	18.99	87.3	0.42	3.70	14.80
Extension WTG 02			100	14.25	88.9	0.65	3.00	16.80
Extension WTG 02			125	10.32	91.5	0.99	1.80	18.80
Extension WTG 02			160	5.02	93.5	1.48	0.00	21.10
Extension WTG 02			200	1.17	94.5	2.13	0.00	22.80
K01	2,836	2,841						
K01			20	44.73	76.3	0.00	5.60	7.60
K01			25	41.37	79.7	0.06	5.40	8.30
K01			32	36.85	81.6	0.09	5.20	9.20
K01			40	31.89	82.8	0.14	5.00	10.30
K01			50	26.93	83.8	0.20	4.70	11.50
K01			63	27.22	90.1	0.31	4.30	13.00
K01			80	22.68	91.8	0.45	3.70	14.80
K01			100	16.92	92.4	0.71	3.00	16.80
K01			125	12.95	95.0	1.08	1.80	18.80
K01			160	5.61	95.0	1.62	0.00	21.10
K01			200	1.70	96.0	2.33	0.00	22.80
K02	2,509	2,515						
K02			20	45.79	76.3	0.00	5.60	7.60
K02			25	42.44	79.7	0.05	5.40	8.30
K02			32	37.91	81.6	0.08	5.20	9.20
K02			40	32.96	82.8	0.13	5.00	10.30
K02			50	28.01	83.8	0.18	4.70	11.50
K02			63	28.31	90.1	0.28	4.30	13.00
K02			80	23.79	91.8	0.40	3.70	14.80
K02			100	18.06	92.4	0.63	3.00	16.80
K02			125	14.13	95.0	0.96	1.80	18.80
K02			160	6.86	95.0	1.43	0.00	21.10
K02			200	3.03	96.0	2.06	0.00	22.80
K03	2,019	2,025						
K03			20	47.67	76.3	0.00	5.60	7.60
K03			25	44.33	79.7	0.04	5.40	8.30
K03			32	39.81	81.6	0.06	5.20	9.20
K03			40	34.87	82.8	0.10	5.00	10.30
K03			50	29.93	83.8	0.14	4.70	11.50
K03			63	30.25	90.1	0.22	4.30	13.00
K03			80	25.75	91.8	0.32	3.70	14.80
K03			100	20.06	92.4	0.51	3.00	16.80
K03			125	16.20	95.0	0.77	1.80	18.80
K03			160	9.02	95.0	1.15	0.00	21.10
K03			200	5.31	96.0	1.66	0.00	22.80
K04	2,295	2,301						
K04			20	46.56	76.3	0.00	5.60	7.60
K04			25	43.21	79.7	0.05	5.40	8.30
K04			32	38.69	81.6	0.07	5.20	9.20
K04			40	33.75	82.8	0.12	5.00	10.30
K04			50	28.80	83.8	0.16	4.70	11.50
K04			63	29.11	90.1	0.25	4.30	13.00
K04			80	24.59	91.8	0.37	3.70	14.80
K04			100	18.89	92.4	0.58	3.00	16.80
K04			125	14.99	95.0	0.87	1.80	18.80
K04			160	7.75	95.0	1.31	0.00	21.10
K04			200	3.97	96.0	1.89	0.00	22.80
K05	1,565	1,574						
K05			20	49.86	76.3	0.00	5.60	7.60
K05			25	46.53	79.7	0.03	5.40	8.30
K05			32	42.01	81.6	0.05	5.20	9.20
K05			40	37.08	82.8	0.08	5.00	10.30
K05			50	32.15	83.8	0.11	4.70	11.50
K05			63	32.49	90.1	0.17	4.30	13.00
K05			80	28.01	91.8	0.25	3.70	14.80
K05			100	22.37	92.4	0.39	3.00	16.80
K05			125	18.56	95.0	0.60	1.80	18.80
K05			160	11.46	95.0	0.90	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			200	7.87	96.0	1.29	0.00	22.80
K06	3,432	3,436						
K06			20	43.08	76.3	0.00	5.60	7.60
K06			25	39.71	79.7	0.07	5.40	8.30
K06			32	35.18	81.6	0.10	5.20	9.20
K06			40	30.21	82.8	0.17	5.00	10.30
K06			50	25.24	83.8	0.24	4.70	11.50
K06			63	25.50	90.1	0.38	4.30	13.00
K06			80	20.93	91.8	0.55	3.70	14.80
K06			100	15.12	92.4	0.86	3.00	16.80
K06			125	11.07	95.0	1.31	1.80	18.80
K06			160	3.62	95.0	1.96	0.00	21.10
K06			200	-0.44	96.0	2.82	0.00	22.80
K07	3,796	3,799						
K07			20	42.21	76.3	0.00	5.60	7.60
K07			25	38.83	79.7	0.08	5.40	8.30
K07			32	34.29	81.6	0.11	5.20	9.20
K07			40	29.32	82.8	0.19	5.00	10.30
K07			50	24.34	83.8	0.27	4.70	11.50
K07			63	24.59	90.1	0.42	4.30	13.00
K07			80	20.00	91.8	0.61	3.70	14.80
K07			100	14.16	92.4	0.95	3.00	16.80
K07			125	10.06	95.0	1.44	1.80	18.80
K07			160	2.54	95.0	2.17	0.00	21.10
K07			200	-1.61	96.0	3.12	0.00	22.80
K08	2,927	2,932						
K08			20	44.46	76.3	0.00	5.60	7.60
K08			25	41.10	79.7	0.06	5.40	8.30
K08			32	36.57	81.6	0.09	5.20	9.20
K08			40	31.61	82.8	0.15	5.00	10.30
K08			50	26.65	83.8	0.21	4.70	11.50
K08			63	26.94	90.1	0.32	4.30	13.00
K08			80	22.39	91.8	0.47	3.70	14.80
K08			100	16.63	92.4	0.73	3.00	16.80
K08			125	12.64	95.0	1.11	1.80	18.80
K08			160	5.29	95.0	1.67	0.00	21.10
K08			200	1.35	96.0	2.40	0.00	22.80
K09	2,689	2,694						
K09			20	45.19	76.3	0.00	5.60	7.60
K09			25	41.84	79.7	0.05	5.40	8.30
K09			32	37.31	81.6	0.08	5.20	9.20
K09			40	32.36	82.8	0.13	5.00	10.30
K09			50	27.40	83.8	0.19	4.70	11.50
K09			63	27.70	90.1	0.30	4.30	13.00
K09			80	23.16	91.8	0.43	3.70	14.80
K09			100	17.42	92.4	0.67	3.00	16.80
K09			125	13.47	95.0	1.02	1.80	18.80
K09			160	6.16	95.0	1.54	0.00	21.10
K09			200	2.28	96.0	2.21	0.00	22.80
K10	3,751	3,755						
K10			20	42.31	76.3	0.00	5.60	7.60
K10			25	38.93	79.7	0.08	5.40	8.30
K10			32	34.40	81.6	0.11	5.20	9.20
K10			40	29.42	82.8	0.19	5.00	10.30
K10			50	24.44	83.8	0.26	4.70	11.50
K10			63	24.69	90.1	0.41	4.30	13.00
K10			80	20.11	91.8	0.60	3.70	14.80
K10			100	14.27	92.4	0.94	3.00	16.80
K10			125	10.18	95.0	1.43	1.80	18.80
K10			160	2.67	95.0	2.14	0.00	21.10
K10			200	-1.47	96.0	3.08	0.00	22.80
K11	4,408	4,411						
K11			20	40.91	76.3	0.00	5.60	7.60
K11			25	37.52	79.7	0.09	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			32	32.98	81.6	0.13	5.20	9.20
K11			40	27.99	82.8	0.22	5.00	10.30
K11			50	23.00	83.8	0.31	4.70	11.50
K11			63	23.22	90.1	0.49	4.30	13.00
K11			80	18.60	91.8	0.71	3.70	14.80
K11			100	12.71	92.4	1.10	3.00	16.80
K11			125	8.53	95.0	1.68	1.80	18.80
K11			160	0.89	95.0	2.51	0.00	21.10
K11			200	-3.41	96.0	3.62	0.00	22.80
K12	5,094	5,097						
K12			20	39.65	76.3	0.00	5.60	7.60
K12			25	36.25	79.7	0.10	5.40	8.30
K12			32	31.70	81.6	0.15	5.20	9.20
K12			40	26.70	82.8	0.25	5.00	10.30
K12			50	21.70	83.8	0.36	4.70	11.50
K12			63	21.89	90.1	0.56	4.30	13.00
K12			80	17.24	91.8	0.82	3.70	14.80
K12			100	11.28	92.4	1.27	3.00	16.80
K12			125	7.02	95.0	1.94	1.80	18.80
K12			160	-0.75	95.0	2.91	0.00	21.10
K12			200	-5.23	96.0	4.18	0.00	22.80
K13	4,409	4,413						
K13			20	40.91	76.3	0.00	5.60	7.60
K13			25	37.52	79.7	0.09	5.40	8.30
K13			32	32.97	81.6	0.13	5.20	9.20
K13			40	27.99	82.8	0.22	5.00	10.30
K13			50	23.00	83.8	0.31	4.70	11.50
K13			63	23.22	90.1	0.49	4.30	13.00
K13			80	18.60	91.8	0.71	3.70	14.80
K13			100	12.70	92.4	1.10	3.00	16.80
K13			125	8.53	95.0	1.68	1.80	18.80
K13			160	0.89	95.0	2.52	0.00	21.10
K13			200	-3.41	96.0	3.62	0.00	22.80
K14	3,768	3,771						
K14			20	42.27	76.3	0.00	5.60	7.60
K14			25	38.89	79.7	0.08	5.40	8.30
K14			32	34.36	81.6	0.11	5.20	9.20
K14			40	29.38	82.8	0.19	5.00	10.30
K14			50	24.41	83.8	0.26	4.70	11.50
K14			63	24.66	90.1	0.41	4.30	13.00
K14			80	20.07	91.8	0.60	3.70	14.80
K14			100	14.23	92.4	0.94	3.00	16.80
K14			125	10.14	95.0	1.43	1.80	18.80
K14			160	2.62	95.0	2.15	0.00	21.10
K14			200	-1.52	96.0	3.09	0.00	22.80
Sum								
Sum			20	56.64				
Sum			25	53.29				
Sum			32	48.76				
Sum			40	43.81				
Sum			50	38.93				
Sum			63	39.10				
Sum			80	34.62				
Sum			100	28.96				
Sum			125	25.02				
Sum			160	17.93				
Sum			200	14.10				

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
Noise sensitive area: AC Noise sensitive point: Finnish normal frequency - User defined (281)

Wind speed: 8.0 m/s
WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,364	2,372						
Extension WTG 01			20	41.80	71.8	0.00	5.60	7.60
Extension WTG 01			25	38.45	75.2	0.05	5.40	8.30
Extension WTG 01			32	33.93	77.1	0.07	5.20	9.20
Extension WTG 01			40	28.98	78.3	0.12	5.00	10.30
Extension WTG 01			50	25.03	80.3	0.17	4.70	11.50
Extension WTG 01			63	23.34	84.6	0.26	4.30	13.00
Extension WTG 01			80	19.82	87.3	0.38	3.70	14.80
Extension WTG 01			100	15.11	88.9	0.59	3.00	16.80
Extension WTG 01			125	11.20	91.5	0.90	1.80	18.80
Extension WTG 01			160	5.95	93.5	1.35	0.00	21.10
Extension WTG 01			200	2.15	94.5	1.94	0.00	22.80
Extension WTG 02	2,448	2,455						
Extension WTG 02			20	41.50	71.8	0.00	5.60	7.60
Extension WTG 02			25	38.15	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.63	77.1	0.07	5.20	9.20
Extension WTG 02			40	28.68	78.3	0.12	5.00	10.30
Extension WTG 02			50	24.73	80.3	0.17	4.70	11.50
Extension WTG 02			63	23.03	84.6	0.27	4.30	13.00
Extension WTG 02			80	19.51	87.3	0.39	3.70	14.80
Extension WTG 02			100	14.78	88.9	0.61	3.00	16.80
Extension WTG 02			125	10.87	91.5	0.93	1.80	18.80
Extension WTG 02			160	5.60	93.5	1.40	0.00	21.10
Extension WTG 02			200	1.79	94.5	2.01	0.00	22.80
K01	2,448	2,453						
K01			20	46.01	76.3	0.00	5.60	7.60
K01			25	42.66	79.7	0.05	5.40	8.30
K01			32	38.13	81.6	0.07	5.20	9.20
K01			40	33.18	82.8	0.12	5.00	10.30
K01			50	28.23	83.8	0.17	4.70	11.50
K01			63	28.54	90.1	0.27	4.30	13.00
K01			80	24.01	91.8	0.39	3.70	14.80
K01			100	18.29	92.4	0.61	3.00	16.80
K01			125	14.37	95.0	0.93	1.80	18.80
K01			160	7.11	95.0	1.40	0.00	21.10
K01			200	3.29	96.0	2.01	0.00	22.80
K02	2,142	2,149						
K02			20	47.16	76.3	0.00	5.60	7.60
K02			25	43.81	79.7	0.04	5.40	8.30
K02			32	39.29	81.6	0.06	5.20	9.20
K02			40	34.35	82.8	0.11	5.00	10.30
K02			50	29.41	83.8	0.15	4.70	11.50
K02			63	29.72	90.1	0.24	4.30	13.00
K02			80	25.21	91.8	0.34	3.70	14.80
K02			100	19.52	92.4	0.54	3.00	16.80
K02			125	15.64	95.0	0.82	1.80	18.80
K02			160	8.43	95.0	1.22	0.00	21.10
K02			200	4.69	96.0	1.76	0.00	22.80
K03	1,690	1,698						
K03			20	49.20	76.3	0.00	5.60	7.60
K03			25	45.87	79.7	0.03	5.40	8.30
K03			32	41.35	81.6	0.05	5.20	9.20
K03			40	36.42	82.8	0.08	5.00	10.30
K03			50	31.48	83.8	0.12	4.70	11.50
K03			63	31.81	90.1	0.19	4.30	13.00
K03			80	27.33	91.8	0.27	3.70	14.80
K03			100	21.68	92.4	0.42	3.00	16.80
K03			125	17.86	95.0	0.65	1.80	18.80
K03			160	10.73	95.0	0.97	0.00	21.10
K03			200	7.11	96.0	1.39	0.00	22.80
K04	2,070	2,077						
K04			20	47.45	76.3	0.00	5.60	7.60
K04			25	44.11	79.7	0.04	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K04			32	39.59	81.6	0.06	5.20	9.20
K04			40	34.65	82.8	0.10	5.00	10.30
K04			50	29.71	83.8	0.15	4.70	11.50
K04			63	30.02	90.1	0.23	4.30	13.00
K04			80	25.52	91.8	0.33	3.70	14.80
K04			100	19.83	92.4	0.52	3.00	16.80
K04			125	15.96	95.0	0.79	1.80	18.80
K04			160	8.77	95.0	1.18	0.00	21.10
K04			200	5.05	96.0	1.70	0.00	22.80
K05	1,382	1,392						
K05			20	50.93	76.3	0.00	5.60	7.60
K05			25	47.60	79.7	0.03	5.40	8.30
K05			32	43.08	81.6	0.04	5.20	9.20
K05			40	38.16	82.8	0.07	5.00	10.30
K05			50	33.23	83.8	0.10	4.70	11.50
K05			63	33.57	90.1	0.15	4.30	13.00
K05			80	29.10	91.8	0.22	3.70	14.80
K05			100	23.48	92.4	0.35	3.00	16.80
K05			125	19.70	95.0	0.53	1.80	18.80
K05			160	12.63	95.0	0.79	0.00	21.10
K05			200	9.08	96.0	1.14	0.00	22.80
K06	3,073	3,078						
K06			20	44.04	76.3	0.00	5.60	7.60
K06			25	40.67	79.7	0.06	5.40	8.30
K06			32	36.14	81.6	0.09	5.20	9.20
K06			40	31.18	82.8	0.15	5.00	10.30
K06			50	26.22	83.8	0.22	4.70	11.50
K06			63	26.50	90.1	0.34	4.30	13.00
K06			80	21.94	91.8	0.49	3.70	14.80
K06			100	16.17	92.4	0.77	3.00	16.80
K06			125	12.17	95.0	1.17	1.80	18.80
K06			160	4.78	95.0	1.75	0.00	21.10
K06			200	0.81	96.0	2.52	0.00	22.80
K07	3,465	3,469						
K07			20	43.00	76.3	0.00	5.60	7.60
K07			25	39.63	79.7	0.07	5.40	8.30
K07			32	35.09	81.6	0.10	5.20	9.20
K07			40	30.12	82.8	0.17	5.00	10.30
K07			50	25.15	83.8	0.24	4.70	11.50
K07			63	25.41	90.1	0.38	4.30	13.00
K07			80	20.84	91.8	0.56	3.70	14.80
K07			100	15.03	92.4	0.87	3.00	16.80
K07			125	10.98	95.0	1.32	1.80	18.80
K07			160	3.52	95.0	1.98	0.00	21.10
K07			200	-0.55	96.0	2.84	0.00	22.80
K08	2,609	2,615						
K08			20	45.45	76.3	0.00	5.60	7.60
K08			25	42.10	79.7	0.05	5.40	8.30
K08			32	37.57	81.6	0.08	5.20	9.20
K08			40	32.62	82.8	0.13	5.00	10.30
K08			50	27.67	83.8	0.18	4.70	11.50
K08			63	27.96	90.1	0.29	4.30	13.00
K08			80	23.43	91.8	0.42	3.70	14.80
K08			100	17.70	92.4	0.65	3.00	16.80
K08			125	13.76	95.0	0.99	1.80	18.80
K08			160	6.46	95.0	1.49	0.00	21.10
K08			200	2.61	96.0	2.14	0.00	22.80
K09	2,412	2,418						
K09			20	46.13	76.3	0.00	5.60	7.60
K09			25	42.78	79.7	0.05	5.40	8.30
K09			32	38.26	81.6	0.07	5.20	9.20
K09			40	33.31	82.8	0.12	5.00	10.30
K09			50	28.36	83.8	0.17	4.70	11.50
K09			63	28.67	90.1	0.27	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			80	24.15	91.8	0.39	3.70	14.80
K09			100	18.43	92.4	0.60	3.00	16.80
K09			125	14.51	95.0	0.92	1.80	18.80
K09			160	7.25	95.0	1.38	0.00	21.10
K09			200	3.45	96.0	1.98	0.00	22.80
K10	3,355	3,359						
K10			20	43.28	76.3	0.00	5.60	7.60
K10			25	39.91	79.7	0.07	5.40	8.30
K10			32	35.38	81.6	0.10	5.20	9.20
K10			40	30.41	82.8	0.17	5.00	10.30
K10			50	25.44	83.8	0.24	4.70	11.50
K10			63	25.71	90.1	0.37	4.30	13.00
K10			80	21.14	91.8	0.54	3.70	14.80
K10			100	15.34	92.4	0.84	3.00	16.80
K10			125	11.30	95.0	1.28	1.80	18.80
K10			160	3.86	95.0	1.91	0.00	21.10
K10			200	-0.18	96.0	2.75	0.00	22.80
K11	4,013	4,016						
K11			20	41.72	76.3	0.00	5.60	7.60
K11			25	38.34	79.7	0.08	5.40	8.30
K11			32	33.80	81.6	0.12	5.20	9.20
K11			40	28.82	82.8	0.20	5.00	10.30
K11			50	23.84	83.8	0.28	4.70	11.50
K11			63	24.08	90.1	0.44	4.30	13.00
K11			80	19.48	91.8	0.64	3.70	14.80
K11			100	13.62	92.4	1.00	3.00	16.80
K11			125	9.50	95.0	1.53	1.80	18.80
K11			160	1.93	95.0	2.29	0.00	21.10
K11			200	-2.27	96.0	3.29	0.00	22.80
K12	4,697	4,700						
K12			20	40.36	76.3	0.00	5.60	7.60
K12			25	36.96	79.7	0.09	5.40	8.30
K12			32	32.42	81.6	0.14	5.20	9.20
K12			40	27.42	82.8	0.23	5.00	10.30
K12			50	22.43	83.8	0.33	4.70	11.50
K12			63	22.64	90.1	0.52	4.30	13.00
K12			80	18.01	91.8	0.75	3.70	14.80
K12			100	12.08	92.4	1.17	3.00	16.80
K12			125	7.87	95.0	1.79	1.80	18.80
K12			160	0.18	95.0	2.68	0.00	21.10
K12			200	-4.20	96.0	3.85	0.00	22.80
K13	4,016	4,020						
K13			20	41.72	76.3	0.00	5.60	7.60
K13			25	38.34	79.7	0.08	5.40	8.30
K13			32	33.80	81.6	0.12	5.20	9.20
K13			40	28.81	82.8	0.20	5.00	10.30
K13			50	23.83	83.8	0.28	4.70	11.50
K13			63	24.07	90.1	0.44	4.30	13.00
K13			80	19.47	91.8	0.64	3.70	14.80
K13			100	13.61	92.4	1.00	3.00	16.80
K13			125	9.49	95.0	1.53	1.80	18.80
K13			160	1.92	95.0	2.29	0.00	21.10
K13			200	-2.28	96.0	3.30	0.00	22.80
K14	3,379	3,383						
K14			20	43.21	76.3	0.00	5.60	7.60
K14			25	39.85	79.7	0.07	5.40	8.30
K14			32	35.31	81.6	0.10	5.20	9.20
K14			40	30.35	82.8	0.17	5.00	10.30
K14			50	25.38	83.8	0.24	4.70	11.50
K14			63	25.64	90.1	0.37	4.30	13.00
K14			80	21.07	91.8	0.54	3.70	14.80
K14			100	15.27	92.4	0.85	3.00	16.80
K14			125	11.23	95.0	1.29	1.80	18.80
K14			160	3.79	95.0	1.93	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			200	-0.26	96.0	2.77	0.00	22.80
Sum			20	57.69				
Sum			25	54.35				
Sum			32	49.82				
Sum			40	44.88				
Sum			50	39.99				
Sum			63	40.19				
Sum			80	35.72				
Sum			100	30.07				
Sum			125	26.18				
Sum			160	19.10				
Sum			200	15.35				

Noise sensitive area: AD Noise sensitive point: Finnish normal frequency - User defined (280)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	2,634	2,640	20	40.87	71.8	0.00	5.60	7.60
Extension WTG 01			25	37.51	75.2	0.05	5.40	8.30
Extension WTG 01			32	32.99	77.1	0.08	5.20	9.20
Extension WTG 01			40	28.04	78.3	0.13	5.00	10.30
Extension WTG 01			50	24.08	80.3	0.18	4.70	11.50
Extension WTG 01			63	22.38	84.6	0.29	4.30	13.00
Extension WTG 01			80	18.84	87.3	0.42	3.70	14.80
Extension WTG 01			100	14.11	88.9	0.66	3.00	16.80
Extension WTG 01			125	10.16	91.5	1.00	1.80	18.80
Extension WTG 01			160	4.86	93.5	1.50	0.00	21.10
Extension WTG 01			200	1.00	94.5	2.16	0.00	22.80
Extension WTG 02	2,607	2,613	20	40.96	71.8	0.00	5.60	7.60
Extension WTG 02			25	37.60	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.08	77.1	0.08	5.20	9.20
Extension WTG 02			40	28.13	78.3	0.13	5.00	10.30
Extension WTG 02			50	24.17	80.3	0.18	4.70	11.50
Extension WTG 02			63	22.47	84.6	0.29	4.30	13.00
Extension WTG 02			80	18.94	87.3	0.42	3.70	14.80
Extension WTG 02			100	14.20	88.9	0.65	3.00	16.80
Extension WTG 02			125	10.26	91.5	0.99	1.80	18.80
Extension WTG 02			160	4.97	93.5	1.49	0.00	21.10
Extension WTG 02			200	1.11	94.5	2.14	0.00	22.80
K01	2,211	2,217	20	46.89	76.3	0.00	5.60	7.60
K01			25	43.54	79.7	0.04	5.40	8.30
K01			32	39.02	81.6	0.07	5.20	9.20
K01			40	34.07	82.8	0.11	5.00	10.30
K01			50	29.13	83.8	0.16	4.70	11.50
K01			63	29.44	90.1	0.24	4.30	13.00
K01			80	24.93	91.8	0.35	3.70	14.80
K01			100	19.23	92.4	0.55	3.00	16.80
K01			125	15.34	95.0	0.84	1.80	18.80
K01			160	8.12	95.0	1.26	0.00	21.10
K01			200	4.37	96.0	1.82	0.00	22.80
K02	1,980	1,987	20	47.83	76.3	0.00	5.60	7.60
K02			25	44.50	79.7	0.04	5.40	8.30
K02			32	39.98	81.6	0.06	5.20	9.20
K02			40	35.04	82.8	0.10	5.00	10.30
K02			50	30.10	83.8	0.14	4.70	11.50
K02			63	30.42	90.1	0.22	4.30	13.00
K02			80	25.92	91.8	0.32	3.70	14.80
K02			100	20.24	92.4	0.50	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			125	16.38	95.0	0.76	1.80	18.80
K02			160	9.20	95.0	1.13	0.00	21.10
K02			200	5.51	96.0	1.63	0.00	22.80
K03	1,628	1,636						
K03			20	49.52	76.3	0.00	5.60	7.60
K03			25	46.19	79.7	0.03	5.40	8.30
K03			32	41.67	81.6	0.05	5.20	9.20
K03			40	36.74	82.8	0.08	5.00	10.30
K03			50	31.81	83.8	0.11	4.70	11.50
K03			63	32.14	90.1	0.18	4.30	13.00
K03			80	27.66	91.8	0.26	3.70	14.80
K03			100	22.02	92.4	0.41	3.00	16.80
K03			125	18.20	95.0	0.62	1.80	18.80
K03			160	11.09	95.0	0.93	0.00	21.10
K03			200	7.48	96.0	1.34	0.00	22.80
K04	2,151	2,158						
K04			20	47.12	76.3	0.00	5.60	7.60
K04			25	43.78	79.7	0.04	5.40	8.30
K04			32	39.26	81.6	0.06	5.20	9.20
K04			40	34.31	82.8	0.11	5.00	10.30
K04			50	29.37	83.8	0.15	4.70	11.50
K04			63	29.68	90.1	0.24	4.30	13.00
K04			80	25.17	91.8	0.35	3.70	14.80
K04			100	19.48	92.4	0.54	3.00	16.80
K04			125	15.60	95.0	0.82	1.80	18.80
K04			160	8.39	95.0	1.23	0.00	21.10
K04			200	4.65	96.0	1.77	0.00	22.80
K05	1,540	1,549						
K05			20	50.00	76.3	0.00	5.60	7.60
K05			25	46.67	79.7	0.03	5.40	8.30
K05			32	42.15	81.6	0.05	5.20	9.20
K05			40	37.22	82.8	0.08	5.00	10.30
K05			50	32.29	83.8	0.11	4.70	11.50
K05			63	32.63	90.1	0.17	4.30	13.00
K05			80	28.15	91.8	0.25	3.70	14.80
K05			100	22.51	92.4	0.39	3.00	16.80
K05			125	18.71	95.0	0.59	1.80	18.80
K05			160	11.62	95.0	0.88	0.00	21.10
K05			200	8.03	96.0	1.27	0.00	22.80
K06	2,918	2,923						
K06			20	44.48	76.3	0.00	5.60	7.60
K06			25	41.13	79.7	0.06	5.40	8.30
K06			32	36.60	81.6	0.09	5.20	9.20
K06			40	31.64	82.8	0.15	5.00	10.30
K06			50	26.68	83.8	0.20	4.70	11.50
K06			63	26.96	90.1	0.32	4.30	13.00
K06			80	22.42	91.8	0.47	3.70	14.80
K06			100	16.65	92.4	0.73	3.00	16.80
K06			125	12.67	95.0	1.11	1.80	18.80
K06			160	5.32	95.0	1.67	0.00	21.10
K06			200	1.39	96.0	2.40	0.00	22.80
K07	3,364	3,368						
K07			20	43.25	76.3	0.00	5.60	7.60
K07			25	39.89	79.7	0.07	5.40	8.30
K07			32	35.35	81.6	0.10	5.20	9.20
K07			40	30.38	82.8	0.17	5.00	10.30
K07			50	25.42	83.8	0.24	4.70	11.50
K07			63	25.68	90.1	0.37	4.30	13.00
K07			80	21.11	91.8	0.54	3.70	14.80
K07			100	15.31	92.4	0.84	3.00	16.80
K07			125	11.27	95.0	1.28	1.80	18.80
K07			160	3.83	95.0	1.92	0.00	21.10
K07			200	-0.21	96.0	2.76	0.00	22.80
K08	2,544	2,549						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			20	45.67	76.3	0.00	5.60	7.60
K08			25	42.32	79.7	0.05	5.40	8.30
K08			32	37.80	81.6	0.08	5.20	9.20
K08			40	32.84	82.8	0.13	5.00	10.30
K08			50	27.89	83.8	0.18	4.70	11.50
K08			63	28.19	90.1	0.28	4.30	13.00
K08			80	23.66	91.8	0.41	3.70	14.80
K08			100	17.94	92.4	0.64	3.00	16.80
K08			125	14.00	95.0	0.97	1.80	18.80
K08			160	6.72	95.0	1.45	0.00	21.10
K08			200	2.88	96.0	2.09	0.00	22.80
K09	2,414	2,420						
K09			20	46.12	76.3	0.00	5.60	7.60
K09			25	42.78	79.7	0.05	5.40	8.30
K09			32	38.25	81.6	0.07	5.20	9.20
K09			40	33.30	82.8	0.12	5.00	10.30
K09			50	28.36	83.8	0.17	4.70	11.50
K09			63	28.66	90.1	0.27	4.30	13.00
K09			80	24.14	91.8	0.39	3.70	14.80
K09			100	18.42	92.4	0.60	3.00	16.80
K09			125	14.51	95.0	0.92	1.80	18.80
K09			160	7.25	95.0	1.38	0.00	21.10
K09			200	3.44	96.0	1.98	0.00	22.80
K10	3,032	3,037						
K10			20	44.15	76.3	0.00	5.60	7.60
K10			25	40.79	79.7	0.06	5.40	8.30
K10			32	36.26	81.6	0.09	5.20	9.20
K10			40	31.30	82.8	0.15	5.00	10.30
K10			50	26.34	83.8	0.21	4.70	11.50
K10			63	26.62	90.1	0.33	4.30	13.00
K10			80	22.07	91.8	0.49	3.70	14.80
K10			100	16.29	92.4	0.76	3.00	16.80
K10			125	12.30	95.0	1.15	1.80	18.80
K10			160	4.92	95.0	1.73	0.00	21.10
K10			200	0.96	96.0	2.49	0.00	22.80
K11	3,681	3,685						
K11			20	42.47	76.3	0.00	5.60	7.60
K11			25	39.10	79.7	0.07	5.40	8.30
K11			32	34.56	81.6	0.11	5.20	9.20
K11			40	29.59	82.8	0.18	5.00	10.30
K11			50	24.61	83.8	0.26	4.70	11.50
K11			63	24.87	90.1	0.41	4.30	13.00
K11			80	20.28	91.8	0.59	3.70	14.80
K11			100	14.45	92.4	0.92	3.00	16.80
K11			125	10.37	95.0	1.40	1.80	18.80
K11			160	2.87	95.0	2.10	0.00	21.10
K11			200	-1.25	96.0	3.02	0.00	22.80
K12	4,389	4,392						
K12			20	40.95	76.3	0.00	5.60	7.60
K12			25	37.56	79.7	0.09	5.40	8.30
K12			32	33.01	81.6	0.13	5.20	9.20
K12			40	28.03	82.8	0.22	5.00	10.30
K12			50	23.04	83.8	0.31	4.70	11.50
K12			63	23.26	90.1	0.48	4.30	13.00
K12			80	18.64	91.8	0.70	3.70	14.80
K12			100	12.75	92.4	1.10	3.00	16.80
K12			125	8.58	95.0	1.67	1.80	18.80
K12			160	0.94	95.0	2.50	0.00	21.10
K12			200	-3.36	96.0	3.60	0.00	22.80
K13	3,748	3,752						
K13			20	42.31	76.3	0.00	5.60	7.60
K13			25	38.94	79.7	0.08	5.40	8.30
K13			32	34.40	81.6	0.11	5.20	9.20
K13			40	29.43	82.8	0.19	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K13			50	24.45	83.8	0.26	4.70	11.50
K13			63	24.70	90.1	0.41	4.30	13.00
K13			80	20.11	91.8	0.60	3.70	14.80
K13			100	14.28	92.4	0.94	3.00	16.80
K13			125	10.19	95.0	1.43	1.80	18.80
K13			160	2.68	95.0	2.14	0.00	21.10
K13			200	-1.46	96.0	3.08	0.00	22.80
K14	3,134	3,138						
K14			20	43.87	76.3	0.00	5.60	7.60
K14			25	40.50	79.7	0.06	5.40	8.30
K14			32	35.97	81.6	0.09	5.20	9.20
K14			40	31.01	82.8	0.16	5.00	10.30
K14			50	26.05	83.8	0.22	4.70	11.50
K14			63	26.32	90.1	0.35	4.30	13.00
K14			80	21.76	91.8	0.50	3.70	14.80
K14			100	15.98	92.4	0.78	3.00	16.80
K14			125	11.97	95.0	1.19	1.80	18.80
K14			160	4.58	95.0	1.79	0.00	21.10
K14			200	0.59	96.0	2.57	0.00	22.80
Sum								
Sum			20	57.78				
Sum			25	54.44				
Sum			32	49.91				
Sum			40	44.97				
Sum			50	40.07				
Sum			63	40.29				
Sum			80	35.81				
Sum			100	30.15				
Sum			125	26.25				
Sum			160	19.14				
Sum			200	15.38				

Noise sensitive area: AE Noise sensitive point: Finnish normal frequency - User defined (266)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	4,340	4,343						
Extension WTG 01			20	36.54	71.8	0.00	5.60	7.60
Extension WTG 01			25	33.16	75.2	0.09	5.40	8.30
Extension WTG 01			32	28.61	77.1	0.13	5.20	9.20
Extension WTG 01			40	23.63	78.3	0.22	5.00	10.30
Extension WTG 01			50	19.64	80.3	0.30	4.70	11.50
Extension WTG 01			63	17.87	84.6	0.48	4.30	13.00
Extension WTG 01			80	14.25	87.3	0.69	3.70	14.80
Extension WTG 01			100	9.36	88.9	1.09	3.00	16.80
Extension WTG 01			125	5.19	91.5	1.65	1.80	18.80
Extension WTG 01			160	-0.43	93.5	2.48	0.00	21.10
Extension WTG 01			200	-4.72	94.5	3.56	0.00	22.80
Extension WTG 02	3,497	3,501						
Extension WTG 02			20	38.42	71.8	0.00	5.60	7.60
Extension WTG 02			25	35.05	75.2	0.07	5.40	8.30
Extension WTG 02			32	30.51	77.1	0.11	5.20	9.20
Extension WTG 02			40	25.54	78.3	0.18	5.00	10.30
Extension WTG 02			50	21.57	80.3	0.25	4.70	11.50
Extension WTG 02			63	19.83	84.6	0.39	4.30	13.00
Extension WTG 02			80	16.26	87.3	0.56	3.70	14.80
Extension WTG 02			100	11.44	88.9	0.88	3.00	16.80
Extension WTG 02			125	7.39	91.5	1.33	1.80	18.80
Extension WTG 02			160	1.92	93.5	2.00	0.00	21.10
Extension WTG 02			200	-2.15	94.5	2.87	0.00	22.80
K01	2,416	2,420						
K01			20	46.12	76.3	0.00	5.60	7.60
K01			25	42.77	79.7	0.05	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K01			32	38.25	81.6	0.07	5.20	9.20
K01			40	33.30	82.8	0.12	5.00	10.30
K01			50	28.35	83.8	0.17	4.70	11.50
K01			63	28.66	90.1	0.27	4.30	13.00
K01			80	24.14	91.8	0.39	3.70	14.80
K01			100	18.42	92.4	0.61	3.00	16.80
K01			125	14.50	95.0	0.92	1.80	18.80
K01			160	7.24	95.0	1.38	0.00	21.10
K01			200	3.44	96.0	1.98	0.00	22.80
K02	2,578	2,582						
K02			20	45.56	76.3	0.00	5.60	7.60
K02			25	42.21	79.7	0.05	5.40	8.30
K02			32	37.68	81.6	0.08	5.20	9.20
K02			40	32.73	82.8	0.13	5.00	10.30
K02			50	27.78	83.8	0.18	4.70	11.50
K02			63	28.08	90.1	0.28	4.30	13.00
K02			80	23.55	91.8	0.41	3.70	14.80
K02			100	17.81	92.4	0.65	3.00	16.80
K02			125	13.88	95.0	0.98	1.80	18.80
K02			160	6.59	95.0	1.47	0.00	21.10
K02			200	2.74	96.0	2.12	0.00	22.80
K03	3,074	3,077						
K03			20	44.04	76.3	0.00	5.60	7.60
K03			25	40.68	79.7	0.06	5.40	8.30
K03			32	36.14	81.6	0.09	5.20	9.20
K03			40	31.18	82.8	0.15	5.00	10.30
K03			50	26.22	83.8	0.22	4.70	11.50
K03			63	26.50	90.1	0.34	4.30	13.00
K03			80	21.94	91.8	0.49	3.70	14.80
K03			100	16.17	92.4	0.77	3.00	16.80
K03			125	12.17	95.0	1.17	1.80	18.80
K03			160	4.78	95.0	1.75	0.00	21.10
K03			200	0.81	96.0	2.52	0.00	22.80
K04	3,189	3,193						
K04			20	43.72	76.3	0.00	5.60	7.60
K04			25	40.35	79.7	0.06	5.40	8.30
K04			32	35.82	81.6	0.10	5.20	9.20
K04			40	30.86	82.8	0.16	5.00	10.30
K04			50	25.89	83.8	0.22	4.70	11.50
K04			63	26.17	90.1	0.35	4.30	13.00
K04			80	21.61	91.8	0.51	3.70	14.80
K04			100	15.82	92.4	0.80	3.00	16.80
K04			125	11.80	95.0	1.21	1.80	18.80
K04			160	4.40	95.0	1.82	0.00	21.10
K04			200	0.40	96.0	2.62	0.00	22.80
K05	3,820	3,823						
K05			20	42.15	76.3	0.00	5.60	7.60
K05			25	38.78	79.7	0.08	5.40	8.30
K05			32	34.24	81.6	0.11	5.20	9.20
K05			40	29.26	82.8	0.19	5.00	10.30
K05			50	24.29	83.8	0.27	4.70	11.50
K05			63	24.53	90.1	0.42	4.30	13.00
K05			80	19.94	91.8	0.61	3.70	14.80
K05			100	14.10	92.4	0.96	3.00	16.80
K05			125	10.00	95.0	1.45	1.80	18.80
K05			160	2.47	95.0	2.18	0.00	21.10
K05			200	-1.68	96.0	3.13	0.00	22.80
K06	1,644	1,650						
K06			20	49.45	76.3	0.00	5.60	7.60
K06			25	46.12	79.7	0.03	5.40	8.30
K06			32	41.60	81.6	0.05	5.20	9.20
K06			40	36.67	82.8	0.08	5.00	10.30
K06			50	31.73	83.8	0.12	4.70	11.50
K06			63	32.07	90.1	0.18	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			80	27.59	91.8	0.26	3.70	14.80
K06			100	21.94	92.4	0.41	3.00	16.80
K06			125	18.12	95.0	0.63	1.80	18.80
K06			160	11.01	95.0	0.94	0.00	21.10
K06			200	7.40	96.0	1.35	0.00	22.80
K07	1,389	1,397						
K07			20	50.89	76.3	0.00	5.60	7.60
K07			25	47.57	79.7	0.03	5.40	8.30
K07			32	43.05	81.6	0.04	5.20	9.20
K07			40	38.12	82.8	0.07	5.00	10.30
K07			50	33.20	83.8	0.10	4.70	11.50
K07			63	33.54	90.1	0.15	4.30	13.00
K07			80	29.07	91.8	0.22	3.70	14.80
K07			100	23.44	92.4	0.35	3.00	16.80
K07			125	19.66	95.0	0.53	1.80	18.80
K07			160	12.60	95.0	0.80	0.00	21.10
K07			200	9.05	96.0	1.15	0.00	22.80
K08	2,245	2,250						
K08			20	46.76	76.3	0.00	5.60	7.60
K08			25	43.41	79.7	0.04	5.40	8.30
K08			32	38.89	81.6	0.07	5.20	9.20
K08			40	33.94	82.8	0.11	5.00	10.30
K08			50	29.00	83.8	0.16	4.70	11.50
K08			63	29.31	90.1	0.25	4.30	13.00
K08			80	24.80	91.8	0.36	3.70	14.80
K08			100	19.09	92.4	0.56	3.00	16.80
K08			125	15.20	95.0	0.85	1.80	18.80
K08			160	7.97	95.0	1.28	0.00	21.10
K08			200	4.21	96.0	1.84	0.00	22.80
K09	2,646	2,650						
K09			20	45.34	76.3	0.00	5.60	7.60
K09			25	41.98	79.7	0.05	5.40	8.30
K09			32	37.46	81.6	0.08	5.20	9.20
K09			40	32.50	82.8	0.13	5.00	10.30
K09			50	27.55	83.8	0.19	4.70	11.50
K09			63	27.84	90.1	0.29	4.30	13.00
K09			80	23.31	91.8	0.42	3.70	14.80
K09			100	17.57	92.4	0.66	3.00	16.80
K09			125	13.63	95.0	1.01	1.80	18.80
K09			160	6.32	95.0	1.51	0.00	21.10
K09			200	2.46	96.0	2.17	0.00	22.80
K10	2,476	2,480						
K10			20	45.91	76.3	0.00	5.60	7.60
K10			25	42.56	79.7	0.05	5.40	8.30
K10			32	38.04	81.6	0.07	5.20	9.20
K10			40	33.09	82.8	0.12	5.00	10.30
K10			50	28.14	83.8	0.17	4.70	11.50
K10			63	28.44	90.1	0.27	4.30	13.00
K10			80	23.91	91.8	0.40	3.70	14.80
K10			100	18.19	92.4	0.62	3.00	16.80
K10			125	14.27	95.0	0.94	1.80	18.80
K10			160	7.00	95.0	1.41	0.00	21.10
K10			200	3.18	96.0	2.03	0.00	22.80
K11	2,507	2,511						
K11			20	45.80	76.3	0.00	5.60	7.60
K11			25	42.45	79.7	0.05	5.40	8.30
K11			32	37.93	81.6	0.08	5.20	9.20
K11			40	32.98	82.8	0.13	5.00	10.30
K11			50	28.03	83.8	0.18	4.70	11.50
K11			63	28.33	90.1	0.28	4.30	13.00
K11			80	23.80	91.8	0.40	3.70	14.80
K11			100	18.08	92.4	0.63	3.00	16.80
K11			125	14.15	95.0	0.95	1.80	18.80
K11			160	6.87	95.0	1.43	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
WTG								
K11			200	3.04	96.0	2.06	0.00	22.80
K12	2,125	2,130						
K12			20	47.23	76.3	0.00	5.60	7.60
K12			25	43.89	79.7	0.04	5.40	8.30
K12			32	39.37	81.6	0.06	5.20	9.20
K12			40	34.43	82.8	0.11	5.00	10.30
K12			50	29.48	83.8	0.15	4.70	11.50
K12			63	29.80	90.1	0.23	4.30	13.00
K12			80	25.29	91.8	0.34	3.70	14.80
K12			100	19.60	92.4	0.53	3.00	16.80
K12			125	15.72	95.0	0.81	1.80	18.80
K12			160	8.52	95.0	1.21	0.00	21.10
K12			200	4.79	96.0	1.75	0.00	22.80
K13	1,546	1,553						
K13			20	49.98	76.3	0.00	5.60	7.60
K13			25	46.65	79.7	0.03	5.40	8.30
K13			32	42.13	81.6	0.05	5.20	9.20
K13			40	37.20	82.8	0.08	5.00	10.30
K13			50	32.27	83.8	0.11	4.70	11.50
K13			63	32.61	90.1	0.17	4.30	13.00
K13			80	28.13	91.8	0.25	3.70	14.80
K13			100	22.49	92.4	0.39	3.00	16.80
K13			125	18.69	95.0	0.59	1.80	18.80
K13			160	11.59	95.0	0.89	0.00	21.10
K13			200	8.00	96.0	1.27	0.00	22.80
K14	1,672	1,678						
K14			20	49.30	76.3	0.00	5.60	7.60
K14			25	45.97	79.7	0.03	5.40	8.30
K14			32	41.45	81.6	0.05	5.20	9.20
K14			40	36.52	82.8	0.08	5.00	10.30
K14			50	31.59	83.8	0.12	4.70	11.50
K14			63	31.92	90.1	0.18	4.30	13.00
K14			80	27.43	91.8	0.27	3.70	14.80
K14			100	21.78	92.4	0.42	3.00	16.80
K14			125	17.97	95.0	0.64	1.80	18.80
K14			160	10.85	95.0	0.96	0.00	21.10
K14			200	7.23	96.0	1.38	0.00	22.80
Sum								
Sum			20	58.81				
Sum			25	55.47				
Sum			32	50.95				
Sum			40	46.01				
Sum			50	41.08				
Sum			63	41.37				
Sum			80	36.88				
Sum			100	31.21				
Sum			125	27.35				
Sum			160	20.20				
Sum			200	16.50				

Noise sensitive area: AF Noise sensitive point: Finnish normal frequency - User defined (278)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
WTG								
Extension WTG 01	2,928	2,934						
Extension WTG 01			20	39.95	71.8	0.00	5.60	7.60
Extension WTG 01			25	36.59	75.2	0.06	5.40	8.30
Extension WTG 01			32	32.06	77.1	0.09	5.20	9.20
Extension WTG 01			40	27.11	78.3	0.15	5.00	10.30
Extension WTG 01			50	23.15	80.3	0.21	4.70	11.50
Extension WTG 01			63	21.43	84.6	0.32	4.30	13.00
Extension WTG 01			80	17.88	87.3	0.47	3.70	14.80
Extension WTG 01			100	13.12	88.9	0.73	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01			125	9.14	91.5	1.11	1.80	18.80
Extension WTG 01			160	3.78	93.5	1.67	0.00	21.10
Extension WTG 01			200	-0.15	94.5	2.41	0.00	22.80
Extension WTG 02	2,631	2,637						
Extension WTG 02			20	40.88	71.8	0.00	5.60	7.60
Extension WTG 02			25	37.52	75.2	0.05	5.40	8.30
Extension WTG 02			32	33.00	77.1	0.08	5.20	9.20
Extension WTG 02			40	28.05	78.3	0.13	5.00	10.30
Extension WTG 02			50	24.09	80.3	0.18	4.70	11.50
Extension WTG 02			63	22.39	84.6	0.29	4.30	13.00
Extension WTG 02			80	18.86	87.3	0.42	3.70	14.80
Extension WTG 02			100	14.12	88.9	0.66	3.00	16.80
Extension WTG 02			125	10.18	91.5	1.00	1.80	18.80
Extension WTG 02			160	4.87	93.5	1.50	0.00	21.10
Extension WTG 02			200	1.02	94.5	2.16	0.00	22.80
K01	1,412	1,421						
K01			20	50.75	76.3	0.00	5.60	7.60
K01			25	47.42	79.7	0.03	5.40	8.30
K01			32	42.90	81.6	0.04	5.20	9.20
K01			40	37.98	82.8	0.07	5.00	10.30
K01			50	33.05	83.8	0.10	4.70	11.50
K01			63	33.39	90.1	0.16	4.30	13.00
K01			80	28.92	91.8	0.23	3.70	14.80
K01			100	23.29	92.4	0.36	3.00	16.80
K01			125	19.51	95.0	0.54	1.80	18.80
K01			160	12.44	95.0	0.81	0.00	21.10
K01			200	8.88	96.0	1.17	0.00	22.80
K02	1,346	1,356						
K02			20	51.15	76.3	0.00	5.60	7.60
K02			25	47.83	79.7	0.03	5.40	8.30
K02			32	43.31	81.6	0.04	5.20	9.20
K02			40	38.39	82.8	0.07	5.00	10.30
K02			50	33.46	83.8	0.09	4.70	11.50
K02			63	33.80	90.1	0.15	4.30	13.00
K02			80	29.34	91.8	0.22	3.70	14.80
K02			100	23.71	92.4	0.34	3.00	16.80
K02			125	19.94	95.0	0.52	1.80	18.80
K02			160	12.88	95.0	0.77	0.00	21.10
K02			200	9.34	96.0	1.11	0.00	22.80
K03	1,282	1,293						
K03			20	51.57	76.3	0.00	5.60	7.60
K03			25	48.24	79.7	0.03	5.40	8.30
K03			32	43.73	81.6	0.04	5.20	9.20
K03			40	38.80	82.8	0.06	5.00	10.30
K03			50	33.88	83.8	0.09	4.70	11.50
K03			63	34.23	90.1	0.14	4.30	13.00
K03			80	29.76	91.8	0.21	3.70	14.80
K03			100	24.15	92.4	0.32	3.00	16.80
K03			125	20.38	95.0	0.49	1.80	18.80
K03			160	13.33	95.0	0.74	0.00	21.10
K03			200	9.81	96.0	1.06	0.00	22.80
K04	2,043	2,049						
K04			20	47.57	76.3	0.00	5.60	7.60
K04			25	44.23	79.7	0.04	5.40	8.30
K04			32	39.71	81.6	0.06	5.20	9.20
K04			40	34.77	82.8	0.10	5.00	10.30
K04			50	29.82	83.8	0.14	4.70	11.50
K04			63	30.14	90.1	0.23	4.30	13.00
K04			80	25.64	91.8	0.33	3.70	14.80
K04			100	19.96	92.4	0.51	3.00	16.80
K04			125	16.09	95.0	0.78	1.80	18.80
K04			160	8.90	95.0	1.17	0.00	21.10
K04			200	5.19	96.0	1.68	0.00	22.80
K05	1,704	1,712						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			20	49.13	76.3	0.00	5.60	7.60
K05			25	45.79	79.7	0.03	5.40	8.30
K05			32	41.28	81.6	0.05	5.20	9.20
K05			40	36.34	82.8	0.09	5.00	10.30
K05			50	31.41	83.8	0.12	4.70	11.50
K05			63	31.74	90.1	0.19	4.30	13.00
K05			80	27.25	91.8	0.27	3.70	14.80
K05			100	21.60	92.4	0.43	3.00	16.80
K05			125	17.78	95.0	0.65	1.80	18.80
K05			160	10.65	95.0	0.98	0.00	21.10
K05			200	7.02	96.0	1.40	0.00	22.80
K06	2,235	2,242						
K06			20	46.79	76.3	0.00	5.60	7.60
K06			25	43.44	79.7	0.04	5.40	8.30
K06			32	38.92	81.6	0.07	5.20	9.20
K06			40	33.98	82.8	0.11	5.00	10.30
K06			50	29.03	83.8	0.16	4.70	11.50
K06			63	29.34	90.1	0.25	4.30	13.00
K06			80	24.83	91.8	0.36	3.70	14.80
K06			100	19.13	92.4	0.56	3.00	16.80
K06			125	15.24	95.0	0.85	1.80	18.80
K06			160	8.01	95.0	1.28	0.00	21.10
K06			200	4.25	96.0	1.84	0.00	22.80
K07	2,767	2,772						
K07			20	44.94	76.3	0.00	5.60	7.60
K07			25	41.59	79.7	0.06	5.40	8.30
K07			32	37.06	81.6	0.08	5.20	9.20
K07			40	32.10	82.8	0.14	5.00	10.30
K07			50	27.15	83.8	0.19	4.70	11.50
K07			63	27.44	90.1	0.30	4.30	13.00
K07			80	22.90	91.8	0.44	3.70	14.80
K07			100	17.15	92.4	0.69	3.00	16.80
K07			125	13.19	95.0	1.05	1.80	18.80
K07			160	5.86	95.0	1.58	0.00	21.10
K07			200	1.97	96.0	2.27	0.00	22.80
K08	2,065	2,071						
K08			20	47.48	76.3	0.00	5.60	7.60
K08			25	44.13	79.7	0.04	5.40	8.30
K08			32	39.61	81.6	0.06	5.20	9.20
K08			40	34.67	82.8	0.10	5.00	10.30
K08			50	29.73	83.8	0.14	4.70	11.50
K08			63	30.05	90.1	0.23	4.30	13.00
K08			80	25.54	91.8	0.33	3.70	14.80
K08			100	19.86	92.4	0.52	3.00	16.80
K08			125	15.99	95.0	0.79	1.80	18.80
K08			160	8.79	95.0	1.18	0.00	21.10
K08			200	5.08	96.0	1.70	0.00	22.80
K09	2,097	2,103						
K09			20	47.34	76.3	0.00	5.60	7.60
K09			25	44.00	79.7	0.04	5.40	8.30
K09			32	39.48	81.6	0.06	5.20	9.20
K09			40	34.54	82.8	0.11	5.00	10.30
K09			50	29.59	83.8	0.15	4.70	11.50
K09			63	29.91	90.1	0.23	4.30	13.00
K09			80	25.40	91.8	0.34	3.70	14.80
K09			100	19.72	92.4	0.53	3.00	16.80
K09			125	15.84	95.0	0.80	1.80	18.80
K09			160	8.64	95.0	1.20	0.00	21.10
K09			200	4.92	96.0	1.72	0.00	22.80
K10	2,136	2,143						
K10			20	47.18	76.3	0.00	5.60	7.60
K10			25	43.84	79.7	0.04	5.40	8.30
K10			32	39.32	81.6	0.06	5.20	9.20
K10			40	34.37	82.8	0.11	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K10			50	29.43	83.8	0.15	4.70	11.50
K10			63	29.74	90.1	0.24	4.30	13.00
K10			80	25.24	91.8	0.34	3.70	14.80
K10			100	19.54	92.4	0.54	3.00	16.80
K10			125	15.67	95.0	0.81	1.80	18.80
K10			160	8.46	95.0	1.22	0.00	21.10
K10			200	4.72	96.0	1.76	0.00	22.80
K11	2,785	2,790						
K11			20	44.89	76.3	0.00	5.60	7.60
K11			25	41.53	79.7	0.06	5.40	8.30
K11			32	37.00	81.6	0.08	5.20	9.20
K11			40	32.05	82.8	0.14	5.00	10.30
K11			50	27.09	83.8	0.20	4.70	11.50
K11			63	27.38	90.1	0.31	4.30	13.00
K11			80	22.84	91.8	0.45	3.70	14.80
K11			100	17.09	92.4	0.70	3.00	16.80
K11			125	13.13	95.0	1.06	1.80	18.80
K11			160	5.80	95.0	1.59	0.00	21.10
K11			200	1.90	96.0	2.29	0.00	22.80
K12	3,496	3,500						
K12			20	42.92	76.3	0.00	5.60	7.60
K12			25	39.55	79.7	0.07	5.40	8.30
K12			32	35.01	81.6	0.11	5.20	9.20
K12			40	30.04	82.8	0.18	5.00	10.30
K12			50	25.07	83.8	0.25	4.70	11.50
K12			63	25.33	90.1	0.39	4.30	13.00
K12			80	20.76	91.8	0.56	3.70	14.80
K12			100	14.94	92.4	0.88	3.00	16.80
K12			125	10.89	95.0	1.33	1.80	18.80
K12			160	3.42	95.0	2.00	0.00	21.10
K12			200	-0.65	96.0	2.87	0.00	22.80
K13	2,884	2,889						
K13			20	44.59	76.3	0.00	5.60	7.60
K13			25	41.23	79.7	0.06	5.40	8.30
K13			32	36.70	81.6	0.09	5.20	9.20
K13			40	31.74	82.8	0.14	5.00	10.30
K13			50	26.78	83.8	0.20	4.70	11.50
K13			63	27.07	90.1	0.32	4.30	13.00
K13			80	22.52	91.8	0.46	3.70	14.80
K13			100	16.76	92.4	0.72	3.00	16.80
K13			125	12.79	95.0	1.10	1.80	18.80
K13			160	5.44	95.0	1.65	0.00	21.10
K13			200	1.52	96.0	2.37	0.00	22.80
K14	2,301	2,307						
K14			20	46.54	76.3	0.00	5.60	7.60
K14			25	43.19	79.7	0.05	5.40	8.30
K14			32	38.67	81.6	0.07	5.20	9.20
K14			40	33.73	82.8	0.12	5.00	10.30
K14			50	28.78	83.8	0.16	4.70	11.50
K14			63	29.09	90.1	0.25	4.30	13.00
K14			80	24.57	91.8	0.37	3.70	14.80
K14			100	18.86	92.4	0.58	3.00	16.80
K14			125	14.96	95.0	0.88	1.80	18.80
K14			160	7.73	95.0	1.31	0.00	21.10
K14			200	3.95	96.0	1.89	0.00	22.80
Sum								
Sum			20	59.63				
Sum			25	56.30				
Sum			32	51.78				
Sum			40	46.84				
Sum			50	41.93				
Sum			63	42.21				
Sum			80	37.74				
Sum			100	32.09				

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Sum			125	28.25				
Sum			160	21.17				
Sum			200	17.50				

Noise sensitive area: AG Noise sensitive point: Finnish normal frequency - User defined (276)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	3,095	3,100						
Extension WTG 01			20	39.47	71.8	0.00	5.60	7.60
Extension WTG 01			25	36.11	75.2	0.06	5.40	8.30
Extension WTG 01			32	31.58	77.1	0.09	5.20	9.20
Extension WTG 01			40	26.62	78.3	0.16	5.00	10.30
Extension WTG 01			50	22.65	80.3	0.22	4.70	11.50
Extension WTG 01			63	20.93	84.6	0.34	4.30	13.00
Extension WTG 01			80	17.38	87.3	0.50	3.70	14.80
Extension WTG 01			100	12.60	88.9	0.78	3.00	16.80
Extension WTG 01			125	8.59	91.5	1.18	1.80	18.80
Extension WTG 01			160	3.20	93.5	1.77	0.00	21.10
Extension WTG 01			200	-0.77	94.5	2.54	0.00	22.80
Extension WTG 02	2,746	2,752						
Extension WTG 02			20	40.51	71.8	0.00	5.60	7.60
Extension WTG 02			25	37.15	75.2	0.06	5.40	8.30
Extension WTG 02			32	32.63	77.1	0.08	5.20	9.20
Extension WTG 02			40	27.67	78.3	0.14	5.00	10.30
Extension WTG 02			50	23.72	80.3	0.19	4.70	11.50
Extension WTG 02			63	22.01	84.6	0.30	4.30	13.00
Extension WTG 02			80	18.47	87.3	0.44	3.70	14.80
Extension WTG 02			100	13.72	88.9	0.69	3.00	16.80
Extension WTG 02			125	9.76	91.5	1.05	1.80	18.80
Extension WTG 02			160	4.44	93.5	1.57	0.00	21.10
Extension WTG 02			200	0.55	94.5	2.26	0.00	22.80
K01	1,270	1,280						
K01			20	51.65	76.3	0.00	5.60	7.60
K01			25	48.33	79.7	0.03	5.40	8.30
K01			32	43.82	81.6	0.04	5.20	9.20
K01			40	38.89	82.8	0.06	5.00	10.30
K01			50	33.96	83.8	0.09	4.70	11.50
K01			63	34.31	90.1	0.14	4.30	13.00
K01			80	29.85	91.8	0.20	3.70	14.80
K01			100	24.23	92.4	0.32	3.00	16.80
K01			125	20.47	95.0	0.49	1.80	18.80
K01			160	13.42	95.0	0.73	0.00	21.10
K01			200	9.90	96.0	1.05	0.00	22.80
K02	1,294	1,305						
K02			20	51.49	76.3	0.00	5.60	7.60
K02			25	48.16	79.7	0.03	5.40	8.30
K02			32	43.65	81.6	0.04	5.20	9.20
K02			40	38.72	82.8	0.07	5.00	10.30
K02			50	33.80	83.8	0.09	4.70	11.50
K02			63	34.15	90.1	0.14	4.30	13.00
K02			80	29.68	91.8	0.21	3.70	14.80
K02			100	24.06	92.4	0.33	3.00	16.80
K02			125	20.29	95.0	0.50	1.80	18.80
K02			160	13.25	95.0	0.74	0.00	21.10
K02			200	9.72	96.0	1.07	0.00	22.80
K03	1,345	1,355						
K03			20	51.16	76.3	0.00	5.60	7.60
K03			25	47.84	79.7	0.03	5.40	8.30
K03			32	43.32	81.6	0.04	5.20	9.20
K03			40	38.39	82.8	0.07	5.00	10.30
K03			50	33.47	83.8	0.09	4.70	11.50
K03			63	33.81	90.1	0.15	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			80	29.35	91.8	0.22	3.70	14.80
K03			100	23.72	92.4	0.34	3.00	16.80
K03			125	19.95	95.0	0.51	1.80	18.80
K03			160	12.89	95.0	0.77	0.00	21.10
K03			200	9.35	96.0	1.11	0.00	22.80
K04	2,138	2,145						
K04			20	47.17	76.3	0.00	5.60	7.60
K04			25	43.83	79.7	0.04	5.40	8.30
K04			32	39.31	81.6	0.06	5.20	9.20
K04			40	34.37	82.8	0.11	5.00	10.30
K04			50	29.42	83.8	0.15	4.70	11.50
K04			63	29.74	90.1	0.24	4.30	13.00
K04			80	25.23	91.8	0.34	3.70	14.80
K04			100	19.54	92.4	0.54	3.00	16.80
K04			125	15.66	95.0	0.81	1.80	18.80
K04			160	8.45	95.0	1.22	0.00	21.10
K04			200	4.71	96.0	1.76	0.00	22.80
K05	1,870	1,877						
K05			20	48.33	76.3	0.00	5.60	7.60
K05			25	44.99	79.7	0.04	5.40	8.30
K05			32	40.48	81.6	0.06	5.20	9.20
K05			40	35.54	82.8	0.09	5.00	10.30
K05			50	30.60	83.8	0.13	4.70	11.50
K05			63	30.92	90.1	0.21	4.30	13.00
K05			80	26.43	91.8	0.30	3.70	14.80
K05			100	20.76	92.4	0.47	3.00	16.80
K05			125	16.92	95.0	0.71	1.80	18.80
K05			160	9.76	95.0	1.07	0.00	21.10
K05			200	6.09	96.0	1.54	0.00	22.80
K06	2,136	2,143						
K06			20	47.18	76.3	0.00	5.60	7.60
K06			25	43.84	79.7	0.04	5.40	8.30
K06			32	39.32	81.6	0.06	5.20	9.20
K06			40	34.37	82.8	0.11	5.00	10.30
K06			50	29.43	83.8	0.15	4.70	11.50
K06			63	29.75	90.1	0.24	4.30	13.00
K06			80	25.24	91.8	0.34	3.70	14.80
K06			100	19.55	92.4	0.54	3.00	16.80
K06			125	15.67	95.0	0.81	1.80	18.80
K06			160	8.46	95.0	1.22	0.00	21.10
K06			200	4.72	96.0	1.76	0.00	22.80
K07	2,695	2,701						
K07			20	45.17	76.3	0.00	5.60	7.60
K07			25	41.82	79.7	0.05	5.40	8.30
K07			32	37.29	81.6	0.08	5.20	9.20
K07			40	32.34	82.8	0.14	5.00	10.30
K07			50	27.38	83.8	0.19	4.70	11.50
K07			63	27.67	90.1	0.30	4.30	13.00
K07			80	23.14	91.8	0.43	3.70	14.80
K07			100	17.40	92.4	0.68	3.00	16.80
K07			125	13.44	95.0	1.03	1.80	18.80
K07			160	6.13	95.0	1.54	0.00	21.10
K07			200	2.26	96.0	2.21	0.00	22.80
K08	2,049	2,056						
K08			20	47.54	76.3	0.00	5.60	7.60
K08			25	44.20	79.7	0.04	5.40	8.30
K08			32	39.68	81.6	0.06	5.20	9.20
K08			40	34.74	82.8	0.10	5.00	10.30
K08			50	29.80	83.8	0.14	4.70	11.50
K08			63	30.11	90.1	0.23	4.30	13.00
K08			80	25.61	91.8	0.33	3.70	14.80
K08			100	19.93	92.4	0.51	3.00	16.80
K08			125	16.06	95.0	0.78	1.80	18.80
K08			160	8.87	95.0	1.17	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			200	5.16	96.0	1.69	0.00	22.80
K09	2,134	2,140						
K09			20	47.19	76.3	0.00	5.60	7.60
K09			25	43.85	79.7	0.04	5.40	8.30
K09			32	39.33	81.6	0.06	5.20	9.20
K09			40	34.39	82.8	0.11	5.00	10.30
K09			50	29.44	83.8	0.15	4.70	11.50
K09			63	29.76	90.1	0.24	4.30	13.00
K09			80	25.25	91.8	0.34	3.70	14.80
K09			100	19.56	92.4	0.53	3.00	16.80
K09			125	15.68	95.0	0.81	1.80	18.80
K09			160	8.47	95.0	1.22	0.00	21.10
K09			200	4.74	96.0	1.75	0.00	22.80
K10	1,910	1,917						
K10			20	48.15	76.3	0.00	5.60	7.60
K10			25	44.81	79.7	0.04	5.40	8.30
K10			32	40.29	81.6	0.06	5.20	9.20
K10			40	35.35	82.8	0.10	5.00	10.30
K10			50	30.41	83.8	0.13	4.70	11.50
K10			63	30.74	90.1	0.21	4.30	13.00
K10			80	26.24	91.8	0.31	3.70	14.80
K10			100	20.57	92.4	0.48	3.00	16.80
K10			125	16.72	95.0	0.73	1.80	18.80
K10			160	9.56	95.0	1.09	0.00	21.10
K10			200	5.88	96.0	1.57	0.00	22.80
K11	2,554	2,559						
K11			20	45.64	76.3	0.00	5.60	7.60
K11			25	42.29	79.7	0.05	5.40	8.30
K11			32	37.76	81.6	0.08	5.20	9.20
K11			40	32.81	82.8	0.13	5.00	10.30
K11			50	27.86	83.8	0.18	4.70	11.50
K11			63	28.16	90.1	0.28	4.30	13.00
K11			80	23.63	91.8	0.41	3.70	14.80
K11			100	17.90	92.4	0.64	3.00	16.80
K11			125	13.97	95.0	0.97	1.80	18.80
K11			160	6.68	95.0	1.46	0.00	21.10
K11			200	2.84	96.0	2.10	0.00	22.80
K12	3,275	3,279						
K12			20	43.49	76.3	0.00	5.60	7.60
K12			25	40.12	79.7	0.07	5.40	8.30
K12			32	35.59	81.6	0.10	5.20	9.20
K12			40	30.62	82.8	0.16	5.00	10.30
K12			50	25.66	83.8	0.23	4.70	11.50
K12			63	25.93	90.1	0.36	4.30	13.00
K12			80	21.36	91.8	0.52	3.70	14.80
K12			100	15.57	92.4	0.82	3.00	16.80
K12			125	11.54	95.0	1.25	1.80	18.80
K12			160	4.12	95.0	1.87	0.00	21.10
K12			200	0.10	96.0	2.69	0.00	22.80
K13	2,687	2,692						
K13			20	45.20	76.3	0.00	5.60	7.60
K13			25	41.85	79.7	0.05	5.40	8.30
K13			32	37.32	81.6	0.08	5.20	9.20
K13			40	32.36	82.8	0.13	5.00	10.30
K13			50	27.41	83.8	0.19	4.70	11.50
K13			63	27.70	90.1	0.30	4.30	13.00
K13			80	23.17	91.8	0.43	3.70	14.80
K13			100	17.43	92.4	0.67	3.00	16.80
K13			125	13.48	95.0	1.02	1.80	18.80
K13			160	6.16	95.0	1.53	0.00	21.10
K13			200	2.29	96.0	2.21	0.00	22.80
K14	2,125	2,132						
K14			20	47.23	76.3	0.00	5.60	7.60
K14			25	43.88	79.7	0.04	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			32	39.36	81.6	0.06	5.20	9.20
K14			40	34.42	82.8	0.11	5.00	10.30
K14			50	29.48	83.8	0.15	4.70	11.50
K14			63	29.79	90.1	0.23	4.30	13.00
K14			80	25.28	91.8	0.34	3.70	14.80
K14			100	19.59	92.4	0.53	3.00	16.80
K14			125	15.72	95.0	0.81	1.80	18.80
K14			160	8.51	95.0	1.22	0.00	21.10
K14			200	4.78	96.0	1.75	0.00	22.80
Sum								
Sum			20	59.84				
Sum			25	56.50				
Sum			32	51.98				
Sum			40	47.04				
Sum			50	42.13				
Sum			63	42.42				
Sum			80	37.94				
Sum			100	32.30				
Sum			125	28.46				
Sum			160	21.38				
Sum			200	17.72				

Noise sensitive area: AH Noise sensitive point: Finnish normal frequency - User defined (275)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	3,235	3,240						
Extension WTG 01			20	39.09	71.8	0.00	5.60	7.60
Extension WTG 01			25	35.72	75.2	0.06	5.40	8.30
Extension WTG 01			32	31.19	77.1	0.10	5.20	9.20
Extension WTG 01			40	26.23	78.3	0.16	5.00	10.30
Extension WTG 01			50	22.26	80.3	0.23	4.70	11.50
Extension WTG 01			63	20.53	84.6	0.36	4.30	13.00
Extension WTG 01			80	16.97	87.3	0.52	3.70	14.80
Extension WTG 01			100	12.18	88.9	0.81	3.00	16.80
Extension WTG 01			125	8.16	91.5	1.23	1.80	18.80
Extension WTG 01			160	2.74	93.5	1.85	0.00	21.10
Extension WTG 01			200	-1.27	94.5	2.66	0.00	22.80
Extension WTG 02	2,841	2,846						
Extension WTG 02			20	40.21	71.8	0.00	5.60	7.60
Extension WTG 02			25	36.86	75.2	0.06	5.40	8.30
Extension WTG 02			32	32.33	77.1	0.09	5.20	9.20
Extension WTG 02			40	27.37	78.3	0.14	5.00	10.30
Extension WTG 02			50	23.42	80.3	0.20	4.70	11.50
Extension WTG 02			63	21.70	84.6	0.31	4.30	13.00
Extension WTG 02			80	18.16	87.3	0.46	3.70	14.80
Extension WTG 02			100	13.40	88.9	0.71	3.00	16.80
Extension WTG 02			125	9.43	91.5	1.08	1.80	18.80
Extension WTG 02			160	4.09	93.5	1.62	0.00	21.10
Extension WTG 02			200	0.18	94.5	2.33	0.00	22.80
K01	1,149	1,160						
K01			20	52.51	76.3	0.00	5.60	7.60
K01			25	49.19	79.7	0.02	5.40	8.30
K01			32	44.68	81.6	0.03	5.20	9.20
K01			40	39.76	82.8	0.06	5.00	10.30
K01			50	34.83	83.8	0.08	4.70	11.50
K01			63	35.19	90.1	0.13	4.30	13.00
K01			80	30.73	91.8	0.19	3.70	14.80
K01			100	25.12	92.4	0.29	3.00	16.80
K01			125	21.37	95.0	0.44	1.80	18.80
K01			160	14.35	95.0	0.66	0.00	21.10
K01			200	10.86	96.0	0.95	0.00	22.80
K02	1,261	1,270						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			20	51.72	76.3	0.00	5.60	7.60
K02			25	48.40	79.7	0.03	5.40	8.30
K02			32	43.88	81.6	0.04	5.20	9.20
K02			40	38.96	82.8	0.06	5.00	10.30
K02			50	34.03	83.8	0.09	4.70	11.50
K02			63	34.38	90.1	0.14	4.30	13.00
K02			80	29.92	91.8	0.20	3.70	14.80
K02			100	24.30	92.4	0.32	3.00	16.80
K02			125	20.54	95.0	0.48	1.80	18.80
K02			160	13.50	95.0	0.72	0.00	21.10
K02			200	9.98	96.0	1.04	0.00	22.80
K03	1,411	1,420						
K03			20	50.76	76.3	0.00	5.60	7.60
K03			25	47.43	79.7	0.03	5.40	8.30
K03			32	42.91	81.6	0.04	5.20	9.20
K03			40	37.98	82.8	0.07	5.00	10.30
K03			50	33.06	83.8	0.10	4.70	11.50
K03			63	33.40	90.1	0.16	4.30	13.00
K03			80	28.93	91.8	0.23	3.70	14.80
K03			100	23.30	92.4	0.35	3.00	16.80
K03			125	19.52	95.0	0.54	1.80	18.80
K03			160	12.45	95.0	0.81	0.00	21.10
K03			200	8.89	96.0	1.16	0.00	22.80
K04	2,221	2,227						
K04			20	46.85	76.3	0.00	5.60	7.60
K04			25	43.50	79.7	0.04	5.40	8.30
K04			32	38.98	81.6	0.07	5.20	9.20
K04			40	34.04	82.8	0.11	5.00	10.30
K04			50	29.09	83.8	0.16	4.70	11.50
K04			63	29.40	90.1	0.24	4.30	13.00
K04			80	24.89	91.8	0.36	3.70	14.80
K04			100	19.19	92.4	0.56	3.00	16.80
K04			125	15.30	95.0	0.85	1.80	18.80
K04			160	8.08	95.0	1.27	0.00	21.10
K04			200	4.32	96.0	1.83	0.00	22.80
K05	2,014	2,020						
K05			20	47.69	76.3	0.00	5.60	7.60
K05			25	44.35	79.7	0.04	5.40	8.30
K05			32	39.83	81.6	0.06	5.20	9.20
K05			40	34.89	82.8	0.10	5.00	10.30
K05			50	29.95	83.8	0.14	4.70	11.50
K05			63	30.27	90.1	0.22	4.30	13.00
K05			80	25.77	91.8	0.32	3.70	14.80
K05			100	20.09	92.4	0.50	3.00	16.80
K05			125	16.23	95.0	0.77	1.80	18.80
K05			160	9.04	95.0	1.15	0.00	21.10
K05			200	5.34	96.0	1.66	0.00	22.80
K06	2,045	2,051						
K06			20	47.56	76.3	0.00	5.60	7.60
K06			25	44.22	79.7	0.04	5.40	8.30
K06			32	39.70	81.6	0.06	5.20	9.20
K06			40	34.76	82.8	0.10	5.00	10.30
K06			50	29.82	83.8	0.14	4.70	11.50
K06			63	30.14	90.1	0.23	4.30	13.00
K06			80	25.63	91.8	0.33	3.70	14.80
K06			100	19.95	92.4	0.51	3.00	16.80
K06			125	16.08	95.0	0.78	1.80	18.80
K06			160	8.89	95.0	1.17	0.00	21.10
K06			200	5.18	96.0	1.68	0.00	22.80
K07	2,625	2,630						
K07			20	45.40	76.3	0.00	5.60	7.60
K07			25	42.05	79.7	0.05	5.40	8.30
K07			32	37.52	81.6	0.08	5.20	9.20
K07			40	32.57	82.8	0.13	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K07			50	27.62	83.8	0.18	4.70	11.50
K07			63	27.91	90.1	0.29	4.30	13.00
K07			80	23.38	91.8	0.42	3.70	14.80
K07			100	17.64	92.4	0.66	3.00	16.80
K07			125	13.70	95.0	1.00	1.80	18.80
K07			160	6.40	95.0	1.50	0.00	21.10
K07			200	2.55	96.0	2.16	0.00	22.80
K08	2,035	2,041						
K08			20	47.60	76.3	0.00	5.60	7.60
K08			25	44.26	79.7	0.04	5.40	8.30
K08			32	39.74	81.6	0.06	5.20	9.20
K08			40	34.80	82.8	0.10	5.00	10.30
K08			50	29.86	83.8	0.14	4.70	11.50
K08			63	30.18	90.1	0.22	4.30	13.00
K08			80	25.68	91.8	0.33	3.70	14.80
K08			100	19.99	92.4	0.51	3.00	16.80
K08			125	16.13	95.0	0.78	1.80	18.80
K08			160	8.94	95.0	1.16	0.00	21.10
K08			200	5.23	96.0	1.67	0.00	22.80
K09	2,165	2,170						
K09			20	47.07	76.3	0.00	5.60	7.60
K09			25	43.73	79.7	0.04	5.40	8.30
K09			32	39.20	81.6	0.07	5.20	9.20
K09			40	34.26	82.8	0.11	5.00	10.30
K09			50	29.32	83.8	0.15	4.70	11.50
K09			63	29.63	90.1	0.24	4.30	13.00
K09			80	25.12	91.8	0.35	3.70	14.80
K09			100	19.43	92.4	0.54	3.00	16.80
K09			125	15.54	95.0	0.82	1.80	18.80
K09			160	8.33	95.0	1.24	0.00	21.10
K09			200	4.59	96.0	1.78	0.00	22.80
K10	1,703	1,710						
K10			20	49.14	76.3	0.00	5.60	7.60
K10			25	45.80	79.7	0.03	5.40	8.30
K10			32	41.29	81.6	0.05	5.20	9.20
K10			40	36.35	82.8	0.09	5.00	10.30
K10			50	31.42	83.8	0.12	4.70	11.50
K10			63	31.75	90.1	0.19	4.30	13.00
K10			80	27.26	91.8	0.27	3.70	14.80
K10			100	21.61	92.4	0.43	3.00	16.80
K10			125	17.79	95.0	0.65	1.80	18.80
K10			160	10.66	95.0	0.97	0.00	21.10
K10			200	7.04	96.0	1.40	0.00	22.80
K11	2,343	2,348						
K11			20	46.38	76.3	0.00	5.60	7.60
K11			25	43.04	79.7	0.05	5.40	8.30
K11			32	38.51	81.6	0.07	5.20	9.20
K11			40	33.57	82.8	0.12	5.00	10.30
K11			50	28.62	83.8	0.16	4.70	11.50
K11			63	28.93	90.1	0.26	4.30	13.00
K11			80	24.41	91.8	0.38	3.70	14.80
K11			100	18.70	92.4	0.59	3.00	16.80
K11			125	14.79	95.0	0.89	1.80	18.80
K11			160	7.55	95.0	1.34	0.00	21.10
K11			200	3.76	96.0	1.93	0.00	22.80
K12	3,070	3,074						
K12			20	44.04	76.3	0.00	5.60	7.60
K12			25	40.68	79.7	0.06	5.40	8.30
K12			32	36.15	81.6	0.09	5.20	9.20
K12			40	31.19	82.8	0.15	5.00	10.30
K12			50	26.23	83.8	0.22	4.70	11.50
K12			63	26.51	90.1	0.34	4.30	13.00
K12			80	21.95	91.8	0.49	3.70	14.80
K12			100	16.18	92.4	0.77	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			125	12.18	95.0	1.17	1.80	18.80
K12			160	4.79	95.0	1.75	0.00	21.10
K12			200	0.82	96.0	2.52	0.00	22.80
K13	2,503	2,508						
K13			20	45.81	76.3	0.00	5.60	7.60
K13			25	42.46	79.7	0.05	5.40	8.30
K13			32	37.94	81.6	0.08	5.20	9.20
K13			40	32.99	82.8	0.13	5.00	10.30
K13			50	28.04	83.8	0.18	4.70	11.50
K13			63	28.34	90.1	0.28	4.30	13.00
K13			80	23.81	91.8	0.40	3.70	14.80
K13			100	18.09	92.4	0.63	3.00	16.80
K13			125	14.16	95.0	0.95	1.80	18.80
K13			160	6.88	95.0	1.43	0.00	21.10
K13			200	3.06	96.0	2.06	0.00	22.80
K14	1,963	1,970						
K14			20	47.91	76.3	0.00	5.60	7.60
K14			25	44.57	79.7	0.04	5.40	8.30
K14			32	40.05	81.6	0.06	5.20	9.20
K14			40	35.11	82.8	0.10	5.00	10.30
K14			50	30.17	83.8	0.14	4.70	11.50
K14			63	30.50	90.1	0.22	4.30	13.00
K14			80	26.00	91.8	0.32	3.70	14.80
K14			100	20.32	92.4	0.49	3.00	16.80
K14			125	16.46	95.0	0.75	1.80	18.80
K14			160	9.29	95.0	1.12	0.00	21.10
K14			200	5.60	96.0	1.62	0.00	22.80
Sum								
Sum			20	60.10				
Sum			25	56.76				
Sum			32	52.25				
Sum			40	47.31				
Sum			50	42.39				
Sum			63	42.69				
Sum			80	38.21				
Sum			100	32.57				
Sum			125	28.74				
Sum			160	21.66				
Sum			200	18.02				

Noise sensitive area: AI Noise sensitive point: Finnish normal frequency - User defined (257)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	4,389	4,393						
Extension WTG 01			20	36.45	71.8	0.00	5.60	7.60
Extension WTG 01			25	33.06	75.2	0.09	5.40	8.30
Extension WTG 01			32	28.51	77.1	0.13	5.20	9.20
Extension WTG 01			40	23.53	78.3	0.22	5.00	10.30
Extension WTG 01			50	19.54	80.3	0.31	4.70	11.50
Extension WTG 01			63	17.76	84.6	0.48	4.30	13.00
Extension WTG 01			80	14.14	87.3	0.70	3.70	14.80
Extension WTG 01			100	9.25	88.9	1.10	3.00	16.80
Extension WTG 01			125	5.08	91.5	1.67	1.80	18.80
Extension WTG 01			160	-0.56	93.5	2.50	0.00	21.10
Extension WTG 01			200	-4.86	94.5	3.60	0.00	22.80
Extension WTG 02	3,872	3,875						
Extension WTG 02			20	37.53	71.8	0.00	5.60	7.60
Extension WTG 02			25	34.16	75.2	0.08	5.40	8.30
Extension WTG 02			32	29.62	77.1	0.12	5.20	9.20
Extension WTG 02			40	24.64	78.3	0.19	5.00	10.30
Extension WTG 02			50	20.66	80.3	0.27	4.70	11.50
Extension WTG 02			63	18.91	84.6	0.43	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			80	15.31	87.3	0.62	3.70	14.80
Extension WTG 02			100	10.46	88.9	0.97	3.00	16.80
Extension WTG 02			125	6.36	91.5	1.47	1.80	18.80
Extension WTG 02			160	0.82	93.5	2.21	0.00	21.10
Extension WTG 02			200	-3.34	94.5	3.18	0.00	22.80
K01	1,539	1,546						
K01			20	50.01	76.3	0.00	5.60	7.60
K01			25	46.68	79.7	0.03	5.40	8.30
K01			32	42.17	81.6	0.05	5.20	9.20
K01			40	37.24	82.8	0.08	5.00	10.30
K01			50	32.31	83.8	0.11	4.70	11.50
K01			63	32.64	90.1	0.17	4.30	13.00
K01			80	28.17	91.8	0.25	3.70	14.80
K01			100	22.53	92.4	0.39	3.00	16.80
K01			125	18.73	95.0	0.59	1.80	18.80
K01			160	11.63	95.0	0.88	0.00	21.10
K01			200	8.05	96.0	1.27	0.00	22.80
K02	2,003	2,008						
K02			20	47.74	76.3	0.00	5.60	7.60
K02			25	44.40	79.7	0.04	5.40	8.30
K02			32	39.88	81.6	0.06	5.20	9.20
K02			40	34.94	82.8	0.10	5.00	10.30
K02			50	30.00	83.8	0.14	4.70	11.50
K02			63	30.32	90.1	0.22	4.30	13.00
K02			80	25.82	91.8	0.32	3.70	14.80
K02			100	20.14	92.4	0.50	3.00	16.80
K02			125	16.28	95.0	0.76	1.80	18.80
K02			160	9.10	95.0	1.14	0.00	21.10
K02			200	5.40	96.0	1.65	0.00	22.80
K03	2,439	2,444						
K03			20	46.04	76.3	0.00	5.60	7.60
K03			25	42.69	79.7	0.05	5.40	8.30
K03			32	38.16	81.6	0.07	5.20	9.20
K03			40	33.22	82.8	0.12	5.00	10.30
K03			50	28.27	83.8	0.17	4.70	11.50
K03			63	28.57	90.1	0.27	4.30	13.00
K03			80	24.05	91.8	0.39	3.70	14.80
K03			100	18.33	92.4	0.61	3.00	16.80
K03			125	14.41	95.0	0.93	1.80	18.80
K03			160	7.14	95.0	1.39	0.00	21.10
K03			200	3.33	96.0	2.00	0.00	22.80
K04	3,237	3,241						
K04			20	43.59	76.3	0.00	5.60	7.60
K04			25	40.22	79.7	0.06	5.40	8.30
K04			32	35.69	81.6	0.10	5.20	9.20
K04			40	30.72	82.8	0.16	5.00	10.30
K04			50	25.76	83.8	0.23	4.70	11.50
K04			63	26.03	90.1	0.36	4.30	13.00
K04			80	21.47	91.8	0.52	3.70	14.80
K04			100	15.68	92.4	0.81	3.00	16.80
K04			125	11.66	95.0	1.23	1.80	18.80
K04			160	4.24	95.0	1.85	0.00	21.10
K04			200	0.23	96.0	2.66	0.00	22.80
K05	3,197	3,201						
K05			20	43.70	76.3	0.00	5.60	7.60
K05			25	40.33	79.7	0.06	5.40	8.30
K05			32	35.80	81.6	0.10	5.20	9.20
K05			40	30.84	82.8	0.16	5.00	10.30
K05			50	25.87	83.8	0.22	4.70	11.50
K05			63	26.14	90.1	0.35	4.30	13.00
K05			80	21.58	91.8	0.51	3.70	14.80
K05			100	15.80	92.4	0.80	3.00	16.80
K05			125	11.78	95.0	1.22	1.80	18.80
K05			160	4.37	95.0	1.82	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			200	0.37	96.0	2.62	0.00	22.80
K06	2,341	2,346						
K06			20	46.39	76.3	0.00	5.60	7.60
K06			25	43.05	79.7	0.05	5.40	8.30
K06			32	38.52	81.6	0.07	5.20	9.20
K06			40	33.57	82.8	0.12	5.00	10.30
K06			50	28.63	83.8	0.16	4.70	11.50
K06			63	28.93	90.1	0.26	4.30	13.00
K06			80	24.42	91.8	0.38	3.70	14.80
K06			100	18.71	92.4	0.59	3.00	16.80
K06			125	14.80	95.0	0.89	1.80	18.80
K06			160	7.55	95.0	1.34	0.00	21.10
K06			200	3.77	96.0	1.92	0.00	22.80
K07	2,960	2,964						
K07			20	44.36	76.3	0.00	5.60	7.60
K07			25	41.00	79.7	0.06	5.40	8.30
K07			32	36.47	81.6	0.09	5.20	9.20
K07			40	31.51	82.8	0.15	5.00	10.30
K07			50	26.55	83.8	0.21	4.70	11.50
K07			63	26.84	90.1	0.33	4.30	13.00
K07			80	22.29	91.8	0.47	3.70	14.80
K07			100	16.52	92.4	0.74	3.00	16.80
K07			125	12.54	95.0	1.13	1.80	18.80
K07			160	5.17	95.0	1.69	0.00	21.10
K07			200	1.23	96.0	2.43	0.00	22.80
K08	2,716	2,721						
K08			20	45.11	76.3	0.00	5.60	7.60
K08			25	41.75	79.7	0.05	5.40	8.30
K08			32	37.23	81.6	0.08	5.20	9.20
K08			40	32.27	82.8	0.14	5.00	10.30
K08			50	27.32	83.8	0.19	4.70	11.50
K08			63	27.61	90.1	0.30	4.30	13.00
K08			80	23.07	91.8	0.44	3.70	14.80
K08			100	17.33	92.4	0.68	3.00	16.80
K08			125	13.37	95.0	1.03	1.80	18.80
K08			160	6.06	95.0	1.55	0.00	21.10
K08			200	2.18	96.0	2.23	0.00	22.80
K09	3,012	3,016						
K09			20	44.21	76.3	0.00	5.60	7.60
K09			25	40.85	79.7	0.06	5.40	8.30
K09			32	36.32	81.6	0.09	5.20	9.20
K09			40	31.36	82.8	0.15	5.00	10.30
K09			50	26.40	83.8	0.21	4.70	11.50
K09			63	26.68	90.1	0.33	4.30	13.00
K09			80	22.13	91.8	0.48	3.70	14.80
K09			100	16.36	92.4	0.75	3.00	16.80
K09			125	12.37	95.0	1.15	1.80	18.80
K09			160	4.99	95.0	1.72	0.00	21.10
K09			200	1.04	96.0	2.47	0.00	22.80
K10	966	978						
K10			20	54.00	76.3	0.00	5.60	7.60
K10			25	50.68	79.7	0.02	5.40	8.30
K10			32	46.17	81.6	0.03	5.20	9.20
K10			40	41.25	82.8	0.05	5.00	10.30
K10			50	36.33	83.8	0.07	4.70	11.50
K10			63	36.69	90.1	0.11	4.30	13.00
K10			80	32.24	91.8	0.16	3.70	14.80
K10			100	26.65	92.4	0.24	3.00	16.80
K10			125	22.92	95.0	0.37	1.80	18.80
K10			160	15.94	95.0	0.56	0.00	21.10
K10			200	12.49	96.0	0.80	0.00	22.80
K11	1,373	1,381						
K11			20	51.00	76.3	0.00	5.60	7.60
K11			25	47.67	79.7	0.03	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			32	43.16	81.6	0.04	5.20	9.20
K11			40	38.23	82.8	0.07	5.00	10.30
K11			50	33.30	83.8	0.10	4.70	11.50
K11			63	33.65	90.1	0.15	4.30	13.00
K11			80	29.18	91.8	0.22	3.70	14.80
K11			100	23.55	92.4	0.35	3.00	16.80
K11			125	19.77	95.0	0.52	1.80	18.80
K11			160	12.71	95.0	0.79	0.00	21.10
K11			200	9.17	96.0	1.13	0.00	22.80
K12	2,192	2,197						
K12			20	46.96	76.3	0.00	5.60	7.60
K12			25	43.62	79.7	0.04	5.40	8.30
K12			32	39.10	81.6	0.07	5.20	9.20
K12			40	34.15	82.8	0.11	5.00	10.30
K12			50	29.21	83.8	0.15	4.70	11.50
K12			63	29.52	90.1	0.24	4.30	13.00
K12			80	25.01	91.8	0.35	3.70	14.80
K12			100	19.31	92.4	0.55	3.00	16.80
K12			125	15.43	95.0	0.83	1.80	18.80
K12			160	8.21	95.0	1.25	0.00	21.10
K12			200	4.46	96.0	1.80	0.00	22.80
K13	1,975	1,980						
K13			20	47.86	76.3	0.00	5.60	7.60
K13			25	44.53	79.7	0.04	5.40	8.30
K13			32	40.01	81.6	0.06	5.20	9.20
K13			40	35.07	82.8	0.10	5.00	10.30
K13			50	30.13	83.8	0.14	4.70	11.50
K13			63	30.45	90.1	0.22	4.30	13.00
K13			80	25.95	91.8	0.32	3.70	14.80
K13			100	20.27	92.4	0.50	3.00	16.80
K13			125	16.41	95.0	0.75	1.80	18.80
K13			160	9.24	95.0	1.13	0.00	21.10
K13			200	5.54	96.0	1.62	0.00	22.80
K14	1,766	1,772						
K14			20	48.83	76.3	0.00	5.60	7.60
K14			25	45.49	79.7	0.04	5.40	8.30
K14			32	40.98	81.6	0.05	5.20	9.20
K14			40	36.04	82.8	0.09	5.00	10.30
K14			50	31.10	83.8	0.12	4.70	11.50
K14			63	31.43	90.1	0.19	4.30	13.00
K14			80	26.94	91.8	0.28	3.70	14.80
K14			100	21.29	92.4	0.44	3.00	16.80
K14			125	17.45	95.0	0.67	1.80	18.80
K14			160	10.32	95.0	1.01	0.00	21.10
K14			200	6.67	96.0	1.45	0.00	22.80
Sum								
Sum			20	59.78				
Sum			25	56.44				
Sum			32	51.92				
Sum			40	46.99				
Sum			50	42.06				
Sum			63	42.37				
Sum			80	37.89				
Sum			100	32.24				
Sum			125	28.42				
Sum			160	21.31				
Sum			200	17.68				

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
Noise sensitive area: AJ Noise sensitive point: Finnish normal frequency - User defined (256)

Wind speed: 8.0 m/s
WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	4,716	4,719						
Extension WTG 01			20	35.82	71.8	0.00	5.60	7.60
Extension WTG 01			25	32.43	75.2	0.09	5.40	8.30
Extension WTG 01			32	27.88	77.1	0.14	5.20	9.20
Extension WTG 01			40	22.89	78.3	0.24	5.00	10.30
Extension WTG 01			50	18.89	80.3	0.33	4.70	11.50
Extension WTG 01			63	17.10	84.6	0.52	4.30	13.00
Extension WTG 01			80	13.47	87.3	0.76	3.70	14.80
Extension WTG 01			100	8.54	88.9	1.18	3.00	16.80
Extension WTG 01			125	4.33	91.5	1.79	1.80	18.80
Extension WTG 01			160	-1.37	93.5	2.69	0.00	21.10
Extension WTG 01			200	-5.75	94.5	3.87	0.00	22.80
Extension WTG 02	4,174	4,177						
Extension WTG 02			20	36.88	71.8	0.00	5.60	7.60
Extension WTG 02			25	33.50	75.2	0.08	5.40	8.30
Extension WTG 02			32	28.96	77.1	0.13	5.20	9.20
Extension WTG 02			40	23.97	78.3	0.21	5.00	10.30
Extension WTG 02			50	19.99	80.3	0.29	4.70	11.50
Extension WTG 02			63	18.22	84.6	0.46	4.30	13.00
Extension WTG 02			80	14.61	87.3	0.67	3.70	14.80
Extension WTG 02			100	9.74	88.9	1.04	3.00	16.80
Extension WTG 02			125	5.59	91.5	1.59	1.80	18.80
Extension WTG 02			160	0.00	93.5	2.38	0.00	21.10
Extension WTG 02			200	-4.24	94.5	3.43	0.00	22.80
K01	1,784	1,791						
K01			20	48.74	76.3	0.00	5.60	7.60
K01			25	45.40	79.7	0.04	5.40	8.30
K01			32	40.89	81.6	0.05	5.20	9.20
K01			40	35.95	82.8	0.09	5.00	10.30
K01			50	31.01	83.8	0.13	4.70	11.50
K01			63	31.34	90.1	0.20	4.30	13.00
K01			80	26.85	91.8	0.29	3.70	14.80
K01			100	21.19	92.4	0.45	3.00	16.80
K01			125	17.36	95.0	0.68	1.80	18.80
K01			160	10.22	95.0	1.02	0.00	21.10
K01			200	6.57	96.0	1.47	0.00	22.80
K02	2,282	2,287						
K02			20	46.61	76.3	0.00	5.60	7.60
K02			25	43.27	79.7	0.05	5.40	8.30
K02			32	38.75	81.6	0.07	5.20	9.20
K02			40	33.80	82.8	0.11	5.00	10.30
K02			50	28.85	83.8	0.16	4.70	11.50
K02			63	29.16	90.1	0.25	4.30	13.00
K02			80	24.65	91.8	0.37	3.70	14.80
K02			100	18.94	92.4	0.57	3.00	16.80
K02			125	15.04	95.0	0.87	1.80	18.80
K02			160	7.81	95.0	1.30	0.00	21.10
K02			200	4.04	96.0	1.88	0.00	22.80
K03	2,754	2,759						
K03			20	44.99	76.3	0.00	5.60	7.60
K03			25	41.63	79.7	0.06	5.40	8.30
K03			32	37.10	81.6	0.08	5.20	9.20
K03			40	32.15	82.8	0.14	5.00	10.30
K03			50	27.19	83.8	0.19	4.70	11.50
K03			63	27.48	90.1	0.30	4.30	13.00
K03			80	22.94	91.8	0.44	3.70	14.80
K03			100	17.20	92.4	0.69	3.00	16.80
K03			125	13.24	95.0	1.05	1.80	18.80
K03			160	5.91	95.0	1.57	0.00	21.10
K03			200	2.02	96.0	2.26	0.00	22.80
K04	3,541	3,544						
K04			20	42.81	76.3	0.00	5.60	7.60
K04			25	39.44	79.7	0.07	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K04			32	34.90	81.6	0.11	5.20	9.20
K04			40	29.93	82.8	0.18	5.00	10.30
K04			50	24.96	83.8	0.25	4.70	11.50
K04			63	25.22	90.1	0.39	4.30	13.00
K04			80	20.64	91.8	0.57	3.70	14.80
K04			100	14.82	92.4	0.89	3.00	16.80
K04			125	10.76	95.0	1.35	1.80	18.80
K04			160	3.29	95.0	2.02	0.00	21.10
K04			200	-0.80	96.0	2.91	0.00	22.80
K05	3,533	3,537						
K05			20	42.83	76.3	0.00	5.60	7.60
K05			25	39.46	79.7	0.07	5.40	8.30
K05			32	34.92	81.6	0.11	5.20	9.20
K05			40	29.95	82.8	0.18	5.00	10.30
K05			50	24.98	83.8	0.25	4.70	11.50
K05			63	25.24	90.1	0.39	4.30	13.00
K05			80	20.66	91.8	0.57	3.70	14.80
K05			100	14.84	92.4	0.88	3.00	16.80
K05			125	10.78	95.0	1.34	1.80	18.80
K05			160	3.31	95.0	2.02	0.00	21.10
K05			200	-0.77	96.0	2.90	0.00	22.80
K06	2,515	2,520						
K06			20	45.77	76.3	0.00	5.60	7.60
K06			25	42.42	79.7	0.05	5.40	8.30
K06			32	37.90	81.6	0.08	5.20	9.20
K06			40	32.95	82.8	0.13	5.00	10.30
K06			50	28.00	83.8	0.18	4.70	11.50
K06			63	28.29	90.1	0.28	4.30	13.00
K06			80	23.77	91.8	0.40	3.70	14.80
K06			100	18.04	92.4	0.63	3.00	16.80
K06			125	14.11	95.0	0.96	1.80	18.80
K06			160	6.84	95.0	1.44	0.00	21.10
K06			200	3.01	96.0	2.07	0.00	22.80
K07	3,121	3,125						
K07			20	43.90	76.3	0.00	5.60	7.60
K07			25	40.54	79.7	0.06	5.40	8.30
K07			32	36.01	81.6	0.09	5.20	9.20
K07			40	31.05	82.8	0.16	5.00	10.30
K07			50	26.08	83.8	0.22	4.70	11.50
K07			63	26.36	90.1	0.34	4.30	13.00
K07			80	21.80	91.8	0.50	3.70	14.80
K07			100	16.02	92.4	0.78	3.00	16.80
K07			125	12.02	95.0	1.19	1.80	18.80
K07			160	4.62	95.0	1.78	0.00	21.10
K07			200	0.64	96.0	2.56	0.00	22.80
K08	2,962	2,966						
K08			20	44.36	76.3	0.00	5.60	7.60
K08			25	41.00	79.7	0.06	5.40	8.30
K08			32	36.47	81.6	0.09	5.20	9.20
K08			40	31.51	82.8	0.15	5.00	10.30
K08			50	26.55	83.8	0.21	4.70	11.50
K08			63	26.83	90.1	0.33	4.30	13.00
K08			80	22.28	91.8	0.47	3.70	14.80
K08			100	16.52	92.4	0.74	3.00	16.80
K08			125	12.53	95.0	1.13	1.80	18.80
K08			160	5.17	95.0	1.69	0.00	21.10
K08			200	1.23	96.0	2.43	0.00	22.80
K09	3,285	3,289						
K09			20	43.46	76.3	0.00	5.60	7.60
K09			25	40.09	79.7	0.07	5.40	8.30
K09			32	35.56	81.6	0.10	5.20	9.20
K09			40	30.59	82.8	0.16	5.00	10.30
K09			50	25.63	83.8	0.23	4.70	11.50
K09			63	25.90	90.1	0.36	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K09			80	21.33	91.8	0.53	3.70	14.80
K09			100	15.54	92.4	0.82	3.00	16.80
K09			125	11.51	95.0	1.25	1.80	18.80
K09			160	4.08	95.0	1.87	0.00	21.10
K09			200	0.06	96.0	2.70	0.00	22.80
K10	953	965						
K10			20	54.11	76.3	0.00	5.60	7.60
K10			25	50.79	79.7	0.02	5.40	8.30
K10			32	46.28	81.6	0.03	5.20	9.20
K10			40	41.36	82.8	0.05	5.00	10.30
K10			50	36.44	83.8	0.07	4.70	11.50
K10			63	36.80	90.1	0.11	4.30	13.00
K10			80	32.35	91.8	0.15	3.70	14.80
K10			100	26.76	92.4	0.24	3.00	16.80
K10			125	23.04	95.0	0.37	1.80	18.80
K10			160	16.05	95.0	0.55	0.00	21.10
K10			200	12.61	96.0	0.79	0.00	22.80
K11	1,180	1,189						
K11			20	52.29	76.3	0.00	5.60	7.60
K11			25	48.97	79.7	0.02	5.40	8.30
K11			32	44.46	81.6	0.04	5.20	9.20
K11			40	39.53	82.8	0.06	5.00	10.30
K11			50	34.61	83.8	0.08	4.70	11.50
K11			63	34.96	90.1	0.13	4.30	13.00
K11			80	30.50	91.8	0.19	3.70	14.80
K11			100	24.90	92.4	0.30	3.00	16.80
K11			125	21.14	95.0	0.45	1.80	18.80
K11			160	14.12	95.0	0.68	0.00	21.10
K11			200	10.62	96.0	0.98	0.00	22.80
K12	1,998	2,004						
K12			20	47.76	76.3	0.00	5.60	7.60
K12			25	44.42	79.7	0.04	5.40	8.30
K12			32	39.90	81.6	0.06	5.20	9.20
K12			40	34.96	82.8	0.10	5.00	10.30
K12			50	30.02	83.8	0.14	4.70	11.50
K12			63	30.34	90.1	0.22	4.30	13.00
K12			80	25.84	91.8	0.32	3.70	14.80
K12			100	20.16	92.4	0.50	3.00	16.80
K12			125	16.30	95.0	0.76	1.80	18.80
K12			160	9.12	95.0	1.14	0.00	21.10
K12			200	5.42	96.0	1.64	0.00	22.80
K13	1,928	1,934						
K13			20	48.07	76.3	0.00	5.60	7.60
K13			25	44.73	79.7	0.04	5.40	8.30
K13			32	40.21	81.6	0.06	5.20	9.20
K13			40	35.27	82.8	0.10	5.00	10.30
K13			50	30.34	83.8	0.14	4.70	11.50
K13			63	30.66	90.1	0.21	4.30	13.00
K13			80	26.16	91.8	0.31	3.70	14.80
K13			100	20.49	92.4	0.48	3.00	16.80
K13			125	16.64	95.0	0.73	1.80	18.80
K13			160	9.47	95.0	1.10	0.00	21.10
K13			200	5.79	96.0	1.59	0.00	22.80
K14	1,845	1,852						
K14			20	48.45	76.3	0.00	5.60	7.60
K14			25	45.11	79.7	0.04	5.40	8.30
K14			32	40.59	81.6	0.06	5.20	9.20
K14			40	35.66	82.8	0.09	5.00	10.30
K14			50	30.72	83.8	0.13	4.70	11.50
K14			63	31.05	90.1	0.20	4.30	13.00
K14			80	26.55	91.8	0.30	3.70	14.80
K14			100	20.89	92.4	0.46	3.00	16.80
K14			125	17.05	95.0	0.70	1.80	18.80
K14			160	9.89	95.0	1.06	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			200	6.23	96.0	1.52	0.00	22.80
Sum			20	59.69				
Sum			25	56.36				
Sum			32	51.84				
Sum			40	46.90				
Sum			50	41.98				
Sum			63	42.29				
Sum			80	37.81				
Sum			100	32.16				
Sum			125	28.34				
Sum			160	21.24				
Sum			200	17.61				

Noise sensitive area: AK Noise sensitive point: Finnish normal frequency - User defined (274)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,118	5,122	20	35.11	71.8	0.00	5.60	7.60
Extension WTG 01			25	31.71	75.2	0.10	5.40	8.30
Extension WTG 01			32	27.16	77.1	0.15	5.20	9.20
Extension WTG 01			40	22.16	78.3	0.26	5.00	10.30
Extension WTG 01			50	18.15	80.3	0.36	4.70	11.50
Extension WTG 01			63	16.35	84.6	0.56	4.30	13.00
Extension WTG 01			80	12.69	87.3	0.82	3.70	14.80
Extension WTG 01			100	7.73	88.9	1.28	3.00	16.80
Extension WTG 01			125	3.47	91.5	1.95	1.80	18.80
Extension WTG 01			160	-2.31	93.5	2.92	0.00	21.10
Extension WTG 01			200	-6.79	94.5	4.20	0.00	22.80
Extension WTG 02	4,598	4,602	20	36.04	71.8	0.00	5.60	7.60
Extension WTG 02			25	32.65	75.2	0.09	5.40	8.30
Extension WTG 02			32	28.10	77.1	0.14	5.20	9.20
Extension WTG 02			40	23.11	78.3	0.23	5.00	10.30
Extension WTG 02			50	19.12	80.3	0.32	4.70	11.50
Extension WTG 02			63	17.34	84.6	0.51	4.30	13.00
Extension WTG 02			80	13.71	87.3	0.74	3.70	14.80
Extension WTG 02			100	8.79	88.9	1.15	3.00	16.80
Extension WTG 02			125	4.59	91.5	1.75	1.80	18.80
Extension WTG 02			160	-1.08	93.5	2.62	0.00	21.10
Extension WTG 02			200	-5.43	94.5	3.77	0.00	22.80
K01	2,226	2,231	20	46.83	76.3	0.00	5.60	7.60
K01			25	43.49	79.7	0.04	5.40	8.30
K01			32	38.96	81.6	0.07	5.20	9.20
K01			40	34.02	82.8	0.11	5.00	10.30
K01			50	29.07	83.8	0.16	4.70	11.50
K01			63	29.38	90.1	0.25	4.30	13.00
K01			80	24.87	91.8	0.36	3.70	14.80
K01			100	19.17	92.4	0.56	3.00	16.80
K01			125	15.28	95.0	0.85	1.80	18.80
K01			160	8.06	95.0	1.27	0.00	21.10
K01			200	4.30	96.0	1.83	0.00	22.80
K02	2,716	2,721	20	45.11	76.3	0.00	5.60	7.60
K02			25	41.75	79.7	0.05	5.40	8.30
K02			32	37.22	81.6	0.08	5.20	9.20
K02			40	32.27	82.8	0.14	5.00	10.30
K02			50	27.32	83.8	0.19	4.70	11.50
K02			63	27.61	90.1	0.30	4.30	13.00
K02			80	23.07	91.8	0.44	3.70	14.80
K02			100	17.33	92.4	0.68	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			125	13.37	95.0	1.03	1.80	18.80
K02			160	6.06	95.0	1.55	0.00	21.10
K02			200	2.18	96.0	2.23	0.00	22.80
K03	3,169	3,173						
K03			20	43.77	76.3	0.00	5.60	7.60
K03			25	40.41	79.7	0.06	5.40	8.30
K03			32	35.88	81.6	0.10	5.20	9.20
K03			40	30.91	82.8	0.16	5.00	10.30
K03			50	25.95	83.8	0.22	4.70	11.50
K03			63	26.22	90.1	0.35	4.30	13.00
K03			80	21.66	91.8	0.51	3.70	14.80
K03			100	15.88	92.4	0.79	3.00	16.80
K03			125	11.86	95.0	1.21	1.80	18.80
K03			160	4.46	95.0	1.81	0.00	21.10
K03			200	0.47	96.0	2.60	0.00	22.80
K04	3,964	3,967						
K04			20	41.83	76.3	0.00	5.60	7.60
K04			25	38.45	79.7	0.08	5.40	8.30
K04			32	33.91	81.6	0.12	5.20	9.20
K04			40	28.93	82.8	0.20	5.00	10.30
K04			50	23.95	83.8	0.28	4.70	11.50
K04			63	24.19	90.1	0.44	4.30	13.00
K04			80	19.60	91.8	0.63	3.70	14.80
K04			100	13.74	92.4	0.99	3.00	16.80
K04			125	9.62	95.0	1.51	1.80	18.80
K04			160	2.07	95.0	2.26	0.00	21.10
K04			200	-2.12	96.0	3.25	0.00	22.80
K05	3,922	3,925						
K05			20	41.92	76.3	0.00	5.60	7.60
K05			25	38.54	79.7	0.08	5.40	8.30
K05			32	34.00	81.6	0.12	5.20	9.20
K05			40	29.03	82.8	0.20	5.00	10.30
K05			50	24.05	83.8	0.27	4.70	11.50
K05			63	24.29	90.1	0.43	4.30	13.00
K05			80	19.69	91.8	0.63	3.70	14.80
K05			100	13.84	92.4	0.98	3.00	16.80
K05			125	9.73	95.0	1.49	1.80	18.80
K05			160	2.19	95.0	2.24	0.00	21.10
K05			200	-2.00	96.0	3.22	0.00	22.80
K06	2,953	2,958						
K06			20	44.38	76.3	0.00	5.60	7.60
K06			25	41.02	79.7	0.06	5.40	8.30
K06			32	36.49	81.6	0.09	5.20	9.20
K06			40	31.53	82.8	0.15	5.00	10.30
K06			50	26.57	83.8	0.21	4.70	11.50
K06			63	26.86	90.1	0.33	4.30	13.00
K06			80	22.31	91.8	0.47	3.70	14.80
K06			100	16.54	92.4	0.74	3.00	16.80
K06			125	12.56	95.0	1.12	1.80	18.80
K06			160	5.20	95.0	1.69	0.00	21.10
K06			200	1.26	96.0	2.43	0.00	22.80
K07	3,555	3,559						
K07			20	42.77	76.3	0.00	5.60	7.60
K07			25	39.40	79.7	0.07	5.40	8.30
K07			32	34.87	81.6	0.11	5.20	9.20
K07			40	29.90	82.8	0.18	5.00	10.30
K07			50	24.92	83.8	0.25	4.70	11.50
K07			63	25.18	90.1	0.39	4.30	13.00
K07			80	20.60	91.8	0.57	3.70	14.80
K07			100	14.78	92.4	0.89	3.00	16.80
K07			125	10.72	95.0	1.35	1.80	18.80
K07			160	3.24	95.0	2.03	0.00	21.10
K07			200	-0.84	96.0	2.92	0.00	22.80
K08	3,404	3,408						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			20	43.15	76.3	0.00	5.60	7.60
K08			25	39.78	79.7	0.07	5.40	8.30
K08			32	35.25	81.6	0.10	5.20	9.20
K08			40	30.28	82.8	0.17	5.00	10.30
K08			50	25.31	83.8	0.24	4.70	11.50
K08			63	25.58	90.1	0.37	4.30	13.00
K08			80	21.01	91.8	0.55	3.70	14.80
K08			100	15.20	92.4	0.85	3.00	16.80
K08			125	11.16	95.0	1.29	1.80	18.80
K08			160	3.71	95.0	1.94	0.00	21.10
K08			200	-0.34	96.0	2.79	0.00	22.80
K09	3,722	3,725						
K09			20	42.38	76.3	0.00	5.60	7.60
K09			25	39.00	79.7	0.07	5.40	8.30
K09			32	34.46	81.6	0.11	5.20	9.20
K09			40	29.49	82.8	0.19	5.00	10.30
K09			50	24.52	83.8	0.26	4.70	11.50
K09			63	24.77	90.1	0.41	4.30	13.00
K09			80	20.18	91.8	0.60	3.70	14.80
K09			100	14.35	92.4	0.93	3.00	16.80
K09			125	10.26	95.0	1.42	1.80	18.80
K09			160	2.75	95.0	2.12	0.00	21.10
K09			200	-1.38	96.0	3.05	0.00	22.80
K10	1,344	1,354						
K10			20	51.17	76.3	0.00	5.60	7.60
K10			25	47.84	79.7	0.03	5.40	8.30
K10			32	43.33	81.6	0.04	5.20	9.20
K10			40	38.40	82.8	0.07	5.00	10.30
K10			50	33.47	83.8	0.09	4.70	11.50
K10			63	33.82	90.1	0.15	4.30	13.00
K10			80	29.35	91.8	0.22	3.70	14.80
K10			100	23.73	92.4	0.34	3.00	16.80
K10			125	19.95	95.0	0.51	1.80	18.80
K10			160	12.90	95.0	0.77	0.00	21.10
K10			200	9.36	96.0	1.11	0.00	22.80
K11	1,406	1,414						
K11			20	50.79	76.3	0.00	5.60	7.60
K11			25	47.46	79.7	0.03	5.40	8.30
K11			32	42.95	81.6	0.04	5.20	9.20
K11			40	38.02	82.8	0.07	5.00	10.30
K11			50	33.09	83.8	0.10	4.70	11.50
K11			63	33.43	90.1	0.16	4.30	13.00
K11			80	28.96	91.8	0.23	3.70	14.80
K11			100	23.33	92.4	0.35	3.00	16.80
K11			125	19.55	95.0	0.54	1.80	18.80
K11			160	12.48	95.0	0.81	0.00	21.10
K11			200	8.93	96.0	1.16	0.00	22.80
K12	2,182	2,188						
K12			20	47.00	76.3	0.00	5.60	7.60
K12			25	43.66	79.7	0.04	5.40	8.30
K12			32	39.14	81.6	0.07	5.20	9.20
K12			40	34.19	82.8	0.11	5.00	10.30
K12			50	29.25	83.8	0.15	4.70	11.50
K12			63	29.56	90.1	0.24	4.30	13.00
K12			80	25.05	91.8	0.35	3.70	14.80
K12			100	19.35	92.4	0.55	3.00	16.80
K12			125	15.47	95.0	0.83	1.80	18.80
K12			160	8.25	95.0	1.25	0.00	21.10
K12			200	4.51	96.0	1.79	0.00	22.80
K13	2,265	2,271						
K13			20	46.68	76.3	0.00	5.60	7.60
K13			25	43.33	79.7	0.05	5.40	8.30
K13			32	38.81	81.6	0.07	5.20	9.20
K13			40	33.86	82.8	0.11	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K13			50	28.92	83.8	0.16	4.70	11.50
K13			63	29.23	90.1	0.25	4.30	13.00
K13			80	24.71	91.8	0.36	3.70	14.80
K13			100	19.01	92.4	0.57	3.00	16.80
K13			125	15.11	95.0	0.86	1.80	18.80
K13			160	7.88	95.0	1.29	0.00	21.10
K13			200	4.12	96.0	1.86	0.00	22.80
K14	2,257	2,263						
K14			20	46.71	76.3	0.00	5.60	7.60
K14			25	43.36	79.7	0.05	5.40	8.30
K14			32	38.84	81.6	0.07	5.20	9.20
K14			40	33.89	82.8	0.11	5.00	10.30
K14			50	28.95	83.8	0.16	4.70	11.50
K14			63	29.26	90.1	0.25	4.30	13.00
K14			80	24.74	91.8	0.36	3.70	14.80
K14			100	19.04	92.4	0.57	3.00	16.80
K14			125	15.15	95.0	0.86	1.80	18.80
K14			160	7.92	95.0	1.29	0.00	21.10
K14			200	4.15	96.0	1.86	0.00	22.80
Sum								
Sum			20	57.93				
Sum			25	54.59				
Sum			32	50.06				
Sum			40	45.12				
Sum			50	40.19				
Sum			63	40.48				
Sum			80	35.98				
Sum			100	30.29				
Sum			125	26.41				
Sum			160	19.23				
Sum			200	15.50				

Noise sensitive area: AL Noise sensitive point: Finnish normal frequency - User defined (250)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	7,037	7,039						
Extension WTG 01			20	32.35	71.8	0.00	5.60	7.60
Extension WTG 01			25	28.91	75.2	0.14	5.40	8.30
Extension WTG 01			32	24.34	77.1	0.21	5.20	9.20
Extension WTG 01			40	19.30	78.3	0.35	5.00	10.30
Extension WTG 01			50	15.26	80.3	0.49	4.70	11.50
Extension WTG 01			63	13.38	84.6	0.77	4.30	13.00
Extension WTG 01			80	9.62	87.3	1.13	3.70	14.80
Extension WTG 01			100	4.49	88.9	1.76	3.00	16.80
Extension WTG 01			125	-0.03	91.5	2.67	1.80	18.80
Extension WTG 01			160	-6.16	93.5	4.01	0.00	21.10
Extension WTG 01			200	-11.12	94.5	5.77	0.00	22.80
Extension WTG 02	6,218	6,220						
Extension WTG 02			20	33.42	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.00	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.44	77.1	0.19	5.20	9.20
Extension WTG 02			40	20.41	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.39	80.3	0.44	4.70	11.50
Extension WTG 02			63	14.54	84.6	0.68	4.30	13.00
Extension WTG 02			80	10.83	87.3	1.00	3.70	14.80
Extension WTG 02			100	5.77	88.9	1.56	3.00	16.80
Extension WTG 02			125	1.36	91.5	2.36	1.80	18.80
Extension WTG 02			160	-4.62	93.5	3.55	0.00	21.10
Extension WTG 02			200	-9.38	94.5	5.10	0.00	22.80
K01	4,312	4,315						
K01			20	41.10	76.3	0.00	5.60	7.60
K01			25	37.71	79.7	0.09	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K01			32	33.17	81.6	0.13	5.20	9.20
K01			40	28.19	82.8	0.22	5.00	10.30
K01			50	23.20	83.8	0.30	4.70	11.50
K01			63	23.43	90.1	0.47	4.30	13.00
K01			80	18.81	91.8	0.69	3.70	14.80
K01			100	12.92	92.4	1.08	3.00	16.80
K01			125	8.76	95.0	1.64	1.80	18.80
K01			160	1.14	95.0	2.46	0.00	21.10
K01			200	-3.14	96.0	3.54	0.00	22.80
K02	4,753	4,755						
K02			20	40.26	76.3	0.00	5.60	7.60
K02			25	36.86	79.7	0.10	5.40	8.30
K02			32	32.31	81.6	0.14	5.20	9.20
K02			40	27.32	82.8	0.24	5.00	10.30
K02			50	22.32	83.8	0.33	4.70	11.50
K02			63	22.53	90.1	0.52	4.30	13.00
K02			80	17.90	91.8	0.76	3.70	14.80
K02			100	11.97	92.4	1.19	3.00	16.80
K02			125	7.75	95.0	1.81	1.80	18.80
K02			160	0.05	95.0	2.71	0.00	21.10
K02			200	-4.34	96.0	3.90	0.00	22.80
K03	5,376	5,378						
K03			20	39.19	76.3	0.00	5.60	7.60
K03			25	35.78	79.7	0.11	5.40	8.30
K03			32	31.23	81.6	0.16	5.20	9.20
K03			40	26.22	82.8	0.27	5.00	10.30
K03			50	21.21	83.8	0.38	4.70	11.50
K03			63	21.40	90.1	0.59	4.30	13.00
K03			80	16.73	91.8	0.86	3.70	14.80
K03			100	10.74	92.4	1.34	3.00	16.80
K03			125	6.44	95.0	2.04	1.80	18.80
K03			160	-1.38	95.0	3.07	0.00	21.10
K03			200	-5.92	96.0	4.41	0.00	22.80
K04	5,778	5,780						
K04			20	38.56	76.3	0.00	5.60	7.60
K04			25	35.15	79.7	0.12	5.40	8.30
K04			32	30.59	81.6	0.17	5.20	9.20
K04			40	25.57	82.8	0.29	5.00	10.30
K04			50	20.56	83.8	0.40	4.70	11.50
K04			63	20.73	90.1	0.64	4.30	13.00
K04			80	16.04	91.8	0.92	3.70	14.80
K04			100	10.02	92.4	1.44	3.00	16.80
K04			125	5.67	95.0	2.20	1.80	18.80
K04			160	-2.23	95.0	3.29	0.00	21.10
K04			200	-6.88	96.0	4.74	0.00	22.80
K05	6,252	6,254						
K05			20	37.88	76.3	0.00	5.60	7.60
K05			25	34.45	79.7	0.13	5.40	8.30
K05			32	29.89	81.6	0.19	5.20	9.20
K05			40	24.86	82.8	0.31	5.00	10.30
K05			50	19.84	83.8	0.44	4.70	11.50
K05			63	19.99	90.1	0.69	4.30	13.00
K05			80	15.28	91.8	1.00	3.70	14.80
K05			100	9.21	92.4	1.56	3.00	16.80
K05			125	4.80	95.0	2.38	1.80	18.80
K05			160	-3.19	95.0	3.56	0.00	21.10
K05			200	-7.95	96.0	5.13	0.00	22.80
K06	4,027	4,030						
K06			20	41.69	76.3	0.00	5.60	7.60
K06			25	38.31	79.7	0.08	5.40	8.30
K06			32	33.77	81.6	0.12	5.20	9.20
K06			40	28.79	82.8	0.20	5.00	10.30
K06			50	23.81	83.8	0.28	4.70	11.50
K06			63	24.05	90.1	0.44	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K06			80	19.45	91.8	0.64	3.70	14.80
K06			100	13.59	92.4	1.01	3.00	16.80
K06			125	9.46	95.0	1.53	1.80	18.80
K06			160	1.90	95.0	2.30	0.00	21.10
K06			200	-2.31	96.0	3.30	0.00	22.80
K07	4,108	4,111						
K07			20	41.52	76.3	0.00	5.60	7.60
K07			25	38.14	79.7	0.08	5.40	8.30
K07			32	33.60	81.6	0.12	5.20	9.20
K07			40	28.62	82.8	0.21	5.00	10.30
K07			50	23.63	83.8	0.29	4.70	11.50
K07			63	23.87	90.1	0.45	4.30	13.00
K07			80	19.26	91.8	0.66	3.70	14.80
K07			100	13.39	92.4	1.03	3.00	16.80
K07			125	9.26	95.0	1.56	1.80	18.80
K07			160	1.68	95.0	2.34	0.00	21.10
K07			200	-2.55	96.0	3.37	0.00	22.80
K08	4,796	4,798						
K08			20	40.18	76.3	0.00	5.60	7.60
K08			25	36.78	79.7	0.10	5.40	8.30
K08			32	32.23	81.6	0.14	5.20	9.20
K08			40	27.24	82.8	0.24	5.00	10.30
K08			50	22.24	83.8	0.34	4.70	11.50
K08			63	22.45	90.1	0.53	4.30	13.00
K08			80	17.81	91.8	0.77	3.70	14.80
K08			100	11.88	92.4	1.20	3.00	16.80
K08			125	7.66	95.0	1.82	1.80	18.80
K08			160	-0.06	95.0	2.73	0.00	21.10
K08			200	-4.46	96.0	3.93	0.00	22.80
K09	5,253	5,255						
K09			20	39.39	76.3	0.00	5.60	7.60
K09			25	35.98	79.7	0.11	5.40	8.30
K09			32	31.43	81.6	0.16	5.20	9.20
K09			40	26.43	82.8	0.26	5.00	10.30
K09			50	21.42	83.8	0.37	4.70	11.50
K09			63	21.61	90.1	0.58	4.30	13.00
K09			80	16.95	91.8	0.84	3.70	14.80
K09			100	10.98	92.4	1.31	3.00	16.80
K09			125	6.69	95.0	2.00	1.80	18.80
K09			160	-1.11	95.0	3.00	0.00	21.10
K09			200	-5.62	96.0	4.31	0.00	22.80
K10	3,451	3,454						
K10			20	43.03	76.3	0.00	5.60	7.60
K10			25	39.67	79.7	0.07	5.40	8.30
K10			32	35.13	81.6	0.10	5.20	9.20
K10			40	30.16	82.8	0.17	5.00	10.30
K10			50	25.19	83.8	0.24	4.70	11.50
K10			63	25.45	90.1	0.38	4.30	13.00
K10			80	20.88	91.8	0.55	3.70	14.80
K10			100	15.07	92.4	0.86	3.00	16.80
K10			125	11.02	95.0	1.31	1.80	18.80
K10			160	3.57	95.0	1.97	0.00	21.10
K10			200	-0.50	96.0	2.83	0.00	22.80
K11	2,884	2,887						
K11			20	44.59	76.3	0.00	5.60	7.60
K11			25	41.23	79.7	0.06	5.40	8.30
K11			32	36.70	81.6	0.09	5.20	9.20
K11			40	31.75	82.8	0.14	5.00	10.30
K11			50	26.79	83.8	0.20	4.70	11.50
K11			63	27.07	90.1	0.32	4.30	13.00
K11			80	22.53	91.8	0.46	3.70	14.80
K11			100	16.77	92.4	0.72	3.00	16.80
K11			125	12.79	95.0	1.10	1.80	18.80
K11			160	5.44	95.0	1.65	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			200	1.52	96.0	2.37	0.00	22.80
K12	2,083	2,088						
K12			20	47.40	76.3	0.00	5.60	7.60
K12			25	44.06	79.7	0.04	5.40	8.30
K12			32	39.54	81.6	0.06	5.20	9.20
K12			40	34.60	82.8	0.10	5.00	10.30
K12			50	29.66	83.8	0.15	4.70	11.50
K12			63	29.97	90.1	0.23	4.30	13.00
K12			80	25.47	91.8	0.33	3.70	14.80
K12			100	19.78	92.4	0.52	3.00	16.80
K12			125	15.91	95.0	0.79	1.80	18.80
K12			160	8.71	95.0	1.19	0.00	21.10
K12			200	4.99	96.0	1.71	0.00	22.80
K13	2,728	2,732						
K13			20	45.07	76.3	0.00	5.60	7.60
K13			25	41.72	79.7	0.05	5.40	8.30
K13			32	37.19	81.6	0.08	5.20	9.20
K13			40	32.24	82.8	0.14	5.00	10.30
K13			50	27.28	83.8	0.19	4.70	11.50
K13			63	27.57	90.1	0.30	4.30	13.00
K13			80	23.03	91.8	0.44	3.70	14.80
K13			100	17.29	92.4	0.68	3.00	16.80
K13			125	13.33	95.0	1.04	1.80	18.80
K13			160	6.01	95.0	1.56	0.00	21.10
K13			200	2.13	96.0	2.24	0.00	22.80
K14	3,400	3,403						
K14			20	43.16	76.3	0.00	5.60	7.60
K14			25	39.79	79.7	0.07	5.40	8.30
K14			32	35.26	81.6	0.10	5.20	9.20
K14			40	30.29	82.8	0.17	5.00	10.30
K14			50	25.32	83.8	0.24	4.70	11.50
K14			63	25.59	90.1	0.37	4.30	13.00
K14			80	21.02	91.8	0.54	3.70	14.80
K14			100	15.21	92.4	0.85	3.00	16.80
K14			125	11.17	95.0	1.29	1.80	18.80
K14			160	3.72	95.0	1.94	0.00	21.10
K14			200	-0.33	96.0	2.79	0.00	22.80
Sum								
Sum			20	54.05				
Sum			25	50.68				
Sum			32	46.14				
Sum			40	41.17				
Sum			50	36.22				
Sum			63	36.45				
Sum			80	31.89				
Sum			100	26.09				
Sum			125	22.04				
Sum			160	14.63				
Sum			200	10.60				

Noise sensitive area: AM Noise sensitive point: Finnish normal frequency - User defined (271)

Wind speed: 8.0 m/s

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	5,761	5,764						
Extension WTG 01			20	34.09	71.8	0.00	5.60	7.60
Extension WTG 01			25	30.67	75.2	0.12	5.40	8.30
Extension WTG 01			32	26.11	77.1	0.17	5.20	9.20
Extension WTG 01			40	21.10	78.3	0.29	5.00	10.30
Extension WTG 01			50	17.08	80.3	0.40	4.70	11.50
Extension WTG 01			63	15.25	84.6	0.63	4.30	13.00
Extension WTG 01			80	11.56	87.3	0.92	3.70	14.80
Extension WTG 01			100	6.54	88.9	1.44	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01			125	2.19	91.5	2.19	1.80	18.80
Extension WTG 01			160	-3.70	93.5	3.29	0.00	21.10
Extension WTG 01			200	-8.34	94.5	4.73	0.00	22.80
Extension WTG 02	5,203	5,206						
Extension WTG 02			20	34.97	71.8	0.00	5.60	7.60
Extension WTG 02			25	31.57	75.2	0.10	5.40	8.30
Extension WTG 02			32	27.01	77.1	0.16	5.20	9.20
Extension WTG 02			40	22.01	78.3	0.26	5.00	10.30
Extension WTG 02			50	18.01	80.3	0.36	4.70	11.50
Extension WTG 02			63	16.20	84.6	0.57	4.30	13.00
Extension WTG 02			80	12.54	87.3	0.83	3.70	14.80
Extension WTG 02			100	7.57	88.9	1.30	3.00	16.80
Extension WTG 02			125	3.29	91.5	1.98	1.80	18.80
Extension WTG 02			160	-2.50	93.5	2.97	0.00	21.10
Extension WTG 02			200	-7.00	94.5	4.27	0.00	22.80
K01	2,776	2,781						
K01			20	44.92	76.3	0.00	5.60	7.60
K01			25	41.56	79.7	0.06	5.40	8.30
K01			32	37.03	81.6	0.08	5.20	9.20
K01			40	32.08	82.8	0.14	5.00	10.30
K01			50	27.12	83.8	0.19	4.70	11.50
K01			63	27.41	90.1	0.31	4.30	13.00
K01			80	22.87	91.8	0.44	3.70	14.80
K01			100	17.12	92.4	0.70	3.00	16.80
K01			125	13.16	95.0	1.06	1.80	18.80
K01			160	5.83	95.0	1.58	0.00	21.10
K01			200	1.94	96.0	2.28	0.00	22.80
K02	3,299	3,302						
K02			20	43.42	76.3	0.00	5.60	7.60
K02			25	40.06	79.7	0.07	5.40	8.30
K02			32	35.52	81.6	0.10	5.20	9.20
K02			40	30.56	82.8	0.17	5.00	10.30
K02			50	25.59	83.8	0.23	4.70	11.50
K02			63	25.86	90.1	0.36	4.30	13.00
K02			80	21.29	91.8	0.53	3.70	14.80
K02			100	15.50	92.4	0.83	3.00	16.80
K02			125	11.47	95.0	1.25	1.80	18.80
K02			160	4.04	95.0	1.88	0.00	21.10
K02			200	0.02	96.0	2.71	0.00	22.80
K03	3,796	3,799						
K03			20	42.21	76.3	0.00	5.60	7.60
K03			25	38.83	79.7	0.08	5.40	8.30
K03			32	34.29	81.6	0.11	5.20	9.20
K03			40	29.32	82.8	0.19	5.00	10.30
K03			50	24.34	83.8	0.27	4.70	11.50
K03			63	24.59	90.1	0.42	4.30	13.00
K03			80	20.00	91.8	0.61	3.70	14.80
K03			100	14.16	92.4	0.95	3.00	16.80
K03			125	10.06	95.0	1.44	1.80	18.80
K03			160	2.54	95.0	2.17	0.00	21.10
K03			200	-1.61	96.0	3.12	0.00	22.80
K04	4,573	4,576						
K04			20	40.59	76.3	0.00	5.60	7.60
K04			25	37.20	79.7	0.09	5.40	8.30
K04			32	32.65	81.6	0.14	5.20	9.20
K04			40	27.66	82.8	0.23	5.00	10.30
K04			50	22.67	83.8	0.32	4.70	11.50
K04			63	22.89	90.1	0.50	4.30	13.00
K04			80	18.26	91.8	0.73	3.70	14.80
K04			100	12.35	92.4	1.14	3.00	16.80
K04			125	8.15	95.0	1.74	1.80	18.80
K04			160	0.48	95.0	2.61	0.00	21.10
K04			200	-3.86	96.0	3.75	0.00	22.80
K05	4,580	4,583						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
WTG								
K05			20	40.58	76.3	0.00	5.60	7.60
K05			25	37.19	79.7	0.09	5.40	8.30
K05			32	32.64	81.6	0.14	5.20	9.20
K05			40	27.65	82.8	0.23	5.00	10.30
K05			50	22.66	83.8	0.32	4.70	11.50
K05			63	22.87	90.1	0.50	4.30	13.00
K05			80	18.24	91.8	0.73	3.70	14.80
K05			100	12.33	92.4	1.15	3.00	16.80
K05			125	8.14	95.0	1.74	1.80	18.80
K05			160	0.47	95.0	2.61	0.00	21.10
K05			200	-3.88	96.0	3.76	0.00	22.80
K06	3,398	3,402						
K06			20	43.17	76.3	0.00	5.60	7.60
K06			25	39.80	79.7	0.07	5.40	8.30
K06			32	35.26	81.6	0.10	5.20	9.20
K06			40	30.30	82.8	0.17	5.00	10.30
K06			50	25.33	83.8	0.24	4.70	11.50
K06			63	25.59	90.1	0.37	4.30	13.00
K06			80	21.02	91.8	0.54	3.70	14.80
K06			100	15.22	92.4	0.85	3.00	16.80
K06			125	11.17	95.0	1.29	1.80	18.80
K06			160	3.73	95.0	1.94	0.00	21.10
K06			200	-0.32	96.0	2.79	0.00	22.80
K07	3,966	3,970						
K07			20	41.82	76.3	0.00	5.60	7.60
K07			25	38.45	79.7	0.08	5.40	8.30
K07			32	33.91	81.6	0.12	5.20	9.20
K07			40	28.93	82.8	0.20	5.00	10.30
K07			50	23.95	83.8	0.28	4.70	11.50
K07			63	24.19	90.1	0.44	4.30	13.00
K07			80	19.59	91.8	0.64	3.70	14.80
K07			100	13.73	92.4	0.99	3.00	16.80
K07			125	9.62	95.0	1.51	1.80	18.80
K07			160	2.06	95.0	2.26	0.00	21.10
K07			200	-2.13	96.0	3.26	0.00	22.80
K08	3,935	3,938						
K08			20	41.89	76.3	0.00	5.60	7.60
K08			25	38.52	79.7	0.08	5.40	8.30
K08			32	33.98	81.6	0.12	5.20	9.20
K08			40	29.00	82.8	0.20	5.00	10.30
K08			50	24.02	83.8	0.28	4.70	11.50
K08			63	24.26	90.1	0.43	4.30	13.00
K08			80	19.66	91.8	0.63	3.70	14.80
K08			100	13.81	92.4	0.98	3.00	16.80
K08			125	9.70	95.0	1.50	1.80	18.80
K08			160	2.15	95.0	2.24	0.00	21.10
K08			200	-2.04	96.0	3.23	0.00	22.80
K09	4,288	4,291						
K09			20	41.15	76.3	0.00	5.60	7.60
K09			25	37.76	79.7	0.09	5.40	8.30
K09			32	33.22	81.6	0.13	5.20	9.20
K09			40	28.23	82.8	0.21	5.00	10.30
K09			50	23.25	83.8	0.30	4.70	11.50
K09			63	23.48	90.1	0.47	4.30	13.00
K09			80	18.86	91.8	0.69	3.70	14.80
K09			100	12.98	92.4	1.07	3.00	16.80
K09			125	8.82	95.0	1.63	1.80	18.80
K09			160	1.20	95.0	2.45	0.00	21.10
K09			200	-3.07	96.0	3.52	0.00	22.80
K10	1,707	1,715						
K10			20	49.12	76.3	0.00	5.60	7.60
K10			25	45.78	79.7	0.03	5.40	8.30
K10			32	41.26	81.6	0.05	5.20	9.20
K10			40	36.33	82.8	0.09	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K10			50	31.40	83.8	0.12	4.70	11.50
K10			63	31.73	90.1	0.19	4.30	13.00
K10			80	27.24	91.8	0.27	3.70	14.80
K10			100	21.59	92.4	0.43	3.00	16.80
K10			125	17.76	95.0	0.65	1.80	18.80
K10			160	10.64	95.0	0.98	0.00	21.10
K10			200	7.01	96.0	1.41	0.00	22.80
K11	1,473	1,481						
K11			20	50.39	76.3	0.00	5.60	7.60
K11			25	47.06	79.7	0.03	5.40	8.30
K11			32	42.55	81.6	0.04	5.20	9.20
K11			40	37.62	82.8	0.07	5.00	10.30
K11			50	32.69	83.8	0.10	4.70	11.50
K11			63	33.03	90.1	0.16	4.30	13.00
K11			80	28.55	91.8	0.24	3.70	14.80
K11			100	22.92	92.4	0.37	3.00	16.80
K11			125	19.13	95.0	0.56	1.80	18.80
K11			160	12.05	95.0	0.84	0.00	21.10
K11			200	8.48	96.0	1.21	0.00	22.80
K12	2,083	2,089						
K12			20	47.40	76.3	0.00	5.60	7.60
K12			25	44.06	79.7	0.04	5.40	8.30
K12			32	39.54	81.6	0.06	5.20	9.20
K12			40	34.60	82.8	0.10	5.00	10.30
K12			50	29.66	83.8	0.15	4.70	11.50
K12			63	29.97	90.1	0.23	4.30	13.00
K12			80	25.47	91.8	0.33	3.70	14.80
K12			100	19.78	92.4	0.52	3.00	16.80
K12			125	15.91	95.0	0.79	1.80	18.80
K12			160	8.71	95.0	1.19	0.00	21.10
K12			200	4.99	96.0	1.71	0.00	22.80
K13	2,437	2,443						
K13			20	46.04	76.3	0.00	5.60	7.60
K13			25	42.69	79.7	0.05	5.40	8.30
K13			32	38.17	81.6	0.07	5.20	9.20
K13			40	33.22	82.8	0.12	5.00	10.30
K13			50	28.27	83.8	0.17	4.70	11.50
K13			63	28.57	90.1	0.27	4.30	13.00
K13			80	24.05	91.8	0.39	3.70	14.80
K13			100	18.33	92.4	0.61	3.00	16.80
K13			125	14.41	95.0	0.93	1.80	18.80
K13			160	7.15	95.0	1.39	0.00	21.10
K13			200	3.34	96.0	2.00	0.00	22.80
K14	2,612	2,617						
K14			20	45.45	76.3	0.00	5.60	7.60
K14			25	42.09	79.7	0.05	5.40	8.30
K14			32	37.57	81.6	0.08	5.20	9.20
K14			40	32.61	82.8	0.13	5.00	10.30
K14			50	27.66	83.8	0.18	4.70	11.50
K14			63	27.96	90.1	0.29	4.30	13.00
K14			80	23.43	91.8	0.42	3.70	14.80
K14			100	17.69	92.4	0.65	3.00	16.80
K14			125	13.75	95.0	0.99	1.80	18.80
K14			160	6.45	95.0	1.49	0.00	21.10
K14			200	2.60	96.0	2.15	0.00	22.80
Sum								
Sum			20	56.85				
Sum			25	53.50				
Sum			32	48.97				
Sum			40	44.02				
Sum			50	39.09				
Sum			63	39.36				
Sum			80	34.85				
Sum			100	29.14				

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Sum			125	25.22				
Sum			160	17.99				
Sum			200	14.20				

Noise sensitive area: AN Noise sensitive point: Finnish normal frequency - User defined (251)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	6,770	6,772						
Extension WTG 01			20	32.69	71.8	0.00	5.60	7.60
Extension WTG 01			25	29.25	75.2	0.14	5.40	8.30
Extension WTG 01			32	24.68	77.1	0.20	5.20	9.20
Extension WTG 01			40	19.65	78.3	0.34	5.00	10.30
Extension WTG 01			50	15.61	80.3	0.47	4.70	11.50
Extension WTG 01			63	13.74	84.6	0.74	4.30	13.00
Extension WTG 01			80	10.00	87.3	1.08	3.70	14.80
Extension WTG 01			100	4.89	88.9	1.69	3.00	16.80
Extension WTG 01			125	0.41	91.5	2.57	1.80	18.80
Extension WTG 01			160	-5.67	93.5	3.86	0.00	21.10
Extension WTG 01			200	-10.57	94.5	5.55	0.00	22.80
Extension WTG 02	5,999	6,002						
Extension WTG 02			20	33.73	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.31	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.75	77.1	0.18	5.20	9.20
Extension WTG 02			40	20.73	78.3	0.30	5.00	10.30
Extension WTG 02			50	16.71	80.3	0.42	4.70	11.50
Extension WTG 02			63	14.87	84.6	0.66	4.30	13.00
Extension WTG 02			80	11.17	87.3	0.96	3.70	14.80
Extension WTG 02			100	6.13	88.9	1.50	3.00	16.80
Extension WTG 02			125	1.75	91.5	2.28	1.80	18.80
Extension WTG 02			160	-4.19	93.5	3.42	0.00	21.10
Extension WTG 02			200	-8.89	94.5	4.92	0.00	22.80
K01	3,792	3,795						
K01			20	42.22	76.3	0.00	5.60	7.60
K01			25	38.84	79.7	0.08	5.40	8.30
K01			32	34.30	81.6	0.11	5.20	9.20
K01			40	29.33	82.8	0.19	5.00	10.30
K01			50	24.35	83.8	0.27	4.70	11.50
K01			63	24.60	90.1	0.42	4.30	13.00
K01			80	20.01	91.8	0.61	3.70	14.80
K01			100	14.17	92.4	0.95	3.00	16.80
K01			125	10.07	95.0	1.44	1.80	18.80
K01			160	2.55	95.0	2.16	0.00	21.10
K01			200	-1.60	96.0	3.11	0.00	22.80
K02	4,303	4,305						
K02			20	41.12	76.3	0.00	5.60	7.60
K02			25	37.73	79.7	0.09	5.40	8.30
K02			32	33.19	81.6	0.13	5.20	9.20
K02			40	28.20	82.8	0.22	5.00	10.30
K02			50	23.22	83.8	0.30	4.70	11.50
K02			63	23.45	90.1	0.47	4.30	13.00
K02			80	18.83	91.8	0.69	3.70	14.80
K02			100	12.94	92.4	1.08	3.00	16.80
K02			125	8.78	95.0	1.64	1.80	18.80
K02			160	1.17	95.0	2.45	0.00	21.10
K02			200	-3.11	96.0	3.53	0.00	22.80
K03	4,935	4,937						
K03			20	39.93	76.3	0.00	5.60	7.60
K03			25	36.53	79.7	0.10	5.40	8.30
K03			32	31.98	81.6	0.15	5.20	9.20
K03			40	26.98	82.8	0.25	5.00	10.30
K03			50	21.98	83.8	0.35	4.70	11.50
K03			63	22.19	90.1	0.54	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K03			80	17.54	91.8	0.79	3.70	14.80
K03			100	11.60	92.4	1.23	3.00	16.80
K03			125	7.35	95.0	1.88	1.80	18.80
K03			160	-0.38	95.0	2.81	0.00	21.10
K03			200	-4.82	96.0	4.05	0.00	22.80
K04	5,477	5,479						
K04			20	39.03	76.3	0.00	5.60	7.60
K04			25	35.62	79.7	0.11	5.40	8.30
K04			32	31.06	81.6	0.16	5.20	9.20
K04			40	26.05	82.8	0.27	5.00	10.30
K04			50	21.04	83.8	0.38	4.70	11.50
K04			63	21.22	90.1	0.60	4.30	13.00
K04			80	16.55	91.8	0.88	3.70	14.80
K04			100	10.56	92.4	1.37	3.00	16.80
K04			125	6.24	95.0	2.08	1.80	18.80
K04			160	-1.60	95.0	3.12	0.00	21.10
K04			200	-6.17	96.0	4.49	0.00	22.80
K05	5,830	5,832						
K05			20	38.48	76.3	0.00	5.60	7.60
K05			25	35.07	79.7	0.12	5.40	8.30
K05			32	30.51	81.6	0.17	5.20	9.20
K05			40	25.49	82.8	0.29	5.00	10.30
K05			50	20.47	83.8	0.41	4.70	11.50
K05			63	20.64	90.1	0.64	4.30	13.00
K05			80	15.95	91.8	0.93	3.70	14.80
K05			100	9.93	92.4	1.46	3.00	16.80
K05			125	5.57	95.0	2.22	1.80	18.80
K05			160	-2.34	95.0	3.32	0.00	21.10
K05			200	-7.00	96.0	4.78	0.00	22.80
K06	3,765	3,767						
K06			20	42.28	76.3	0.00	5.60	7.60
K06			25	38.90	79.7	0.08	5.40	8.30
K06			32	34.37	81.6	0.11	5.20	9.20
K06			40	29.39	82.8	0.19	5.00	10.30
K06			50	24.42	83.8	0.26	4.70	11.50
K06			63	24.66	90.1	0.41	4.30	13.00
K06			80	20.08	91.8	0.60	3.70	14.80
K06			100	14.24	92.4	0.94	3.00	16.80
K06			125	10.15	95.0	1.43	1.80	18.80
K06			160	2.63	95.0	2.15	0.00	21.10
K06			200	-1.51	96.0	3.09	0.00	22.80
K07	4,024	4,026						
K07			20	41.70	76.3	0.00	5.60	7.60
K07			25	38.32	79.7	0.08	5.40	8.30
K07			32	33.78	81.6	0.12	5.20	9.20
K07			40	28.80	82.8	0.20	5.00	10.30
K07			50	23.82	83.8	0.28	4.70	11.50
K07			63	24.06	90.1	0.44	4.30	13.00
K07			80	19.46	91.8	0.64	3.70	14.80
K07			100	13.60	92.4	1.01	3.00	16.80
K07			125	9.47	95.0	1.53	1.80	18.80
K07			160	1.91	95.0	2.30	0.00	21.10
K07			200	-2.30	96.0	3.30	0.00	22.80
K08	4,537	4,539						
K08			20	40.66	76.3	0.00	5.60	7.60
K08			25	37.27	79.7	0.09	5.40	8.30
K08			32	32.72	81.6	0.14	5.20	9.20
K08			40	27.73	82.8	0.23	5.00	10.30
K08			50	22.74	83.8	0.32	4.70	11.50
K08			63	22.96	90.1	0.50	4.30	13.00
K08			80	18.33	91.8	0.73	3.70	14.80
K08			100	12.43	92.4	1.13	3.00	16.80
K08			125	8.24	95.0	1.72	1.80	18.80
K08			160	0.57	95.0	2.59	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K08			200	-3.76	96.0	3.72	0.00	22.80
K09	4,995	4,998						
K09			20	39.82	76.3	0.00	5.60	7.60
K09			25	36.42	79.7	0.10	5.40	8.30
K09			32	31.87	81.6	0.15	5.20	9.20
K09			40	26.87	82.8	0.25	5.00	10.30
K09			50	21.87	83.8	0.35	4.70	11.50
K09			63	22.08	90.1	0.55	4.30	13.00
K09			80	17.43	91.8	0.80	3.70	14.80
K09			100	11.48	92.4	1.25	3.00	16.80
K09			125	7.23	95.0	1.90	1.80	18.80
K09			160	-0.52	95.0	2.85	0.00	21.10
K09			200	-4.97	96.0	4.10	0.00	22.80
K10	2,723	2,727						
K10			20	45.09	76.3	0.00	5.60	7.60
K10			25	41.73	79.7	0.05	5.40	8.30
K10			32	37.20	81.6	0.08	5.20	9.20
K10			40	32.25	82.8	0.14	5.00	10.30
K10			50	27.29	83.8	0.19	4.70	11.50
K10			63	27.59	90.1	0.30	4.30	13.00
K10			80	23.05	91.8	0.44	3.70	14.80
K10			100	17.30	92.4	0.68	3.00	16.80
K10			125	13.35	95.0	1.04	1.80	18.80
K10			160	6.03	95.0	1.55	0.00	21.10
K10			200	2.15	96.0	2.24	0.00	22.80
K11	2,070	2,075						
K11			20	47.46	76.3	0.00	5.60	7.60
K11			25	44.12	79.7	0.04	5.40	8.30
K11			32	39.60	81.6	0.06	5.20	9.20
K11			40	34.65	82.8	0.10	5.00	10.30
K11			50	29.71	83.8	0.15	4.70	11.50
K11			63	30.03	90.1	0.23	4.30	13.00
K11			80	25.53	91.8	0.33	3.70	14.80
K11			100	19.84	92.4	0.52	3.00	16.80
K11			125	15.97	95.0	0.79	1.80	18.80
K11			160	8.78	95.0	1.18	0.00	21.10
K11			200	5.06	96.0	1.70	0.00	22.80
K12	1,438	1,445						
K12			20	50.60	76.3	0.00	5.60	7.60
K12			25	47.27	79.7	0.03	5.40	8.30
K12			32	42.76	81.6	0.04	5.20	9.20
K12			40	37.83	82.8	0.07	5.00	10.30
K12			50	32.90	83.8	0.10	4.70	11.50
K12			63	33.24	90.1	0.16	4.30	13.00
K12			80	28.77	91.8	0.23	3.70	14.80
K12			100	23.14	92.4	0.36	3.00	16.80
K12			125	19.35	95.0	0.55	1.80	18.80
K12			160	12.28	95.0	0.82	0.00	21.10
K12			200	8.72	96.0	1.19	0.00	22.80
K13	2,313	2,317						
K13			20	46.50	76.3	0.00	5.60	7.60
K13			25	43.15	79.7	0.05	5.40	8.30
K13			32	38.63	81.6	0.07	5.20	9.20
K13			40	33.68	82.8	0.12	5.00	10.30
K13			50	28.74	83.8	0.16	4.70	11.50
K13			63	29.04	90.1	0.25	4.30	13.00
K13			80	24.53	91.8	0.37	3.70	14.80
K13			100	18.82	92.4	0.58	3.00	16.80
K13			125	14.92	95.0	0.88	1.80	18.80
K13			160	7.68	95.0	1.32	0.00	21.10
K13			200	3.90	96.0	1.90	0.00	22.80
K14	2,979	2,982						
K14			20	44.31	76.3	0.00	5.60	7.60
K14			25	40.95	79.7	0.06	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K14			32	36.42	81.6	0.09	5.20	9.20
K14			40	31.46	82.8	0.15	5.00	10.30
K14			50	26.50	83.8	0.21	4.70	11.50
K14			63	26.78	90.1	0.33	4.30	13.00
K14			80	22.23	91.8	0.48	3.70	14.80
K14			100	16.46	92.4	0.75	3.00	16.80
K14			125	12.48	95.0	1.13	1.80	18.80
K14			160	5.11	95.0	1.70	0.00	21.10
K14			200	1.16	96.0	2.45	0.00	22.80
Sum								
Sum			20	55.87				
Sum			25	52.51				
Sum			32	47.98				
Sum			40	43.03				
Sum			50	38.09				
Sum			63	38.36				
Sum			80	33.83				
Sum			100	28.10				
Sum			125	24.16				
Sum			160	16.89				
Sum			200	13.06				

Noise sensitive area: AO Noise sensitive point: Finnish normal frequency - User defined (270)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	6,285	6,287						
Extension WTG 01			20	33.33	71.8	0.00	5.60	7.60
Extension WTG 01			25	29.91	75.2	0.13	5.40	8.30
Extension WTG 01			32	25.34	77.1	0.19	5.20	9.20
Extension WTG 01			40	20.32	78.3	0.31	5.00	10.30
Extension WTG 01			50	16.29	80.3	0.44	4.70	11.50
Extension WTG 01			63	14.44	84.6	0.69	4.30	13.00
Extension WTG 01			80	10.72	87.3	1.01	3.70	14.80
Extension WTG 01			100	5.66	88.9	1.57	3.00	16.80
Extension WTG 01			125	1.24	91.5	2.39	1.80	18.80
Extension WTG 01			160	-4.75	93.5	3.58	0.00	21.10
Extension WTG 01			200	-9.52	94.5	5.16	0.00	22.80
Extension WTG 02	5,674	5,676						
Extension WTG 02			20	34.22	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.80	75.2	0.11	5.40	8.30
Extension WTG 02			32	26.25	77.1	0.17	5.20	9.20
Extension WTG 02			40	21.23	78.3	0.28	5.00	10.30
Extension WTG 02			50	17.22	80.3	0.40	4.70	11.50
Extension WTG 02			63	15.39	84.6	0.62	4.30	13.00
Extension WTG 02			80	11.71	87.3	0.91	3.70	14.80
Extension WTG 02			100	6.70	88.9	1.42	3.00	16.80
Extension WTG 02			125	2.36	91.5	2.16	1.80	18.80
Extension WTG 02			160	-3.52	93.5	3.24	0.00	21.10
Extension WTG 02			200	-8.14	94.5	4.65	0.00	22.80
K01	3,221	3,224						
K01			20	43.63	76.3	0.00	5.60	7.60
K01			25	40.27	79.7	0.06	5.40	8.30
K01			32	35.74	81.6	0.10	5.20	9.20
K01			40	30.77	82.8	0.16	5.00	10.30
K01			50	25.81	83.8	0.23	4.70	11.50
K01			63	26.08	90.1	0.35	4.30	13.00
K01			80	21.52	91.8	0.52	3.70	14.80
K01			100	15.73	92.4	0.81	3.00	16.80
K01			125	11.71	95.0	1.23	1.80	18.80
K01			160	4.29	95.0	1.84	0.00	21.10
K01			200	0.29	96.0	2.64	0.00	22.80
K02	3,765	3,768						

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K02			20	42.28	76.3	0.00	5.60	7.60
K02			25	38.90	79.7	0.08	5.40	8.30
K02			32	34.36	81.6	0.11	5.20	9.20
K02			40	29.39	82.8	0.19	5.00	10.30
K02			50	24.41	83.8	0.26	4.70	11.50
K02			63	24.66	90.1	0.41	4.30	13.00
K02			80	20.07	91.8	0.60	3.70	14.80
K02			100	14.23	92.4	0.94	3.00	16.80
K02			125	10.14	95.0	1.43	1.80	18.80
K02			160	2.63	95.0	2.15	0.00	21.10
K02			200	-1.51	96.0	3.09	0.00	22.80
K03	4,310	4,313						
K03			20	41.10	76.3	0.00	5.60	7.60
K03			25	37.72	79.7	0.09	5.40	8.30
K03			32	33.18	81.6	0.13	5.20	9.20
K03			40	28.19	82.8	0.22	5.00	10.30
K03			50	23.20	83.8	0.30	4.70	11.50
K03			63	23.43	90.1	0.47	4.30	13.00
K03			80	18.81	91.8	0.69	3.70	14.80
K03			100	12.93	92.4	1.08	3.00	16.80
K03			125	8.77	95.0	1.64	1.80	18.80
K03			160	1.15	95.0	2.46	0.00	21.10
K03			200	-3.13	96.0	3.54	0.00	22.80
K04	5,055	5,057						
K04			20	39.72	76.3	0.00	5.60	7.60
K04			25	36.32	79.7	0.10	5.40	8.30
K04			32	31.77	81.6	0.15	5.20	9.20
K04			40	26.77	82.8	0.25	5.00	10.30
K04			50	21.77	83.8	0.35	4.70	11.50
K04			63	21.97	90.1	0.56	4.30	13.00
K04			80	17.31	91.8	0.81	3.70	14.80
K04			100	11.36	92.4	1.26	3.00	16.80
K04			125	7.10	95.0	1.92	1.80	18.80
K04			160	-0.66	95.0	2.88	0.00	21.10
K04			200	-5.12	96.0	4.15	0.00	22.80
K05	5,135	5,137						
K05			20	39.59	76.3	0.00	5.60	7.60
K05			25	36.18	79.7	0.10	5.40	8.30
K05			32	31.63	81.6	0.15	5.20	9.20
K05			40	26.63	82.8	0.26	5.00	10.30
K05			50	21.63	83.8	0.36	4.70	11.50
K05			63	21.82	90.1	0.57	4.30	13.00
K05			80	17.16	91.8	0.82	3.70	14.80
K05			100	11.20	92.4	1.28	3.00	16.80
K05			125	6.93	95.0	1.95	1.80	18.80
K05			160	-0.84	95.0	2.93	0.00	21.10
K05			200	-5.33	96.0	4.21	0.00	22.80
K06	3,710	3,713						
K06			20	42.41	76.3	0.00	5.60	7.60
K06			25	39.03	79.7	0.07	5.40	8.30
K06			32	34.49	81.6	0.11	5.20	9.20
K06			40	29.52	82.8	0.19	5.00	10.30
K06			50	24.55	83.8	0.26	4.70	11.50
K06			63	24.80	90.1	0.41	4.30	13.00
K06			80	20.21	91.8	0.59	3.70	14.80
K06			100	14.38	92.4	0.93	3.00	16.80
K06			125	10.29	95.0	1.41	1.80	18.80
K06			160	2.79	95.0	2.12	0.00	21.10
K06			200	-1.34	96.0	3.04	0.00	22.80
K07	4,227	4,230						
K07			20	41.27	76.3	0.00	5.60	7.60
K07			25	37.89	79.7	0.08	5.40	8.30
K07			32	33.35	81.6	0.13	5.20	9.20
K07			40	28.36	82.8	0.21	5.00	10.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K07			50	23.38	83.8	0.30	4.70	11.50
K07			63	23.61	90.1	0.47	4.30	13.00
K07			80	19.00	91.8	0.68	3.70	14.80
K07			100	13.11	92.4	1.06	3.00	16.80
K07			125	8.97	95.0	1.61	1.80	18.80
K07			160	1.36	95.0	2.41	0.00	21.10
K07			200	-2.90	96.0	3.47	0.00	22.80
K08	4,329	4,332						
K08			20	41.07	76.3	0.00	5.60	7.60
K08			25	37.68	79.7	0.09	5.40	8.30
K08			32	33.14	81.6	0.13	5.20	9.20
K08			40	28.15	82.8	0.22	5.00	10.30
K08			50	23.16	83.8	0.30	4.70	11.50
K08			63	23.39	90.1	0.48	4.30	13.00
K08			80	18.77	91.8	0.69	3.70	14.80
K08			100	12.88	92.4	1.08	3.00	16.80
K08			125	8.72	95.0	1.65	1.80	18.80
K08			160	1.10	95.0	2.47	0.00	21.10
K08			200	-3.19	96.0	3.55	0.00	22.80
K09	4,719	4,721						
K09			20	40.32	76.3	0.00	5.60	7.60
K09			25	36.92	79.7	0.09	5.40	8.30
K09			32	32.38	81.6	0.14	5.20	9.20
K09			40	27.38	82.8	0.24	5.00	10.30
K09			50	22.39	83.8	0.33	4.70	11.50
K09			63	22.60	90.1	0.52	4.30	13.00
K09			80	17.96	91.8	0.76	3.70	14.80
K09			100	12.04	92.4	1.18	3.00	16.80
K09			125	7.83	95.0	1.79	1.80	18.80
K09			160	0.13	95.0	2.69	0.00	21.10
K09			200	-4.25	96.0	3.87	0.00	22.80
K10	2,045	2,051						
K10			20	47.56	76.3	0.00	5.60	7.60
K10			25	44.22	79.7	0.04	5.40	8.30
K10			32	39.70	81.6	0.06	5.20	9.20
K10			40	34.76	82.8	0.10	5.00	10.30
K10			50	29.82	83.8	0.14	4.70	11.50
K10			63	30.14	90.1	0.23	4.30	13.00
K10			80	25.63	91.8	0.33	3.70	14.80
K10			100	19.95	92.4	0.51	3.00	16.80
K10			125	16.08	95.0	0.78	1.80	18.80
K10			160	8.89	95.0	1.17	0.00	21.10
K10			200	5.18	96.0	1.68	0.00	22.80
K11	1,586	1,593						
K11			20	49.75	76.3	0.00	5.60	7.60
K11			25	46.42	79.7	0.03	5.40	8.30
K11			32	41.91	81.6	0.05	5.20	9.20
K11			40	36.97	82.8	0.08	5.00	10.30
K11			50	32.04	83.8	0.11	4.70	11.50
K11			63	32.38	90.1	0.18	4.30	13.00
K11			80	27.90	91.8	0.25	3.70	14.80
K11			100	22.26	92.4	0.40	3.00	16.80
K11			125	18.45	95.0	0.61	1.80	18.80
K11			160	11.35	95.0	0.91	0.00	21.10
K11			200	7.75	96.0	1.31	0.00	22.80
K12	1,930	1,936						
K12			20	48.06	76.3	0.00	5.60	7.60
K12			25	44.72	79.7	0.04	5.40	8.30
K12			32	40.20	81.6	0.06	5.20	9.20
K12			40	35.26	82.8	0.10	5.00	10.30
K12			50	30.33	83.8	0.14	4.70	11.50
K12			63	30.65	90.1	0.21	4.30	13.00
K12			80	26.15	91.8	0.31	3.70	14.80
K12			100	20.48	92.4	0.48	3.00	16.80

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K12			125	16.63	95.0	0.74	1.80	18.80
K12			160	9.46	95.0	1.10	0.00	21.10
K12			200	5.77	96.0	1.59	0.00	22.80
K13	2,526	2,531						
K13			20	45.73	76.3	0.00	5.60	7.60
K13			25	42.38	79.7	0.05	5.40	8.30
K13			32	37.86	81.6	0.08	5.20	9.20
K13			40	32.91	82.8	0.13	5.00	10.30
K13			50	27.96	83.8	0.18	4.70	11.50
K13			63	28.26	90.1	0.28	4.30	13.00
K13			80	23.73	91.8	0.40	3.70	14.80
K13			100	18.00	92.4	0.63	3.00	16.80
K13			125	14.07	95.0	0.96	1.80	18.80
K13			160	6.79	95.0	1.44	0.00	21.10
K13			200	2.96	96.0	2.08	0.00	22.80
K14	2,866	2,870						
K14			20	44.64	76.3	0.00	5.60	7.60
K14			25	41.28	79.7	0.06	5.40	8.30
K14			32	36.76	81.6	0.09	5.20	9.20
K14			40	31.80	82.8	0.14	5.00	10.30
K14			50	26.84	83.8	0.20	4.70	11.50
K14			63	27.13	90.1	0.32	4.30	13.00
K14			80	22.58	91.8	0.46	3.70	14.80
K14			100	16.82	92.4	0.72	3.00	16.80
K14			125	12.85	95.0	1.09	1.80	18.80
K14			160	5.51	95.0	1.64	0.00	21.10
K14			200	1.59	96.0	2.35	0.00	22.80
Sum								
Sum			20	56.16				
Sum			25	52.80				
Sum			32	48.27				
Sum			40	43.32				
Sum			50	38.38				
Sum			63	38.65				
Sum			80	34.13				
Sum			100	28.40				
Sum			125	24.46				
Sum			160	17.19				
Sum			200	13.36				

Noise sensitive area: AP Noise sensitive point: Finnish normal frequency - User defined (253)

Wind speed: 8.0 m/s

WTG

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 01	6,854	6,856						
Extension WTG 01			20	32.58	71.8	0.00	5.60	7.60
Extension WTG 01			25	29.14	75.2	0.14	5.40	8.30
Extension WTG 01			32	24.57	77.1	0.21	5.20	9.20
Extension WTG 01			40	19.54	78.3	0.34	5.00	10.30
Extension WTG 01			50	15.50	80.3	0.48	4.70	11.50
Extension WTG 01			63	13.62	84.6	0.75	4.30	13.00
Extension WTG 01			80	9.88	87.3	1.10	3.70	14.80
Extension WTG 01			100	4.76	88.9	1.71	3.00	16.80
Extension WTG 01			125	0.27	91.5	2.61	1.80	18.80
Extension WTG 01			160	-5.83	93.5	3.91	0.00	21.10
Extension WTG 01			200	-10.74	94.5	5.62	0.00	22.80
Extension WTG 02	6,113	6,116						
Extension WTG 02			20	33.57	71.8	0.00	5.60	7.60
Extension WTG 02			25	30.15	75.2	0.12	5.40	8.30
Extension WTG 02			32	25.59	77.1	0.18	5.20	9.20
Extension WTG 02			40	20.57	78.3	0.31	5.00	10.30
Extension WTG 02			50	16.54	80.3	0.43	4.70	11.50
Extension WTG 02			63	14.70	84.6	0.67	4.30	13.00

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
Extension WTG 02			80	10.99	87.3	0.98	3.70	14.80
Extension WTG 02			100	5.94	88.9	1.53	3.00	16.80
Extension WTG 02			125	1.55	91.5	2.32	1.80	18.80
Extension WTG 02			160	-4.41	93.5	3.49	0.00	21.10
Extension WTG 02			200	-9.14	94.5	5.01	0.00	22.80
K01	3,805	3,808						
K01			20	42.19	76.3	0.00	5.60	7.60
K01			25	38.81	79.7	0.08	5.40	8.30
K01			32	34.27	81.6	0.11	5.20	9.20
K01			40	29.30	82.8	0.19	5.00	10.30
K01			50	24.32	83.8	0.27	4.70	11.50
K01			63	24.57	90.1	0.42	4.30	13.00
K01			80	19.98	91.8	0.61	3.70	14.80
K01			100	14.14	92.4	0.95	3.00	16.80
K01			125	10.04	95.0	1.45	1.80	18.80
K01			160	2.52	95.0	2.17	0.00	21.10
K01			200	-1.64	96.0	3.12	0.00	22.80
K02	4,338	4,340						
K02			20	41.05	76.3	0.00	5.60	7.60
K02			25	37.66	79.7	0.09	5.40	8.30
K02			32	33.12	81.6	0.13	5.20	9.20
K02			40	28.13	82.8	0.22	5.00	10.30
K02			50	23.15	83.8	0.30	4.70	11.50
K02			63	23.37	90.1	0.48	4.30	13.00
K02			80	18.75	91.8	0.69	3.70	14.80
K02			100	12.86	92.4	1.09	3.00	16.80
K02			125	8.70	95.0	1.65	1.80	18.80
K02			160	1.08	95.0	2.47	0.00	21.10
K02			200	-3.21	96.0	3.56	0.00	22.80
K03	4,963	4,965						
K03			20	39.88	76.3	0.00	5.60	7.60
K03			25	36.48	79.7	0.10	5.40	8.30
K03			32	31.93	81.6	0.15	5.20	9.20
K03			40	26.93	82.8	0.25	5.00	10.30
K03			50	21.93	83.8	0.35	4.70	11.50
K03			63	22.14	90.1	0.55	4.30	13.00
K03			80	17.49	91.8	0.79	3.70	14.80
K03			100	11.54	92.4	1.24	3.00	16.80
K03			125	7.30	95.0	1.89	1.80	18.80
K03			160	-0.45	95.0	2.83	0.00	21.10
K03			200	-4.89	96.0	4.07	0.00	22.80
K04	5,562	5,563						
K04			20	38.89	76.3	0.00	5.60	7.60
K04			25	35.48	79.7	0.11	5.40	8.30
K04			32	30.93	81.6	0.17	5.20	9.20
K04			40	25.91	82.8	0.28	5.00	10.30
K04			50	20.90	83.8	0.39	4.70	11.50
K04			63	21.08	90.1	0.61	4.30	13.00
K04			80	16.40	91.8	0.89	3.70	14.80
K04			100	10.40	92.4	1.39	3.00	16.80
K04			125	6.08	95.0	2.11	1.80	18.80
K04			160	-1.78	95.0	3.17	0.00	21.10
K04			200	-6.37	96.0	4.56	0.00	22.80
K05	5,854	5,856						
K05			20	38.45	76.3	0.00	5.60	7.60
K05			25	35.03	79.7	0.12	5.40	8.30
K05			32	30.47	81.6	0.18	5.20	9.20
K05			40	25.45	82.8	0.29	5.00	10.30
K05			50	20.44	83.8	0.41	4.70	11.50
K05			63	20.60	90.1	0.64	4.30	13.00
K05			80	15.91	91.8	0.94	3.70	14.80
K05			100	9.88	92.4	1.46	3.00	16.80
K05			125	5.52	95.0	2.23	1.80	18.80
K05			160	-2.39	95.0	3.34	0.00	21.10

To be continued on next page...

DECIBEL - Detailed results

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K05			200	-7.05	96.0	4.80	0.00	22.80
K06	3,899	3,902						
K06			20	41.97	76.3	0.00	5.60	7.60
K06			25	38.60	79.7	0.08	5.40	8.30
K06			32	34.06	81.6	0.12	5.20	9.20
K06			40	29.08	82.8	0.20	5.00	10.30
K06			50	24.10	83.8	0.27	4.70	11.50
K06			63	24.34	90.1	0.43	4.30	13.00
K06			80	19.75	91.8	0.62	3.70	14.80
K06			100	13.90	92.4	0.98	3.00	16.80
K06			125	9.79	95.0	1.48	1.80	18.80
K06			160	2.25	95.0	2.22	0.00	21.10
K06			200	-1.93	96.0	3.20	0.00	22.80
K07	4,226	4,228						
K07			20	41.28	76.3	0.00	5.60	7.60
K07			25	37.89	79.7	0.08	5.40	8.30
K07			32	33.35	81.6	0.13	5.20	9.20
K07			40	28.37	82.8	0.21	5.00	10.30
K07			50	23.38	83.8	0.30	4.70	11.50
K07			63	23.61	90.1	0.47	4.30	13.00
K07			80	19.00	91.8	0.68	3.70	14.80
K07			100	13.12	92.4	1.06	3.00	16.80
K07			125	8.97	95.0	1.61	1.80	18.80
K07			160	1.37	95.0	2.41	0.00	21.10
K07			200	-2.89	96.0	3.47	0.00	22.80
K08	4,655	4,657						
K08			20	40.44	76.3	0.00	5.60	7.60
K08			25	37.04	79.7	0.09	5.40	8.30
K08			32	32.50	81.6	0.14	5.20	9.20
K08			40	27.50	82.8	0.23	5.00	10.30
K08			50	22.51	83.8	0.33	4.70	11.50
K08			63	22.72	90.1	0.51	4.30	13.00
K08			80	18.09	91.8	0.75	3.70	14.80
K08			100	12.17	92.4	1.16	3.00	16.80
K08			125	7.97	95.0	1.77	1.80	18.80
K08			160	0.28	95.0	2.65	0.00	21.10
K08			200	-4.08	96.0	3.82	0.00	22.80
K09	5,106	5,109						
K09			20	39.63	76.3	0.00	5.60	7.60
K09			25	36.23	79.7	0.10	5.40	8.30
K09			32	31.68	81.6	0.15	5.20	9.20
K09			40	26.68	82.8	0.26	5.00	10.30
K09			50	21.68	83.8	0.36	4.70	11.50
K09			63	21.87	90.1	0.56	4.30	13.00
K09			80	17.22	91.8	0.82	3.70	14.80
K09			100	11.26	92.4	1.28	3.00	16.80
K09			125	6.99	95.0	1.94	1.80	18.80
K09			160	-0.78	95.0	2.91	0.00	21.10
K09			200	-5.25	96.0	4.19	0.00	22.80
K10	2,659	2,663						
K10			20	45.29	76.3	0.00	5.60	7.60
K10			25	41.94	79.7	0.05	5.40	8.30
K10			32	37.41	81.6	0.08	5.20	9.20
K10			40	32.46	82.8	0.13	5.00	10.30
K10			50	27.51	83.8	0.19	4.70	11.50
K10			63	27.80	90.1	0.29	4.30	13.00
K10			80	23.27	91.8	0.43	3.70	14.80
K10			100	17.53	92.4	0.67	3.00	16.80
K10			125	13.58	95.0	1.01	1.80	18.80
K10			160	6.28	95.0	1.52	0.00	21.10
K10			200	2.41	96.0	2.18	0.00	22.80
K11	1,989	1,994						
K11			20	47.81	76.3	0.00	5.60	7.60
K11			25	44.47	79.7	0.04	5.40	8.30

To be continued on next page...

DECIBEL - Detailed results

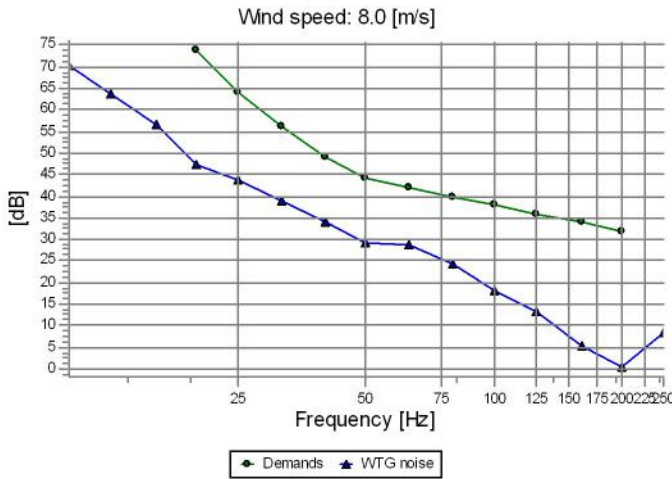
Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s

...continued from previous page

No.	Distance [m]	Sound distance [m]	Frequency [Hz]	Calculated [dB]	LwA,ref [dB(A)]	Aatm [dB]	Agr [dB]	Lsigma [dB]
K11			32	39.95	81.6	0.06	5.20	9.20
K11			40	35.01	82.8	0.10	5.00	10.30
K11			50	30.07	83.8	0.14	4.70	11.50
K11			63	30.39	90.1	0.22	4.30	13.00
K11			80	25.89	91.8	0.32	3.70	14.80
K11			100	20.21	92.4	0.50	3.00	16.80
K11			125	16.35	95.0	0.76	1.80	18.80
K11			160	9.17	95.0	1.14	0.00	21.10
K11			200	5.47	96.0	1.63	0.00	22.80
K12	1,538	1,544						
K12			20	50.02	76.3	0.00	5.60	7.60
K12			25	46.69	79.7	0.03	5.40	8.30
K12			32	42.18	81.6	0.05	5.20	9.20
K12			40	37.25	82.8	0.08	5.00	10.30
K12			50	32.32	83.8	0.11	4.70	11.50
K12			63	32.65	90.1	0.17	4.30	13.00
K12			80	28.18	91.8	0.25	3.70	14.80
K12			100	22.54	92.4	0.39	3.00	16.80
K12			125	18.74	95.0	0.59	1.80	18.80
K12			160	11.64	95.0	0.88	0.00	21.10
K12			200	8.06	96.0	1.27	0.00	22.80
K13	2,443	2,447						
K13			20	46.03	76.3	0.00	5.60	7.60
K13			25	42.68	79.7	0.05	5.40	8.30
K13			32	38.15	81.6	0.07	5.20	9.20
K13			40	33.20	82.8	0.12	5.00	10.30
K13			50	28.26	83.8	0.17	4.70	11.50
K13			63	28.56	90.1	0.27	4.30	13.00
K13			80	24.04	91.8	0.39	3.70	14.80
K13			100	18.32	92.4	0.61	3.00	16.80
K13			125	14.40	95.0	0.93	1.80	18.80
K13			160	7.13	95.0	1.39	0.00	21.10
K13			200	3.32	96.0	2.01	0.00	22.80
K14	3,069	3,072						
K14			20	44.05	76.3	0.00	5.60	7.60
K14			25	40.69	79.7	0.06	5.40	8.30
K14			32	36.16	81.6	0.09	5.20	9.20
K14			40	31.20	82.8	0.15	5.00	10.30
K14			50	26.24	83.8	0.22	4.70	11.50
K14			63	26.51	90.1	0.34	4.30	13.00
K14			80	21.96	91.8	0.49	3.70	14.80
K14			100	16.18	92.4	0.77	3.00	16.80
K14			125	12.18	95.0	1.17	1.80	18.80
K14			160	4.80	95.0	1.75	0.00	21.10
K14			200	0.83	96.0	2.52	0.00	22.80
Sum								
Sum			20	55.65				
Sum			25	52.30				
Sum			32	47.77				
Sum			40	42.81				
Sum			50	37.87				
Sum			63	38.14				
Sum			80	33.61				
Sum			100	27.87				
Sum			125	23.92				
Sum			160	16.63				
Sum			200	12.78				

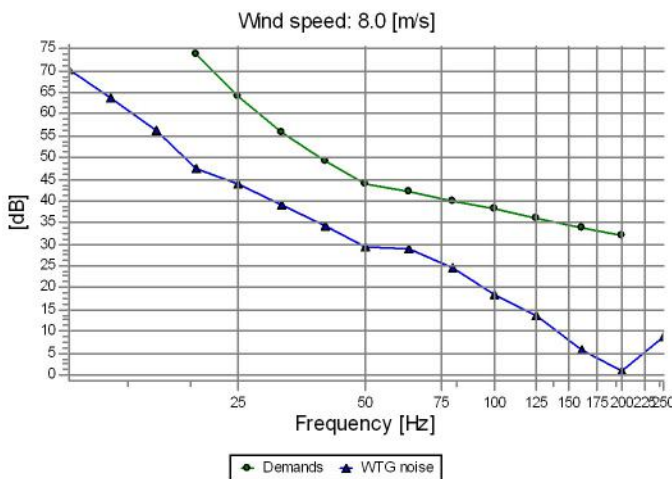
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
A Noise sensitive point: Finnish normal frequency - User defined (291)



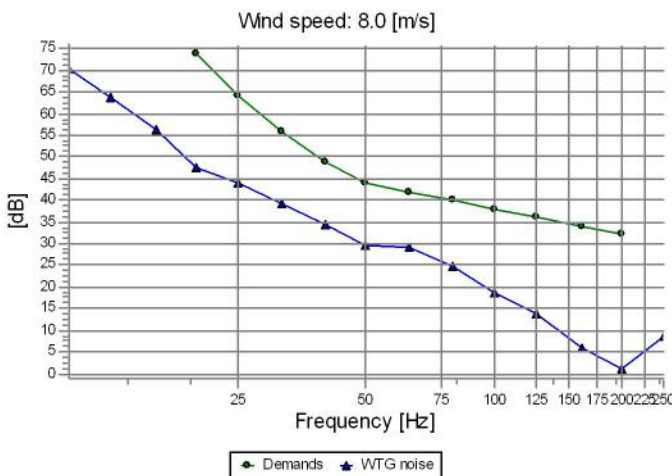
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.1	Yes
25.0	64.0	43.7	Yes
31.5	56.0	39.1	Yes
40.0	49.0	34.0	Yes
50.0	44.0	29.0	Yes
63.0	42.0	28.9	Yes
80.0	40.0	24.2	Yes
100.0	38.0	18.1	Yes
125.0	36.0	13.4	Yes
160.0	34.0	5.4	Yes
200.0	32.0	0.3	Yes
250.0	-	8.6	No

B Noise sensitive point: Finnish normal frequency - User defined (272)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.3	Yes
25.0	64.0	43.9	Yes
31.5	56.0	39.3	Yes
40.0	49.0	34.2	Yes
50.0	44.0	29.3	Yes
63.0	42.0	29.2	Yes
80.0	40.0	24.4	Yes
100.0	38.0	18.3	Yes
125.0	36.0	13.7	Yes
160.0	34.0	5.8	Yes
200.0	32.0	0.7	Yes
250.0	-	8.6	No

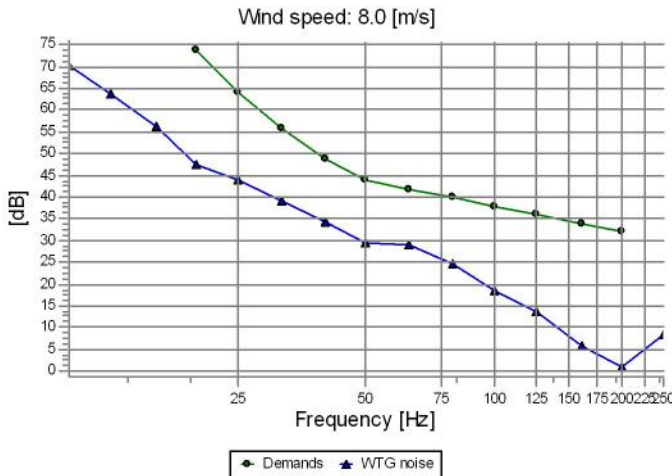
C Noise sensitive point: Finnish normal frequency - User defined (273)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.5	Yes
25.0	64.0	44.0	Yes
31.5	56.0	39.4	Yes
40.0	49.0	34.4	Yes
50.0	44.0	29.4	Yes
63.0	42.0	29.3	Yes
80.0	40.0	24.6	Yes
100.0	38.0	18.5	Yes
125.0	36.0	13.9	Yes
160.0	34.0	6.0	Yes
200.0	32.0	0.9	Yes
250.0	-	8.6	No

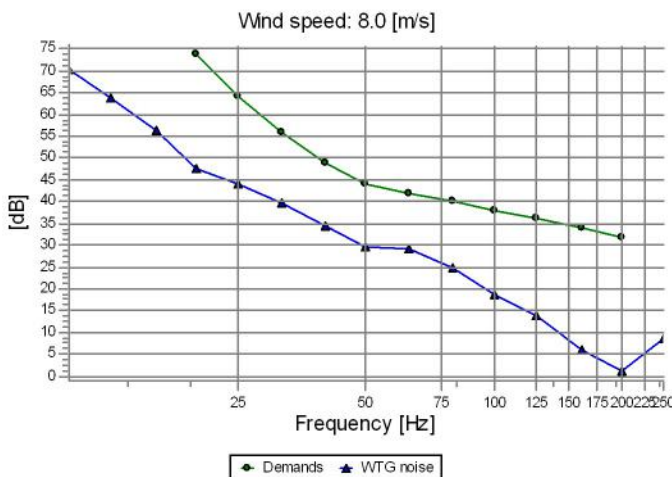
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
D Noise sensitive point: Finnish normal frequency - User defined (277)



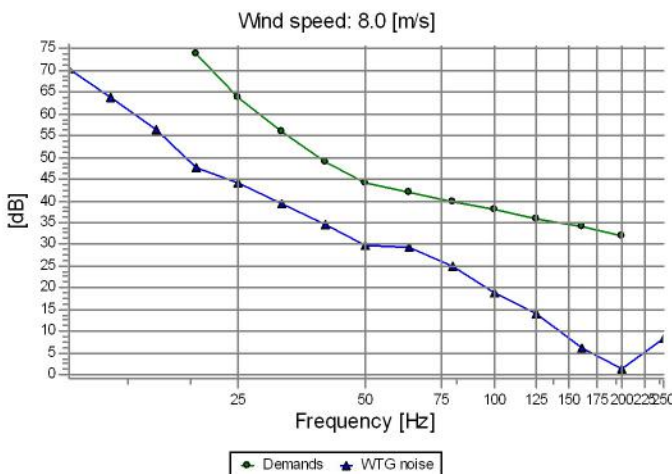
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.4	Yes
25.0	64.0	43.9	Yes
31.5	56.0	39.3	Yes
40.0	49.0	34.3	Yes
50.0	44.0	29.3	Yes
63.0	42.0	29.2	Yes
80.0	40.0	24.5	Yes
100.0	38.0	18.4	Yes
125.0	36.0	13.8	Yes
160.0	34.0	5.9	Yes
200.0	32.0	0.8	Yes
250.0	-	8.6	No

E Noise sensitive point: Finnish normal frequency - User defined (269)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.5	Yes
25.0	64.0	44.1	Yes
31.5	56.0	39.5	Yes
40.0	49.0	34.4	Yes
50.0	44.0	29.5	Yes
63.0	42.0	29.4	Yes
80.0	40.0	24.7	Yes
100.0	38.0	18.6	Yes
125.0	36.0	14.0	Yes
160.0	34.0	6.1	Yes
200.0	32.0	1.0	Yes
250.0	-	8.6	No

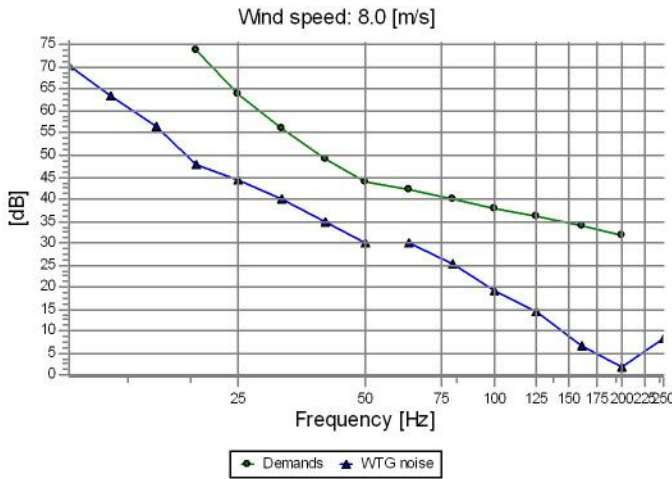
F Noise sensitive point: Finnish normal frequency - User defined (279)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.6	Yes
25.0	64.0	44.1	Yes
31.5	56.0	39.6	Yes
40.0	49.0	34.5	Yes
50.0	44.0	29.6	Yes
63.0	42.0	29.5	Yes
80.0	40.0	24.8	Yes
100.0	38.0	18.7	Yes
125.0	36.0	14.1	Yes
160.0	34.0	6.2	Yes
200.0	32.0	1.2	Yes
250.0	-	8.6	No

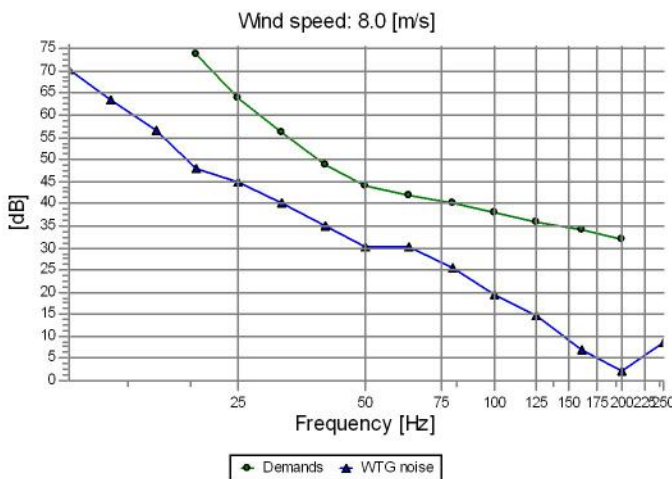
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
G Noise sensitive point: Finnish normal frequency - User defined (268)



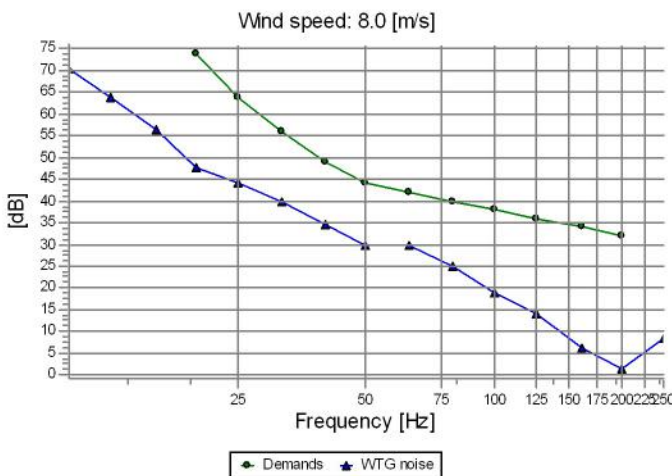
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	48.0	Yes
25.0	64.0	44.5	Yes
31.5	56.0	40.0	Yes
40.0	49.0	34.9	Yes
50.0	44.0	30.0	Yes
63.0	42.0	29.9	Yes
80.0	40.0	25.2	Yes
100.0	38.0	19.1	Yes
125.0	36.0	14.6	Yes
160.0	34.0	6.7	Yes
200.0	32.0	1.8	Yes
250.0	-	8.6	No

H Noise sensitive point: Finnish normal frequency - User defined (252)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	48.1	Yes
25.0	64.0	44.7	Yes
31.5	56.0	40.1	Yes
40.0	49.0	35.1	Yes
50.0	44.0	30.1	Yes
63.0	42.0	30.1	Yes
80.0	40.0	25.4	Yes
100.0	38.0	19.3	Yes
125.0	36.0	14.8	Yes
160.0	34.0	6.9	Yes
200.0	32.0	2.0	Yes
250.0	-	8.6	No

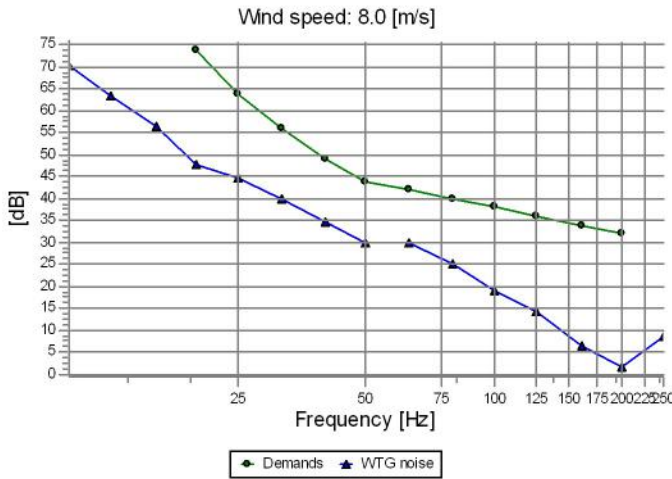
I Noise sensitive point: Finnish normal frequency - User defined (263)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	47.8	Yes
25.0	64.0	44.3	Yes
31.5	56.0	39.8	Yes
40.0	49.0	34.7	Yes
50.0	44.0	29.7	Yes
63.0	42.0	29.7	Yes
80.0	40.0	25.0	Yes
100.0	38.0	18.9	Yes
125.0	36.0	14.3	Yes
160.0	34.0	6.3	Yes
200.0	32.0	1.3	Yes
250.0	-	8.6	No

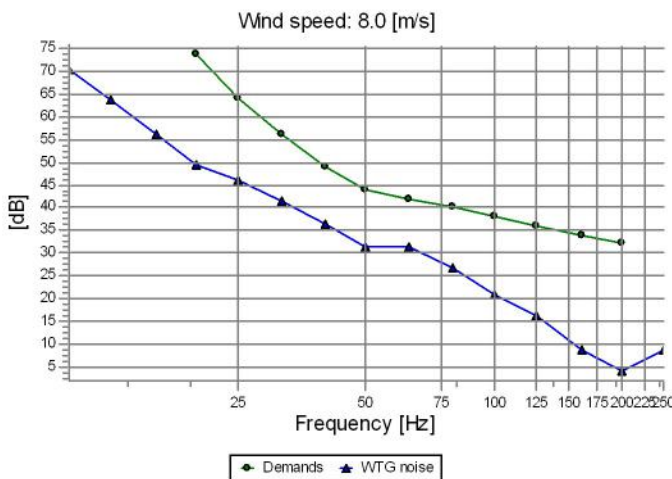
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
J Noise sensitive point: Finnish normal frequency - User defined (260)



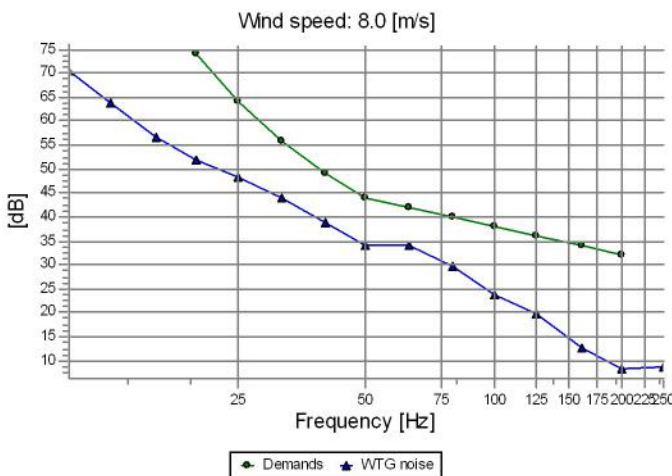
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	48.0	Yes
25.0	64.0	44.5	Yes
31.5	56.0	39.9	Yes
40.0	49.0	34.9	Yes
50.0	44.0	29.9	Yes
63.0	42.0	29.9	Yes
80.0	40.0	25.2	Yes
100.0	38.0	19.1	Yes
125.0	36.0	14.5	Yes
160.0	34.0	6.6	Yes
200.0	32.0	1.5	Yes
250.0	-	8.6	No

K Noise sensitive point: Finnish normal frequency - User defined (261)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	49.4	Yes
25.0	64.0	46.0	Yes
31.5	56.0	41.4	Yes
40.0	49.0	36.4	Yes
50.0	44.0	31.4	Yes
63.0	42.0	31.4	Yes
80.0	40.0	26.8	Yes
100.0	38.0	20.8	Yes
125.0	36.0	16.4	Yes
160.0	34.0	8.6	Yes
200.0	32.0	3.9	Yes
250.0	-	8.6	No

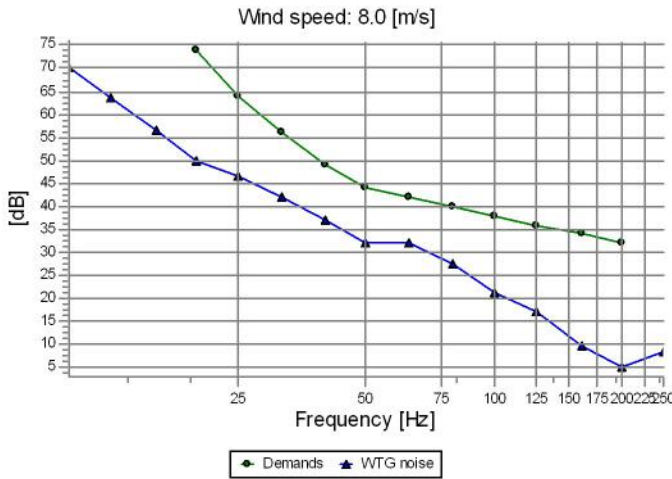
L Noise sensitive point: Finnish normal frequency - User defined (259)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	51.9	Yes
25.0	64.0	48.5	Yes
31.5	56.0	43.9	Yes
40.0	49.0	38.9	Yes
50.0	44.0	34.1	Yes
63.0	42.0	34.0	Yes
80.0	40.0	29.5	Yes
100.0	38.0	23.8	Yes
125.0	36.0	19.6	Yes
160.0	34.0	12.5	Yes
200.0	32.0	8.3	Yes
250.0	-	8.6	No

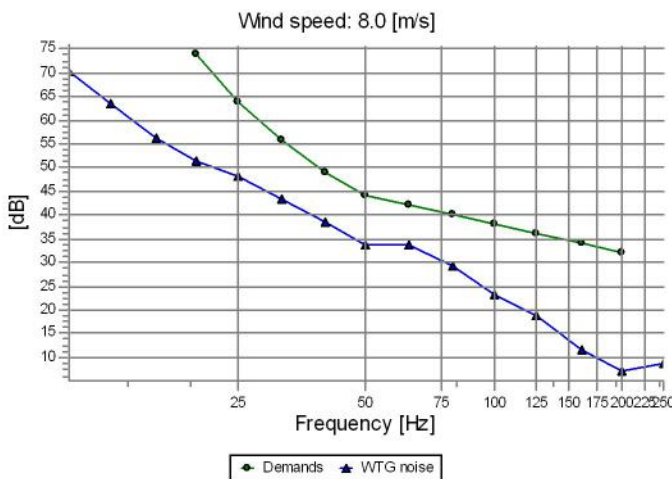
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
M Noise sensitive point: Finnish normal frequency - User defined (290)



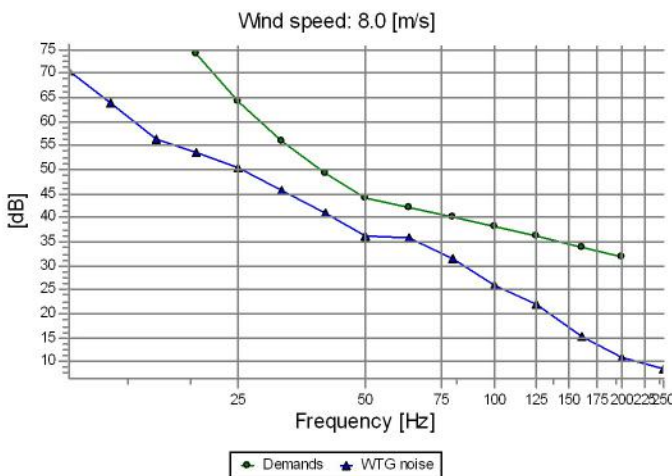
Frequency [Hz]	Demands [dB]	WTG noise [dB]	Demands fulfilled ?
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	49.9	Yes
25.0	64.0	46.4	Yes
31.5	56.0	41.9	Yes
40.0	49.0	36.9	Yes
50.0	44.0	32.0	Yes
63.0	42.0	31.9	Yes
80.0	40.0	27.3	Yes
100.0	38.0	21.4	Yes
125.0	36.0	17.1	Yes
160.0	34.0	9.6	Yes
200.0	32.0	5.1	Yes
250.0	-	8.6	No

N Noise sensitive point: Finnish normal frequency - User defined (264)



Frequency [Hz]	Demands [dB]	WTG noise [dB]	Demands fulfilled ?
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	51.4	Yes
25.0	64.0	48.0	Yes
31.5	56.0	43.5	Yes
40.0	49.0	38.5	Yes
50.0	44.0	33.6	Yes
63.0	42.0	33.6	Yes
80.0	40.0	29.1	Yes
100.0	38.0	23.2	Yes
125.0	36.0	19.0	Yes
160.0	34.0	11.5	Yes
200.0	32.0	7.1	Yes
250.0	-	8.6	No

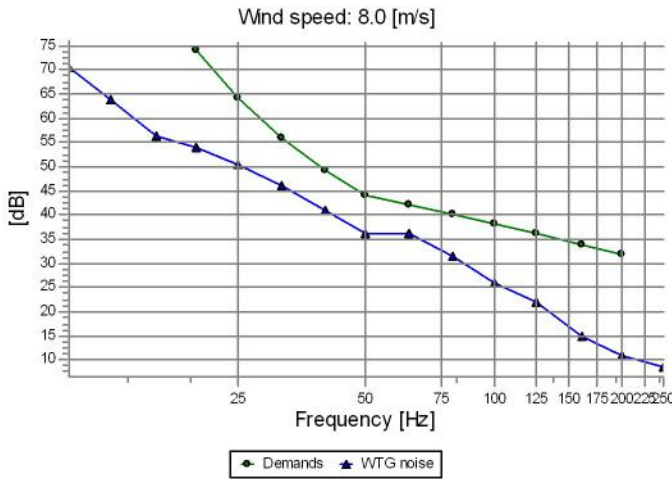
O Noise sensitive point: Finnish normal frequency - User defined (258)



Frequency [Hz]	Demands [dB]	WTG noise [dB]	Demands fulfilled ?
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	53.7	Yes
25.0	64.0	50.3	Yes
31.5	56.0	45.8	Yes
40.0	49.0	40.8	Yes
50.0	44.0	36.1	Yes
63.0	42.0	35.9	Yes
80.0	40.0	31.5	Yes
100.0	38.0	25.9	Yes
125.0	36.0	21.9	Yes
160.0	34.0	15.1	Yes
200.0	32.0	11.1	Yes
250.0	-	8.6	No

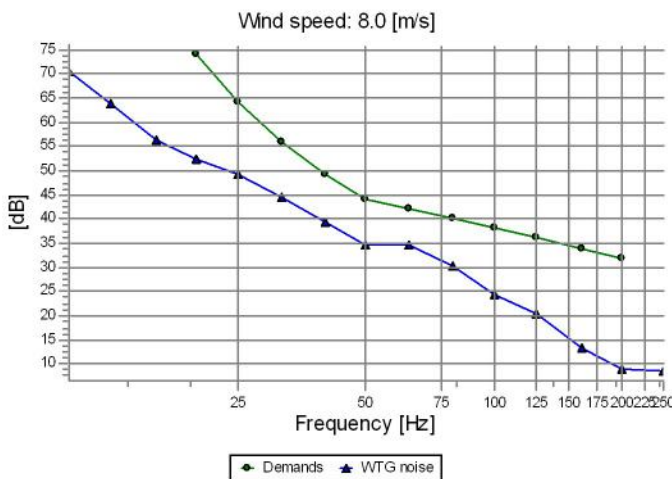
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
P Noise sensitive point: Finnish normal frequency - User defined (255)



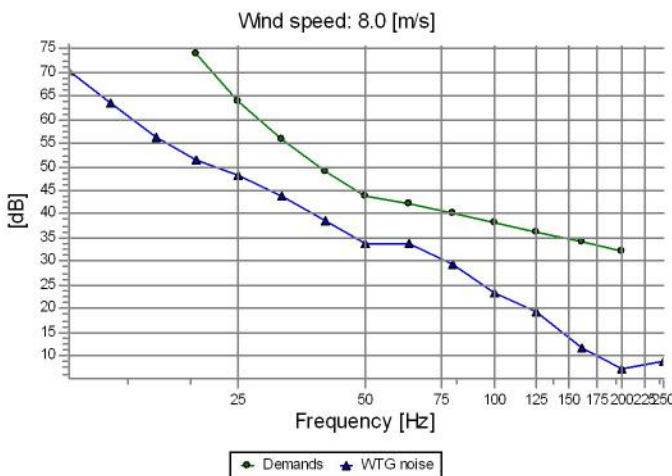
Frequency [Hz]	Demands [dB]	WTG noise [dB]	Sound level [dB]	Demands fulfilled ?
10.0	-	-	70.4	No
12.5	-	-	63.6	No
16.0	-	-	56.4	No
20.0	74.0	53.8	53.8	Yes
25.0	64.0	50.4	50.4	Yes
31.5	56.0	45.9	45.9	Yes
40.0	49.0	40.9	40.9	Yes
50.0	44.0	36.1	36.1	Yes
63.0	42.0	36.0	36.0	Yes
80.0	40.0	31.6	31.6	Yes
100.0	38.0	25.9	25.9	Yes
125.0	36.0	21.8	21.8	Yes
160.0	34.0	14.8	14.8	Yes
200.0	32.0	10.7	10.7	Yes
250.0	-	8.6	8.6	No

Q Noise sensitive point: Finnish normal frequency - User defined (289)



Frequency [Hz]	Demands [dB]	WTG noise [dB]	Sound level [dB]	Demands fulfilled ?
10.0	-	-	70.4	No
12.5	-	-	63.6	No
16.0	-	-	56.4	No
20.0	74.0	52.4	52.4	Yes
25.0	64.0	49.1	49.1	Yes
31.5	56.0	44.5	44.5	Yes
40.0	49.0	39.5	39.5	Yes
50.0	44.0	34.7	34.7	Yes
63.0	42.0	34.6	34.6	Yes
80.0	40.0	30.2	30.2	Yes
100.0	38.0	24.4	24.4	Yes
125.0	36.0	20.3	20.3	Yes
160.0	34.0	13.2	13.2	Yes
200.0	32.0	9.1	9.1	Yes
250.0	-	8.6	8.6	No

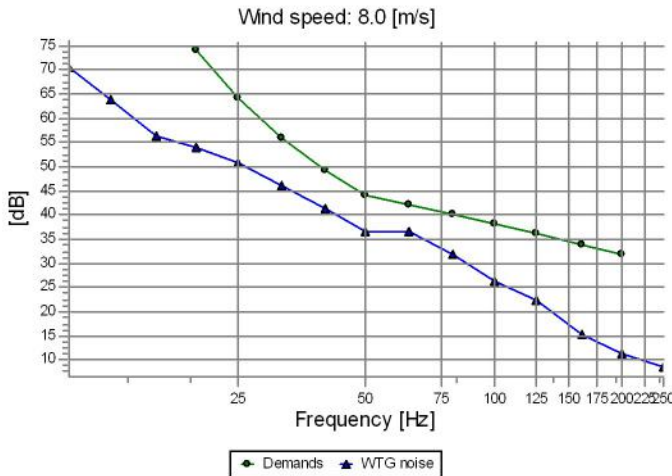
R Noise sensitive point: Finnish normal frequency - User defined (262)



Frequency [Hz]	Demands [dB]	WTG noise [dB]	Sound level [dB]	Demands fulfilled ?
10.0	-	-	70.4	No
12.5	-	-	63.6	No
16.0	-	-	56.4	No
20.0	74.0	51.6	51.6	Yes
25.0	64.0	48.2	48.2	Yes
31.5	56.0	43.7	43.7	Yes
40.0	49.0	38.7	38.7	Yes
50.0	44.0	33.7	33.7	Yes
63.0	42.0	33.8	33.8	Yes
80.0	40.0	29.2	29.2	Yes
100.0	38.0	23.3	23.3	Yes
125.0	36.0	19.1	19.1	Yes
160.0	34.0	11.6	11.6	Yes
200.0	32.0	7.2	7.2	Yes
250.0	-	8.6	8.6	No

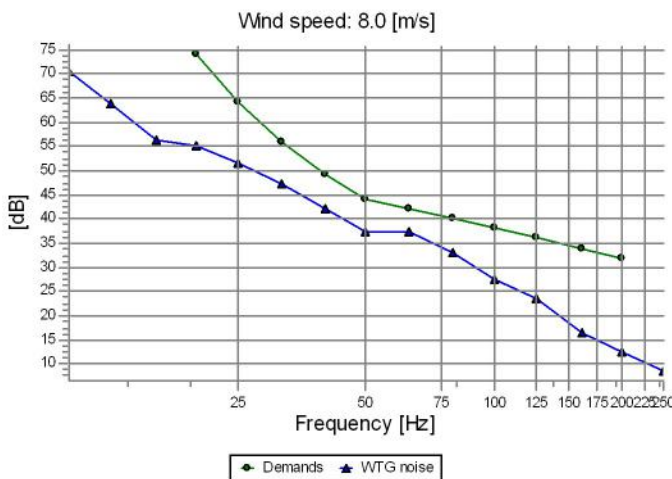
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
S Noise sensitive point: Finnish normal frequency - User defined (287)



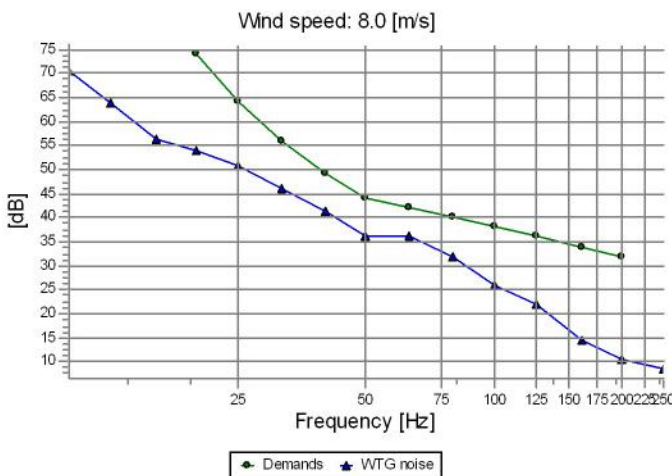
Frequency [Hz]	Demands [dB]	WTG noise [dB]	Demands fulfilled ?
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	54.1	Yes
25.0	64.0	50.7	Yes
31.5	56.0	46.2	Yes
40.0	49.0	41.2	Yes
50.0	44.0	36.4	Yes
63.0	42.0	36.4	Yes
80.0	40.0	31.9	Yes
100.0	38.0	26.3	Yes
125.0	36.0	22.3	Yes
160.0	34.0	15.4	Yes
200.0	32.0	11.4	Yes
250.0	-	8.6	No

T Noise sensitive point: Finnish normal frequency - User defined (283)



Frequency [Hz]	Demands [dB]	WTG noise [dB]	Demands fulfilled ?
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	55.1	Yes
25.0	64.0	51.7	Yes
31.5	56.0	47.2	Yes
40.0	49.0	42.2	Yes
50.0	44.0	37.4	Yes
63.0	42.0	37.4	Yes
80.0	40.0	33.0	Yes
100.0	38.0	27.4	Yes
125.0	36.0	23.4	Yes
160.0	34.0	16.6	Yes
200.0	32.0	12.7	Yes
250.0	-	8.6	No

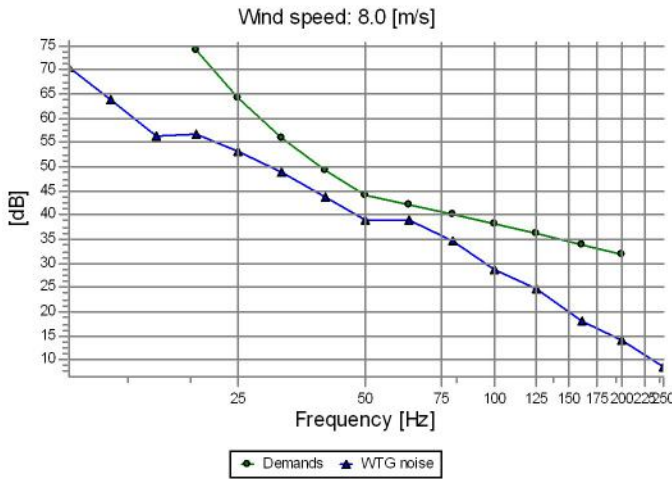
U Noise sensitive point: Finnish normal frequency - User defined (265)



Frequency [Hz]	Demands [dB]	WTG noise [dB]	Demands fulfilled ?
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	54.0	Yes
25.0	64.0	50.6	Yes
31.5	56.0	46.1	Yes
40.0	49.0	41.1	Yes
50.0	44.0	36.2	Yes
63.0	42.0	36.3	Yes
80.0	40.0	31.8	Yes
100.0	38.0	26.0	Yes
125.0	36.0	22.0	Yes
160.0	34.0	14.6	Yes
200.0	32.0	10.5	Yes
250.0	-	8.6	No

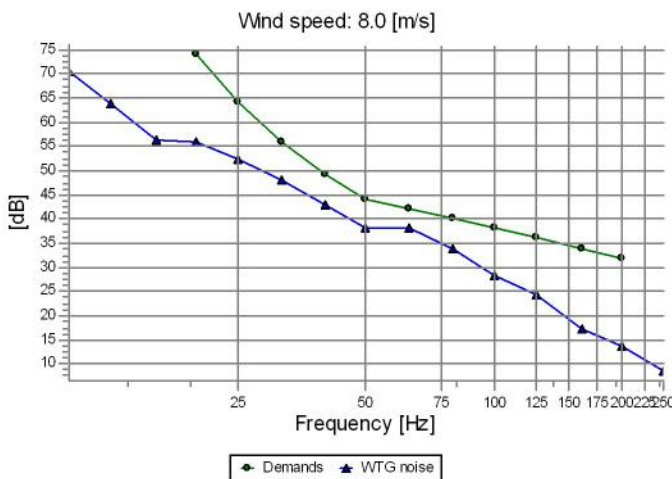
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
V Noise sensitive point: Finnish normal frequency - User defined (254)



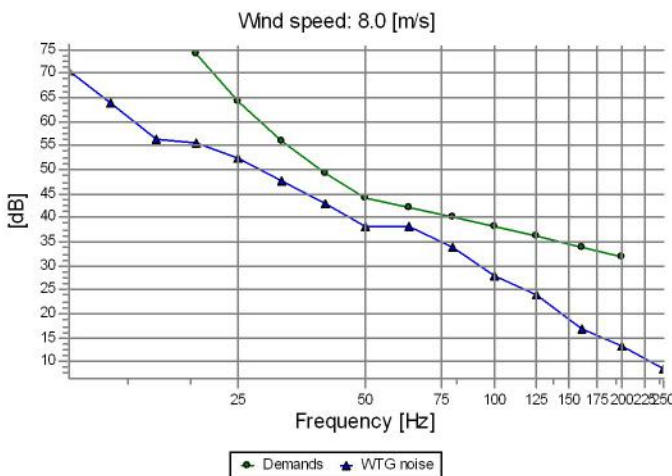
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	56.5	Yes
25.0	64.0	53.2	Yes
31.5	56.0	48.7	Yes
40.0	49.0	43.7	Yes
50.0	44.0	38.8	Yes
63.0	42.0	39.0	Yes
80.0	40.0	34.5	Yes
100.0	38.0	28.9	Yes
125.0	36.0	24.9	Yes
160.0	34.0	17.9	Yes
200.0	32.0	14.0	Yes
250.0	-	8.6	No

W Noise sensitive point: Finnish normal frequency - User defined (282)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	55.8	Yes
25.0	64.0	52.5	Yes
31.5	56.0	48.0	Yes
40.0	49.0	43.0	Yes
50.0	44.0	38.2	Yes
63.0	42.0	38.2	Yes
80.0	40.0	33.8	Yes
100.0	38.0	28.2	Yes
125.0	36.0	24.3	Yes
160.0	34.0	17.4	Yes
200.0	32.0	13.6	Yes
250.0	-	8.6	No

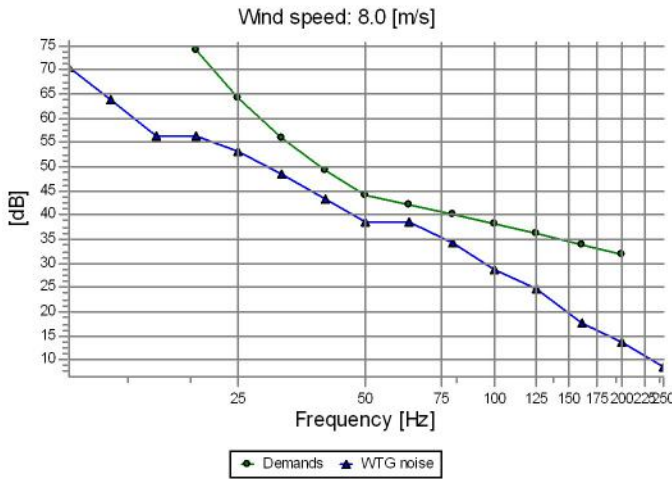
X Noise sensitive point: Finnish normal frequency - User defined (288)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	55.7	Yes
25.0	64.0	52.3	Yes
31.5	56.0	47.8	Yes
40.0	49.0	42.8	Yes
50.0	44.0	38.0	Yes
63.0	42.0	38.1	Yes
80.0	40.0	33.6	Yes
100.0	38.0	28.0	Yes
125.0	36.0	24.0	Yes
160.0	34.0	17.0	Yes
200.0	32.0	13.2	Yes
250.0	-	8.6	No

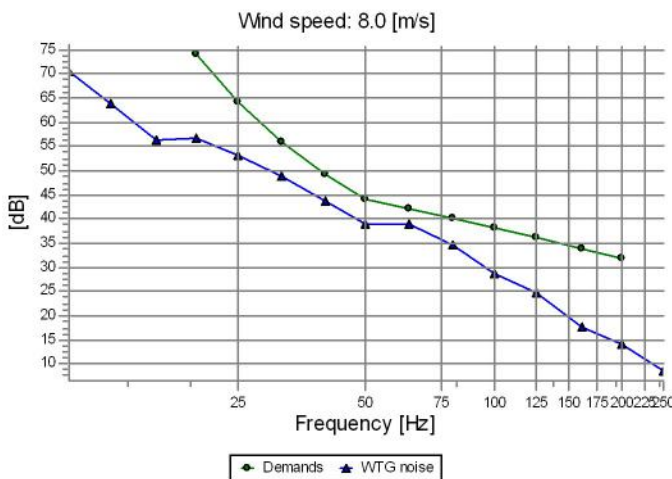
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
Y Noise sensitive point: Finnish normal frequency - User defined (286)



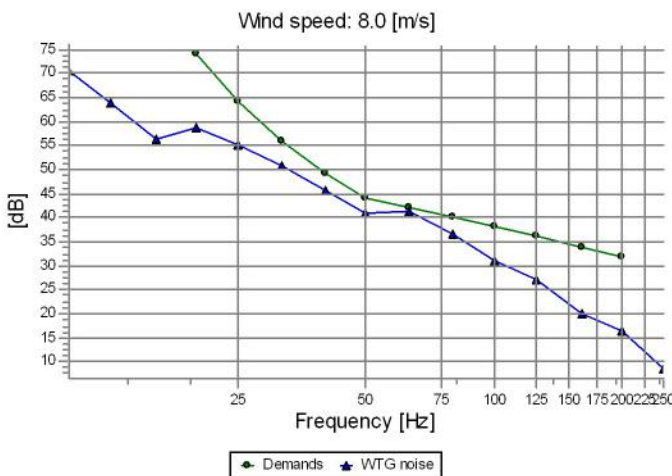
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	56.3	Yes
25.0	64.0	52.9	Yes
31.5	56.0	48.4	Yes
40.0	49.0	43.5	Yes
50.0	44.0	38.6	Yes
63.0	42.0	38.7	Yes
80.0	40.0	34.3	Yes
100.0	38.0	28.6	Yes
125.0	36.0	24.7	Yes
160.0	34.0	17.7	Yes
200.0	32.0	13.8	Yes
250.0	-	8.6	No

Z Noise sensitive point: Finnish normal frequency - User defined (285)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	56.5	Yes
25.0	64.0	53.2	Yes
31.5	56.0	48.6	Yes
40.0	49.0	43.7	Yes
50.0	44.0	38.8	Yes
63.0	42.0	39.0	Yes
80.0	40.0	34.5	Yes
100.0	38.0	28.8	Yes
125.0	36.0	24.9	Yes
160.0	34.0	17.8	Yes
200.0	32.0	14.0	Yes
250.0	-	8.6	No

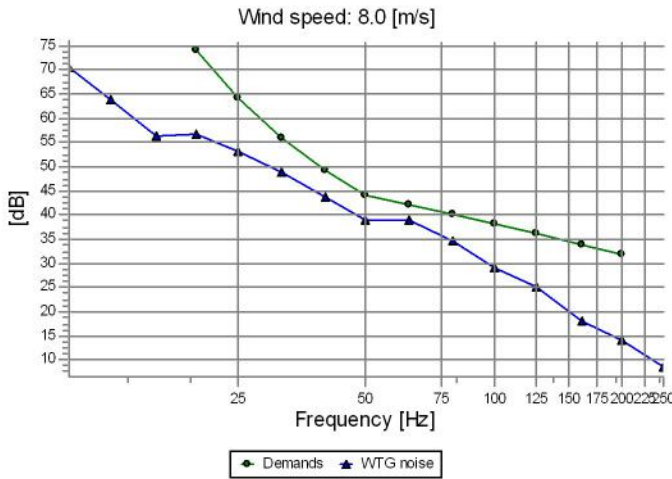
AA Noise sensitive point: Finnish normal frequency - User defined (267)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	58.6	Yes
25.0	64.0	55.3	Yes
31.5	56.0	50.8	Yes
40.0	49.0	45.8	Yes
50.0	44.0	40.9	Yes
63.0	42.0	41.2	Yes
80.0	40.0	36.7	Yes
100.0	38.0	31.0	Yes
125.0	36.0	27.2	Yes
160.0	34.0	20.0	Yes
200.0	32.0	16.3	Yes
250.0	-	8.6	No

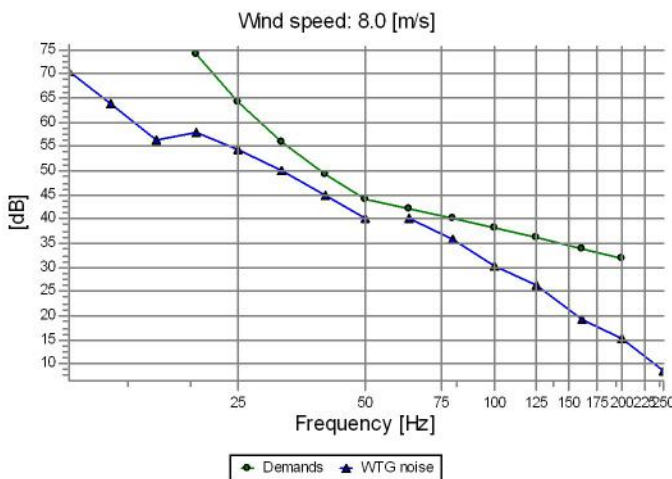
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
AB Noise sensitive point: Finnish normal frequency - User defined (284)



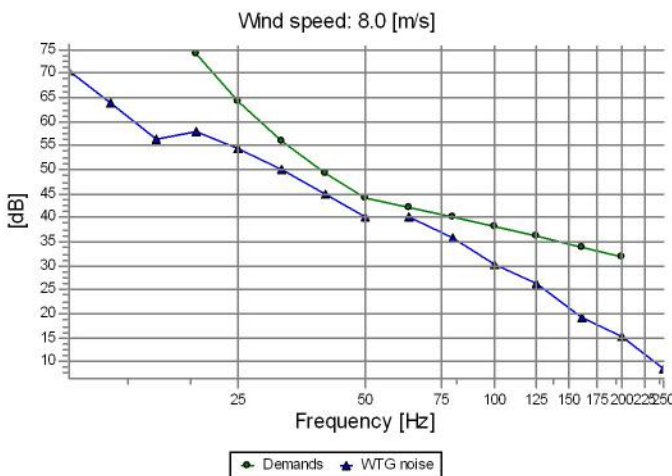
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	56.6	Yes
25.0	64.0	53.3	Yes
31.5	56.0	48.8	Yes
40.0	49.0	43.8	Yes
50.0	44.0	38.9	Yes
63.0	42.0	39.1	Yes
80.0	40.0	34.6	Yes
100.0	38.0	29.0	Yes
125.0	36.0	25.0	Yes
160.0	34.0	17.9	Yes
200.0	32.0	14.1	Yes
250.0	-	8.6	No

AC Noise sensitive point: Finnish normal frequency - User defined (281)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	57.7	Yes
25.0	64.0	54.3	Yes
31.5	56.0	49.8	Yes
40.0	49.0	44.9	Yes
50.0	44.0	40.0	Yes
63.0	42.0	40.2	Yes
80.0	40.0	35.7	Yes
100.0	38.0	30.1	Yes
125.0	36.0	26.2	Yes
160.0	34.0	19.1	Yes
200.0	32.0	15.3	Yes
250.0	-	8.6	No

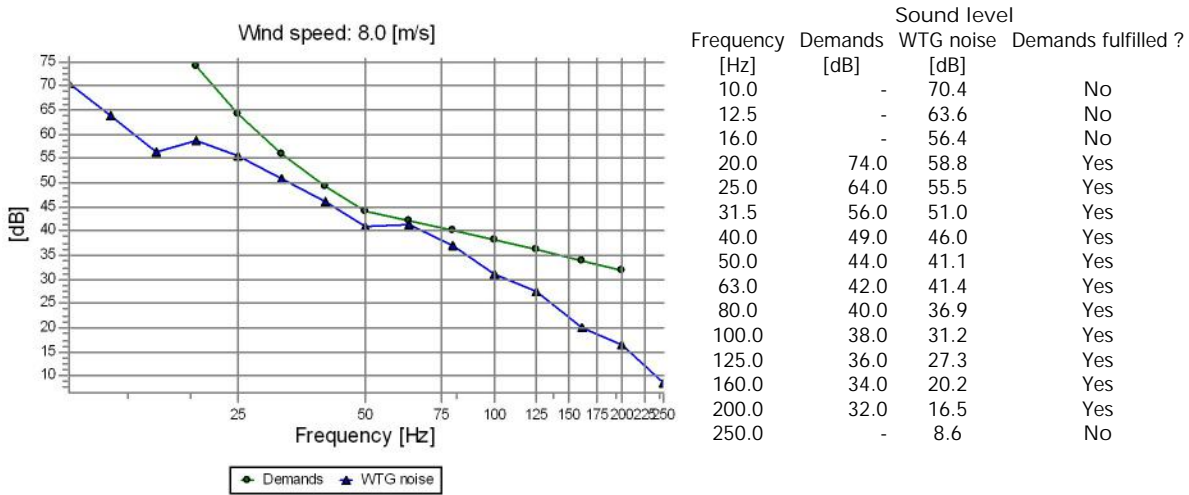
AD Noise sensitive point: Finnish normal frequency - User defined (280)



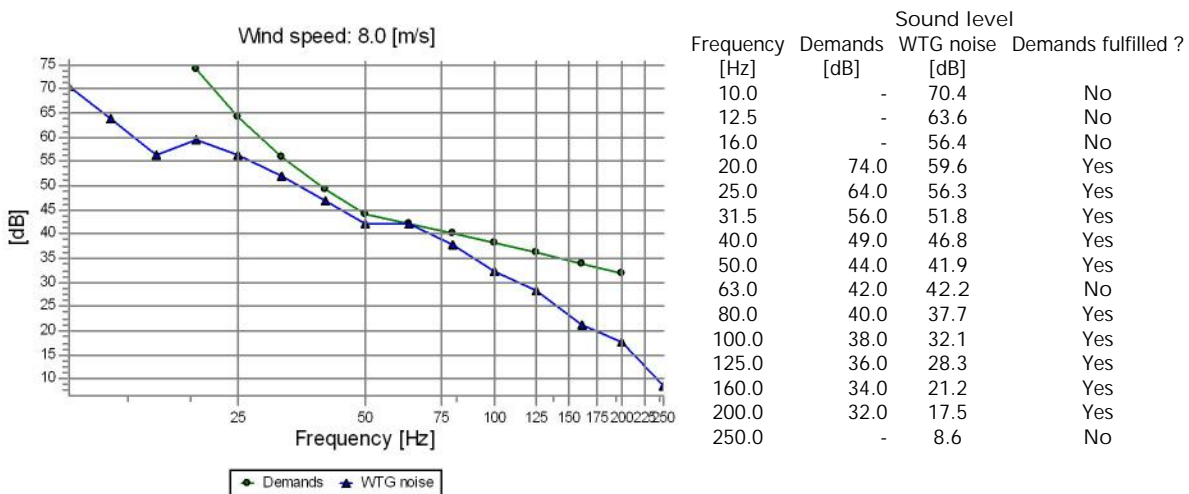
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	57.8	Yes
25.0	64.0	54.4	Yes
31.5	56.0	49.9	Yes
40.0	49.0	45.0	Yes
50.0	44.0	40.1	Yes
63.0	42.0	40.3	Yes
80.0	40.0	35.8	Yes
100.0	38.0	30.2	Yes
125.0	36.0	26.3	Yes
160.0	34.0	19.1	Yes
200.0	32.0	15.4	Yes
250.0	-	8.6	No

DECIBEL - Detailed results, graphic

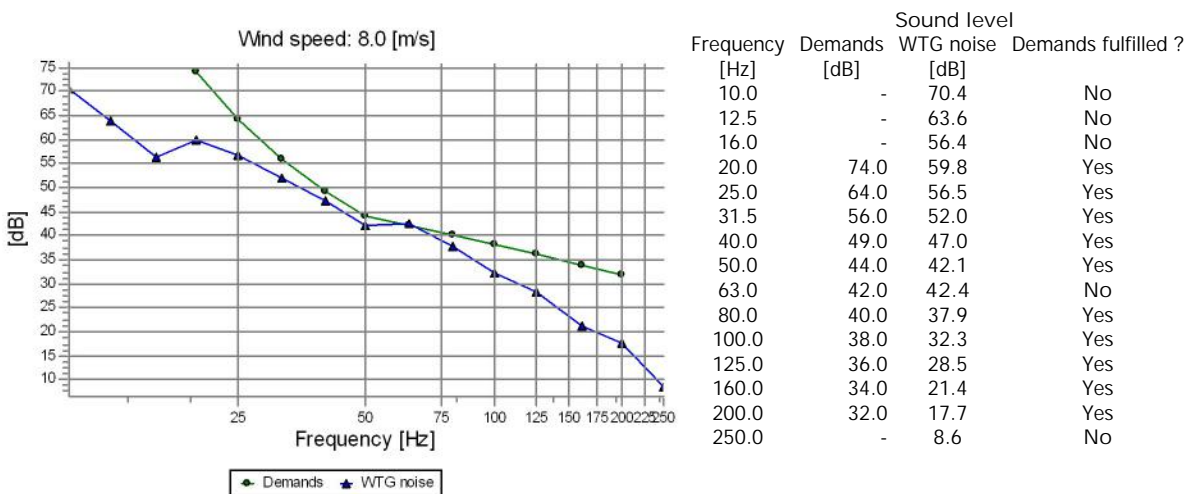
Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
AE Noise sensitive point: Finnish normal frequency - User defined (266)



AF Noise sensitive point: Finnish normal frequency - User defined (278)

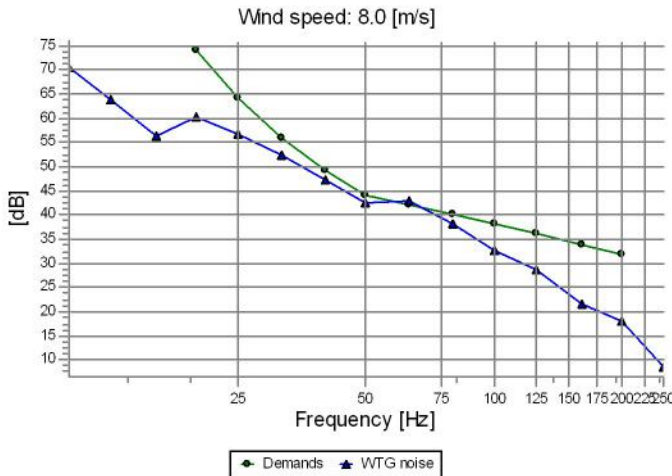


AG Noise sensitive point: Finnish normal frequency - User defined (276)



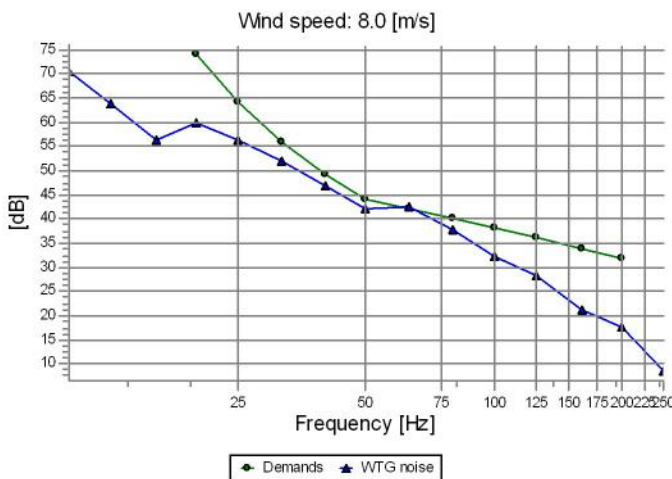
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
AH Noise sensitive point: Finnish normal frequency - User defined (275)



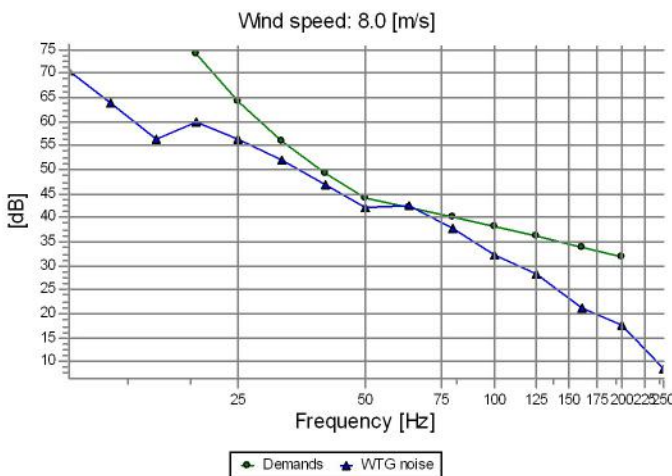
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	60.1	Yes
25.0	64.0	56.8	Yes
31.5	56.0	52.2	Yes
40.0	49.0	47.3	Yes
50.0	44.0	42.4	Yes
63.0	42.0	42.7	No
80.0	40.0	38.2	Yes
100.0	38.0	32.6	Yes
125.0	36.0	28.7	Yes
160.0	34.0	21.7	Yes
200.0	32.0	18.0	Yes
250.0	-	8.6	No

AI Noise sensitive point: Finnish normal frequency - User defined (257)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	59.8	Yes
25.0	64.0	56.4	Yes
31.5	56.0	51.9	Yes
40.0	49.0	47.0	Yes
50.0	44.0	42.1	Yes
63.0	42.0	42.4	No
80.0	40.0	37.9	Yes
100.0	38.0	32.2	Yes
125.0	36.0	28.4	Yes
160.0	34.0	21.3	Yes
200.0	32.0	17.7	Yes
250.0	-	8.6	No

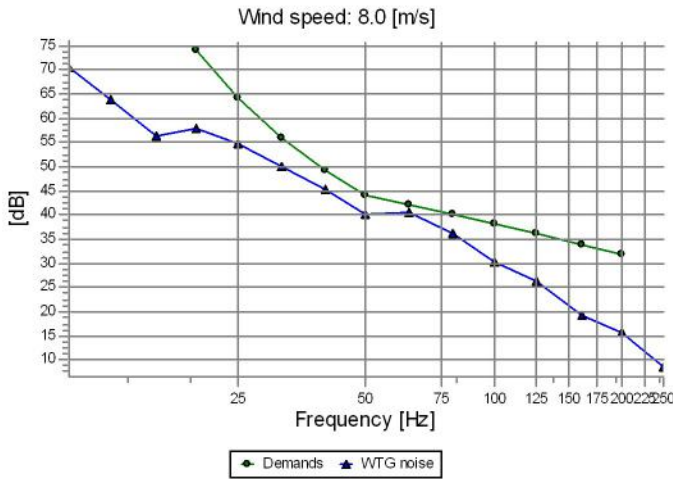
AJ Noise sensitive point: Finnish normal frequency - User defined (256)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	59.7	Yes
25.0	64.0	56.4	Yes
31.5	56.0	51.8	Yes
40.0	49.0	46.9	Yes
50.0	44.0	42.0	Yes
63.0	42.0	42.3	No
80.0	40.0	37.8	Yes
100.0	38.0	32.2	Yes
125.0	36.0	28.3	Yes
160.0	34.0	21.2	Yes
200.0	32.0	17.6	Yes
250.0	-	8.6	No

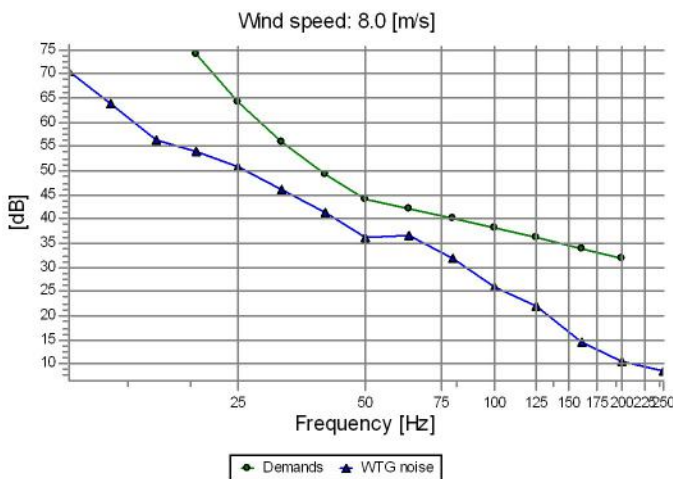
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
AK Noise sensitive point: Finnish normal frequency - User defined (274)



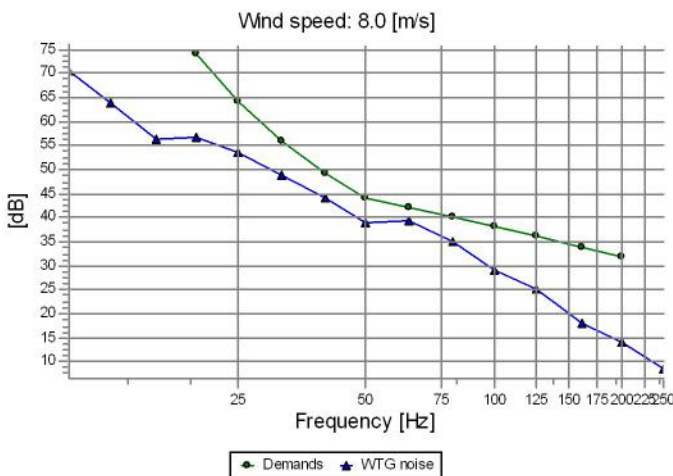
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	57.9	Yes
25.0	64.0	54.6	Yes
31.5	56.0	50.1	Yes
40.0	49.0	45.1	Yes
50.0	44.0	40.2	Yes
63.0	42.0	40.5	Yes
80.0	40.0	36.0	Yes
100.0	38.0	30.3	Yes
125.0	36.0	26.4	Yes
160.0	34.0	19.2	Yes
200.0	32.0	15.5	Yes
250.0	-	8.6	No

AL Noise sensitive point: Finnish normal frequency - User defined (250)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	54.0	Yes
25.0	64.0	50.7	Yes
31.5	56.0	46.1	Yes
40.0	49.0	41.2	Yes
50.0	44.0	36.2	Yes
63.0	42.0	36.4	Yes
80.0	40.0	31.9	Yes
100.0	38.0	26.1	Yes
125.0	36.0	22.0	Yes
160.0	34.0	14.6	Yes
200.0	32.0	10.6	Yes
250.0	-	8.6	No

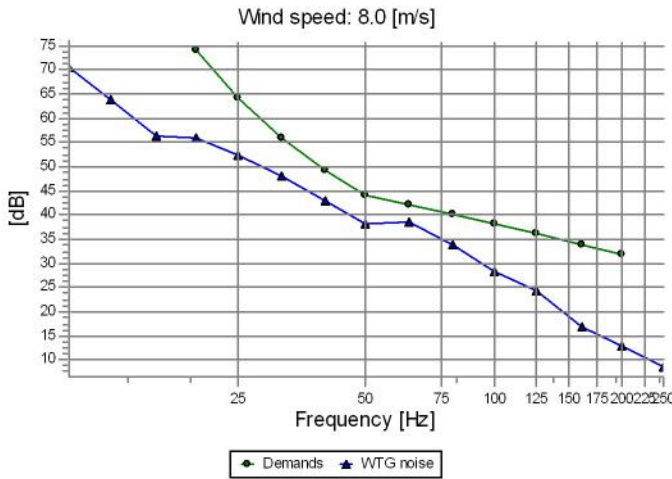
AM Noise sensitive point: Finnish normal frequency - User defined (271)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	56.8	Yes
25.0	64.0	53.5	Yes
31.5	56.0	49.0	Yes
40.0	49.0	44.0	Yes
50.0	44.0	39.1	Yes
63.0	42.0	39.4	Yes
80.0	40.0	34.8	Yes
100.0	38.0	29.1	Yes
125.0	36.0	25.2	Yes
160.0	34.0	18.0	Yes
200.0	32.0	14.2	Yes
250.0	-	8.6	No

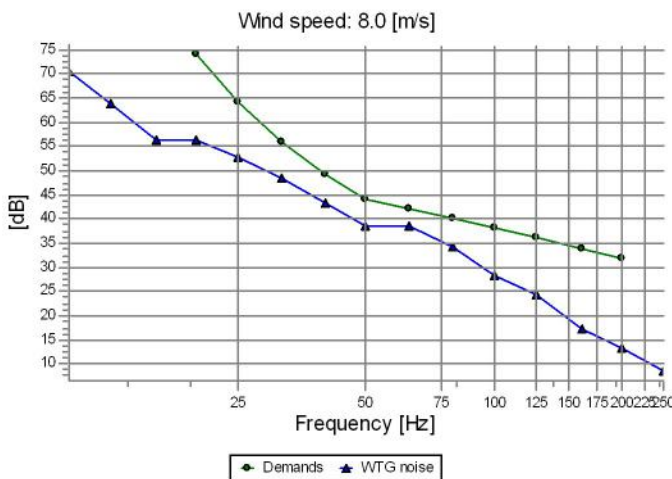
DECIBEL - Detailed results, graphic

Calculation: VE1: Kattiharju + laajennus low frequency Noise calculation model: Finland Low frequency 8.0 m/s
AN Noise sensitive point: Finnish normal frequency - User defined (251)



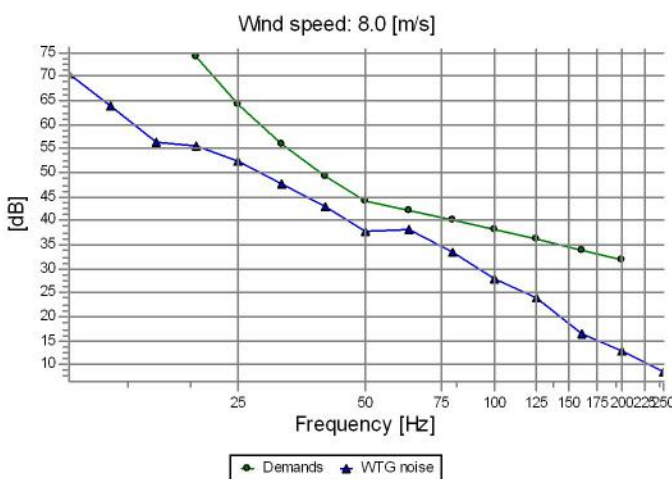
Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	55.9	Yes
25.0	64.0	52.5	Yes
31.5	56.0	48.0	Yes
40.0	49.0	43.0	Yes
50.0	44.0	38.1	Yes
63.0	42.0	38.4	Yes
80.0	40.0	33.8	Yes
100.0	38.0	28.1	Yes
125.0	36.0	24.2	Yes
160.0	34.0	16.9	Yes
200.0	32.0	13.1	Yes
250.0	-	8.6	No

AO Noise sensitive point: Finnish normal frequency - User defined (270)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	56.2	Yes
25.0	64.0	52.8	Yes
31.5	56.0	48.3	Yes
40.0	49.0	43.3	Yes
50.0	44.0	38.4	Yes
63.0	42.0	38.7	Yes
80.0	40.0	34.1	Yes
100.0	38.0	28.4	Yes
125.0	36.0	24.5	Yes
160.0	34.0	17.2	Yes
200.0	32.0	13.4	Yes
250.0	-	8.6	No

AP Noise sensitive point: Finnish normal frequency - User defined (253)



Frequency [Hz]	Sound level		Demands fulfilled ?
	Demands [dB]	WTG noise [dB]	
10.0	-	70.4	No
12.5	-	63.6	No
16.0	-	56.4	No
20.0	74.0	55.7	Yes
25.0	64.0	52.3	Yes
31.5	56.0	47.8	Yes
40.0	49.0	42.8	Yes
50.0	44.0	37.9	Yes
63.0	42.0	38.1	Yes
80.0	40.0	33.6	Yes
100.0	38.0	27.9	Yes
125.0	36.0	23.9	Yes
160.0	34.0	16.6	Yes
200.0	32.0	12.8	Yes
250.0	-	8.6	No

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise calculation model:

Finland Low frequency

Wind speed (at 10 m height):

8.0 m/s

Spectral distribution:

From 20.0 Hz to 200.0 Hz

Meteorological coefficient, CO:

Selected option: Fixed value: 0.0 dB

Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

Pure tones:

Pure tone penalty is subtracted from demand

Model: 5.0 dB(A)

Height above ground level, when no value in NSA object:

4.0 m; Don't allow override of model height with height from NSA object

Uncertainty margin:

0.0 dB; Uncertainty margin in NSA has priority

Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0.0 dB(A)

Low frequency calculation

dLsigma

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
7.6	8.3	9.2	10.3	11.5	13.0	14.8	16.8	18.8	21.1	22.8

All coordinates are in

Finish TM ETRS-TM35FIN-ETRS89

WTG: NORDEX N163/6.X 6800 163.0 !O!

Noise: Third octave sound power levels, Mode 1 serrated blades HH 148m +2dB added

Source

Source/Date Creator Edited

F008_277_A17_EN_R02_Third-octave-sound-power-levels.pdf 2022-01-14 USER 2022-01-28 05:37

Data from client. Hub height 148 m

Status	Hub height	Wind speed	LwA,ref	20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
	[m]	[m/s]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
From Windcat	150.5	8.0	101.8	76.3	79.7	81.6	82.8	83.8	90.1	91.8	92.4	95.0	95.0	96.0
From Windcat	149.5	8.0	101.8	76.3	79.7	81.6	82.8	83.8	90.1	91.8	92.4	95.0	95.0	96.0
From Windcat	148.5	8.0	101.8	76.3	79.7	81.6	82.8	83.8	90.1	91.8	92.4	95.0	95.0	96.0

WTG: NORDEX Generic 180-169 6800 180.0 !-!

Noise: Third octave sound power levels for N175-6.X, Mode 0, STE

Source

Source/Date Creator Edited

11.03_Third octave sound power levels_F008_278_A17_EN_R03.pdf 2024-05-14 USER 2024-05-15 14:02

Status	Hub height	Wind speed	LwA,ref	20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
	[m]	[m/s]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
From Windcat	169.0	8.0	99.2	71.8	75.2	77.1	78.3	80.3	84.6	87.3	88.9	91.5	93.5	94.5

Noise sensitive area: A Noise sensitive point: Finnish normal frequency - User defined (291)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: B Noise sensitive point: Finnish normal frequency - User defined (272)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: C Noise sensitive point: Finnish normal frequency - User defined (273)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: D Noise sensitive point: Finnish normal frequency - User defined (277)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: E Noise sensitive point: Finnish normal frequency - User defined (269)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: F Noise sensitive point: Finnish normal frequency - User defined (279)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: G Noise sensitive point: Finnish normal frequency - User defined (268)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: H Noise sensitive point: Finnish normal frequency - User defined (252)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: I Noise sensitive point: Finnish normal frequency - User defined (263)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: J Noise sensitive point: Finnish normal frequency - User defined (260)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: K Noise sensitive point: Finnish normal frequency - User defined (261)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: L Noise sensitive point: Finnish normal frequency - User defined (259)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: M Noise sensitive point: Finnish normal frequency - User defined (290)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: N Noise sensitive point: Finnish normal frequency - User defined (264)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: O Noise sensitive point: Finnish normal frequency - User defined (258)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: P Noise sensitive point: Finnish normal frequency - User defined (255)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: Q Noise sensitive point: Finnish normal frequency - User defined (289)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: R Noise sensitive point: Finnish normal frequency - User defined (262)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: S Noise sensitive point: Finnish normal frequency - User defined (287)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: T Noise sensitive point: Finnish normal frequency - User defined (283)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: U Noise sensitive point: Finnish normal frequency - User defined (265)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: V Noise sensitive point: Finnish normal frequency - User defined (254)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: W Noise sensitive point: Finnish normal frequency - User defined (282)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: X Noise sensitive point: Finnish normal frequency - User defined (288)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: Y Noise sensitive point: Finnish normal frequency - User defined (286)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: Z Noise sensitive point: Finnish normal frequency - User defined (285)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AA Noise sensitive point: Finnish normal frequency - User defined (267)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AB Noise sensitive point: Finnish normal frequency - User defined (284)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AC Noise sensitive point: Finnish normal frequency - User defined (281)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AD Noise sensitive point: Finnish normal frequency - User defined (280)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AE Noise sensitive point: Finnish normal frequency - User defined (266)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: AF Noise sensitive point: Finnish normal frequency - User defined (278)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AG Noise sensitive point: Finnish normal frequency - User defined (276)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AH Noise sensitive point: Finnish normal frequency - User defined (275)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AI Noise sensitive point: Finnish normal frequency - User defined (257)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AJ Noise sensitive point: Finnish normal frequency - User defined (256)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AK Noise sensitive point: Finnish normal frequency - User defined (274)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Project:
Kattiharju

Licensed user:
Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-23 15:15/4.0.531

DECIBEL - Assumptions for noise calculation

Calculation: VE1: Kattiharju + laajennus low frequency

Noise sensitive area: AL Noise sensitive point: Finnish normal frequency - User defined (250)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AM Noise sensitive point: Finnish normal frequency - User defined (271)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AN Noise sensitive point: Finnish normal frequency - User defined (251)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AO Noise sensitive point: Finnish normal frequency - User defined (270)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

Noise sensitive area: AP Noise sensitive point: Finnish normal frequency - User defined (253)

Predefined calculation standard: Residential health guide 2003, indoor - night

Immission height(a.g.l.): Use standard value from calculation model

Uncertainty margin: Use default value from calculation model

No temporal binning

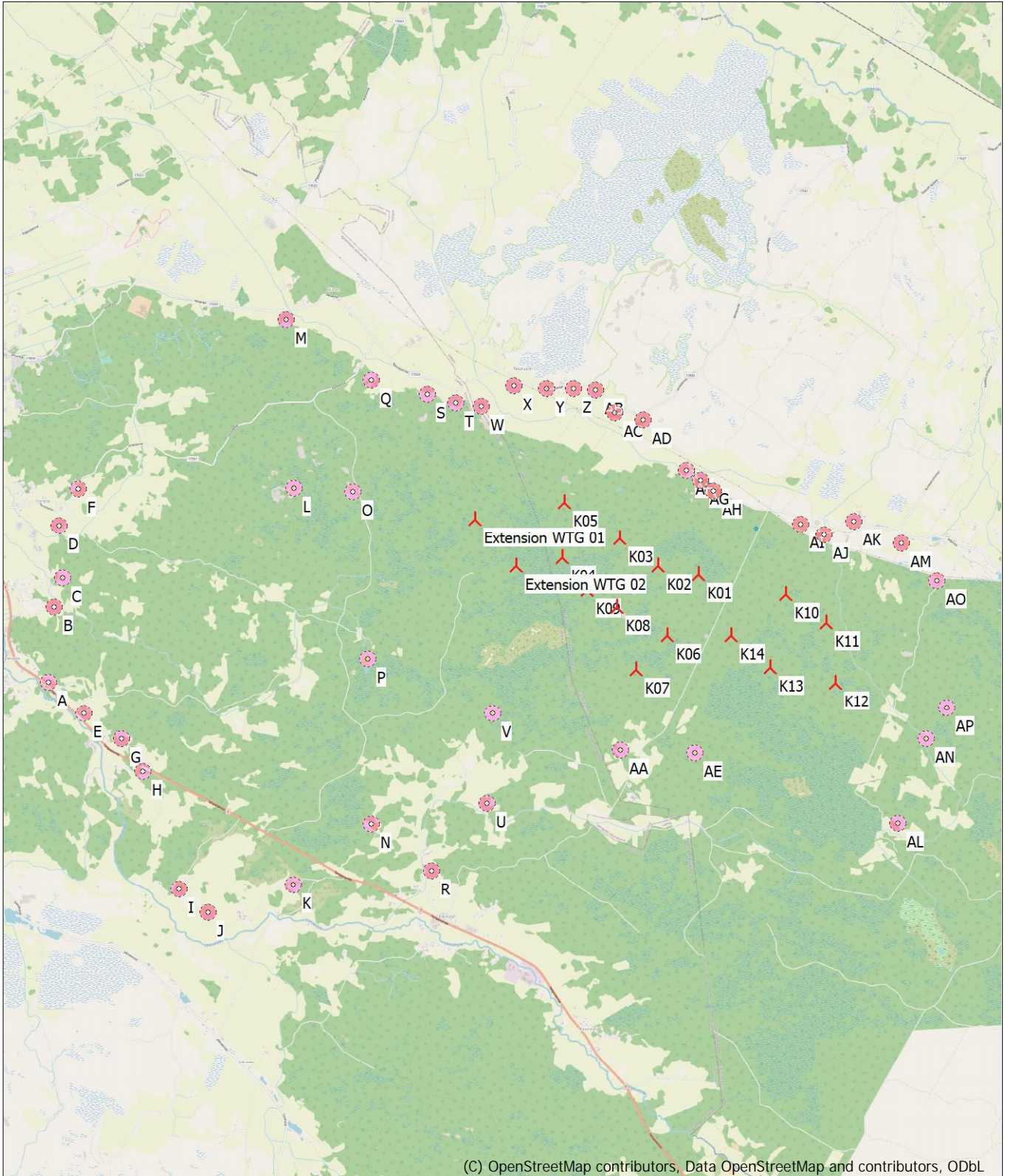
Noise demand:

20.0 Hz	25.0 Hz	31.5 Hz	40.0 Hz	50.0 Hz	63.0 Hz	80.0 Hz	100.0 Hz	125.0 Hz	160.0 Hz	200.0 Hz
74.0 dB	64.0 dB	56.0 dB	49.0 dB	44.0 dB	42.0 dB	40.0 dB	38.0 dB	36.0 dB	34.0 dB	32.0 dB

No distance demand

DECIBEL - Map

Calculation: VE1: Kattiharju + laajennus low frequency



0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75,000, Map center Finish TM ETRS-TM35FIN-ETRS89 East: 256,080 North: 6,984,253

New WTG Noise sensitive area

Project:

Kattiharju

Licensed user:

Norconsult AS
 Postboks 8984
 NO-7439 Trondheim
 (+47) 480 50 480
 Hanna Sabelström / hanna.sabelstrom@norconsult.com
 Calculated:
 2024-05-27 15:18/4.0.531

SHADOW - Main Result

Calculation: VE1: Kattiharju+extension_without_forest

Assumptions for shadow calculations

Maximum distance for influence
 Calculate only when more than 20 % of sun is covered by the blade
 Please look in WTG table

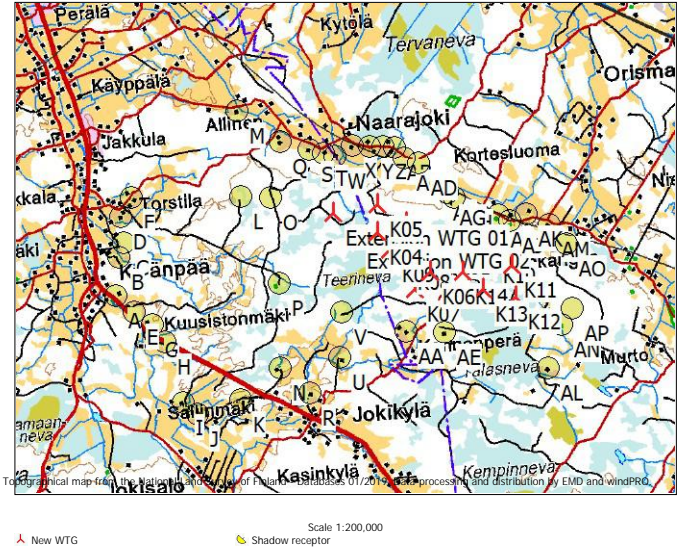
Minimum sun height over horizon for influence 3 °
 Day step for calculation 1 days
 Time step for calculation 1 minutes

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time
 N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Line-of-sight calculation has been deactivated. This means that sheltering from obstacles, areas or hills are not taken into account.

All coordinates are in
 Finish TM ETRS-TM35FIN-ETRS89



WTGs

	East	North	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM [RPM]
Extension WTG 01	255,944	6,985,328	50.0	NORDEX Generic 180-...	Yes	NORDEX	Generic 180-169-6,800	6,800	180.0	169.0	1,893	10.8
Extension WTG 02	256,455	6,984,657	50.0	NORDEX Generic 180-...	Yes	NORDEX	Generic 180-169-6,800	6,800	180.0	169.0	1,893	10.8
K01	258,892	6,984,359	45.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K02	258,361	6,984,512	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	149.5	1,786	-
K03	257,878	6,984,922	48.7	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K04	257,087	6,984,720	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K05	257,163	6,985,462	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K06	258,414	6,983,575	51.8	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	148.5	1,786	-
K07	257,962	6,983,145	55.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	149.5	1,786	-
K08	257,766	6,984,006	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	149.5	1,786	-
K09	257,382	6,984,262	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K10	260,052	6,984,010	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K11	260,574	6,983,589	45.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K12	260,637	6,982,769	47.5	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K13	259,773	6,983,040	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K14	259,278	6,983,511	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-

Shadow receptor-Input

No.	East	North	Z	Width	Height	Elevation	Slope of	Direction mode
				[m]	[m]	a.g.l.	window	
				[m]	[m]	[m]	[°]	
A	250,049	6,983,575	30.0	5.0	5.0	2.0	0.0	"Green house mode"
B	250,198	6,984,576	30.0	5.0	5.0	2.0	0.0	"Green house mode"
C	250,341	6,984,961	30.0	5.0	5.0	2.0	0.0	"Green house mode"
D	250,343	6,985,667	28.0	5.0	5.0	2.0	0.0	"Green house mode"
E	250,494	6,983,108	30.0	5.0	5.0	2.0	0.0	"Green house mode"
F	250,645	6,986,141	29.9	5.0	5.0	2.0	0.0	"Green house mode"
G	250,968	6,982,726	34.7	5.0	5.0	2.0	0.0	"Green house mode"
H	251,226	6,982,266	34.3	5.0	5.0	2.0	0.0	"Green house mode"
I	251,592	6,980,644	37.4	5.0	5.0	2.0	0.0	"Green house mode"
J	251,960	6,980,299	35.0	5.0	5.0	2.0	0.0	"Green house mode"
K	253,131	6,980,587	43.3	5.0	5.0	2.0	0.0	"Green house mode"
L	253,546	6,985,931	45.0	5.0	5.0	2.0	0.0	"Green house mode"
M	253,607	6,988,208	24.5	5.0	5.0	2.0	0.0	"Green house mode"
N	254,248	6,981,332	42.1	5.0	5.0	2.0	0.0	"Green house mode"
O	254,339	6,985,826	55.0	5.0	5.0	2.0	0.0	"Green house mode"
P	254,373	6,983,560	46.0	5.0	5.0	2.0	0.0	"Green house mode"
Q	254,693	6,987,302	30.0	5.0	5.0	2.0	0.0	"Green house mode"
R	255,007	6,980,631	40.0	5.0	5.0	2.0	0.0	"Green house mode"
S	255,437	6,987,054	30.0	5.0	5.0	2.0	0.0	"Green house mode"

To be continued on next page...

SHADOW - Main Result

Calculation: VE1: Kattiharju+extension_without_forest

...continued from previous page

No.	East	North	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	
T	255,814	6,986,908	29.4	5.0	5.0	2.0	0.0	"Green house mode"
U	255,826	6,981,493	42.9	5.0	5.0	2.0	0.0	"Green house mode"
V	255,991	6,982,694	45.0	5.0	5.0	2.0	0.0	"Green house mode"
W	256,145	6,986,833	25.0	5.0	5.0	2.0	0.0	"Green house mode"
X	256,601	6,987,078	25.0	5.0	5.0	2.0	0.0	"Green house mode"
Y	257,040	6,987,001	26.9	5.0	5.0	2.0	0.0	"Green house mode"
Z	257,405	6,986,979	30.0	5.0	5.0	2.0	0.0	"Green house mode"
AA	257,676	6,982,066	50.0	5.0	5.0	2.0	0.0	"Green house mode"
AB	257,698	6,986,934	29.8	5.0	5.0	2.0	0.0	"Green house mode"
AC	257,931	6,986,612	28.2	5.0	5.0	2.0	0.0	"Green house mode"
AD	258,308	6,986,493	30.0	5.0	5.0	2.0	0.0	"Green house mode"
AE	258,674	6,981,951	50.0	5.0	5.0	2.0	0.0	"Green house mode"
AF	258,840	6,985,771	30.0	5.0	5.0	2.0	0.0	"Green house mode"
AG	259,027	6,985,623	32.8	5.0	5.0	2.0	0.0	"Green house mode"
AH	259,178	6,985,473	37.8	5.0	5.0	2.0	0.0	"Green house mode"
AI	260,319	6,984,939	45.0	5.0	5.0	2.0	0.0	"Green house mode"
AJ	260,630	6,984,768	39.4	5.0	5.0	2.0	0.0	"Green house mode"
AK	261,049	6,984,913	35.0	5.0	5.0	2.0	0.0	"Green house mode"
AL	261,344	6,980,808	50.0	5.0	5.0	2.0	0.0	"Green house mode"
AM	261,661	6,984,584	36.4	5.0	5.0	2.0	0.0	"Green house mode"
AN	261,796	6,981,916	50.0	5.0	5.0	2.0	0.0	"Green house mode"
AO	262,098	6,984,032	40.0	5.0	5.0	2.0	0.0	"Green house mode"
AP	262,110	6,982,324	50.0	5.0	5.0	2.0	0.0	"Green house mode"

Calculation Results

Shadow receptor

No.	Shadow, worst case			Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]	
A	0:00	0	0:00	0:00	
B	0:00	0	0:00	0:00	
C	0:00	0	0:00	0:00	
D	0:00	0	0:00	0:00	
E	0:00	0	0:00	0:00	
F	0:00	0	0:00	0:00	
G	0:00	0	0:00	0:00	
H	0:00	0	0:00	0:00	
I	0:00	0	0:00	0:00	
J	0:00	0	0:00	0:00	
K	0:00	0	0:00	0:00	
L	0:00	0	0:00	0:00	
M	0:00	0	0:00	0:00	
N	0:00	0	0:00	0:00	
O	9:50	31	0:26	2:05	
P	0:00	0	0:00	0:00	
Q	0:00	0	0:00	0:00	
R	0:00	0	0:00	0:00	
S	16:34	52	0:25	1:42	
T	24:52	71	0:29	2:28	
U	0:00	0	0:00	0:00	
V	0:00	0	0:00	0:00	
W	36:45	100	0:30	4:18	
X	31:49	64	0:47	3:14	
Y	23:43	75	0:27	2:17	
Z	26:38	78	0:27	2:32	
AA	0:00	0	0:00	0:00	
AB	19:56	60	0:26	1:59	
AC	41:45	108	0:32	4:33	
AD	35:53	115	0:26	4:15	
AE	8:33	35	0:21	2:28	
AF	77:39	163	0:58	10:01	
AG	68:22	146	0:58	8:35	

To be continued on next page...

SHADOW - Main Result

Calculation: VE1: Kattiharju+extension_without_forest

...continued from previous page

No.	Shadow, worst case		Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
AH	76:31	133	1:20	10:27
AI	88:24	129	1:30	10:48
AJ	76:32	162	0:53	10:31
AK	39:54	107	0:29	5:03
AL	0:00	0	0:00	0:00
AM	21:39	67	0:27	3:43
AN	22:31	65	0:28	6:15
AO	9:21	31	0:24	1:52
AP	10:58	36	0:25	2:35

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
Extension WTG 01	NORDEX Generic 180-169 6800 180.0 !-! hub: 169.0 m (TOT: 259.0 m) (93)	95:06	10:43
Extension WTG 02	NORDEX Generic 180-169 6800 180.0 !-! hub: 169.0 m (TOT: 259.0 m) (92)	0:00	0:00
	K01 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (1)	113:10	13:09
	K02 NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (2)	63:28	8:04
	K03 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (3)	90:49	12:08
	K04 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (4)	0:00	0:00
	K05 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (5)	133:13	15:53
	K06 NORDEX N163/6.X 6800 163.0 !O! hub: 148.5 m (TOT: 230.0 m) (6)	0:00	0:00
	K07 NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (7)	0:00	0:00
	K08 NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (8)	0:00	0:00
	K09 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (9)	0:00	0:00
	K10 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (10)	107:20	15:37
	K11 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (11)	112:05	12:59
	K12 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (12)	33:29	8:51
	K13 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (13)	8:33	2:28
	K14 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (14)	10:56	1:15

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: A - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (114)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:54 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:56	08:15 16:16	09:40 15:04
5	10:03 15:12	08:55 16:39	07:27 18:02	06:42 20:30	05:04 21:57	03:41 23:21	03:40 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:42 15:02
6	10:02 15:14	08:52 16:42	07:24 18:05	06:39 20:33	05:00 21:59	03:40 23:23	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 15:00
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:34 23:31	03:50 23:24	05:14 21:59	06:41 20:17	08:02 18:36	08:33 15:59	09:53 14:56
11	09:55 15:26	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:04 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:20 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:16 20:52	04:39 22:20	03:30 23:35	03:56 23:17	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:48	10:00 14:53
15	09:47 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:45 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:28 23:38	04:04 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:52
17	09:43 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:25 22:35	03:27 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:41	04:11 23:03	05:40 21:30	07:05 19:46	08:27 18:06	09:00 15:35	10:05 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:12	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:02 15:32	10:06 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:51	05:46 21:18	04:14 22:46	03:26 23:42	04:20 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:27 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:08 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:57 21:11	07:21 19:26	07:45 16:47	09:17 15:21	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:31 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:04	05:29 21:33	04:01 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:41	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:10 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17	07:40 17:45	06:06 19:03	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:08 14:59
30	09:12 16:20	07:37 17:40	06:03 19:00	05:19 21:42	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	06:59 17:43	06:02 19:06	05:16 21:45	03:51 23:10	03:31 23:38	04:45 22:30	06:13 20:50	08:03 16:28	08:03 15:10	10:08 15:02	10:08 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: B - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (95)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:04
5	10:03 15:12	08:55 16:38	07:27 18:02	06:42 20:30	05:04 21:57	03:41 23:21	03:40 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:02
6	10:02 15:14	08:52 16:42	07:24 18:05	06:39 20:33	05:00 22:00	03:39 23:23	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:03	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:14 21:59	06:40 20:17	08:02 18:35	08:33 15:59	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:04 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:19 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:56 14:54
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:18	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:48	10:00 14:53
15	09:48 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:46 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:27 23:39	04:04 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:52
17	09:43 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:04 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:24 22:35	03:27 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:41	04:11 23:03	05:40 21:30	07:05 19:46	08:27 18:06	09:00 15:35	10:06 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:12	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:03 15:32	10:06 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:42	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:51	05:46 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	08:00 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:09 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:55	03:27 23:41	04:28 22:48	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:20	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:31 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:05	05:29 21:33	04:01 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:10 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17	07:40 17:48	06:06 19:07	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:20	07:37 18:03	06:03 19:03	05:19 21:39	03:54 23:05	03:32 23:38	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	07:34 18:06	06:59 19:06	05:16 21:42	03:51 23:10	03:30 23:38	04:45 22:30	06:13 20:51	08:03 16:28	09:08 15:10	10:08 15:02	
Potential sun hours	185	243	364	446	556	601	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: C - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (96)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:38	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:08
2	10:06 15:06	09:04 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:04
5	10:03 15:12	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:57	03:41 23:21	03:39 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:02
6	10:02 15:14	08:52 16:42	07:24 18:05	06:39 20:33	05:00 22:00	03:39 23:23	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:03	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	10:00 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:06	03:36 23:27	03:45 23:28	05:08 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:57 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:14 22:00	06:40 20:17	08:02 18:35	08:33 15:59	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:04 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:19 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:57 14:54
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:18	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:54
14	09:50 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:53
15	09:48 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:46 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:27 23:39	04:04 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:52
17	09:44 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:04 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:24 22:35	03:26 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:41	04:11 23:04	05:40 21:30	07:05 19:46	08:27 18:06	09:00 15:34	10:06 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:13	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:03 15:32	10:06 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:42	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:51	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	08:00 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:09 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:55	03:27 23:42	04:28 22:48	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:20	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:04	05:29 21:33	04:01 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:15 16:17	07:41 17:46	06:06 19:03	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:20	07:38 17:40	06:03 19:00	05:19 21:42	03:53 23:08	03:32 23:39	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	07:35 17:41	06:59 19:06	03:51 23:10	03:51 23:10	03:51 23:10	04:45 22:30	06:13 20:51	08:03 16:28	09:08 15:02	10:08 15:02	
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: D - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (100) Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:19	05:16 21:45	03:49 23:13	03:33 23:38	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:08
2	10:06 15:06	09:04 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:34 23:37	04:50 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:03
5	10:03 15:12	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:57	03:41 23:22	03:39 23:33	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:02
6	10:02 15:14	08:52 16:42	07:24 18:05	06:39 20:33	05:00 22:00	03:39 23:24	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:03	03:38 23:26	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	10:00 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:06	03:36 23:27	03:45 23:28	05:08 22:06	06:35 20:24	07:57 18:42	08:27 16:04	09:49 14:58
9	09:58 15:20	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:09	03:35 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:57 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:14 22:00	06:40 20:17	08:02 18:35	08:33 15:58	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:33	03:51 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:04 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:19 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:57 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:18	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:54
14	09:50 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:37	03:58 23:16	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:53
15	09:48 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:44	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:46 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:52
17	09:44 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:40	04:06 23:09	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:04 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:24 22:35	03:26 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:41	04:11 23:04	05:39 21:30	07:05 19:46	08:28 18:06	09:00 15:34	10:06 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:13	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:03 15:32	10:07 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:44	03:26 23:42	04:17 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:06 15:30	10:07 14:52
22	09:32 15:56	08:03 17:30	06:30 18:51	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	08:00 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:09 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:05 22:55	03:27 23:42	04:28 22:48	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:20	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:05	05:29 21:33	04:00 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:03	03:30 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:15 16:17	07:41 17:46	06:06 19:06	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:20	07:38 17:43	06:03 19:03	05:19 21:42	03:53 23:08	03:32 23:39	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	07:35 17:48	06:59 19:06	03:51 23:10	03:51 23:10	03:51 23:10	04:45 22:30	06:13 20:51	08:03 16:28	08:03 15:02	10:08 15:02	10:08 15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: E - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (92)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:54 22:21	06:21 20:40	07:43 18:59	08:11 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:53	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:55 16:39	07:27 18:02	06:42 20:30	05:04 21:56	03:41 23:21	03:40 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:00 21:59	03:40 23:23	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 15:00
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:25	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:34 23:31	03:50 23:24	05:14 21:59	06:40 20:17	08:02 18:35	08:33 15:59	09:53 14:56
11	09:55 15:26	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:34	03:54 23:20	05:20 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:17	05:22 21:50	06:49 20:06	08:10 18:26	08:42 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:48	09:59 14:53
15	09:47 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:45 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:28 23:38	04:04 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:53
17	09:43 15:41	08:18 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:25 22:35	03:27 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:40	04:11 23:03	05:40 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:12	04:19 22:40	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:02 15:32	10:06 14:52
21	09:34 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:51	05:46 21:18	04:14 22:46	03:26 23:41	04:20 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:27 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:08 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:21	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:31 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:19 15:18	10:09 14:56
27	09:20 16:11	07:46 17:45	06:13 19:04	05:29 21:33	04:01 23:00	03:29 23:40	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:41	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:00	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17		07:06 20:10	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:08 14:59
30	09:12 16:20		07:03 20:13	05:19 21:42	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:34 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23		06:59 20:16	03:51 23:10			04:45 22:30	06:13 20:50		08:03 16:28		10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
 Postboks 8984
 NO-7439 Trondheim
 (+47) 480 50 480
 Hanna Sabelström / hanna.sabelstrom@norconsult.com
 Calculated:
 2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: F - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (102)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:13	03:33 23:38	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:08
2	10:06 15:06	09:04 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:34 23:37	04:50 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:36 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:05 15:10	08:58 16:35	07:30 17:59	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:03
5	10:03 15:12	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:57	03:41 23:22	03:39 23:33	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:02
6	10:02 15:14	08:52 16:41	07:24 18:05	06:39 20:33	05:00 22:00	03:39 23:24	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:00
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:03	03:38 23:26	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	10:00 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:06	03:36 23:28	03:45 23:28	05:08 22:06	06:35 20:24	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:20	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:09	03:34 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:57 15:23	08:40 16:54	07:10 18:17	06:25 20:44	04:48 22:12	03:33 23:31	03:49 23:24	05:14 22:00	06:40 20:17	08:02 18:35	08:33 15:58	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:33	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:19 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:57 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:18	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:53
14	09:50 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:37	03:58 23:16	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:53
15	09:48 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:44	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:52
16	09:46 15:38	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:03 14:52
17	09:44 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:40	04:06 23:09	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:39	10:04 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:24 22:35	03:26 23:40	04:08 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:21 22:38	03:26 23:41	04:11 23:04	05:39 21:30	07:05 19:46	08:27 18:06	09:00 15:34	10:06 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:13	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:03 15:32	10:07 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:44	03:26 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:06 15:29	10:07 14:52
22	09:32 15:56	08:03 17:30	06:30 18:51	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	08:00 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:09 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:05 22:55	03:27 23:42	04:28 22:48	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:20	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:03	03:29 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:15 16:17	07:41 17:46	06:06 19:03	05:23 21:39	03:56 23:05	03:31 23:40	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:20	07:38 17:40	06:03 19:00	05:19 21:42	03:53 23:08	03:32 23:39	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	07:35 17:41	06:59 20:16	03:51 23:10	03:51 23:10	03:51 23:10	04:45 22:30	06:13 20:51	08:03 16:28	09:08 15:02	10:08 15:02	10:08 15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

Kattiharju

Licensed user:

Norconsult AS
 Postboks 8984
 NO-7439 Trondheim
 (+47) 480 50 480
 Hanna Sabelström / hanna.sabelstrom@norconsult.com
 Calculated:
 2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: G - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (91)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:48 22:27	06:16 20:47	07:37 19:06	08:05 16:25	09:33 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:47	03:47 23:14	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:57	06:49 20:24	05:10 21:50	03:45 23:17	03:36 23:35	04:54 22:21	06:21 20:40	07:43 18:59	08:11 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:53	03:43 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:55 16:39	07:27 18:02	06:42 20:30	05:04 21:56	03:41 23:21	03:40 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:00 21:59	03:40 23:23	03:42 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:20 16:10	09:44 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:23 16:07	09:47 15:00
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:25	05:11 22:02	06:38 20:20	07:59 18:39	08:29 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:34 23:30	03:50 23:23	05:14 21:59	06:40 20:17	08:02 18:35	08:32 15:59	09:53 14:56
11	09:55 15:26	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:21	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:20 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:17	05:22 21:50	06:49 20:06	08:10 18:26	08:42 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:48	09:59 14:53
15	09:47 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:45 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:28 23:38	04:04 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:50 15:42	10:02 14:53
17	09:43 15:41	08:18 17:15	06:47 18:36	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:53 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:25 22:35	03:27 23:40	04:09 23:06	05:37 21:34	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:38	03:26 23:40	04:11 23:03	05:40 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:12	04:19 22:40	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:02 15:32	10:06 14:52
21	09:34 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:50	05:46 21:18	04:14 22:46	03:26 23:41	04:20 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:30 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:27 23:41	04:22 22:53	05:51 21:17	07:15 19:33	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:08 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:26	07:45 16:47	09:17 15:21	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:31 22:44	05:59 21:07	07:24 19:22	07:48 16:44	09:19 15:18	10:09 14:56
27	09:20 16:11	07:46 17:45	06:13 19:04	05:29 21:33	04:01 23:00	03:29 23:40	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:00	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17		07:06 20:10	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:27 15:12	10:08 14:59
30	09:12 16:20		07:03 20:13	05:19 21:42	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23		06:59 20:16	03:51 23:10	03:51 23:10		04:45 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
 Postboks 8984
 NO-7439 Trondheim
 (+47) 480 50 480
 Hanna Sabelström / hanna.sabelstrom@norconsult.com
 Calculated:
 2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: H - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (75)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:49 23:12	03:34 23:37	04:48 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:33 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:47	03:47 23:14	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:57	06:49 20:24	05:10 21:50	03:45 23:17	03:36 23:35	04:54 22:21	06:21 20:40	07:43 18:59	08:11 16:19	09:37 15:05
4	10:04 15:10	08:58 16:35	07:30 17:59	06:46 20:27	05:07 21:53	03:43 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:55 16:39	07:27 18:02	06:42 20:30	05:04 21:56	03:41 23:21	03:40 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:00 21:59	03:40 23:23	03:42 23:30	05:02 22:12	06:30 20:30	07:51 18:49	08:20 16:10	09:44 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:23 16:07	09:47 15:00
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:25	05:11 22:02	06:38 20:20	07:59 18:39	08:29 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:34 23:30	03:50 23:23	05:14 21:59	06:40 20:17	08:02 18:35	08:32 15:59	09:53 14:56
11	09:55 15:26	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:21	05:17 21:56	06:43 20:13	08:05 18:32	08:35 15:56	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:20 21:53	06:46 20:10	08:08 18:29	08:38 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:17	05:22 21:50	06:49 20:06	08:10 18:26	08:41 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:48	09:59 14:53
15	09:47 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:47 15:45	10:01 14:53
16	09:45 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:28 23:38	04:04 23:10	05:31 21:40	06:57 19:56	08:19 18:16	08:50 15:42	10:02 14:53
17	09:43 15:41	08:18 17:15	06:47 18:36	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:53 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:25 22:35	03:27 23:40	04:09 23:06	05:37 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:37	03:27 23:40	04:11 23:03	05:40 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:37 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:02 15:32	10:06 14:52
21	09:34 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:50	05:46 21:18	04:14 22:46	03:26 23:41	04:20 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:30 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:27 23:41	04:22 22:53	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:08 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:26	07:45 16:47	09:17 15:21	10:08 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:31 22:44	05:59 21:07	07:24 19:22	07:48 16:44	09:19 15:18	10:09 14:56
27	09:20 16:11	07:46 17:45	06:13 19:04	05:29 21:33	04:01 22:59	03:29 23:40	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:00	07:29 19:16	07:54 16:37	09:25 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:56 16:34	09:27 15:12	10:08 15:00
30	09:12 16:20		07:03 20:13	05:19 21:42	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23		06:59 20:16	05:16 23:10	03:52 23:10		04:45 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	244	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: I - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (86)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:05	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:50 23:12	03:34 23:37	04:48 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:47	03:47 23:14	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:57	06:49 20:24	05:10 21:50	03:45 23:16	03:37 23:34	04:54 22:21	06:21 20:40	07:43 18:59	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:35	07:30 17:59	06:46 20:27	05:07 21:53	03:43 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:55 16:39	07:27 18:02	06:42 20:30	05:04 21:56	03:42 23:21	03:40 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:01 21:59	03:40 23:23	03:42 23:30	05:02 22:12	06:30 20:30	07:51 18:49	08:20 16:10	09:44 15:01
7	10:00 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:44 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:23 16:07	09:46 15:00
8	09:59 15:19	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:37 23:27	03:46 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:28	03:48 23:25	05:11 22:02	06:38 20:20	07:59 18:39	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:34 23:30	03:50 23:23	05:14 21:59	06:40 20:17	08:02 18:35	08:32 15:59	09:52 14:56
11	09:54 15:26	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:33 23:32	03:52 23:21	05:17 21:56	06:43 20:13	08:05 18:32	08:35 15:56	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:20 21:53	06:46 20:10	08:07 18:29	08:38 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:57 23:17	05:22 21:50	06:49 20:06	08:10 18:26	08:41 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:48	09:59 14:53
15	09:47 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:29 23:37	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:39	08:21 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:28 23:38	04:04 23:10	05:31 21:40	06:57 19:56	08:19 18:16	08:50 15:42	10:02 14:53
17	09:43 15:42	08:18 17:15	06:47 18:36	06:02 21:04	04:28 22:31	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:53 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:06	04:25 22:34	03:27 23:39	04:09 23:05	05:37 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:37	03:27 23:40	04:12 23:03	05:40 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:27 23:40	04:14 23:00	05:42 21:27	07:07 19:43	08:30 18:03	09:02 15:32	10:06 14:53
21	09:34 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:27 23:41	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:02 17:30	06:30 18:50	05:46 21:18	04:14 22:46	03:27 23:41	04:20 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:27 23:41	04:22 22:53	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:08 14:55
25	09:24 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:26	07:45 16:47	09:16 15:21	10:08 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:29 23:40	04:31 22:44	05:59 21:07	07:24 19:22	07:48 16:44	09:19 15:19	10:08 14:56
27	09:19 16:11	07:46 17:45	06:13 19:04	05:29 21:33	04:01 22:59	03:29 23:40	04:34 22:41	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:59 23:02	03:30 23:39	04:36 22:39	06:05 21:00	07:29 19:16	07:53 16:37	09:25 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:23 21:38	03:56 23:04	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:56 16:34	09:27 15:12	10:08 15:00
30	09:11 16:20		07:03 20:13	05:20 21:41	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:11	10:08 15:01
31	09:09 16:23		06:59 20:15	05:19 23:09	03:52 23:09		04:45 22:30	06:13 20:50	08:02 16:28			10:07 15:03
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: J - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (83)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:05	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:50 23:12	03:34 23:37	04:48 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:09
2	10:06 15:06	09:03 16:29	07:36 17:54	06:52 20:21	05:13 21:47	03:47 23:14	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:57	06:49 20:24	05:10 21:50	03:45 23:16	03:37 23:34	04:54 22:21	06:21 20:40	07:43 18:59	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:42	07:30 17:59	06:46 20:27	05:07 21:53	03:44 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:55 16:39	07:27 18:02	06:42 20:29	05:04 21:56	03:42 23:21	03:40 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:01 21:59	03:40 23:23	03:42 23:30	05:02 22:12	06:30 20:30	07:51 18:49	08:20 16:10	09:44 15:01
7	10:00 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:44 23:28	05:05 22:08	06:32 20:27	07:54 18:45	08:23 16:07	09:46 15:00
8	09:59 15:19	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:37 23:27	03:46 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:28	03:48 23:25	05:11 22:02	06:38 20:20	07:59 18:39	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:34 23:30	03:50 23:23	05:14 21:59	06:40 20:16	08:02 18:35	08:32 15:59	09:52 14:56
11	09:54 15:26	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:33 23:32	03:52 23:21	05:17 21:56	06:43 20:13	08:05 18:32	08:35 15:56	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:20 21:53	06:46 20:10	08:07 18:29	08:38 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:57 23:17	05:22 21:50	06:49 20:06	08:10 18:25	08:41 15:50	09:57 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:48	09:59 14:53
15	09:47 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:29 23:37	04:01 23:12	05:28 21:43	06:54 20:00	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:39	08:21 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:28 23:38	04:04 23:10	05:31 21:40	06:57 19:56	08:19 18:16	08:50 15:42	10:02 14:53
17	09:43 15:42	08:18 17:15	06:47 18:36	06:02 21:04	04:28 22:31	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:21 18:12	08:53 15:40	10:03 14:53
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:06	04:25 22:34	03:27 23:39	04:09 23:05	05:37 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:37	03:27 23:40	04:12 23:03	05:40 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:27 23:40	04:14 23:00	05:42 21:27	07:07 19:43	08:30 18:03	09:02 15:32	10:06 14:53
21	09:34 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:27 23:41	04:17 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:30	10:06 14:53
22	09:32 15:56	08:02 17:30	06:30 18:50	05:46 21:18	04:14 22:46	03:27 23:41	04:20 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:27 23:41	04:22 22:52	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:13 15:23	10:08 14:55
25	09:24 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:26	07:45 16:47	09:16 15:21	10:08 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:29 23:40	04:31 22:44	05:59 21:07	07:23 19:22	07:47 16:44	09:19 15:19	10:08 14:56
27	09:19 16:11	07:46 17:45	06:13 19:04	05:29 21:33	04:01 22:59	03:29 23:40	04:34 22:41	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:59 23:02	03:30 23:39	04:36 22:39	06:05 21:00	07:29 19:16	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:23 21:38	03:56 23:04	03:31 23:38	04:39 22:36	06:08 20:57	07:32 19:12	07:56 16:34	09:27 15:12	10:08 15:00
30	09:11 16:20		07:03 20:13	05:19 21:41	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:11	10:08 15:01
31	09:09 16:23		06:59 20:15		03:52 23:09		04:45 22:30	06:13 20:50		08:02 16:28		10:07 15:03
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: K - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (84)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:49 23:12	03:34 23:37	04:48 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:09
2	10:05 15:06	09:03 16:29	07:36 17:54	06:52 20:21	05:13 21:47	03:47 23:14	03:35 23:36	04:51 22:24	06:19 20:43	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:10 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:59	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:35	07:30 17:59	06:46 20:27	05:07 21:53	03:43 23:18	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:54 16:38	07:27 18:02	06:42 20:29	05:04 21:56	03:42 23:21	03:40 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:00 21:59	03:40 23:23	03:42 23:30	05:02 22:12	06:29 20:30	07:51 18:49	08:20 16:10	09:44 15:01
7	10:00 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:43 23:28	05:05 22:08	06:32 20:27	07:53 18:45	08:23 16:07	09:46 15:00
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:37 23:26	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:28	03:48 23:25	05:11 22:02	06:38 20:20	07:59 18:39	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:25 20:44	04:48 22:11	03:34 23:30	03:50 23:23	05:14 21:59	06:40 20:16	08:02 18:35	08:32 15:59	09:52 14:56
11	09:54 15:26	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:52 23:21	05:17 21:56	06:43 20:13	08:05 18:32	08:35 15:56	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:46 20:10	08:07 18:29	08:38 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:48	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:29 23:37	04:01 23:12	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:39	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:28	03:28 23:38	04:04 23:10	05:31 21:40	06:56 19:56	08:19 18:16	08:50 15:42	10:02 14:53
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:21 18:12	08:53 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:06	04:25 22:34	03:27 23:39	04:09 23:05	05:37 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:37	03:27 23:40	04:11 23:03	05:39 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:26 23:40	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:03	09:02 15:32	10:06 14:52
21	09:34 15:53	08:06 17:27	06:33 18:47	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:30	10:06 14:53
22	09:32 15:56	08:02 17:30	06:30 18:50	05:45 21:18	04:14 22:46	03:27 23:41	04:20 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:27 23:41	04:22 22:52	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:13 15:23	10:08 14:54
25	09:24 16:05	07:53 17:39	06:19 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:26	07:44 16:47	09:16 15:21	10:08 14:55
26	09:22 16:08	07:49 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:28 23:40	04:31 22:44	05:59 21:07	07:23 19:22	07:47 16:44	09:19 15:18	10:08 14:56
27	09:19 16:11	07:46 17:45	06:13 19:04	05:29 21:32	04:01 22:59	03:29 23:40	04:33 22:41	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:05 21:00	07:29 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:23 21:38	03:56 23:04	03:31 23:38	04:39 22:36	06:07 20:57	07:32 19:12	07:56 16:34	09:27 15:12	10:08 15:00
30	09:11 16:20		07:03 20:13	05:19 21:41	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:53	07:34 19:09	07:59 16:31	09:30 15:10	10:07 15:01
31	09:09 16:23		06:59 20:15		03:52 23:09		04:45 22:30	06:13 20:50		08:02 16:28		10:07 15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: L - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (82)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:33 15:08
2	10:06 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:48	03:47 23:15	03:34 23:36	04:50 22:24	06:18 20:44	07:40 19:02	08:08 16:22	09:35 15:06
3	10:05 15:07	09:01 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:59	08:11 16:19	09:38 15:05
4	10:04 15:09	08:58 16:35	07:30 17:59	06:46 20:27	05:06 21:53	03:43 23:19	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:49	08:20 16:10	09:45 15:00
7	10:01 15:16	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:53 18:45	08:23 16:07	09:47 14:59
8	09:59 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:14	06:29 20:41	04:51 22:08	03:34 23:29	03:47 23:26	05:10 22:03	06:37 20:20	07:59 18:39	08:29 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:33 15:58	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:36 15:55	09:55 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:29	08:39 15:53	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:29 23:35	03:56 23:18	05:22 21:50	06:48 20:06	08:10 18:25	08:42 15:50	09:58 14:53
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:28 23:36	03:58 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:53
15	09:47 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:44	10:01 14:52
16	09:45 15:38	08:22 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:56 19:56	08:19 18:15	08:51 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:39	04:06 23:08	05:33 21:37	06:59 19:53	08:22 18:12	08:54 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:07	04:24 22:35	03:26 23:40	04:08 23:06	05:36 21:34	07:02 19:49	08:24 18:09	08:56 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:38	03:26 23:41	04:11 23:03	05:39 21:30	07:05 19:46	08:27 18:06	08:59 15:34	10:06 14:52
20	09:37 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:40	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:06 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:03 17:30	06:30 18:50	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:50	09:14 15:22	10:09 14:54
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:54	03:27 23:42	04:27 22:47	05:56 21:10	07:21 19:26	07:45 16:46	09:17 15:20	10:09 14:55
26	09:22 16:07	07:50 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:19 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:02	03:29 23:40	04:36 22:39	06:05 21:00	07:29 19:15	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17	07:40 17:50	06:06 19:10	05:23 21:39	03:55 23:05	03:30 23:39	04:39 22:36	06:07 20:57	07:32 19:12	07:56 16:34	09:28 15:12	10:08 14:59
30	09:12 16:20	07:37 17:59	06:03 19:17	05:20 21:42	03:53 23:07	03:31 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23	07:34 18:00	06:59 20:15	05:19 23:10	03:51 23:10	03:30 23:38	04:44 22:30	06:13 20:50	08:02 16:28	08:02 15:08	09:08 15:02	10:08 15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: M - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (113)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:48 23:13	03:32 23:38	04:47 22:27	06:16 20:47	07:37 19:05	08:06 16:25	09:33 15:08
2	10:06 15:05	09:03 16:29	07:37 17:53	06:52 20:21	05:13 21:48	03:46 23:15	03:34 23:37	04:50 22:24	06:18 20:44	07:40 19:02	08:09 16:22	09:36 15:06
3	10:06 15:07	09:01 16:32	07:33 17:56	06:49 20:24	05:09 21:51	03:44 23:17	03:35 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:04
4	10:05 15:09	08:58 16:35	07:30 17:59	06:45 20:27	05:06 21:54	03:42 23:20	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:57	03:40 23:22	03:39 23:33	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:01
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 22:00	03:39 23:24	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:49	08:21 16:10	09:45 15:00
7	10:01 15:15	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:03	03:37 23:26	03:42 23:30	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	10:00 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:06	03:35 23:28	03:44 23:28	05:07 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:14	06:29 20:41	04:51 22:08	03:34 23:29	03:46 23:26	05:10 22:03	06:37 20:20	07:59 18:38	08:30 16:01	09:51 14:56
10	09:57 15:22	08:40 16:53	07:10 18:16	06:25 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:17	08:02 18:35	08:33 15:58	09:53 14:55
11	09:55 15:25	08:37 16:57	07:07 18:19	06:22 20:47	04:44 22:14	03:31 23:33	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:36 15:55	09:55 14:54
12	09:53 15:27	08:34 17:00	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:29	08:39 15:52	09:57 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:36	03:55 23:18	05:22 21:50	06:48 20:06	08:10 18:25	08:42 15:50	09:58 14:53
14	09:50 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:35 22:23	03:28 23:37	03:58 23:16	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:52
15	09:48 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:27 23:38	04:00 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:44	10:01 14:52
16	09:46 15:38	08:22 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:56 19:56	08:19 18:15	08:51 15:42	10:03 14:52
17	09:44 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:40	04:05 23:09	05:33 21:37	06:59 19:53	08:22 18:12	08:54 15:39	10:04 14:51
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:07	04:24 22:35	03:26 23:41	04:08 23:06	05:36 21:34	07:02 19:49	08:24 18:09	08:57 15:37	10:05 14:51
19	09:39 15:46	08:12 17:21	06:40 18:42	05:55 21:10	04:21 22:38	03:25 23:41	04:11 23:04	05:39 21:30	07:04 19:46	08:27 18:06	09:00 15:34	10:06 14:51
20	09:37 15:49	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:41	03:25 23:42	04:13 23:01	05:42 21:27	07:07 19:43	08:30 18:02	09:03 15:32	10:07 14:52
21	09:35 15:52	08:06 17:27	06:33 18:48	05:48 21:15	04:16 22:44	03:25 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:03 17:30	06:30 18:50	05:45 21:18	04:13 22:46	03:25 23:42	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:52
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:50	09:14 15:22	10:09 14:53
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:55	03:26 23:42	04:27 22:48	05:56 21:10	07:21 19:26	07:45 16:46	09:17 15:20	10:09 14:54
26	09:22 16:07	07:50 17:42	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:42	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:20 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:48	06:09 19:07	05:25 21:36	03:58 23:03	03:29 23:40	04:36 22:39	06:04 21:00	07:29 19:15	07:54 16:37	09:25 15:14	10:09 14:57
29	09:15 16:16	07:41 17:46	06:06 19:02	05:22 21:39	03:55 23:05	03:30 23:40	04:38 22:36	06:07 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:19	07:38 17:41	06:02 19:00	05:19 21:42	03:53 23:08	03:31 23:39	04:41 22:33	06:10 20:54	07:34 19:09	08:00 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23	07:35 17:38	06:59 20:15	03:51 23:10	03:51 23:10	03:51 23:10	04:44 22:30	06:13 20:50	08:03 16:28	09:08 15:02	10:08 15:02	10:08 15:02
Potential sun hours	184	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: N - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (87)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:40	06:56	05:16	03:49	03:33	04:48	06:16	07:37	08:05	09:32
	15:04	16:26	17:51	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:25	15:08
2	10:06	09:03	07:36	06:52	05:13	03:47	03:35	04:50	06:18	07:40	08:08	09:35
	15:06	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:22	15:07
3	10:05	09:00	07:33	06:49	05:10	03:45	03:36	04:53	06:21	07:42	08:11	09:37
	15:08	16:32	17:56	20:24	21:50	23:16	23:34	22:21	20:40	18:59	16:19	15:05
4	10:04	08:57	07:30	06:46	05:07	03:43	03:38	04:56	06:24	07:45	08:14	09:40
	15:10	16:35	17:59	20:27	21:53	23:19	23:33	22:18	20:37	18:55	16:16	15:04
5	10:03	08:54	07:26	06:42	05:03	03:41	03:40	04:59	06:27	07:48	08:17	09:42
	15:12	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:13	15:02
6	10:01	08:52	07:23	06:39	05:00	03:40	03:41	05:02	06:29	07:51	08:20	09:44
	15:14	16:41	18:05	20:32	21:59	23:23	23:30	22:12	20:30	18:49	16:10	15:01
7	10:00	08:49	07:20	06:35	04:57	03:38	03:43	05:05	06:32	07:53	08:23	09:46
	15:16	16:44	18:08	20:35	22:02	23:25	23:28	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:08	06:35	07:56	08:26	09:48
	15:18	16:48	18:11	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:43	07:13	06:29	04:51	03:35	03:47	05:11	06:37	07:59	08:29	09:50
	15:21	16:51	18:14	20:41	22:08	23:28	23:25	22:02	20:20	18:39	16:01	14:57
10	09:56	08:40	07:10	06:25	04:48	03:33	03:49	05:14	06:40	08:02	08:32	09:52
	15:23	16:54	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:56
11	09:54	08:37	07:06	06:22	04:45	03:32	03:52	05:16	06:43	08:04	08:35	09:54
	15:25	16:57	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:56	14:55
12	09:53	08:34	07:03	06:19	04:42	03:31	03:54	05:19	06:46	08:07	08:38	09:56
	15:28	17:00	18:22	20:49	22:17	23:33	23:19	21:53	20:10	18:29	15:53	14:54
13	09:51	08:31	07:00	06:15	04:39	03:30	03:56	05:22	06:48	08:10	08:41	09:57
	15:31	17:03	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:54
14	09:49	08:27	06:56	06:12	04:36	03:29	03:59	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:09	04:33	03:28	04:01	05:28	06:54	08:16	08:47	10:00
	15:36	17:09	18:31	20:58	22:26	23:37	23:12	21:43	19:59	18:19	15:45	14:53
16	09:45	08:21	06:50	06:05	04:30	03:28	04:04	05:31	06:56	08:19	08:50	10:02
	15:39	17:12	18:33	21:01	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:27	04:06	05:34	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:53	18:12	15:39	14:52
18	09:41	08:15	06:43	05:59	04:24	03:27	04:09	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:37	14:52
19	09:39	08:12	06:40	05:55	04:22	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:06	15:34	14:52
20	09:36	08:09	06:36	05:52	04:19	03:26	04:14	05:42	07:07	08:30	09:02	10:06
	15:50	17:24	18:45	21:12	22:40	23:40	23:00	21:27	19:42	18:02	15:32	14:52
21	09:34	08:05	06:33	05:49	04:16	03:26	04:17	05:45	07:10	08:33	09:05	10:06
	15:53	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:30	14:53
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:48	07:13	08:36	09:08	10:07
	15:56	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:36	17:56	15:27	14:53
23	09:29	07:59	06:26	05:42	04:11	03:27	04:22	05:51	07:15	08:39	09:11	10:08
	15:59	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:25	14:54
24	09:27	07:56	06:23	05:39	04:08	03:27	04:25	05:53	07:18	08:42	09:13	10:08
	16:02	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:50	15:23	14:54
25	09:24	07:53	06:19	05:35	04:06	03:28	04:28	05:56	07:21	07:44	09:16	10:08
	16:05	17:39	18:59	21:27	22:54	23:41	22:47	21:10	19:25	16:47	15:20	14:55
26	09:22	07:49	06:16	05:32	04:03	03:28	04:30	05:59	07:23	07:47	09:19	10:08
	16:08	17:42	19:01	21:29	22:57	23:40	22:44	21:07	19:22	16:43	15:18	14:56
27	09:19	07:46	06:13	05:29	04:01	03:29	04:33	06:02	07:26	07:50	09:22	10:08
	16:11	17:45	19:04	21:32	22:59	23:40	22:41	21:03	19:19	16:40	15:16	14:57
28	09:17	07:43	06:09	05:26	03:58	03:30	04:36	06:05	07:29	07:53	09:24	10:08
	16:14	17:48	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:58
29	09:14		07:06	05:22	03:56	03:31	04:39	06:07	07:31	07:56	09:27	10:08
	16:17		20:10	21:38	23:04	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:54	03:32	04:42	06:10	07:34	07:59	09:30	10:07
	16:20		20:13	21:41	23:07	23:38	22:33	20:53	19:09	16:31	15:10	15:01
31	09:09		06:59	03:51	03:51		04:45	06:13		08:02		10:07
	16:23		20:15	23:09	23:09		22:30	20:50		16:28		15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: O - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (81)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March		April	May	June				
1	10:07 15:04	09:06 16:26	07:40 17:50		06:56 20:18	05:16 21:44	03:49 23:12				
2	10:06 15:06	09:03 16:29	07:36 17:53		06:52 20:21	05:13 21:47	03:47 23:15				
3	10:05 15:07	09:00 16:32	07:33 17:56		06:49 20:24	05:09 21:50	03:45 23:17				
4	10:04 15:09	08:58 16:35	07:30 17:59		06:45 20:27	05:06 21:53	03:43 23:19				
5	10:03 15:11	08:55 16:38	07:27 18:02		06:42 20:29	05:03 21:56	03:41 23:21				
6	10:02 15:13	08:52 16:41	07:23 18:05		06:39 20:32	05:00 21:59	03:39 23:23				
7	10:01 15:16	08:49 16:44	07:20 18:08		06:35 20:35	04:57 22:02	03:37 23:25				
8	09:59 15:18	08:46 16:47	07:17 18:11		06:32 20:38	04:54 22:05	03:36 23:27				
9	09:58 15:20	08:43 16:50	07:13 18:14		06:29 20:41	04:51 22:08	03:34 23:29				
10	09:56 15:23	08:40 16:54	07:10 18:16		06:25 20:44	04:48 22:11	03:33 23:31				
11	09:55 15:25	08:37 16:57	07:07 18:19	5	07:38 (Extension WTG 01) 07:43 (Extension WTG 01)	06:22 20:46	04:45 22:14	03:32 23:32			
12	09:53 15:28	08:34 17:00	07:03 18:22	11	07:34 (Extension WTG 01) 07:45 (Extension WTG 01)	06:18 20:49	04:42 22:17	03:30 23:34			
13	09:51 15:30	08:31 17:03	07:00 18:25	16	07:31 (Extension WTG 01) 07:47 (Extension WTG 01)	06:15 20:52	04:39 22:20	03:29 23:35			
14	09:49 15:33	08:28 17:06	06:56 18:28	20	07:27 (Extension WTG 01) 07:47 (Extension WTG 01)	06:12 20:55	04:36 22:23	03:28 23:36			
15	09:47 15:35	08:25 17:09	06:53 18:31	23	07:25 (Extension WTG 01) 07:48 (Extension WTG 01)	06:08 20:58	04:33 22:26	03:28 23:37			
16	09:45 15:38	08:21 17:12	06:50 18:33	24	07:25 (Extension WTG 01) 07:49 (Extension WTG 01)	06:05 21:01	04:30 22:29	03:27 23:38			
17	09:43 15:41	08:18 17:15	06:46 18:36	25	07:23 (Extension WTG 01) 07:48 (Extension WTG 01)	06:02 21:04	04:27 22:32	03:26 23:39			
18	09:41 15:44	08:15 17:18	06:43 18:39	26	07:23 (Extension WTG 01) 07:49 (Extension WTG 01)	05:58 21:06	04:24 22:35	03:26 23:40			
19	09:39 15:47	08:12 17:21	06:40 18:42	25	07:23 (Extension WTG 01) 07:48 (Extension WTG 01)	05:55 21:09	04:21 22:38	03:26 23:41			
20	09:37 15:49	08:09 17:24	06:36 18:45	24	07:23 (Extension WTG 01) 07:47 (Extension WTG 01)	05:52 21:12	04:18 22:40	03:26 23:41			
21	09:34 15:52	08:06 17:27	06:33 18:47	23	07:23 (Extension WTG 01) 07:46 (Extension WTG 01)	05:48 21:15	04:16 22:43	03:25 23:41			
22	09:32 15:55	08:02 17:30	06:29 18:50	22	07:23 (Extension WTG 01) 07:45 (Extension WTG 01)	05:45 21:18	04:13 22:46	03:26 23:42			
23	09:30 15:58	07:59 17:33	06:26 18:53	19	07:25 (Extension WTG 01) 07:44 (Extension WTG 01)	05:42 21:21	04:10 22:49	03:26 23:42			
24	09:27 16:01	07:56 17:36	06:23 18:56	17	07:25 (Extension WTG 01) 07:42 (Extension WTG 01)	05:39 21:24	04:08 22:52	03:26 23:42			
25	09:25 16:04	07:53 17:39	06:19 18:59	12	07:27 (Extension WTG 01) 07:39 (Extension WTG 01)	05:35 21:27	04:05 22:54	03:27 23:41			
26	09:22 16:07	07:50 17:42	06:16 19:01			05:32 21:30	04:03 22:57	03:27 23:41			
27	09:20 16:10	07:46 17:45	06:13 19:04			05:29 21:33	04:00 23:00	03:28 23:41			
28	09:17 16:13	07:43 17:48	06:09 19:07			05:25 21:36	03:58 23:02	03:29 23:40			
29	09:14 16:16		07:06 20:10			05:22 21:39	03:55 23:05	03:30 23:39			
30	09:12 16:20		07:02 20:13			05:19 21:42	03:53 23:07	03:31 23:38			
31	09:09 16:23		06:59 20:15				03:51 23:10				
Potential sun hours	185	243	364		446	557	601				
Total, worst case				292							
Sun reduction				0.40							
Oper. time red.				0.97							
Wind dir. red.				0.58							
Total reduction				0.23							
Total, real				66							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: O - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (81) Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05		08:05 16:25
2	03:34 23:36	04:50 22:24	06:18 20:44	07:40 19:02	13 08:12 (Extension WTG 01) 08:25 (Extension WTG 01)	08:08 16:25
3	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:59	8 08:15 (Extension WTG 01) 08:18 (Extension WTG 01)	08:08 16:22
4	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	1 08:23 (Extension WTG 01) 08:19 (Extension WTG 01)	08:11 16:19
5	03:39 23:32	04:59 22:15	06:27 20:33	07:48 18:52		08:14 16:13
6	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:48		08:17 16:10
7	03:43 23:29	05:05 22:09	06:32 20:27	07:53 18:45		08:23 16:07
8	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42		08:26 16:04
9	03:47 23:26	05:10 22:02	06:37 20:20	07:59 18:38		08:29 16:01
10	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35		08:32 15:58
11	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32		08:35 15:55
12	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:29		08:38 15:53
13	03:56 23:17	05:22 21:50	06:48 20:06	08:10 18:25		08:41 15:50
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22		08:44 15:47
15	04:01 23:13	05:28 21:43	06:54 19:59	08:16 18:19		08:47 15:44
16	04:03 23:11	05:31 21:40	06:56 19:56	08:19 18:15		08:50 15:42
17	04:06 23:08	05:33 21:37	06:59 19:53	08:21 18:12		08:53 15:39
18	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	10 08:16 (Extension WTG 01) 08:26 (Extension WTG 01)	08:56 15:37
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	16 08:12 (Extension WTG 01) 08:28 (Extension WTG 01)	08:59 15:34
20	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	19 08:11 (Extension WTG 01) 08:30 (Extension WTG 01)	09:02 15:32
21	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	21 08:10 (Extension WTG 01) 08:31 (Extension WTG 01)	09:05 15:29
22	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	23 08:08 (Extension WTG 01) 08:31 (Extension WTG 01)	09:08 15:27
23	04:22 22:53	05:50 21:17	07:15 19:32	08:39 17:53	24 08:07 (Extension WTG 01) 08:31 (Extension WTG 01)	09:11 15:24
24	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:50	24 08:07 (Extension WTG 01) 08:31 (Extension WTG 01)	09:14 15:22
25	04:27 22:47	05:56 21:10	07:21 19:26	08:45 16:46	26 08:06 (Extension WTG 01) 08:32 (Extension WTG 01)	09:17 15:20
26	04:30 22:45	05:59 21:07	07:23 19:22	08:48 16:43	25 08:05 (Extension WTG 01) 08:30 (Extension WTG 01)	09:19 15:18
27	04:33 22:42	06:02 21:04	07:26 19:19	08:51 16:40	24 08:06 (Extension WTG 01) 08:30 (Extension WTG 01)	09:22 15:16
28	04:36 22:39	06:04 21:00	07:29 19:15	08:54 16:37	24 08:06 (Extension WTG 01) 08:30 (Extension WTG 01)	09:25 15:14
29	04:39 22:36	06:07 20:57	07:31 19:12	08:57 16:34	22 08:07 (Extension WTG 01) 08:29 (Extension WTG 01)	09:28 15:12
30	04:41 22:33	06:10 20:54	07:34 19:09	08:59 16:31	18 08:09 (Extension WTG 01) 08:27 (Extension WTG 01)	09:30 15:10
31	04:44 22:30	06:13 20:50		09:02 16:28		10:08 15:02
Potential sun hours	591	501	391	308		208
Total, worst case			276		22	
Sun reduction			0.36		0.26	
Oper. time red.			0.97		0.97	
Wind dir. red.			0.58		0.58	
Total reduction			0.20		0.15	
Total, real			56		3	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: P - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (78)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:08
2	10:06 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:10 21:50	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:59	08:11 16:19	09:37 15:05
4	10:04 15:09	08:57 16:35	07:30 17:59	06:45 20:27	05:06 21:53	03:43 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:14	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:12	06:29 20:30	07:51 18:48	08:20 16:10	09:44 15:00
7	10:00 15:16	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:53 18:45	08:23 16:07	09:47 14:59
8	09:59 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:20	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:25	05:11 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:44	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:53 14:56
11	09:54 15:25	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:46 20:10	08:07 18:29	08:38 15:53	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:17	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:50	09:58 14:53
14	09:49 15:33	08:28 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:45	10:01 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:38	04:03 23:10	05:31 21:40	06:56 19:56	08:19 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:40	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:37 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:53	08:06 17:27	06:33 18:47	05:49 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:41	04:22 22:53	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:53 21:14	07:18 19:29	08:42 17:50	09:14 15:22	10:08 14:54
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:21 19:25	07:45 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:09 14:56
27	09:19 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 22:59	03:29 23:40	04:33 22:42	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:00	07:29 19:15	07:53 16:37	09:25 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:22 21:38	03:56 23:05	03:31 23:39	04:39 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:20		07:02 20:13	05:19 21:41	03:53 23:07	03:32 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23		06:59 20:15	03:51 23:10			04:45 22:30	06:13 20:50		08:02 16:28		10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: Q - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (112)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:50	06:56 20:18	05:16 21:45	03:48 23:12	03:32 23:38	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:25	09:33 15:08
2	10:06 15:05	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:48	03:46 23:15	03:34 23:36	04:50 22:24	06:18 20:44	07:40 19:02	08:08 16:22	09:35 15:06
3	10:05 15:07	09:01 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:19	09:38 15:04
4	10:04 15:09	08:58 16:35	07:30 17:59	06:45 20:27	05:06 21:53	03:42 23:19	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:27 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:01
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:24	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:48	08:20 16:10	09:45 15:00
7	10:01 15:15	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:26	03:42 23:29	05:04 22:09	06:32 20:27	07:53 18:45	08:23 16:07	09:47 14:59
8	09:59 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:05	03:35 23:27	03:44 23:28	05:07 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:14	06:29 20:41	04:51 22:08	03:34 23:29	03:47 23:26	05:10 22:03	06:37 20:20	07:59 18:38	08:30 16:01	09:51 14:56
10	09:56 15:22	08:40 16:53	07:10 18:16	06:25 20:44	04:47 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:33 15:58	09:53 14:55
11	09:55 15:25	08:37 16:56	07:07 18:19	06:22 20:46	04:44 22:14	03:31 23:32	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:36 15:55	09:55 14:54
12	09:53 15:27	08:34 17:00	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:28	08:39 15:52	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35	03:56 23:18	05:22 21:50	06:48 20:06	08:10 18:25	08:42 15:50	09:58 14:53
14	09:49 15:33	08:28 17:06	06:56 18:28	06:12 20:55	04:35 22:23	03:28 23:37	03:58 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:52
15	09:48 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:27 23:38	04:00 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:48 15:44	10:01 14:52
16	09:46 15:38	08:22 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:30 21:40	06:56 19:56	08:19 18:15	08:51 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:40	04:05 23:08	05:33 21:37	06:59 19:53	08:22 18:12	08:54 15:39	10:04 14:51
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:07	04:24 22:35	03:26 23:40	04:08 23:06	05:36 21:34	07:02 19:49	08:24 18:09	08:57 15:36	10:05 14:51
19	09:39 15:46	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:38	03:25 23:41	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:06 14:51
20	09:37 15:49	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:41	03:25 23:41	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:52
21	09:35 15:52	08:06 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:25 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:42	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:52
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:38 21:24	04:08 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:49	09:14 15:22	10:09 14:53
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:55	03:27 23:42	04:27 22:47	05:56 21:10	07:21 19:25	07:45 16:46	09:17 15:20	10:09 14:54
26	09:22 16:07	07:50 17:42	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:41	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:20 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:48	06:09 19:07	05:25 21:36	03:58 23:02	03:29 23:40	04:36 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:25 15:14	10:09 14:57
29	09:14 16:16	07:40 17:50	06:06 19:10	05:22 21:39	03:55 23:05	03:30 23:39	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:28 15:12	10:09 14:59
30	09:12 16:19	07:37 17:57	06:03 19:13	05:19 21:42	03:53 23:08	03:31 23:39	04:41 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:22	07:34 18:00	06:59 20:15	03:51 23:10	03:51 23:10	03:31 23:39	04:44 22:30	06:13 20:50	08:02 16:28	09:00 15:00	10:08 15:02	10:08 15:02
Potential sun hours	184	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: R - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (85)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:40	06:56	05:16	03:49	03:33	04:48	06:16	07:37	08:05	09:32
	15:04	16:26	17:51	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:25	15:08
2	10:05	09:03	07:36	06:52	05:13	03:47	03:35	04:50	06:18	07:40	08:08	09:35
	15:06	16:29	17:53	20:21	21:47	23:14	23:35	22:24	20:43	19:02	16:22	15:07
3	10:05	09:00	07:33	06:49	05:10	03:45	03:36	04:53	06:21	07:42	08:11	09:37
	15:08	16:32	17:56	20:24	21:50	23:16	23:34	22:21	20:40	18:58	16:19	15:05
4	10:04	08:57	07:30	06:45	05:06	03:43	03:38	04:56	06:24	07:45	08:14	09:39
	15:10	16:35	17:59	20:26	21:53	23:18	23:33	22:18	20:37	18:55	16:16	15:04
5	10:02	08:54	07:26	06:42	05:03	03:41	03:40	04:59	06:27	07:48	08:17	09:42
	15:12	16:38	18:02	20:29	21:56	23:20	23:31	22:14	20:33	18:52	16:13	15:02
6	10:01	08:51	07:23	06:39	05:00	03:40	03:41	05:02	06:29	07:51	08:20	09:44
	15:14	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:10	15:01
7	10:00	08:48	07:20	06:35	04:57	03:38	03:43	05:05	06:32	07:53	08:23	09:46
	15:16	16:44	18:08	20:35	22:02	23:25	23:28	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:08	06:35	07:56	08:26	09:48
	15:18	16:48	18:11	20:38	22:05	23:26	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:43	07:13	06:29	04:51	03:35	03:47	05:11	06:37	07:59	08:29	09:50
	15:21	16:51	18:14	20:41	22:08	23:28	23:25	22:02	20:20	18:38	16:01	14:57
10	09:56	08:40	07:10	06:25	04:48	03:34	03:49	05:14	06:40	08:02	08:32	09:52
	15:23	16:54	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:56
11	09:54	08:37	07:06	06:22	04:45	03:32	03:52	05:16	06:43	08:04	08:35	09:54
	15:25	16:57	18:19	20:46	22:14	23:31	23:21	21:56	20:13	18:32	15:56	14:55
12	09:52	08:34	07:03	06:19	04:42	03:31	03:54	05:19	06:46	08:07	08:38	09:56
	15:28	17:00	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:29	15:53	14:54
13	09:51	08:30	07:00	06:15	04:39	03:30	03:56	05:22	06:48	08:10	08:41	09:57
	15:31	17:03	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:54
14	09:49	08:27	06:56	06:12	04:36	03:29	03:59	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:35	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:01	05:28	06:54	08:16	08:47	10:00
	15:36	17:09	18:31	20:58	22:25	23:37	23:12	21:43	19:59	18:19	15:45	14:53
16	09:45	08:21	06:50	06:05	04:30	03:28	04:04	05:31	06:56	08:18	08:50	10:02
	15:39	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:27	04:06	05:34	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:38	23:08	21:36	19:53	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:27	04:09	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:37	14:52
19	09:38	08:12	06:40	05:55	04:22	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:06	15:34	14:52
20	09:36	08:09	06:36	05:52	04:19	03:26	04:14	05:42	07:07	08:30	09:02	10:06
	15:50	17:24	18:45	21:12	22:40	23:40	23:00	21:27	19:42	18:02	15:32	14:52
21	09:34	08:05	06:33	05:49	04:16	03:26	04:17	05:45	07:10	08:33	09:05	10:06
	15:53	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:30	14:53
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:48	07:12	08:36	09:08	10:07
	15:56	17:30	18:50	21:18	22:45	23:41	22:55	21:20	19:36	17:56	15:27	14:53
23	09:29	07:59	06:26	05:42	04:11	03:27	04:22	05:51	07:15	08:39	09:10	10:07
	15:59	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:25	14:54
24	09:27	07:56	06:23	05:39	04:08	03:27	04:25	05:53	07:18	08:41	09:13	10:08
	16:02	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:50	15:23	14:54
25	09:24	07:53	06:19	05:35	04:06	03:28	04:28	05:56	07:21	07:44	09:16	10:08
	16:05	17:39	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:47	15:20	14:55
26	09:22	07:49	06:16	05:32	04:03	03:28	04:30	05:59	07:23	07:47	09:19	10:08
	16:08	17:42	19:01	21:29	22:56	23:40	22:44	21:07	19:22	16:43	15:18	14:56
27	09:19	07:46	06:13	05:29	04:01	03:29	04:33	06:02	07:26	07:50	09:22	10:08
	16:11	17:45	19:04	21:32	22:59	23:40	22:41	21:03	19:19	16:40	15:16	14:57
28	09:17	07:43	06:09	05:26	03:58	03:30	04:36	06:05	07:29	07:53	09:24	10:08
	16:14	17:48	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:58
29	09:14		07:06	05:22	03:56	03:31	04:39	06:07	07:31	07:56	09:27	10:08
	16:17		20:10	21:38	23:04	23:38	22:35	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:54	03:32	04:42	06:10	07:34	07:59	09:30	10:07
	16:20		20:12	21:41	23:07	23:37	22:33	20:53	19:09	16:31	15:10	15:01
31	09:08		06:59		03:51		04:45	06:13		08:02		10:07
	16:23		20:15		23:09		22:30	20:50		16:28		15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: S - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (110)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:07 15:04	09:06 16:26	11:09 (Extension WTG 01) 17:50	07:40 20:18	05:16 21:44	03:48 23:12
2	10:06 15:05	09:03 16:29	11:11 (Extension WTG 01) 17:53	07:36 20:21	05:12 21:47	03:46 23:15
3	10:05 15:07	09:00 16:32	11:15 (Extension WTG 01) 17:56	07:33 20:24	05:09 21:50	03:44 23:17
4	10:04 15:09	08:58 16:35	11:18 (Extension WTG 01) 17:59	07:30 20:27	05:06 21:53	03:42 23:19
5	10:03 15:11	08:55 16:38		07:26 18:02	05:03 21:56	03:40 23:21
6	10:02 15:13	08:52 16:41		07:23 18:05	05:00 21:59	03:39 23:23
7	10:01 15:15	08:49 16:44		07:20 18:08	04:57 22:02	03:37 23:25
8	09:59 15:18	08:46 16:47		07:17 18:11	04:54 22:05	03:35 23:27
9	09:58 15:20	11:06 (Extension WTG 01) 11:13 (Extension WTG 01) 16:50	08:43 16:50	07:13 18:13	06:28 20:41	04:50 22:08
10	09:56 15:22	11:05 (Extension WTG 01) 11:15 (Extension WTG 01) 16:53	08:40 16:53	07:10 18:16	06:25 20:44	04:47 22:11
11	09:55 15:25	11:04 (Extension WTG 01) 11:17 (Extension WTG 01) 16:56	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14
12	09:53 15:27	11:03 (Extension WTG 01) 11:18 (Extension WTG 01) 17:00	08:34 17:00	07:03 18:22	06:18 20:49	04:41 22:17
13	09:51 15:30	11:03 (Extension WTG 01) 11:20 (Extension WTG 01) 17:03	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20
14	09:49 15:33	11:03 (Extension WTG 01) 11:21 (Extension WTG 01) 17:06	08:28 17:06	06:56 18:28	06:12 20:55	04:35 22:23
15	09:47 15:35	11:03 (Extension WTG 01) 11:22 (Extension WTG 01) 17:09	08:25 17:09	06:53 18:31	06:08 20:58	04:32 22:26
16	09:45 15:38	11:02 (Extension WTG 01) 11:22 (Extension WTG 01) 17:12	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:29
17	09:43 15:41	11:02 (Extension WTG 01) 11:23 (Extension WTG 01) 17:15	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32
18	09:41 15:44	11:02 (Extension WTG 01) 11:24 (Extension WTG 01) 17:18	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:35
19	09:39 15:46	11:02 (Extension WTG 01) 11:25 (Extension WTG 01) 17:21	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:38
20	09:37 15:49	11:01 (Extension WTG 01) 11:25 (Extension WTG 01) 17:24	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:40
21	09:34 15:52	11:02 (Extension WTG 01) 11:26 (Extension WTG 01) 17:27	08:06 17:27	06:33 18:47	05:48 21:15	04:15 22:43
22	09:32 15:55	11:02 (Extension WTG 01) 11:27 (Extension WTG 01) 17:30	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46
23	09:30 15:58	11:03 (Extension WTG 01) 11:28 (Extension WTG 01) 17:33	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49
24	09:27 16:01	11:02 (Extension WTG 01) 11:27 (Extension WTG 01) 17:36	07:56 17:36	06:23 18:56	05:38 21:24	04:07 22:52
25	09:25 16:04	11:03 (Extension WTG 01) 11:28 (Extension WTG 01) 17:39	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:54
26	09:22 16:07	11:03 (Extension WTG 01) 11:27 (Extension WTG 01) 17:42	07:49 17:42	06:16 19:01	05:32 21:30	04:02 22:57
27	09:20 16:10	11:04 (Extension WTG 01) 11:27 (Extension WTG 01) 17:45	07:46 17:45	06:12 19:04	05:29 21:33	04:00 23:00
28	09:17 16:13	11:05 (Extension WTG 01) 11:28 (Extension WTG 01) 17:47	07:43 17:47	06:09 19:07	05:25 21:36	03:57 23:02
29	09:14 16:16	11:05 (Extension WTG 01) 11:27 (Extension WTG 01)		07:06 20:10	05:22 21:39	03:55 23:05
30	09:12 16:19	11:06 (Extension WTG 01) 11:26 (Extension WTG 01)		07:02 20:13	05:19 21:42	03:53 23:07
31	09:09 16:22	11:07 (Extension WTG 01) 11:25 (Extension WTG 01)		06:59 20:15	03:51 23:10	23:39
Potential sun hours	184	243	364	446	557	601
Total, worst case	464	30				
Sun reduction	0.16	0.29				
Oper. time red.	0.97	0.97				
Wind dir. red.	0.67	0.67				
Total reduction	0.11	0.19				
Total, real	49	6				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: S - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (110)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December	
1	03:32	04:47	06:15	07:37	08:05	09:33	10:46 (Extension WTG 01)
	23:38	22:27	20:47	19:05	16:25	15:08	13 10:59 (Extension WTG 01)
2	03:34	04:50	06:18	07:40	08:08	09:35	10:48 (Extension WTG 01)
	23:36	22:24	20:43	19:02	16:21	15:06	11 10:59 (Extension WTG 01)
3	03:35	04:53	06:21	07:42	08:11	09:38	10:50 (Extension WTG 01)
	23:35	22:21	20:40	18:58	16:18	15:04	8 10:58 (Extension WTG 01)
4	03:37	04:56	06:24	07:45	08:14	09:40	
	23:34	22:18	20:37	18:55	16:15	15:03	
5	03:39	04:59	06:26	07:48	08:17	09:42	
	23:32	22:15	20:33	18:52	16:12	15:01	
6	03:41	05:02	06:29	07:51	08:20	09:45	
	23:31	22:12	20:30	18:48	16:10	15:00	
7	03:42	05:04	06:32	07:53	08:23	09:47	
	23:29	22:09	20:27	18:45	16:07	14:59	
8	03:44	05:07	06:35	07:56	08:26	10:45 (Extension WTG 01)	09:49
	23:27	22:06	20:23	18:42	16:04	4 10:49 (Extension WTG 01)	14:57
9	03:46	05:10	06:37	07:59	08:29	10:42 (Extension WTG 01)	09:51
	23:26	22:02	20:20	18:38	16:01	12 10:54 (Extension WTG 01)	14:56
10	03:49	05:13	06:40	08:02	08:32	10:39 (Extension WTG 01)	09:53
	23:24	21:59	20:16	18:35	15:58	16 10:55 (Extension WTG 01)	14:55
11	03:51	05:16	06:43	08:05	08:35	10:38 (Extension WTG 01)	09:55
	23:22	21:56	20:13	18:32	15:55	19 10:57 (Extension WTG 01)	14:54
12	03:53	05:19	06:45	08:07	08:38	10:38 (Extension WTG 01)	09:56
	23:20	21:53	20:10	18:28	15:52	20 10:58 (Extension WTG 01)	14:54
13	03:55	05:22	06:48	08:10	08:41	10:37 (Extension WTG 01)	09:58
	23:18	21:50	20:06	18:25	15:50	21 10:58 (Extension WTG 01)	14:53
14	03:58	05:25	06:51	08:13	08:45	10:37 (Extension WTG 01)	10:00
	23:15	21:46	20:03	18:22	15:47	22 10:59 (Extension WTG 01)	14:52
15	04:00	05:28	06:54	08:16	08:48	10:37 (Extension WTG 01)	10:01
	23:13	21:43	19:59	18:19	15:44	23 11:00 (Extension WTG 01)	14:52
16	04:03	05:30	06:56	08:19	08:50	10:37 (Extension WTG 01)	10:02
	23:11	21:40	19:56	18:15	15:42	24 11:01 (Extension WTG 01)	14:52
17	04:05	05:33	06:59	08:21	08:53	10:36 (Extension WTG 01)	10:04
	23:08	21:37	19:53	18:12	15:39	25 11:01 (Extension WTG 01)	14:51
18	04:08	05:36	07:02	08:24	08:56	10:36 (Extension WTG 01)	10:05
	23:06	21:33	19:49	18:09	15:36	25 11:01 (Extension WTG 01)	14:51
19	04:11	05:39	07:04	08:27	08:59	10:37 (Extension WTG 01)	10:06
	23:03	21:30	19:46	18:05	15:34	25 11:02 (Extension WTG 01)	14:51
20	04:13	05:42	07:07	08:30	09:02	10:37 (Extension WTG 01)	10:06
	23:01	21:27	19:42	18:02	15:31	25 11:02 (Extension WTG 01)	14:52
21	04:16	05:45	07:10	08:33	09:05	10:38 (Extension WTG 01)	10:07
	22:58	21:24	19:39	17:59	15:29	24 11:02 (Extension WTG 01)	14:52
22	04:19	05:47	07:12	08:36	09:08	10:37 (Extension WTG 01)	10:08
	22:56	21:20	19:36	17:56	15:27	24 11:01 (Extension WTG 01)	14:52
23	04:21	05:50	07:15	08:39	09:11	10:38 (Extension WTG 01)	10:08
	22:53	21:17	19:32	17:53	15:24	23 11:01 (Extension WTG 01)	14:53
24	04:24	05:53	07:18	08:42	09:14	10:39 (Extension WTG 01)	10:09
	22:50	21:14	19:29	17:49	15:22	23 11:02 (Extension WTG 01)	14:53
25	04:27	05:56	07:21	07:45	09:17	10:40 (Extension WTG 01)	10:09
	22:47	21:10	19:25	16:46	15:20	22 11:02 (Extension WTG 01)	14:54
26	04:30	05:59	07:23	07:48	09:19	10:41 (Extension WTG 01)	10:09
	22:45	21:07	19:22	16:43	15:18	21 11:02 (Extension WTG 01)	14:55
27	04:33	06:02	07:26	07:50	09:22	10:42 (Extension WTG 01)	10:09
	22:42	21:04	19:19	16:40	15:16	19 11:01 (Extension WTG 01)	14:56
28	04:36	06:04	07:29	07:53	09:25	10:43 (Extension WTG 01)	10:09
	22:39	21:00	19:15	16:37	15:14	18 11:01 (Extension WTG 01)	14:57
29	04:38	06:07	07:31	07:56	09:28	10:43 (Extension WTG 01)	10:09
	22:36	20:57	19:12	16:34	15:12	17 11:00 (Extension WTG 01)	14:59
30	04:41	06:10	07:34	07:59	09:30	10:44 (Extension WTG 01)	10:08
	22:33	20:54	19:09	16:31	15:10	16 11:00 (Extension WTG 01)	15:00
31	04:44	06:13		08:02			10:08
	22:30	20:50		16:28			15:01
Potential sun hours	591	501	391	308	208	154	
Total, worst case					468		32
Sun reduction					0.15		0.11
Oper. time red.					0.97		0.97
Wind dir. red.					0.67		0.67
Total reduction					0.10		0.07
Total, real					45		2

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: T - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (106)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March	April	May	June
1	10:07	11:50 (Extension WTG 01)	09:06	11:59 (Extension WTG 01)	07:40	06:55	05:16	03:48
	15:04	12:01 (Extension WTG 01)	16:26	12:12 (Extension WTG 01)	17:50	20:18	21:44	23:12
2	10:06	11:50 (Extension WTG 01)	09:03	12:04 (Extension WTG 01)	07:36	06:52	05:12	03:46
	15:05	12:02 (Extension WTG 01)	16:29	12:09 (Extension WTG 01)	17:53	20:21	21:47	23:15
3	10:05	11:50 (Extension WTG 01)	09:00		07:33	06:49	05:09	03:44
	15:07	12:04 (Extension WTG 01)	16:32		17:56	20:24	21:50	23:17
4	10:04	11:49 (Extension WTG 01)	08:58		07:30	06:45	05:06	03:42
	15:09	12:05 (Extension WTG 01)	16:35		17:59	20:27	21:53	23:19
5	10:03	11:49 (Extension WTG 01)	08:55		07:26	06:42	05:03	03:40
	15:11	12:05 (Extension WTG 01)	16:38		18:02	20:29	21:56	23:21
6	10:02	11:49 (Extension WTG 01)	08:52		07:23	06:39	05:00	03:39
	15:13	12:07 (Extension WTG 01)	16:41		18:05	20:32	21:59	23:23
7	10:01	11:49 (Extension WTG 01)	08:49		07:20	06:35	04:57	03:37
	15:15	12:08 (Extension WTG 01)	16:44		18:08	20:35	22:02	23:25
8	09:59	11:48 (Extension WTG 01)	08:46		07:16	06:32	04:54	03:35
	15:18	12:09 (Extension WTG 01)	16:47		18:11	20:38	22:05	23:27
9	09:58	11:48 (Extension WTG 01)	08:43		07:13	06:28	04:50	03:34
	15:20	12:10 (Extension WTG 01)	16:50		18:13	20:41	22:08	23:29
10	09:56	11:48 (Extension WTG 01)	08:40		07:10	06:25	04:47	03:33
	15:22	12:11 (Extension WTG 01)	16:53		18:16	20:44	22:11	23:31
11	09:55	11:48 (Extension WTG 01)	08:37		07:06	06:22	04:44	03:31
	15:25	12:12 (Extension WTG 01)	16:56		18:19	20:46	22:14	23:32
12	09:53	11:48 (Extension WTG 01)	08:34		07:03	06:18	04:41	03:30
	15:27	12:12 (Extension WTG 01)	16:59		18:22	20:49	22:17	23:34
13	09:51	11:48 (Extension WTG 01)	08:31		07:00	06:15	04:38	03:29
	15:30	12:13 (Extension WTG 01)	17:03		18:25	20:52	22:20	23:35
14	09:49	11:48 (Extension WTG 01)	08:28		06:56	06:12	04:35	03:28
	15:33	12:14 (Extension WTG 01)	17:06		18:28	20:55	22:23	23:36
15	09:47	11:48 (Extension WTG 01)	08:25		06:53	06:08	04:32	03:27
	15:35	12:15 (Extension WTG 01)	17:09		18:30	20:58	22:26	23:38
16	09:45	11:48 (Extension WTG 01)	08:21		06:50	06:05	04:30	03:27
	15:38	12:15 (Extension WTG 01)	17:12		18:33	21:01	22:29	23:39
17	09:43	11:48 (Extension WTG 01)	08:18		06:46	06:02	04:27	03:26
	15:41	12:16 (Extension WTG 01)	17:15		18:36	21:04	22:32	23:39
18	09:41	11:48 (Extension WTG 01)	08:15		06:43	05:58	04:24	03:26
	15:44	12:16 (Extension WTG 01)	17:18		18:39	21:06	22:35	23:40
19	09:39	11:49 (Extension WTG 01)	08:12		06:40	05:55	04:21	03:25
	15:46	12:17 (Extension WTG 01)	17:21		18:42	21:09	22:38	23:41
20	09:37	11:48 (Extension WTG 01)	08:09		06:36	05:52	04:18	03:25
	15:49	12:17 (Extension WTG 01)	17:24		18:45	21:12	22:40	23:41
21	09:34	11:49 (Extension WTG 01)	08:06		06:33	05:48	04:15	03:25
	15:52	12:17 (Extension WTG 01)	17:27		18:47	21:15	22:43	23:42
22	09:32	11:50 (Extension WTG 01)	08:02		06:29	05:45	04:13	03:25
	15:55	12:18 (Extension WTG 01)	17:30		18:50	21:18	22:46	23:42
23	09:30	11:49 (Extension WTG 01)	07:59		06:26	05:42	04:10	03:26
	15:58	12:17 (Extension WTG 01)	17:33		18:53	21:21	22:49	23:42
24	09:27	11:50 (Extension WTG 01)	07:56		06:23	05:38	04:07	03:26
	16:01	12:18 (Extension WTG 01)	17:36		18:56	21:24	22:52	23:42
25	09:25	11:51 (Extension WTG 01)	07:53		06:19	05:35	04:05	03:26
	16:04	12:18 (Extension WTG 01)	17:39		18:59	21:27	22:54	23:42
26	09:22	11:51 (Extension WTG 01)	07:49		06:16	05:32	04:02	03:27
	16:07	12:17 (Extension WTG 01)	17:42		19:01	21:30	22:57	23:41
27	09:20	11:52 (Extension WTG 01)	07:46		06:12	05:29	04:00	03:28
	16:10	12:17 (Extension WTG 01)	17:44		19:04	21:33	23:00	23:41
28	09:17	11:54 (Extension WTG 01)	07:43		06:09	05:25	03:57	03:29
	16:13	12:17 (Extension WTG 01)	17:47		19:07	21:36	23:02	23:40
29	09:14	11:54 (Extension WTG 01)			07:06	05:22	03:55	03:30
	16:16	12:16 (Extension WTG 01)			20:10	21:39	23:05	23:39
30	09:12	11:56 (Extension WTG 01)			07:02	05:19	03:53	03:31
	16:19	12:16 (Extension WTG 01)			20:12	21:41	23:07	23:38
31	09:09	11:57 (Extension WTG 01)			06:59		03:51	
	16:22	12:14 (Extension WTG 01)			20:15		23:10	
Potential sun hours	184		243		364	446	557	601
Total, worst case	710		18					
Sun reduction	0.16		0.29					
Oper. time red.	0.97		0.97					
Wind dir. red.	0.68		0.68					
Total reduction	0.11		0.19					
Total, real	76		3					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: T - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (106)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December	
1	03:32	04:47	06:15	07:37	08:05	09:33	11:30 (Extension WTG 01)
	23:37	22:27	20:47	19:05	16:24	15:08	24 11:54 (Extension WTG 01)
2	03:34	04:50	06:18	07:40	08:08	09:35	11:31 (Extension WTG 01)
	23:36	22:24	20:43	19:02	16:21	15:06	23 11:54 (Extension WTG 01)
3	03:35	04:53	06:21	07:42	08:11	09:38	11:31 (Extension WTG 01)
	23:35	22:21	20:40	18:58	16:18	15:04	22 11:53 (Extension WTG 01)
4	03:37	04:56	06:24	07:45	08:14	09:40	11:33 (Extension WTG 01)
	23:34	22:18	20:37	18:55	16:15	15:03	20 11:53 (Extension WTG 01)
5	03:39	04:59	06:26	07:48	08:17	09:42	11:34 (Extension WTG 01)
	23:32	22:15	20:33	18:52	16:12	15:01	19 11:53 (Extension WTG 01)
6	03:40	05:02	06:29	07:51	08:20	09:45	11:34 (Extension WTG 01)
	23:31	22:12	20:30	18:48	16:10	15:00	19 11:53 (Extension WTG 01)
7	03:42	05:04	06:32	07:53	08:23	09:47	11:36 (Extension WTG 01)
	23:29	22:09	20:27	18:45	16:07	14:59	17 11:53 (Extension WTG 01)
8	03:44	05:07	06:35	07:56	08:26	09:49	11:36 (Extension WTG 01)
	23:27	22:06	20:23	18:42	16:04	14:57	16 11:52 (Extension WTG 01)
9	03:46	05:10	06:37	07:59	08:29	11:34 (Extension WTG 01)	09:51 11:38 (Extension WTG 01)
	23:26	22:02	20:20	18:38	16:01	6 11:40 (Extension WTG 01)	14:56 14 11:52 (Extension WTG 01)
10	03:49	05:13	06:40	08:02	08:32	11:30 (Extension WTG 01)	09:53 11:39 (Extension WTG 01)
	23:24	21:59	20:16	18:35	15:58	13 11:43 (Extension WTG 01)	14:55 13 11:52 (Extension WTG 01)
11	03:51	05:16	06:43	08:04	08:35	11:28 (Extension WTG 01)	09:55 11:40 (Extension WTG 01)
	23:22	21:56	20:13	18:32	15:55	18 11:46 (Extension WTG 01)	14:54 11 11:51 (Extension WTG 01)
12	03:53	05:19	06:45	08:07	08:38	11:27 (Extension WTG 01)	09:56 11:42 (Extension WTG 01)
	23:20	21:53	20:10	18:28	15:52	20 11:47 (Extension WTG 01)	14:54 9 11:51 (Extension WTG 01)
13	03:55	05:22	06:48	08:10	08:41	11:26 (Extension WTG 01)	09:58 11:44 (Extension WTG 01)
	23:18	21:50	20:06	18:25	15:50	22 11:48 (Extension WTG 01)	14:53 6 11:50 (Extension WTG 01)
14	03:58	05:25	06:51	08:13	08:44	11:25 (Extension WTG 01)	10:00 11:47 (Extension WTG 01)
	23:15	21:46	20:03	18:22	15:47	24 11:49 (Extension WTG 01)	14:52 2 11:49 (Extension WTG 01)
15	04:00	05:28	06:54	08:16	08:47	11:25 (Extension WTG 01)	10:01
	23:13	21:43	19:59	18:19	15:44	25 11:50 (Extension WTG 01)	14:52
16	04:03	05:30	06:56	08:19	08:50	11:25 (Extension WTG 01)	10:02
	23:11	21:40	19:56	18:15	15:42	26 11:51 (Extension WTG 01)	14:52
17	04:05	05:33	06:59	08:21	08:53	11:24 (Extension WTG 01)	10:03
	23:08	21:37	19:53	18:12	15:39	27 11:51 (Extension WTG 01)	14:51
18	04:08	05:36	07:02	08:24	08:56	11:24 (Extension WTG 01)	10:05
	23:06	21:33	19:49	18:09	15:36	28 11:52 (Extension WTG 01)	14:51
19	04:11	05:39	07:04	08:27	08:59	11:24 (Extension WTG 01)	10:06
	23:03	21:30	19:46	18:05	15:34	28 11:52 (Extension WTG 01)	14:51
20	04:13	05:42	07:07	08:30	09:02	11:25 (Extension WTG 01)	10:06
	23:01	21:27	19:42	18:02	15:31	28 11:53 (Extension WTG 01)	14:52
21	04:16	05:45	07:10	08:33	09:05	11:25 (Extension WTG 01)	10:07
	22:58	21:24	19:39	17:59	15:29	28 11:53 (Extension WTG 01)	14:52
22	04:19	05:47	07:12	08:36	09:08	11:25 (Extension WTG 01)	10:08
	22:56	21:20	19:36	17:56	15:27	28 11:53 (Extension WTG 01)	14:52
23	04:21	05:50	07:15	08:39	09:11	11:25 (Extension WTG 01)	10:08
	22:53	21:17	19:32	17:53	15:24	28 11:53 (Extension WTG 01)	14:53
24	04:24	05:53	07:18	08:42	09:14	11:26 (Extension WTG 01)	10:09
	22:50	21:14	19:29	17:49	15:22	28 11:54 (Extension WTG 01)	14:53
25	04:27	05:56	07:21	07:45	09:17	11:26 (Extension WTG 01)	10:09
	22:47	21:10	19:25	16:46	15:20	28 11:54 (Extension WTG 01)	14:54
26	04:30	05:59	07:23	07:47	09:19	11:27 (Extension WTG 01)	10:09
	22:45	21:07	19:22	16:43	15:18	27 11:54 (Extension WTG 01)	14:55
27	04:33	06:02	07:26	07:50	09:22	11:28 (Extension WTG 01)	10:09
	22:42	21:04	19:19	16:40	15:16	26 11:54 (Extension WTG 01)	14:56
28	04:36	06:04	07:29	07:53	09:25	11:28 (Extension WTG 01)	10:09
	22:39	21:00	19:15	16:37	15:14	26 11:54 (Extension WTG 01)	14:57
29	04:38	06:07	07:31	07:56	09:28	11:28 (Extension WTG 01)	10:08
	22:36	20:57	19:12	16:34	15:12	26 11:54 (Extension WTG 01)	14:59
30	04:41	06:10	07:34	07:59	09:30	11:29 (Extension WTG 01)	10:08
	22:33	20:54	19:08	16:31	15:10	25 11:54 (Extension WTG 01)	15:00 6 11:58 (Extension WTG 01)
31	04:44	06:13	07:37	08:02		10:08	11:51 (Extension WTG 01)
	22:30	20:50	16:28			15:01	8 11:59 (Extension WTG 01)
Potential sun hours	591	501	391	308	208	154	
Total, worst case					535		229
Sun reduction					0.15		0.11
Oper. time red.					0.97		0.97
Wind dir. red.					0.68		0.68
Total reduction					0.10		0.07
Total, real					52		17

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: U - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (88)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:39 17:50	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:08
2	10:05 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:35 23:35	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:10 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:39 15:03
5	10:03 15:12	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:14	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:51 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:01
7	10:00 15:16	08:48 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:38 23:25	03:43 23:28	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:47	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:26	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:43 16:50	07:13 18:13	06:29 20:40	04:51 22:08	03:35 23:28	03:47 23:25	05:11 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:37 16:57	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:31	03:52 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:52 15:28	08:33 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:53	09:56 14:54
13	09:51 15:30	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:54
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:25	03:28 23:37	04:01 23:12	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:31 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:39	04:06 23:08	05:34 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:09 23:05	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:38 15:47	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:44	05:52 21:12	04:19 22:40	03:26 23:40	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:53	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:06 14:52
22	09:32 15:56	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:38 17:53	09:10 15:25	10:07 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:53 21:13	07:18 19:29	08:41 17:50	09:13 15:22	10:08 14:54
25	09:24 16:04	07:53 17:39	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:21 19:25	08:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	08:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:11	07:46 17:45	06:12 19:04	05:29 21:32	04:00 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:19	08:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:04 21:00	07:29 19:15	08:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:22 21:38	03:56 23:04	03:31 23:38	04:39 22:35	06:07 20:57	07:31 19:12	08:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:20		07:02 20:12	05:19 21:41	03:53 23:07	03:32 23:38	04:42 22:33	06:10 20:53	07:34 19:08	08:59 16:31	09:30 15:10	10:07 15:01
31	09:08 16:23		06:59 20:15	03:51 23:09			04:45 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	244	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: V - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (77)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:40 17:50	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:25	09:32 15:08
2	10:06 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:22	09:35 15:06
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:19	09:37 15:05
4	10:04 15:09	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:51 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:00
7	10:00 15:16	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:47	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:43 16:50	07:13 18:13	06:28 20:41	04:51 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:37 16:57	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:53	09:56 14:54
13	09:51 15:30	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:31 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:39	04:06 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:44	05:52 21:12	04:19 22:40	03:26 23:41	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:53 21:13	07:18 19:29	08:41 17:50	09:13 15:22	10:08 14:54
25	09:24 16:04	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:57	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:10	07:46 17:45	06:12 19:04	05:29 21:32	04:00 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:04 21:00	07:29 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:22 21:38	03:56 23:04	03:31 23:39	04:39 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:20		07:02 20:12	05:19 21:41	03:53 23:07	03:32 23:38	04:42 22:33	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23		06:59 20:15	03:51 23:09			04:44 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: W - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (105)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March		April		May		June	
1	10:07	12:42 (Extension WTG 01)	09:06		09:50 (K05)	07:40	06:55	05:16	03:48			
	15:04	11 12:53 (Extension WTG 01)	16:25	28	13:07 (Extension WTG 01)	17:50	20:18	21:44	23:12			
2	10:06	12:42 (Extension WTG 01)	09:03		09:49 (K05)	07:36	06:52	05:12	03:46			
	15:05	12 12:54 (Extension WTG 01)	16:29	26	13:05 (Extension WTG 01)	17:53	20:21	21:47	23:15			
3	10:05	12:41 (Extension WTG 01)	09:00		09:47 (K05)	07:33	06:49	05:09	03:44			
	15:07	14 12:55 (Extension WTG 01)	16:32	22	13:01 (Extension WTG 01)	17:56	20:24	21:50	23:17			
4	10:04	12:41 (Extension WTG 01)	08:58		09:46 (K05)	07:30	06:45	05:06	03:42			
	15:09	16 12:57 (Extension WTG 01)	16:35	19	10:05 (K05)	17:59	20:27	21:53	23:19			
5	10:03	12:41 (Extension WTG 01)	08:55		09:45 (K05)	07:26	06:42	05:03	03:40			
	15:11	16 12:57 (Extension WTG 01)	16:38	20	10:05 (K05)	18:02	20:29	21:56	23:21			
6	10:02	12:41 (Extension WTG 01)	08:52		09:45 (K05)	07:23	06:39	05:00	03:39			
	15:13	18 12:59 (Extension WTG 01)	16:41	21	10:06 (K05)	18:05	20:32	21:59	23:23			
7	10:01	12:41 (Extension WTG 01)	08:49		09:44 (K05)	07:20	06:35	04:57	03:37			
	15:15	19 13:00 (Extension WTG 01)	16:44	22	10:06 (K05)	18:08	20:35	22:02	23:25			
8	09:59	12:40 (Extension WTG 01)	08:46		09:44 (K05)	07:16	06:32	04:54	03:35			
	15:18	21 13:01 (Extension WTG 01)	16:47	23	10:07 (K05)	18:11	20:38	22:05	23:27			
9	09:58	12:40 (Extension WTG 01)	08:43		09:44 (K05)	07:13	06:28	04:50	03:34			
	15:20	22 13:02 (Extension WTG 01)	16:50	23	10:07 (K05)	18:13	20:41	22:08	23:29			
10	09:56	12:40 (Extension WTG 01)	08:40		09:44 (K05)	07:10	06:25	04:47	03:33			
	15:22	23 13:03 (Extension WTG 01)	16:53	23	10:07 (K05)	18:16	20:43	22:11	23:31			
11	09:55	12:40 (Extension WTG 01)	08:37		09:45 (K05)	07:06	06:22	04:44	03:31			
	15:25	24 13:04 (Extension WTG 01)	16:56	23	10:08 (K05)	18:19	20:46	22:14	23:32			
12	09:53	12:40 (Extension WTG 01)	08:34		09:45 (K05)	07:03	06:18	04:41	03:30			
	15:27	25 13:05 (Extension WTG 01)	16:59	22	10:07 (K05)	18:22	20:49	22:17	23:34			
13	09:51	12:40 (Extension WTG 01)	08:31		09:46 (K05)	07:00	06:15	04:38	03:29			
	15:30	26 13:06 (Extension WTG 01)	17:03	20	10:06 (K05)	18:25	20:52	22:20	23:35			
14	09:49	12:40 (Extension WTG 01)	08:28		09:46 (K05)	06:56	06:12	04:35	03:28			
	15:32	27 13:07 (Extension WTG 01)	17:06	19	10:05 (K05)	18:28	20:55	22:23	23:36			
15	09:47	12:40 (Extension WTG 01)	08:24		09:48 (K05)	06:53	06:08	04:32	03:27			
	15:35	27 13:07 (Extension WTG 01)	17:09	16	10:04 (K05)	18:30	20:58	22:26	23:38			
16	09:45	12:39 (Extension WTG 01)	08:21		09:49 (K05)	06:50	06:05	04:30	03:27			
	15:38	28 13:07 (Extension WTG 01)	17:12	13	10:02 (K05)	18:33	21:01	22:29	23:39			
17	09:43	12:40 (Extension WTG 01)	08:18		09:52 (K05)	06:46	06:02	04:27	03:26			
	15:41	28 13:08 (Extension WTG 01)	17:15	7	09:59 (K05)	18:36	21:03	22:32	23:39			
18	09:41	12:40 (Extension WTG 01)	08:15			06:43	05:58	04:24	03:26			
	15:44	29 13:09 (Extension WTG 01)	17:18			18:39	21:06	22:35	23:40			
19	09:39	12:40 (Extension WTG 01)	08:12			06:40	05:55	04:21	03:25			
	15:46	30 13:10 (Extension WTG 01)	17:21			18:42	21:09	22:38	23:41			
20	09:37	12:40 (Extension WTG 01)	08:09			06:36	05:52	04:18	03:25			
	15:49	29 13:09 (Extension WTG 01)	17:24			18:44	21:12	22:40	23:41			
21	09:34	12:40 (Extension WTG 01)	08:06			06:33	05:48	04:15	03:25			
	15:52	30 13:10 (Extension WTG 01)	17:27			18:47	21:15	22:43	23:42			
22	09:32	12:41 (Extension WTG 01)	08:02			06:29	05:45	04:13	03:25			
	15:55	30 13:11 (Extension WTG 01)	17:30			18:50	21:18	22:46	23:42			
23	09:30	12:41 (Extension WTG 01)	07:59			06:26	05:42	04:10	03:26			
	15:58	29 13:10 (Extension WTG 01)	17:33			18:53	21:21	22:49	23:42			
24	09:27	12:42 (Extension WTG 01)	07:56			06:23	05:38	04:07	03:26			
	16:01	29 13:11 (Extension WTG 01)	17:36			18:56	21:24	22:52	23:42			
25	09:25	12:42 (Extension WTG 01)	07:53			06:19	05:35	04:05	03:26			
	16:04	29 13:11 (Extension WTG 01)	17:39			18:58	21:27	22:54	23:41			
26	09:22	12:42 (Extension WTG 01)	07:49			06:16	05:32	04:02	03:27			
	16:07	28 13:10 (Extension WTG 01)	17:42			19:01	21:30	22:57	23:41			
27	09:20	12:43 (Extension WTG 01)	07:46			06:12	05:29	04:00	03:28			
	16:10	27 13:10 (Extension WTG 01)	17:44			19:04	21:33	23:00	23:41			
28	09:17	12:45 (Extension WTG 01)	07:43			06:09	05:25	03:57	03:29			
	16:13	26 13:11 (Extension WTG 01)	17:47			19:07	21:36	23:02	23:40			
29	09:14	12:45 (Extension WTG 01)				07:06	05:22	03:55	03:30			
	16:16	24 13:09 (Extension WTG 01)				20:10	21:38	23:05	23:39			
30	09:12	12:46 (Extension WTG 01)				07:02	05:19	03:53	03:31			
	16:19	23 13:09 (Extension WTG 01)				20:12	21:41	23:07	23:38			
31	09:09	12:47 (Extension WTG 01)				06:59		03:51				
	16:22	21 13:08 (Extension WTG 01)				20:15		23:10				
Potential sun hours	184		243			364	446	557	601			
Total, worst case	741		347									
Sun reduction	0.16		0.29									
Oper. time red.	0.97		0.97									
Wind dir. red.	0.69		0.64									
Total reduction	0.11		0.18									
Total, real	82		63									

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: W - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (105)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:24	09:14 (K05) 15:08
2	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:21	09:14 (K05) 15:06
3	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:14 (K05) 15:04
4	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:15	09:15 (K05) 15:03
5	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:12	09:14 (K05) 15:01
6	03:40 23:31	05:01 22:12	06:29 20:30	07:51 18:48	08:20 16:09	09:16 (K05) 15:00
7	03:42 23:29	05:04 22:09	06:32 20:26	07:53 18:45	08:23 16:07	09:16 (K05) 14:59
8	03:44 23:27	05:07 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:17 (K05) 14:57
9	03:46 23:26	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:19 (K05) 14:56
10	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:21 (K05) 14:55
11	03:51 23:22	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	12:19 (Extension WTG 01) 14:54
12	03:53 23:20	05:19 21:53	06:45 20:10	08:07 18:28	08:38 15:52	12:18 (Extension WTG 01) 14:54
13	03:55 23:17	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:50	12:17 (Extension WTG 01) 14:53
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	12:16 (Extension WTG 01) 14:52
15	04:00 23:13	05:28 21:43	06:54 19:59	08:16 18:18	08:47 15:44	12:16 (Extension WTG 01) 14:52
16	04:03 23:11	05:30 21:40	06:56 19:56	08:19 18:15	08:50 15:42	12:15 (Extension WTG 01) 14:52
17	04:05 23:08	05:33 21:37	06:59 19:53	08:21 18:12	08:53 15:39	12:15 (Extension WTG 01) 14:51
18	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:36	12:16 (Extension WTG 01) 14:51
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	12:16 (Extension WTG 01) 14:51
20	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	12:16 (Extension WTG 01) 14:51
21	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	12:17 (Extension WTG 01) 14:52
22	04:19 22:56	05:47 21:20	07:12 19:36	08:36 17:56	09:08 15:27	12:16 (Extension WTG 01) 14:52
23	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	12:17 (Extension WTG 01) 14:53
24	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:49	09:14 15:22	12:17 (Extension WTG 01) 14:53
25	04:27 22:47	05:56 21:10	07:21 19:25	07:45 16:46	09:17 (K05) 15:20	12:18 (Extension WTG 01) 14:54
26	04:30 22:45	05:59 21:07	07:23 19:22	07:47 16:43	09:19 (K05) 15:18	12:18 (Extension WTG 01) 14:55
27	04:33 22:42	06:01 21:04	07:26 19:19	07:50 16:40	09:17 (K05) 15:16	12:19 (Extension WTG 01) 14:56
28	04:35 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:15 (K05) 15:13	12:19 (Extension WTG 01) 14:57
29	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:15 (K05) 15:12	12:20 (Extension WTG 01) 14:59
30	04:41 22:33	06:10 20:54	07:34 19:08	07:59 16:31	09:14 (K05) 15:10	12:21 (Extension WTG 01) 15:00
31	04:44 22:30	06:13 20:50	07:37 19:05	08:02 16:28	09:14 (K05) 15:09	12:21 (Extension WTG 01) 15:01
Potential sun hours	591	501	391	308	208	154
Total, worst case				124	773	220
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.63	0.68	0.69
Total reduction				0.16	0.10	0.08
Total, real				20	76	17

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: X - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (111)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:07 15:03	09:06 16:25	10:56 (K05) 11:13 (K05)	07:40 17:50	06:55 20:18	05:16 21:44
2	10:06 15:05	09:03 16:29	10:58 (K05) 11:13 (K05)	07:36 17:53	06:52 20:21	05:12 21:47
3	10:05 15:07	09:00 16:32	11:00 (K05) 11:10 (K05)	07:33 17:56	06:49 20:24	05:09 21:50
4	10:04 15:09	08:57 16:35		07:30 17:59	06:45 20:26	05:06 21:53
5	10:03 15:11	08:55 16:38		07:26 18:02	06:42 20:29	05:03 21:56
6	10:02 15:13	08:52 16:41		07:23 18:05	06:38 20:32	05:00 21:59
7	10:01 15:15	08:49 16:44		07:20 18:08	06:35 20:35	04:57 22:02
8	09:59 15:17	08:46 16:47		07:16 18:11	06:32 20:38	04:53 22:05
9	09:58 15:20	08:43 16:50		07:13 18:13	06:28 20:41	04:50 22:08
10	09:56 15:22	08:40 16:53		07:10 18:16	06:25 20:43	04:47 22:11
11	09:55 15:25	08:37 16:56		07:06 18:19	06:22 20:46	04:44 22:14
12	09:53 15:27	08:34 16:59	10:57 (K05) 13:57 (Extension WTG 01)	07:03 18:22	06:18 20:49	04:41 22:17
13	09:51 15:30	08:31 17:02	10:55 (K05) 13:58 (Extension WTG 01)	07:00 18:25	06:15 20:52	04:38 22:20
14	09:49 15:32	08:28 17:06	10:54 (K05) 13:59 (Extension WTG 01)	06:56 18:28	06:12 20:55	04:35 22:23
15	09:47 15:35	08:24 17:09	10:53 (K05) 14:00 (Extension WTG 01)	06:53 18:30	06:08 20:58	04:32 22:26
16	09:45 15:38	08:21 17:12	10:52 (K05) 14:00 (Extension WTG 01)	06:50 18:33	06:05 21:01	04:29 22:29
17	09:43 15:41	08:18 17:15	10:52 (K05) 14:01 (Extension WTG 01)	06:46 18:36	06:01 21:03	04:27 22:32
18	09:41 15:43	08:15 17:18	10:52 (K05) 14:01 (Extension WTG 01)	06:43 18:39	05:58 21:06	04:24 22:35
19	09:39 15:46	08:12 17:21	10:52 (K05) 14:02 (Extension WTG 01)	06:39 18:42	05:55 21:09	04:21 22:38
20	09:37 15:49	08:09 17:24	10:51 (K05) 14:02 (Extension WTG 01)	06:36 18:44	05:52 21:12	04:18 22:40
21	09:34 15:52	08:06 17:27	10:51 (K05) 14:02 (Extension WTG 01)	06:33 18:47	05:48 21:15	04:15 22:43
22	09:32 15:55	08:02 17:30	10:51 (K05) 14:03 (Extension WTG 01)	06:29 18:50	05:45 21:18	04:13 22:46
23	09:30 15:58	07:59 17:33	10:51 (K05) 14:02 (Extension WTG 01)	06:26 18:53	05:42 21:21	04:10 22:49
24	09:27 16:01	07:56 17:36	10:51 (K05) 14:03 (Extension WTG 01)	06:23 18:56	05:38 21:24	04:07 22:52
25	09:25 16:04	07:53 17:39	10:52 (K05) 14:03 (Extension WTG 01)	06:19 18:58	05:35 21:27	04:05 22:54
26	09:22 16:07	07:49 17:41	10:51 (K05) 14:02 (Extension WTG 01)	06:16 19:01	05:32 21:30	04:02 22:57
27	09:20 16:10	07:44 17:44	10:52 (K05) 14:02 (Extension WTG 01)	06:12 19:04	05:28 21:33	04:00 23:00
28	09:17 16:13	07:43 17:47	10:53 (K05) 14:02 (Extension WTG 01)	06:09 19:07	05:25 21:36	03:57 23:02
29	09:14 16:16		10:53 (K05) 14:00 (Extension WTG 01)	07:06 20:10	05:22 21:38	03:55 23:05
30	09:12 16:19		10:54 (K05) 13:59 (Extension WTG 01)	07:02 20:12	05:19 21:41	03:53 23:07
31	09:09 16:22		10:55 (K05) 13:55 (Extension WTG 01)	06:59 20:15	03:50 23:10	
Potential sun hours	184	243	364	446	557	601
Total, worst case	910	42				
Sun reduction	0.16	0.29				
Oper. time red.	0.97	0.97				
Wind dir. red.	0.67	0.67				
Total reduction	0.11	0.19				
Total, real	97	8				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: X - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (111)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December	
1	03:32	04:47	06:15	07:37	08:05	09:33	13:20 (Extension WTG 01)
	23:37	22:27	20:47	19:05	16:24	15:08	19 13:39 (Extension WTG 01)
2	03:34	04:50	06:18	07:40	08:08	09:35	13:21 (Extension WTG 01)
	23:36	22:24	20:43	19:02	16:21	15:06	18 13:39 (Extension WTG 01)
3	03:35	04:53	06:21	07:42	08:11	09:38	13:21 (Extension WTG 01)
	23:35	22:21	20:40	18:58	16:18	15:04	17 13:38 (Extension WTG 01)
4	03:37	04:56	06:24	07:45	08:14	09:40	13:22 (Extension WTG 01)
	23:34	22:18	20:37	18:55	16:15	15:03	16 13:38 (Extension WTG 01)
5	03:39	04:59	06:26	07:48	08:17	09:42	13:24 (Extension WTG 01)
	23:32	22:15	20:33	18:52	16:12	15:01	14 13:38 (Extension WTG 01)
6	03:40	05:01	06:29	07:51	08:20	09:45	13:24 (Extension WTG 01)
	23:31	22:12	20:30	18:48	16:09	15:00	13 13:37 (Extension WTG 01)
7	03:42	05:04	06:32	07:53	08:23	09:47	13:26 (Extension WTG 01)
	23:29	22:09	20:26	18:45	16:07	14:59	10 13:36 (Extension WTG 01)
8	03:44	05:07	06:35	07:56	08:26		10:30 (K05) 09:49
	23:27	22:06	20:23	18:42	16:04	11	10:41 (K05) 14:57
9	03:46	05:10	06:37	07:59	08:29		10:28 (K05) 09:51
	23:26	22:02	20:20	18:38	16:01	14	10:42 (K05) 14:56
10	03:49	05:13	06:40	08:02	08:32		10:27 (K05) 09:53
	23:24	21:59	20:16	18:35	15:58	17	10:44 (K05) 14:55
11	03:51	05:16	06:43	08:04	08:35		10:26 (K05) 09:55
	23:22	21:56	20:13	18:32	15:55	25	13:27 (Extension WTG 01) 14:54
12	03:53	05:19	06:45	08:07	08:38		10:26 (K05) 09:56
	23:20	21:53	20:09	18:28	15:52	33	13:31 (Extension WTG 01) 14:54
13	03:55	05:22	06:48	08:10	08:41		10:25 (K05) 09:58
	23:17	21:50	20:06	18:25	15:50	37	13:32 (Extension WTG 01) 14:53
14	03:58	05:25	06:51	08:13	08:44		10:25 (K05) 09:59
	23:15	21:46	20:03	18:22	15:47	40	13:33 (Extension WTG 01) 14:52
15	04:00	05:27	06:53	08:16	08:47		10:25 (K05) 10:01
	23:13	21:43	19:59	18:18	15:44	43	13:35 (Extension WTG 01) 14:52
16	04:03	05:30	06:56	08:19	08:50		10:24 (K05) 10:02
	23:11	21:40	19:56	18:15	15:41	45	13:35 (Extension WTG 01) 14:52
17	04:05	05:33	06:59	08:21	08:53		10:25 (K05) 10:03
	23:08	21:37	19:52	18:12	15:39	45	13:36 (Extension WTG 01) 14:51
18	04:08	05:36	07:02	08:24	08:56		10:25 (K05) 10:05
	23:06	21:33	19:49	18:09	15:36	47	13:37 (Extension WTG 01) 14:51
19	04:11	05:39	07:04	08:27	08:59		10:26 (K05) 10:05
	23:03	21:30	19:46	18:05	15:34	46	13:37 (Extension WTG 01) 14:51
20	04:13	05:42	07:07	08:30	09:02		10:26 (K05) 10:06
	23:01	21:27	19:42	18:02	15:31	47	13:38 (Extension WTG 01) 14:51
21	04:16	05:45	07:10	08:33	09:05		10:27 (K05) 10:07
	22:58	21:23	19:39	17:59	15:29	46	13:38 (Extension WTG 01) 14:52
22	04:19	05:47	07:12	08:36	09:08		10:27 (K05) 10:08
	22:56	21:20	19:36	17:56	15:27	46	13:38 (Extension WTG 01) 14:52
23	04:21	05:50	07:15	08:39	09:11		10:28 (K05) 10:08
	22:53	21:17	19:32	17:53	15:24	44	13:38 (Extension WTG 01) 14:53
24	04:24	05:53	07:18	08:42	09:14		10:29 (K05) 10:08
	22:50	21:14	19:29	17:49	15:22	43	13:39 (Extension WTG 01) 14:53
25	04:27	05:56	07:20	07:44	09:17		10:30 (K05) 10:09
	22:47	21:10	19:25	16:46	15:20	42	13:39 (Extension WTG 01) 14:54
26	04:30	05:59	07:23	07:47	09:19		10:31 (K05) 10:09
	22:45	21:07	19:22	16:43	15:18	40	13:39 (Extension WTG 01) 14:55
27	04:33	06:01	07:26	07:50	09:22		10:32 (K05) 10:09
	22:42	21:04	19:19	16:40	15:15	37	13:39 (Extension WTG 01) 14:56
28	04:35	06:04	07:29	07:53	09:25		10:34 (K05) 10:09
	22:39	21:00	19:15	16:37	15:13	34	13:39 (Extension WTG 01) 14:57
29	04:38	06:07	07:31	07:56	09:27		10:35 (K05) 10:08
	22:36	20:57	19:12	16:34	15:11	30	13:38 (Extension WTG 01) 14:58
30	04:41	06:10	07:34	07:59	09:30		10:38 (K05) 10:08
	22:33	20:53	19:08	16:31	15:10	26	13:39 (Extension WTG 01) 15:00
31	04:44	06:13		08:02			10:08
	22:30	20:50		16:27			15:01
Potential sun hours	591	501	391	308	208		154
Total, worst case					838		119
Sun reduction					0.15		0.11
Oper. time red.					0.97		0.97
Wind dir. red.					0.67		0.67
Total reduction					0.10		0.07
Total, real					81		9

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: Y - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (109)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31) and summary rows (Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, Total, real).

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: Z - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (108)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31) and summary rows (Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, Total, real).

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AA - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (90)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:39 17:50	06:55 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:15 20:46	07:37 19:05	08:05 16:25	09:32 15:08
2	10:05 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:34 23:35	04:50 22:24	06:18 20:43	07:39 19:02	08:08 16:21	09:35 15:06
3	10:04 15:07	09:00 16:32	07:33 17:56	06:49 20:23	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:05
4	10:04 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:37 23:33	04:56 22:17	06:24 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:14	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:00
7	10:00 15:16	08:48 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:28	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:45 16:47	07:16 18:10	06:32 20:38	04:54 22:05	03:36 23:26	03:45 23:27	05:07 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:51 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:39 16:53	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:36 16:56	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:31	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:52 15:28	08:33 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	09:51 15:30	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:22	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:35	08:24 17:09	06:53 18:30	06:08 20:57	04:33 22:25	03:28 23:37	04:01 23:12	05:28 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:12	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:38	04:06 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:38 15:47	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:05 14:52
20	09:36 15:49	08:08 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:26 23:40	04:14 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:06 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:45	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:35	08:35 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:38 17:53	09:10 15:25	10:07 14:53
24	09:27 16:01	07:56 17:36	06:22 18:56	05:38 21:23	04:08 22:51	03:27 23:41	04:24 22:49	05:53 21:13	07:18 19:29	08:41 17:49	09:13 15:22	10:08 14:54
25	09:24 16:04	07:52 17:39	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:10	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:18	07:50 16:40	09:22 15:16	10:08 14:57
28	09:16 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:39	04:36 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:16		07:06 20:09	05:22 21:38	03:55 23:04	03:31 23:38	04:39 22:35	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:32 23:38	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	10:07 15:00
31	09:08 16:23		06:59 20:15	03:51 23:09			04:44 22:30	06:13 20:50		08:02 16:28		10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AB - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (107)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for time slots (10:07 to 16:22). Includes summary rows for Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, and Total, real.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AC - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (104)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March		April		May		June	
1	10:07	12:13 (K03)	09:06	14:32 (K05)	07:39	06:55	05:15	03:48				
	15:03	20 12:33 (K03)	16:25	29 15:01 (K05)	17:50	20:18	21:44	23:12				
2	10:06	12:14 (K03)	09:03	14:32 (K05)	07:36	06:52	05:12	03:46				
	15:05	20 12:34 (K03)	16:28	28 15:00 (K05)	17:53	20:21	21:47	23:15				
3	10:05	12:13 (K03)	09:00	14:32 (K05)	07:33	06:49	05:09	03:44				
	15:07	21 12:34 (K03)	16:32	29 15:01 (K05)	17:56	20:24	21:50	23:17				
4	10:04	12:14 (K03)	08:57	14:33 (K05)	07:30	06:45	05:06	03:42				
	15:09	21 12:35 (K03)	16:35	29 15:02 (K05)	17:59	20:26	21:53	23:19				
5	10:03	12:14 (K03)	08:54	14:33 (K05)	07:26	06:42	05:03	03:40				
	15:11	21 12:35 (K03)	16:38	28 15:01 (K05)	18:02	20:29	21:56	23:21				
6	10:02	12:15 (K03)	08:52	14:33 (K05)	07:23	06:38	05:00	03:39				
	15:13	22 12:37 (K03)	16:41	28 15:01 (K05)	18:05	20:32	21:59	23:23				
7	10:01	12:15 (K03)	08:49	14:33 (K05)	07:20	06:35	04:57	03:37				
	15:15	22 12:37 (K03)	16:44	27 15:00 (K05)	18:08	20:35	22:02	23:25				
8	09:59	12:15 (K03)	08:46	14:35 (K05)	07:16	06:32	04:53	03:35				
	15:17	23 12:38 (K03)	16:47	25 15:00 (K05)	18:10	20:38	22:05	23:27				
9	09:58	12:15 (K03)	08:43	14:35 (K05)	07:13	06:28	04:50	03:34				
	15:20	23 12:38 (K03)	16:50	24 14:59 (K05)	18:13	20:40	22:08	23:29				
10	09:56	12:15 (K03)	08:40	14:36 (K05)	07:10	06:25	04:47	03:32				
	15:22	24 12:39 (K03)	16:53	23 14:59 (K05)	18:16	20:43	22:11	23:31				
11	09:55	12:15 (K03)	08:37	14:37 (K05)	07:06	06:22	04:44	03:31				
	15:25	24 12:39 (K03)	16:56	20 14:57 (K05)	18:19	20:46	22:14	23:32				
12	09:53	12:16 (K03)	08:34	14:40 (K05)	07:03	06:18	04:41	03:30				
	15:27	24 12:40 (K03)	16:59	15 14:55 (K05)	18:22	20:49	22:17	23:34				
13	09:51	12:16 (K03)	08:31	14:43 (K05)	07:00	06:15	04:38	03:29				
	15:30	24 12:40 (K03)	17:02	10 14:53 (K05)	18:25	20:52	22:20	23:35				
14	09:49	12:17 (K03)	08:27		06:56	06:11	04:35	03:28				
	15:32	24 12:41 (K03)	17:05		18:27	20:55	22:23	23:36				
15	09:47	12:16 (K03)	08:24		06:53	06:08	04:32	03:27				
	15:35	24 12:40 (K03)	17:08		18:30	20:58	22:26	23:37				
16	09:45	12:17 (K03)	08:21		06:49	06:05	04:29	03:26				
	15:38	24 12:41 (K03)	17:12		18:33	21:00	22:29	23:38				
17	09:43	12:17 (K03)	08:18		06:46	06:01	04:26	03:26				
	15:41	24 12:41 (K03)	17:15		18:36	21:03	22:32	23:39				
18	09:41	12:18 (K03)	08:15		06:43	05:58	04:24	03:25				
	15:43	24 12:42 (K03)	17:18		18:39	21:06	22:35	23:40				
19	09:39	12:19 (K03)	08:12		06:39	05:55	04:21	03:25				
	15:46	23 12:42 (K03)	17:21		18:42	21:09	22:37	23:41				
20	09:37	12:19 (K03)	08:09		06:36	05:51	04:18	03:25				
	15:49	22 12:41 (K03)	17:24		18:44	21:12	22:40	23:41				
21	09:34	12:20 (K03)	08:05		06:33	05:48	04:15	03:25				
	15:52	21 12:41 (K03)	17:27		18:47	21:15	22:43	23:41				
22	09:32	12:22 (K03)	08:02		06:29	05:45	04:13	03:25				
	15:55	29 14:49 (K05)	17:30		18:50	21:18	22:46	23:42				
23	09:29	12:22 (K03)	07:59		06:26	05:42	04:10	03:25				
	15:58	32 14:51 (K05)	17:33		18:53	21:21	22:49	23:42				
24	09:27	12:24 (K03)	07:56		06:22	05:38	04:07	03:26				
	16:01	32 14:53 (K05)	17:35		18:56	21:24	22:51	23:42				
25	09:25	12:26 (K03)	07:53		06:19	05:35	04:05	03:26				
	16:04	32 14:55 (K05)	17:38		18:58	21:27	22:54	23:41				
26	09:22	12:28 (K03)	07:49		06:16	05:32	04:02	03:27				
	16:07	30 14:56 (K05)	17:41		19:01	21:30	22:57	23:41				
27	09:19	14:34 (K05)	07:46		06:12	05:28	04:00	03:28				
	16:10	23 14:57 (K05)	17:44		19:04	21:32	23:00	23:40				
28	09:17	14:32 (K05)	07:43		06:09	05:25	03:57	03:29				
	16:13	26 14:58 (K05)	17:47		19:07	21:35	23:02	23:40				
29	09:14	14:32 (K05)			07:05	05:22	03:55	03:30				
	16:16	27 14:59 (K05)			20:10	21:38	23:05	23:39				
30	09:11	14:33 (K05)			07:02	05:19	03:53	03:31				
	16:19	27 15:00 (K05)			20:12	21:41	23:07	23:38				
31	09:09	14:32 (K05)			06:59		03:50					
	16:22	28 15:00 (K05)			20:15		23:10					
Potential sun hours	184		243		364	446	557	601				
Total, worst case	761		315									
Sun reduction	0.16		0.29									
Oper. time red.	0.97		0.97									
Wind dir. red.	0.68		0.67									
Total reduction	0.11		0.19									
Total, real	83		61									

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AC - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (104)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32	04:47	06:15	07:37	08:05	14:06 (K05) 09:33 11:57 (K03)
	23:37	22:27	20:47	19:05	16:24 22	14:28 (K05) 15:08 25 12:22 (K03)
2	03:34	04:50	06:18	07:39	08:08	14:04 (K05) 09:35 11:58 (K03)
	23:36	22:24	20:43	19:02	16:21 25	14:29 (K05) 15:06 24 12:22 (K03)
3	03:35	04:53	06:21	07:42	08:11	14:04 (K05) 09:37 11:58 (K03)
	23:35	22:21	20:40	18:58	16:18 26	14:30 (K05) 15:04 23 12:21 (K03)
4	03:37	04:56	06:23	07:45	08:14	14:03 (K05) 09:40 11:59 (K03)
	23:34	22:18	20:37	18:55	16:15 27	14:30 (K05) 15:03 23 12:22 (K03)
5	03:39	04:58	06:26	07:48	08:17	14:03 (K05) 09:42 12:00 (K03)
	23:32	22:15	20:33	18:52	16:12 28	14:31 (K05) 15:01 23 12:23 (K03)
6	03:40	05:01	06:29	07:50	08:20	14:03 (K05) 09:44 12:00 (K03)
	23:31	22:12	20:30	18:48	16:09 29	14:32 (K05) 15:00 22 12:22 (K03)
7	03:42	05:04	06:32	07:53	08:23	14:02 (K05) 09:47 12:01 (K03)
	23:29	22:09	20:26	18:45	16:06 29	14:31 (K05) 14:59 22 12:23 (K03)
8	03:44	05:07	06:34	07:56	08:26	14:03 (K05) 09:49 12:01 (K03)
	23:27	22:05	20:23	18:41	16:04 29	14:32 (K05) 14:57 21 12:22 (K03)
9	03:46	05:10	06:37	07:59	08:29	14:02 (K05) 09:51 12:03 (K03)
	23:25	22:02	20:20	18:38	16:01 29	14:31 (K05) 14:56 20 12:23 (K03)
10	03:48	05:13	06:40	08:02	08:32	14:03 (K05) 09:53 12:03 (K03)
	23:24	21:59	20:16	18:35	15:58 28	14:31 (K05) 14:55 20 12:23 (K03)
11	03:51	05:16	06:43	08:04	08:35	14:04 (K05) 09:54 12:03 (K03)
	23:22	21:56	20:13	18:32	15:55 28	14:32 (K05) 14:54 20 12:23 (K03)
12	03:53	05:19	06:45	08:07	08:38	14:03 (K05) 09:56 12:04 (K03)
	23:19	21:53	20:09	18:28	15:52 28	14:31 (K05) 14:53 19 12:23 (K03)
13	03:55	05:22	06:48	08:10	08:41	14:04 (K05) 09:58 12:05 (K03)
	23:17	21:49	20:06	18:25	15:49 27	14:31 (K05) 14:53 19 12:24 (K03)
14	03:58	05:25	06:51	08:13	08:44	14:05 (K05) 09:59 12:06 (K03)
	23:15	21:46	20:03	18:22	15:47 25	14:30 (K05) 14:52 18 12:24 (K03)
15	04:00	05:27	06:53	08:16	08:47	14:06 (K05) 10:01 12:06 (K03)
	23:13	21:43	19:59	18:18	15:44 24	14:30 (K05) 14:52 18 12:24 (K03)
16	04:03	05:30	06:56	08:18	08:50	12:01 (K03) 10:02 12:07 (K03)
	23:11	21:40	19:56	18:15	15:41 30	14:29 (K05) 14:51 17 12:24 (K03)
17	04:05	05:33	06:59	08:21	08:53	11:59 (K03) 10:03 12:07 (K03)
	23:08	21:37	19:52	18:12	15:39 32	14:28 (K05) 14:51 17 12:24 (K03)
18	04:08	05:36	07:01	08:24	08:56	11:58 (K03) 10:04 12:08 (K03)
	23:06	21:33	19:49	18:09	15:36 32	14:27 (K05) 14:51 17 12:25 (K03)
19	04:10	05:39	07:04	08:27	08:59	11:57 (K03) 10:05 12:09 (K03)
	23:03	21:30	19:46	18:05	15:34 32	14:26 (K05) 14:51 17 12:26 (K03)
20	04:13	05:42	07:07	08:30	09:02	11:57 (K03) 10:06 12:10 (K03)
	23:01	21:27	19:42	18:02	15:31 29	14:24 (K05) 14:51 16 12:26 (K03)
21	04:16	05:44	07:10	08:33	09:05	11:55 (K03) 10:07 12:10 (K03)
	22:58	21:23	19:39	17:59	15:29 21	12:16 (K03) 14:52 16 12:26 (K03)
22	04:19	05:47	07:12	08:36	09:08	11:55 (K03) 10:08 12:10 (K03)
	22:55	21:20	19:35	17:56	15:26 22	12:17 (K03) 14:52 16 12:26 (K03)
23	04:21	05:50	07:15	08:39	09:11	11:55 (K03) 10:08 12:10 (K03)
	22:53	21:17	19:32	17:52	15:24 23	12:18 (K03) 14:53 17 12:27 (K03)
24	04:24	05:53	07:18	08:41	09:14	11:55 (K03) 10:08 12:11 (K03)
	22:50	21:13	19:29	17:49	15:22 24	12:19 (K03) 14:53 16 12:27 (K03)
25	04:27	05:56	07:20	07:44	09:16	11:56 (K03) 10:09 12:12 (K03)
	22:47	21:10	19:25	16:46	15:20 23	12:19 (K03) 14:54 16 12:28 (K03)
26	04:30	05:59	07:23	07:47	09:19	11:56 (K03) 10:09 12:12 (K03)
	22:44	21:07	19:22	16:43	15:17 24	12:20 (K03) 14:55 16 12:28 (K03)
27	04:33	06:01	07:26	07:50	09:22	11:56 (K03) 10:09 12:12 (K03)
	22:42	21:03	19:18	16:40	15:15 25	12:21 (K03) 14:56 17 12:29 (K03)
28	04:35	06:04	07:29	07:53	09:25	11:56 (K03) 10:09 12:13 (K03)
	22:39	21:00	19:15	16:37	15:13 24	12:20 (K03) 14:57 17 12:30 (K03)
29	04:38	06:07	07:31	07:56	09:27	11:56 (K03) 10:08 12:12 (K03)
	22:36	20:57	19:12	16:34	11 14:23 (K05) 15:11 25	12:21 (K03) 14:58 18 12:30 (K03)
30	04:41	06:10	07:34	07:59	14:09 (K05) 09:30	11:57 (K03) 10:08 12:13 (K03)
	22:33	20:53	19:08	16:30	16 14:25 (K05) 15:10 24	12:21 (K03) 15:00 19 12:32 (K03)
31	04:44	06:12	08:02	14:07 (K05)	10:07	12:13 (K03)
	22:30	20:50	16:27	20 14:27 (K05)	15:01 19	12:32 (K03)
Potential sun hours	591	501	391	308	208	154
Total, worst case				47	794	588
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.67	0.68	0.69
Total reduction				0.17	0.10	0.07
Total, real				8	78	44

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AD - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (103)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March	April	May	June
1	10:07	13:13 (K03)	09:06		07:39	06:55	05:15	03:48
	15:03	15	13:28 (K03)	16:25	17:50	20:18	21:44	23:12
2	10:06	13:13 (K03)	09:03		07:36	06:52	05:12	03:46
	15:05	16	13:29 (K03)	16:28	17:53	20:21	21:47	23:14
3	10:05	13:13 (K03)	09:00		07:33	06:49	05:09	03:44
	15:07	17	13:30 (K03)	16:32	17:56	20:24	21:50	23:17
4	10:04	13:13 (K03)	08:57		15:40 (K05)	07:30	06:45	05:06
	15:09	18	13:31 (K03)	16:35	6	15:46 (K05)	17:59	20:26
5	10:03	13:13 (K03)	08:54		15:37 (K05)	07:26	06:42	05:03
	15:11	19	13:32 (K03)	16:38	13	15:50 (K05)	18:02	20:29
6	10:02	13:12 (K03)	08:52		15:36 (K05)	07:23	06:38	05:00
	15:13	20	13:32 (K03)	16:41	17	15:53 (K05)	18:05	20:32
7	10:00	13:13 (K03)	08:49		15:34 (K05)	07:20	06:35	04:56
	15:15	21	13:34 (K03)	16:44	20	15:54 (K05)	18:08	20:35
8	09:59	13:13 (K03)	08:46		15:34 (K05)	07:16	06:32	04:53
	15:17	21	13:34 (K03)	16:47	21	15:55 (K05)	18:10	20:38
9	09:58	13:13 (K03)	08:43		15:33 (K05)	07:13	06:28	04:50
	15:20	22	13:35 (K03)	16:50	22	15:55 (K05)	18:13	20:40
10	09:56	13:13 (K03)	08:40		15:33 (K05)	07:10	06:25	04:47
	15:22	23	13:36 (K03)	16:53	24	15:57 (K05)	18:16	20:43
11	09:54	13:13 (K03)	08:37		15:32 (K05)	07:06	06:21	04:44
	15:25	23	13:36 (K03)	16:56	24	15:56 (K05)	18:19	20:46
12	09:53	13:13 (K03)	08:34		15:32 (K05)	07:03	06:18	04:41
	15:27	24	13:37 (K03)	16:59	25	15:57 (K05)	18:22	20:49
13	09:51	13:14 (K03)	08:31		15:31 (K05)	07:00	06:15	04:38
	15:30	24	13:38 (K03)	17:02	26	15:57 (K05)	18:25	20:52
14	09:49	13:14 (K03)	08:27		15:32 (K05)	06:56	06:11	04:35
	15:32	25	13:39 (K03)	17:05	25	15:57 (K05)	18:27	20:55
15	09:47	13:13 (K03)	08:24		15:33 (K05)	06:53	06:08	04:32
	15:35	25	13:38 (K03)	17:08	25	15:58 (K05)	18:30	20:58
16	09:45	13:14 (K03)	08:21		15:32 (K05)	06:49	06:05	04:29
	15:38	25	13:39 (K03)	17:11	25	15:57 (K05)	18:33	21:00
17	09:43	13:14 (K03)	08:18		15:33 (K05)	06:46	06:01	04:26
	15:41	26	13:40 (K03)	17:15	23	15:56 (K05)	18:36	21:03
18	09:41	13:15 (K03)	08:15		15:34 (K05)	06:43	05:58	04:24
	15:43	25	13:40 (K03)	17:18	21	15:55 (K05)	18:39	21:06
19	09:39	13:15 (K03)	08:12		15:35 (K05)	06:39	05:55	04:21
	15:46	25	13:40 (K03)	17:21	19	15:54 (K05)	18:42	21:09
20	09:37	13:15 (K03)	08:09		15:36 (K05)	06:36	05:51	04:18
	15:49	25	13:40 (K03)	17:24	16	15:52 (K05)	18:44	21:12
21	09:34	13:16 (K03)	08:05		15:39 (K05)	06:33	05:48	04:15
	15:52	24	13:40 (K03)	17:27	11	15:50 (K05)	18:47	21:15
22	09:32	13:17 (K03)	08:02		06:29	05:45	04:13	03:25
	15:55	24	13:41 (K03)	17:30		18:50	21:18	22:46
23	09:29	13:17 (K03)	07:59		06:26	05:41	04:10	03:25
	15:58	23	13:40 (K03)	17:32		18:53	21:21	22:49
24	09:27	13:18 (K03)	07:56		06:22	05:38	04:07	03:26
	16:01	22	13:40 (K03)	17:35		18:56	21:24	22:51
25	09:24	13:20 (K03)	07:52		06:19	05:35	04:05	03:26
	16:04	20	13:40 (K03)	17:38		18:58	21:27	22:54
26	09:22	13:20 (K03)	07:49		06:16	05:32	04:02	03:27
	16:07	19	13:39 (K03)	17:41		19:01	21:29	22:57
27	09:19	13:22 (K03)	07:46		06:12	05:28	04:00	03:28
	16:10	16	13:38 (K03)	17:44		19:04	21:32	23:00
28	09:17	13:24 (K03)	07:43		06:09	05:25	03:57	03:29
	16:13	12	13:36 (K03)	17:47		19:07	21:35	23:02
29	09:14	13:27 (K03)			07:05	05:22	03:55	03:30
	16:16	7	13:34 (K03)		20:09	21:38	23:05	23:39
30	09:11				07:02	05:19	03:53	03:31
	16:19				20:12	21:41	23:07	23:38
31	09:09				06:59		03:50	
	16:22				20:15		23:10	
Potential sun hours	184		243		364	446	557	601
Total, worst case		606		363				
Sun reduction		0.16		0.29				
Oper. time red.		0.97		0.97				
Wind dir. red.		0.68		0.64				
Total reduction		0.11		0.18				
Total, real		66		66				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AD - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (103)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32	04:47	06:15	07:37	08:05	15:02 (K05) 09:32 12:55 (K03)
	23:37	22:27	20:47	19:05	16:24 24 15:26 (K05) 15:08 24 13:19 (K03)	
2	03:34	04:50	06:18	07:39	08:08	15:02 (K05) 09:35 12:56 (K03)
	23:36	22:24	20:43	19:02	16:21 23 15:25 (K05) 15:06 23 13:19 (K03)	
3	03:35	04:53	06:21	07:42	08:11	15:03 (K05) 09:37 12:56 (K03)
	23:35	22:21	20:40	18:58	16:18 21 15:24 (K05) 15:04 22 13:18 (K03)	
4	03:37	04:56	06:23	07:45	08:14	15:04 (K05) 09:40 12:57 (K03)
	23:34	22:18	20:36	18:55	16:15 19 15:23 (K05) 15:03 22 13:19 (K03)	
5	03:39	04:58	06:26	07:48	08:17	15:06 (K05) 09:42 12:58 (K03)
	23:32	22:15	20:33	18:51	16:12 16 15:22 (K05) 15:01 21 13:19 (K03)	
6	03:40	05:01	06:29	07:50	08:20	15:07 (K05) 09:44 12:59 (K03)
	23:31	22:12	20:30	18:48	16:09 12 15:19 (K05) 15:00 19 13:18 (K03)	
7	03:42	05:04	06:32	07:53	08:23	15:11 (K05) 09:47 13:00 (K03)
	23:29	22:08	20:26	18:45	16:06 5 15:16 (K05) 14:58 19 13:19 (K03)	
8	03:44	05:07	06:34	07:56	08:26	15:13 (K05) 09:49 13:00 (K03)
	23:27	22:05	20:23	18:41	16:03	14:57 18 13:18 (K03)
9	03:46	05:10	06:37	07:59	08:29	15:15 (K05) 09:51 13:02 (K03)
	23:25	22:02	20:20	18:38	16:01	14:56 17 13:19 (K03)
10	03:48	05:13	06:40	08:01	08:32	15:17 (K05) 09:53 13:02 (K03)
	23:23	21:59	20:16	18:35	15:58	14:55 17 13:19 (K03)
11	03:51	05:16	06:43	08:04	08:35	15:19 (K05) 09:54 13:03 (K03)
	23:21	21:56	20:13	18:32	15:55	14:54 16 13:19 (K03)
12	03:53	05:19	06:45	08:07	08:38	15:21 (K05) 09:56 13:04 (K03)
	23:19	21:53	20:09	18:28	15:52	14:53 14 13:18 (K03)
13	03:55	05:22	06:48	08:10	08:41	12:59 (K03) 09:58 13:05 (K03)
	23:17	21:49	20:06	18:25	15:49 7 13:06 (K03) 14:53 14 13:19 (K03)	
14	03:58	05:24	06:51	08:13	08:44	12:56 (K03) 09:59 13:05 (K03)
	23:15	21:46	20:03	18:22	15:47 13 13:09 (K03) 14:52 13 13:18 (K03)	
15	04:00	05:27	06:53	08:16	08:47	12:55 (K03) 10:01 13:07 (K03)
	23:13	21:43	19:59	18:18	15:44 16 13:11 (K03) 14:52 11 13:18 (K03)	
16	04:03	05:30	06:56	08:18	08:50	12:53 (K03) 10:02 13:08 (K03)
	23:10	21:40	19:56	18:15	15:41 19 13:12 (K03) 14:51 10 13:18 (K03)	
17	04:05	05:33	06:59	08:21	08:53	12:53 (K03) 10:03 13:08 (K03)
	23:08	21:36	19:52	18:12	15:39 20 13:13 (K03) 14:51 10 13:18 (K03)	
18	04:08	05:36	07:01	08:24	08:56	12:52 (K03) 10:04 13:09 (K03)
	23:06	21:33	19:49	18:09	15:36 22 13:14 (K03) 14:51 9 13:18 (K03)	
19	04:10	05:39	07:04	08:27	08:59	12:52 (K03) 10:05 13:10 (K03)
	23:03	21:30	19:46	18:05	15:34 23 13:15 (K03) 14:51 8 13:18 (K03)	
20	04:13	05:42	07:07	08:30	09:02	12:52 (K03) 10:06 13:11 (K03)
	23:01	21:27	19:42	18:02	5 16:18 (K05) 15:31 24 13:16 (K03) 14:51 8 13:19 (K03)	
21	04:16	05:44	07:10	08:33	09:05	12:51 (K03) 10:07 13:11 (K03)
	22:58	21:23	19:39	17:59	13 16:21 (K05) 15:29 25 13:16 (K03) 14:52 7 13:18 (K03)	
22	04:19	05:47	07:12	08:36	09:08	12:51 (K03) 10:07 13:12 (K03)
	22:55	21:20	19:35	17:56	17 16:24 (K05) 15:26 25 13:16 (K03) 14:52 7 13:19 (K03)	
23	04:21	05:50	07:15	08:38	09:11	12:52 (K03) 10:08 13:12 (K03)
	22:53	21:17	19:32	17:52	20 16:25 (K05) 15:24 25 13:17 (K03) 14:53 8 13:20 (K03)	
24	04:24	05:53	07:18	08:41	09:14	12:52 (K03) 10:08 13:13 (K03)
	22:50	21:13	19:29	17:49	21 16:25 (K05) 15:22 25 13:17 (K03) 14:53 8 13:21 (K03)	
25	04:27	05:56	07:20	07:44	09:16	12:53 (K03) 10:09 13:13 (K03)
	22:47	21:10	19:25	16:46	24 15:26 (K05) 15:20 25 13:18 (K03) 14:54 9 13:22 (K03)	
26	04:30	05:59	07:23	07:47	09:19	12:53 (K03) 10:09 13:13 (K03)
	22:44	21:07	19:22	16:43	25 15:27 (K05) 15:17 25 13:18 (K03) 14:55 9 13:22 (K03)	
27	04:32	06:01	07:26	07:50	09:22	12:53 (K03) 10:09 13:13 (K03)
	22:41	21:03	19:18	16:40	25 15:27 (K05) 15:15 24 13:17 (K03) 14:56 10 13:23 (K03)	
28	04:35	06:04	07:28	07:53	09:25	12:53 (K03) 10:08 13:13 (K03)
	22:39	21:00	19:15	16:37	26 15:27 (K05) 15:13 25 13:18 (K03) 14:57 11 13:24 (K03)	
29	04:38	06:07	07:31	07:56	09:27	12:54 (K03) 10:08 13:13 (K03)
	22:36	20:57	19:12	16:34	25 15:27 (K05) 15:11 24 13:18 (K03) 14:58 12 13:25 (K03)	
30	04:41	06:10	07:34	07:59	09:30	12:55 (K03) 10:08 13:13 (K03)
	22:33	20:53	19:08	16:30	26 15:27 (K05) 15:09 23 13:18 (K03) 15:00 12 13:25 (K03)	
31	04:44	06:12	07:37	08:02	09:33	12:56 (K03) 10:07 13:13 (K03)
	22:30	20:50	19:05	16:27	25 15:26 (K05) 15:07 14 13:27 (K03)	
Potential sun hours	591	501	391	308	208	154
Total, worst case				252	510	422
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.64	0.67	0.68
Total reduction				0.16	0.10	0.07
Total, real				41	50	31

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AE - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (89)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for each day of the month, showing sun rise/set times, shadow reduction, and operational time. Includes summary rows for 'Potential sun hours' and 'Total, real'.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AF - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (101)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March		April	May	June
1	10:06	11:58 (K01)	09:06	12:14 (K01)	07:39		06:55	05:15	03:48
	15:03	17 12:15 (K01)	16:25	32 14:07 (K02)	17:50		20:18	21:44	23:12
2	10:06	11:58 (K01)	09:03	13:41 (K02)	07:36		06:52	05:12	03:46
	15:05	18 12:16 (K01)	16:28	25 14:06 (K02)	17:53		20:21	21:47	23:14
3	10:05	11:58 (K01)	09:00	13:43 (K02)	07:33		06:48	05:09	03:44
	15:07	19 12:17 (K01)	16:32	22 14:05 (K02)	17:56		20:23	21:50	23:17
4	10:04	11:58 (K01)	08:57	13:44 (K02)	07:29		06:45	05:06	03:42
	15:09	20 12:18 (K01)	16:35	19 14:03 (K02)	17:59		20:26	21:53	23:19
5	10:03	11:58 (K01)	08:54	13:46 (K02)	07:26		06:42	05:03	03:40
	15:11	21 12:19 (K01)	16:38	16 14:02 (K02)	18:02		20:29	21:56	23:21
6	10:02	11:58 (K01)	08:51	13:50 (K02)	07:23		06:38	05:00	03:39
	15:13	21 12:19 (K01)	16:41	12 15:46 (K03)	18:05		20:32	21:59	23:23
7	10:00	11:57 (K01)	08:49	15:38 (K03)	07:20		06:35	04:56	03:37
	15:15	23 12:20 (K01)	16:44	13 15:51 (K03)	18:07		20:35	22:02	23:25
8	09:59	11:58 (K01)	08:46	15:36 (K03)	07:16		06:32	04:53	03:35
	15:17	30 13:49 (K02)	16:47	18 15:54 (K03)	18:10		20:38	22:05	23:27
9	09:58	11:58 (K01)	08:43	15:34 (K03)	07:13		06:28	04:50	03:34
	15:20	34 13:52 (K02)	16:50	21 15:55 (K03)	18:13		20:40	22:08	23:29
10	09:56	11:58 (K01)	08:40	15:34 (K03)	07:10		06:25	04:47	03:32
	15:22	39 13:54 (K02)	16:53	23 15:57 (K03)	18:16	7 17:35 (K05)	20:43	22:11	23:30
11	09:54	11:58 (K01)	08:37	15:32 (K03)	07:06		06:21	04:44	03:31
	15:25	41 13:55 (K02)	16:56	25 15:57 (K03)	18:19	13 17:44 (K05)	20:46	22:14	23:32
12	09:53	11:58 (K01)	08:33	15:32 (K03)	07:03		06:18	04:41	03:30
	15:27	45 13:57 (K02)	16:59	27 15:59 (K03)	18:22	17 17:47 (K05)	20:49	22:17	23:33
13	09:51	11:58 (K01)	08:30	15:31 (K03)	06:59		06:15	04:38	03:29
	15:30	47 13:58 (K02)	17:02	28 15:59 (K03)	18:25	19 17:47 (K05)	20:52	22:20	23:35
14	09:49	11:58 (K01)	08:27	15:31 (K03)	06:56		06:11	04:35	03:28
	15:32	49 13:59 (K02)	17:05	29 16:00 (K03)	18:27	21 17:48 (K05)	20:55	22:23	23:36
15	09:47	11:58 (K01)	08:24	15:30 (K03)	06:53		06:08	04:32	03:27
	15:35	51 14:00 (K02)	17:08	30 16:00 (K03)	18:30	22 17:49 (K05)	20:57	22:26	23:37
16	09:45	11:58 (K01)	08:21	15:30 (K03)	06:49		06:05	04:29	03:27
	15:38	53 14:01 (K02)	17:11	30 16:00 (K03)	18:33	22 17:48 (K05)	21:00	22:29	23:38
17	09:43	11:59 (K01)	08:18	15:30 (K03)	06:46		06:01	04:26	03:26
	15:41	53 14:02 (K02)	17:14	31 16:01 (K03)	18:36	23 17:49 (K05)	21:03	22:31	23:39
18	09:41	11:59 (K01)	08:15	15:30 (K03)	06:43		05:58	04:24	03:26
	15:43	55 14:03 (K02)	17:18	30 16:00 (K03)	18:39	21 17:47 (K05)	21:06	22:34	23:40
19	09:39	11:59 (K01)	08:12	15:31 (K03)	06:39		05:55	04:21	03:25
	15:46	56 14:03 (K02)	17:21	29 16:00 (K03)	18:41	21 17:47 (K05)	21:09	22:37	23:40
20	09:36	11:59 (K01)	08:08	15:30 (K03)	06:36		05:51	04:18	03:25
	15:49	57 14:04 (K02)	17:24	29 15:59 (K03)	18:44	20 17:46 (K05)	21:12	22:40	23:41
21	09:34	12:00 (K01)	08:05	15:31 (K03)	06:33		05:48	04:15	03:25
	15:52	57 14:05 (K02)	17:27	28 15:59 (K03)	18:47	18 17:45 (K05)	21:15	22:43	23:41
22	09:32	12:00 (K01)	08:02	15:31 (K03)	06:29		05:45	04:13	03:25
	15:55	57 14:05 (K02)	17:29	27 15:58 (K03)	18:50	14 17:43 (K05)	21:18	22:46	23:41
23	09:29	12:01 (K01)	07:59	15:33 (K03)	06:26		05:41	04:10	03:25
	15:58	58 14:06 (K02)	17:32	24 15:57 (K03)	18:53	8 17:39 (K05)	21:21	22:49	23:41
24	09:27	12:02 (K01)	07:56	15:34 (K03)	06:22		05:38	04:07	03:26
	16:01	57 14:07 (K02)	17:35	21 15:55 (K03)	18:55		21:24	22:51	23:41
25	09:24	12:02 (K01)	07:52	15:36 (K03)	06:19		05:35	04:05	03:26
	16:04	57 14:07 (K02)	17:38	18 15:54 (K03)	18:58		21:26	22:54	23:41
26	09:22	12:03 (K01)	07:49	15:38 (K03)	06:16		05:32	04:02	03:27
	16:07	55 14:07 (K02)	17:41	13 15:51 (K03)	19:01		21:29	22:57	23:41
27	09:19	12:04 (K01)	07:46		06:12		05:28	04:00	03:28
	16:10	54 14:08 (K02)	17:44		19:04		21:32	22:59	23:40
28	09:17	12:05 (K01)	07:43		06:09		05:25	03:57	03:29
	16:13	51 14:07 (K02)	17:47		19:07		21:35	23:02	23:40
29	09:14	12:06 (K01)			07:05		05:22	03:55	03:30
	16:16	49 14:07 (K02)			20:09		21:38	23:05	23:39
30	09:11	12:07 (K01)			07:02		05:19	03:53	03:31
	16:19	47 14:07 (K02)			20:12		21:41	23:07	23:38
31	09:09	12:10 (K01)			06:59		03:50		
	16:22	40 14:07 (K02)			20:15		23:10		
Potential sun hours	185		243		364		446	557	601
Total, worst case	1331		620		246				
Sun reduction	0.16		0.29		0.40				
Oper. time red.	0.97		0.97		0.97				
Wind dir. red.	0.68		0.64		0.58				
Total reduction	0.11		0.19		0.23				
Total, real	146		115		57				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AF - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (101)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December							
1	03:32	04:47	06:15	07:37	18:09 (K05)	08:05	15:03 (K03)	09:32	11:40 (K01)				
	23:37	22:27	20:47	19:05	18	18:27 (K05)	16:24	23	15:26 (K03)	15:08	42	13:38 (K02)	
2	03:34	04:50	06:18	07:39	18:10 (K05)	08:08	15:04 (K03)	09:35	11:40 (K01)				
	23:36	22:24	20:43	19:02	15	18:25 (K05)	16:21	20	15:24 (K03)	15:06	38	13:36 (K02)	
3	03:35	04:53	06:21	07:42	18:11 (K05)	08:11	15:06 (K03)	09:37	11:41 (K01)				
	23:35	22:21	20:40	18:58	10	18:21 (K05)	16:18	17	15:23 (K03)	15:04	35	13:35 (K02)	
4	03:37	04:56	06:23	07:45	18:14	08:14	15:08 (K03)	09:40	11:42 (K01)				
	23:33	22:18	20:36	18:55		16:15	12	15:20 (K03)	15:03	30	13:33 (K02)		
5	03:39	04:58	06:26	07:48	18:17	08:17	13:19 (K02)	09:42	11:43 (K01)				
	23:32	22:15	20:33	18:51		16:12	11	13:30 (K02)	15:01	22	12:05 (K01)		
6	03:40	05:01	06:29	07:50	18:20	08:20	13:15 (K02)	09:44	11:44 (K01)				
	23:30	22:12	20:30	18:48		16:09	17	13:32 (K02)	15:00	22	12:06 (K01)		
7	03:42	05:04	06:32	07:53	18:23	08:23	13:14 (K02)	09:46	11:44 (K01)				
	23:29	22:08	20:26	18:45		16:06	20	13:34 (K02)	14:59	21	12:05 (K01)		
8	03:44	05:07	06:34	07:56	18:26	08:26	13:13 (K02)	09:49	11:46 (K01)				
	23:27	22:05	20:23	18:41		16:03	23	13:36 (K02)	14:57	20	12:06 (K01)		
9	03:46	05:10	06:37	07:59	18:29	08:29	13:12 (K02)	09:51	11:46 (K01)				
	23:25	22:02	20:19	18:38		16:01	24	13:36 (K02)	14:56	19	12:05 (K01)		
10	03:48	05:13	06:40	08:01	18:32	08:32	11:44 (K01)	09:52	11:48 (K01)				
	23:23	21:59	20:16	18:35		15:58	34	13:38 (K02)	14:55	18	12:06 (K01)		
11	03:51	05:16	06:42	08:04	18:35	08:35	11:41 (K01)	09:54	11:49 (K01)				
	23:21	21:56	20:13	18:31		15:55	42	13:39 (K02)	14:54	17	12:06 (K01)		
12	03:53	05:19	06:45	08:07	18:38	08:38	11:39 (K01)	09:56	11:50 (K01)				
	23:19	21:53	20:09	18:28		15:52	45	13:38 (K02)	14:53	16	12:06 (K01)		
13	03:55	05:22	06:48	08:10	18:41	08:41	11:38 (K01)	09:58	11:51 (K01)				
	23:17	21:49	20:06	18:25		15:49	49	13:39 (K02)	14:53	15	12:06 (K01)		
14	03:58	05:24	06:51	08:13	18:44	08:44	11:37 (K01)	09:59	11:51 (K01)				
	23:15	21:46	20:02	18:22		15:47	53	13:40 (K02)	14:52	14	12:05 (K01)		
15	04:00	05:27	06:53	08:15	16:14 (K03)	08:47	11:36 (K01)	10:01	11:52 (K01)				
	23:13	21:43	19:59	18:18	7	16:21 (K03)	15:44	54	13:40 (K02)	14:52	14	12:06 (K01)	
16	04:03	05:30	06:56	08:18	16:09 (K03)	08:50	11:36 (K01)	10:02	11:53 (K01)				
	23:10	21:40	19:56	18:15	16	16:25 (K03)	15:41	55	13:40 (K02)	14:51	12	12:05 (K01)	
17	04:05	05:33	06:59	08:21	16:07 (K03)	08:53	11:36 (K01)	10:03	11:54 (K01)				
	23:08	21:36	19:52	18:12	20	16:27 (K03)	15:39	56	13:40 (K02)	14:51	11	12:05 (K01)	
18	04:08	05:36	07:01	08:24	16:05 (K03)	08:56	11:36 (K01)	10:04	11:55 (K01)				
	23:06	21:33	19:49	18:08	23	16:28 (K03)	15:36	57	13:41 (K02)	14:51	11	12:06 (K01)	
19	04:10	05:39	07:04	08:27	16:03 (K03)	08:59	11:36 (K01)	10:05	11:55 (K01)				
	23:03	21:30	19:46	18:05	26	16:29 (K03)	15:34	58	13:41 (K02)	14:51	10	12:05 (K01)	
20	04:13	05:42	07:07	08:30	16:02 (K03)	09:02	11:35 (K01)	10:06	11:56 (K01)				
	23:00	21:27	19:42	18:25 (K05)	18:02	27	16:29 (K03)	15:31	57	13:40 (K02)	14:51	9	12:05 (K01)
21	04:16	05:44	07:09	08:33	16:01 (K03)	09:05	11:35 (K01)	10:07	11:57 (K01)				
	22:58	21:23	19:39	18:27 (K05)	17:59	28	16:29 (K03)	15:29	57	13:40 (K02)	14:52	9	12:06 (K01)
22	04:19	05:47	07:12	08:36	16:01 (K03)	09:08	11:35 (K01)	10:07	11:57 (K01)				
	22:55	21:20	19:35	18:29 (K05)	17:56	30	16:31 (K03)	15:26	57	13:40 (K02)	14:52	10	12:07 (K01)
23	04:21	05:50	07:15	08:38	16:00 (K03)	09:11	11:36 (K01)	10:08	11:58 (K01)				
	22:53	21:17	19:32	18:30 (K05)	17:52	30	16:30 (K03)	15:24	57	13:41 (K02)	14:53	9	12:07 (K01)
24	04:24	05:53	07:18	08:41	16:00 (K03)	09:14	11:36 (K01)	10:08	11:58 (K01)				
	22:50	21:13	19:29	18:30 (K05)	17:49	30	16:30 (K03)	15:22	56	13:41 (K02)	14:53	10	12:08 (K01)
25	04:27	05:56	07:20	07:44	14:59 (K03)	09:16	11:37 (K01)	10:08	11:58 (K01)				
	22:47	21:10	19:25	18:30 (K05)	16:46	31	15:30 (K03)	15:20	54	13:40 (K02)	14:54	10	12:08 (K01)
26	04:30	05:59	07:23	07:47	18:08 (K05)	09:19	11:36 (K01)	10:09	11:59 (K01)				
	22:44	21:07	19:22	18:31 (K05)	16:43	30	15:30 (K03)	15:17	53	13:39 (K02)	14:55	11	12:10 (K01)
27	04:32	06:01	07:26	07:50	18:08 (K05)	09:22	11:37 (K01)	10:08	11:59 (K01)				
	22:41	21:03	19:18	18:31 (K05)	16:40	30	15:30 (K03)	15:15	51	13:39 (K02)	14:56	11	12:10 (K01)
28	04:35	06:04	07:28	07:53	18:07 (K05)	09:25	11:38 (K01)	10:08	11:58 (K01)				
	22:39	21:00	19:15	18:29 (K05)	16:37	29	15:29 (K03)	15:13	49	13:39 (K02)	14:57	13	12:11 (K01)
29	04:38	06:07	07:31	07:56	18:07 (K05)	09:27	11:39 (K01)	10:08	11:58 (K01)				
	22:36	20:57	19:12	18:29 (K05)	16:34	28	15:29 (K03)	15:11	47	13:39 (K02)	14:58	14	12:12 (K01)
30	04:41	06:10	07:34	07:59	18:08 (K05)	09:30	11:39 (K01)	10:08	11:58 (K01)				
	22:33	20:53	19:08	18:28 (K05)	16:30	27	15:28 (K03)	15:10	45	13:38 (K02)	15:00	15	12:13 (K01)
31	04:44	06:12		08:02	15:02 (K03)			10:07	11:58 (K01)				
	22:30	20:50		16:27	25	15:27 (K03)		15:01	16	12:14 (K01)			
Potential sun hours	591	501	391	308		208		154					
Total, worst case			205		480		1253			524			
Sun reduction			0.36		0.26		0.15			0.11			
Oper. time red.			0.97		0.97		0.97			0.97			
Wind dir. red.			0.58		0.63		0.67			0.68			
Total reduction			0.21		0.16		0.10			0.07			
Total, real			42		78		124			39			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AG - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (99)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March		April		May		June	
1	10:06	12:33 (K01)	09:06	12:41 (K01)	07:39	16:09 (K03)	06:55	05:15	03:48			
	15:03	17 12:50 (K01)	16:25	52 14:51 (K02)	17:50	27 16:36 (K03)	20:18	21:44	23:12			
2	10:06	12:32 (K01)	09:03	12:43 (K01)	07:36	16:10 (K03)	06:52	05:12	03:46			
	15:05	18 12:50 (K01)	16:28	48 14:50 (K02)	17:53	25 16:35 (K03)	20:21	21:47	23:14			
3	10:05	12:33 (K01)	09:00	12:46 (K01)	07:33	16:11 (K03)	06:48	05:09	03:44			
	15:07	19 12:52 (K01)	16:32	44 14:51 (K02)	17:56	23 16:34 (K03)	20:23	21:50	23:17			
4	10:04	12:33 (K01)	08:57	14:20 (K02)	07:29	16:13 (K03)	06:45	05:06	03:42			
	15:09	20 12:53 (K01)	16:35	30 14:50 (K02)	17:59	20 16:33 (K03)	20:26	21:53	23:19			
5	10:03	12:32 (K01)	08:54	14:21 (K02)	07:26	16:14 (K03)	06:42	05:03	03:40			
	15:11	22 12:54 (K01)	16:38	29 14:50 (K02)	18:02	16 16:30 (K03)	20:29	21:56	23:21			
6	10:02	12:32 (K01)	08:51	14:21 (K02)	07:23	16:18 (K03)	06:38	05:00	03:39			
	15:13	22 12:54 (K01)	16:41	28 14:49 (K02)	18:05	9 16:27 (K03)	20:32	21:59	23:23			
7	10:00	12:32 (K01)	08:48	14:22 (K02)	07:20		06:35	04:56	03:37			
	15:15	23 12:55 (K01)	16:44	27 14:49 (K02)	18:07		20:35	22:02	23:25			
8	09:59	12:32 (K01)	08:46	14:23 (K02)	07:16		06:32	04:53	03:35			
	15:17	25 12:57 (K01)	16:47	26 14:49 (K02)	18:10		20:38	22:05	23:27			
9	09:58	12:32 (K01)	08:43	14:24 (K02)	07:13		06:28	04:50	03:34			
	15:20	26 12:58 (K01)	16:50	24 14:48 (K02)	18:13		20:40	22:08	23:29			
10	09:56	12:32 (K01)	08:40	14:25 (K02)	07:10		06:25	04:47	03:32			
	15:22	27 12:59 (K01)	16:53	22 14:47 (K02)	18:16		20:43	22:11	23:30			
11	09:54	12:32 (K01)	08:37	14:27 (K02)	07:06		06:21	04:44	03:31			
	15:25	27 12:59 (K01)	16:56	18 14:45 (K02)	18:19		20:46	22:14	23:32			
12	09:53	12:32 (K01)	08:33	14:30 (K02)	07:03		06:18	04:41	03:30			
	15:27	28 13:00 (K01)	16:59	13 14:43 (K02)	18:22		20:49	22:17	23:33			
13	09:51	12:32 (K01)	08:30	14:35 (K02)	06:59		06:15	04:38	03:29			
	15:30	29 13:01 (K01)	17:02	2 14:37 (K02)	18:25		20:52	22:20	23:35			
14	09:49	12:31 (K01)	08:27		06:56		06:11	04:35	03:28			
	15:32	30 13:01 (K01)	17:05		18:27		20:55	22:23	23:36			
15	09:47	12:32 (K01)	08:24		06:53		06:08	04:32	03:27			
	15:35	30 13:02 (K01)	17:08		18:30		20:57	22:26	23:37			
16	09:45	12:32 (K01)	08:21	16:21 (K03)	06:49		06:05	04:29	03:27			
	15:38	31 13:03 (K01)	17:11	5 16:26 (K03)	18:33		21:00	22:29	23:38			
17	09:43	12:32 (K01)	08:18	16:17 (K03)	06:46		06:01	04:26	03:26			
	15:41	31 13:03 (K01)	17:14	14 16:31 (K03)	18:36		21:03	22:31	23:39			
18	09:41	12:33 (K01)	08:15	16:14 (K03)	06:43		05:58	04:24	03:26			
	15:43	31 13:04 (K01)	17:18	18 16:32 (K03)	18:39		21:06	22:34	23:40			
19	09:39	12:32 (K01)	08:12	16:13 (K03)	06:39		05:55	04:21	03:25			
	15:46	42 14:36 (K02)	17:21	21 16:34 (K03)	18:41		21:09	22:37	23:40			
20	09:36	12:33 (K01)	08:08	16:12 (K03)	06:36		05:51	04:18	03:25			
	15:49	46 14:39 (K02)	17:24	23 16:35 (K03)	18:44		21:12	22:40	23:41			
21	09:34	12:33 (K01)	08:05	16:11 (K03)	06:33		05:48	04:15	03:25			
	15:52	49 14:41 (K02)	17:27	25 16:36 (K03)	18:47		21:15	22:43	23:41			
22	09:32	12:33 (K01)	08:02	16:10 (K03)	06:29		05:45	04:13	03:25			
	15:55	52 14:42 (K02)	17:29	27 16:37 (K03)	18:50		21:18	22:46	23:41			
23	09:29	12:34 (K01)	07:59	16:10 (K03)	06:26		05:41	04:10	03:25			
	15:58	53 14:44 (K02)	17:32	27 16:37 (K03)	18:53		21:21	22:49	23:41			
24	09:27	12:34 (K01)	07:56	16:09 (K03)	06:22		05:38	04:07	03:26			
	16:01	56 14:45 (K02)	17:35	28 16:37 (K03)	18:55		21:24	22:51	23:41			
25	09:24	12:34 (K01)	07:52	16:09 (K03)	06:19		05:35	04:05	03:26			
	16:04	57 14:46 (K02)	17:38	29 16:38 (K03)	18:58		21:26	22:54	23:41			
26	09:22	12:35 (K01)	07:49	16:08 (K03)	06:16		05:32	04:02	03:27			
	16:07	58 14:47 (K02)	17:41	29 16:37 (K03)	19:01		21:29	22:57	23:41			
27	09:19	12:36 (K01)	07:46	16:09 (K03)	06:12		05:28	04:00	03:28			
	16:10	58 14:48 (K02)	17:44	28 16:37 (K03)	19:04		21:32	22:59	23:40			
28	09:17	12:36 (K01)	07:43	16:08 (K03)	06:09		05:25	03:57	03:29			
	16:13	58 14:48 (K02)	17:47	28 16:36 (K03)	19:07		21:35	23:02	23:40			
29	09:14	12:38 (K01)			07:05		05:22	03:55	03:30			
	16:16	57 14:49 (K02)			20:09		21:38	23:05	23:39			
30	09:11	12:38 (K01)			07:02		05:19	03:53	03:31			
	16:19	56 14:49 (K02)			20:12		21:41	23:07	23:38			
31	09:08	12:40 (K01)			06:59			03:50				
	16:22	54 14:50 (K02)			20:15			23:10				
Potential sun hours	185		243		364		446	557	601			
Total, worst case	1152		665		120							
Sun reduction	0.16		0.29		0.40							
Oper. time red.	0.97		0.97		0.97							
Wind dir. red.	0.69		0.66		0.63							
Total reduction	0.11		0.19		0.25							
Total, real	127		125		30							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AG - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (99)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32	04:47	06:15	07:37	08:05	13:55 (K02) 09:32 12:14 (K01)
	23:37	22:27	20:47	19:05	16:24	22 14:17 (K02) 15:08 28 12:42 (K01)
2	03:34	04:50	06:18	07:39	08:08	13:53 (K02) 09:35 12:14 (K01)
	23:36	22:24	20:43	19:02	16:21	24 14:17 (K02) 15:06 27 12:41 (K01)
3	03:35	04:53	06:21	07:42	08:11	13:52 (K02) 09:37 12:15 (K01)
	23:35	22:21	20:40	18:58	16:18	27 14:19 (K02) 15:04 26 12:41 (K01)
4	03:37	04:56	06:23	07:45	08:14	13:51 (K02) 09:40 12:17 (K01)
	23:33	22:18	20:36	18:55	16:15	28 14:19 (K02) 15:03 24 12:41 (K01)
5	03:39	04:58	06:26	07:48	08:17	13:51 (K02) 09:42 12:17 (K01)
	23:32	22:15	20:33	18:51	16:12	29 14:20 (K02) 15:01 24 12:41 (K01)
6	03:40	05:01	06:29	07:50	08:20	13:50 (K02) 09:44 12:18 (K01)
	23:30	22:11	20:30	18:48	16:09	30 14:20 (K02) 15:00 23 12:41 (K01)
7	03:42	05:04	06:32	07:53	16:57 (K03) 08:23	12:20 (K01) 09:46 12:19 (K01)
	23:29	22:08	20:26	18:45	3 17:00 (K03) 16:06	35 14:21 (K02) 14:59 21 12:40 (K01)
8	03:44	05:07	06:34	07:56	16:51 (K03) 08:26	12:16 (K01) 09:49 12:20 (K01)
	23:27	22:05	20:23	18:41	13 17:04 (K03) 16:03	43 14:21 (K02) 14:57 21 12:41 (K01)
9	03:46	05:10	06:37	07:59	16:48 (K03) 08:29	12:13 (K01) 09:51 12:21 (K01)
	23:25	22:02	20:19	18:38	18 17:06 (K03) 16:01	49 14:21 (K02) 14:56 19 12:40 (K01)
10	03:48	05:13	06:40	08:01	16:46 (K03) 08:32	12:12 (K01) 09:52 12:22 (K01)
	23:23	21:59	20:16	18:35	22 17:08 (K03) 15:58	52 14:21 (K02) 14:55 18 12:40 (K01)
11	03:51	05:16	06:42	08:04	16:45 (K03) 08:35	12:11 (K01) 09:54 12:23 (K01)
	23:21	21:56	20:13	18:31	24 17:09 (K03) 15:55	55 14:22 (K02) 14:54 17 12:40 (K01)
12	03:53	05:19	06:45	08:07	16:44 (K03) 08:38	12:10 (K01) 09:56 12:25 (K01)
	23:19	21:53	20:09	18:28	25 17:09 (K03) 15:52	55 14:21 (K02) 14:53 15 12:40 (K01)
13	03:55	05:22	06:48	08:10	16:43 (K03) 08:41	12:09 (K01) 09:58 12:25 (K01)
	23:17	21:49	20:06	18:25	27 17:10 (K03) 15:49	58 14:21 (K02) 14:53 14 12:39 (K01)
14	03:58	05:24	06:51	08:13	16:42 (K03) 08:44	12:09 (K01) 09:59 12:26 (K01)
	23:15	21:46	20:02	18:22	28 17:10 (K03) 15:47	58 14:21 (K02) 14:52 13 12:39 (K01)
15	04:00	05:27	06:53	08:15	16:41 (K03) 08:47	12:08 (K01) 10:01 12:28 (K01)
	23:13	21:43	19:59	18:18	29 17:10 (K03) 15:44	58 14:20 (K02) 14:52 12 12:40 (K01)
16	04:03	05:30	06:56	08:18	16:41 (K03) 08:50	12:08 (K01) 10:02 12:28 (K01)
	23:10	21:40	19:56	18:15	29 17:10 (K03) 15:41	57 14:20 (K02) 14:51 11 12:39 (K01)
17	04:05	05:33	06:59	08:21	16:41 (K03) 08:53	12:08 (K01) 10:03 12:29 (K01)
	23:08	21:36	19:52	18:12	28 17:09 (K03) 15:39	57 14:20 (K02) 14:51 10 12:39 (K01)
18	04:08	05:36	07:01	08:24	16:41 (K03) 08:56	12:08 (K01) 10:04 12:31 (K01)
	23:05	21:33	19:49	18:08	28 17:09 (K03) 15:36	56 14:19 (K02) 14:51 8 12:39 (K01)
19	04:10	05:39	07:04	08:27	16:41 (K03) 08:59	12:09 (K01) 10:05 12:31 (K01)
	23:03	21:30	19:45	18:05	27 17:08 (K03) 15:34	53 14:19 (K02) 14:51 8 12:39 (K01)
20	04:13	05:42	07:07	08:30	16:41 (K03) 09:02	12:08 (K01) 10:06 12:32 (K01)
	23:00	21:27	19:42	18:02	26 17:07 (K03) 15:31	52 14:17 (K02) 14:51 7 12:39 (K01)
21	04:16	05:44	07:09	08:33	16:41 (K03) 09:05	12:08 (K01) 10:07 12:33 (K01)
	22:58	21:23	19:39	17:59	25 17:06 (K03) 15:29	49 14:16 (K02) 14:52 6 12:39 (K01)
22	04:19	05:47	07:12	08:35	16:42 (K03) 09:08	12:09 (K01) 10:07 12:33 (K01)
	22:55	21:20	19:35	17:56	23 17:05 (K03) 15:26	46 14:15 (K02) 14:52 7 12:40 (K01)
23	04:21	05:50	07:15	08:38	16:44 (K03) 09:11	12:09 (K01) 10:08 12:34 (K01)
	22:52	21:17	19:32	17:52	20 17:04 (K03) 15:24	42 14:13 (K02) 14:53 7 12:41 (K01)
24	04:24	05:53	07:18	08:41	16:45 (K03) 09:13	12:10 (K01) 10:08 12:34 (K01)
	22:50	21:13	19:29	17:49	17 17:02 (K03) 15:22	31 12:41 (K01) 14:53 7 12:41 (K01)
25	04:27	05:56	07:20	07:44	15:47 (K03) 09:16	12:10 (K01) 10:08 12:33 (K01)
	22:47	21:10	19:25	16:46	12 15:59 (K03) 15:20	32 12:42 (K01) 14:54 9 12:42 (K01)
26	04:30	05:59	07:23	07:47	09:19	12:10 (K01) 10:08 12:34 (K01)
	22:44	21:07	19:22	16:43	31 15:17	12:41 (K01) 14:55 9 12:43 (K01)
27	04:32	06:01	07:26	07:50	09:22	12:11 (K01) 10:08 12:34 (K01)
	22:41	21:03	19:18	16:40	15:15	30 12:41 (K01) 14:56 10 12:44 (K01)
28	04:35	06:04	07:28	07:53	09:25	12:12 (K01) 10:08 12:33 (K01)
	22:38	21:00	19:15	16:37	15:13	29 12:41 (K01) 14:57 12 12:45 (K01)
29	04:38	06:07	07:31	07:56	14:03 (K02) 09:27	12:12 (K01) 10:08 12:34 (K01)
	22:36	20:57	19:12	16:33	7 14:10 (K02) 15:11	29 12:41 (K01) 14:58 12 12:46 (K01)
30	04:41	06:10	07:34	07:59	13:58 (K02) 09:30	12:13 (K01) 10:08 12:33 (K01)
	22:33	20:53	19:08	16:30	15 14:13 (K02) 15:09	29 12:42 (K01) 15:00 14 12:47 (K01)
31	04:44	06:12	08:02	08:27	13:56 (K02)	10:07 12:33 (K01)
	22:30	20:50	16:27	19 14:15 (K02)	15:01 15 12:48 (K01)	
Potential sun hours	591	501	391	308	208	154
Total, worst case				465	1246	454
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.63	0.68	0.69
Total reduction				0.16	0.10	0.07
Total, real				75	124	34

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AH - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (98)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:06 15:03		09:06 16:25	10:06 (K10) 17:50	16:42 (K03) 20:18	05:15 23:12
2	10:06 15:05	13:13 (K01) 16:28	09:03 16:28	10:05 (K10) 17:53	16:41 (K03) 20:21	05:12 23:14
3	10:05 15:07	13:12 (K01) 16:31	09:00 16:31	10:06 (K10) 17:56	16:41 (K03) 20:23	05:09 23:17
4	10:04 15:09	13:10 (K01) 16:35	08:57 16:35	10:05 (K10) 17:59	16:41 (K03) 20:26	05:06 23:19
5	10:03 15:11	13:10 (K01) 16:38	08:54 16:38	10:06 (K10) 18:02	16:40 (K03) 20:29	05:03 23:21
6	10:02 15:13	13:09 (K01) 16:41	08:51 16:41	10:06 (K10) 18:05	16:40 (K03) 20:32	05:00 23:23
7	10:00 15:15	13:09 (K01) 16:44	08:48 16:44	10:07 (K10) 18:07	16:40 (K03) 20:35	04:56 23:25
8	09:59 15:17	13:09 (K01) 16:47	08:46 16:47	10:09 (K10) 18:10	16:41 (K03) 20:38	04:53 23:27
9	09:57 15:20	13:09 (K01) 16:50	08:43 16:50	10:10 (K10) 18:13	16:41 (K03) 20:40	04:50 23:29
10	09:56 15:22	13:08 (K01) 16:53	08:40 16:53	10:12 (K10) 18:16	16:42 (K03) 20:43	04:47 23:30
11	09:54 15:25	13:08 (K01) 16:56	08:36 16:56	10:15 (K10) 18:19	16:43 (K03) 20:46	04:44 23:32
12	09:53 15:27	13:08 (K01) 16:59	08:33 16:59	14:59 (K02) 18:22	16:45 (K03) 20:49	06:18 23:33
13	09:51 15:30	13:08 (K01) 17:02	08:30 17:02	14:59 (K02) 18:25	16:48 (K03) 20:52	06:15 23:35
14	09:49 15:32	13:07 (K01) 17:05	08:27 17:05	15:00 (K02) 18:27	06:11 20:55	04:35 23:36
15	09:47 15:35	13:07 (K01) 17:08	08:24 17:08	15:00 (K02) 18:30	06:08 20:57	04:32 23:37
16	09:45 15:38	13:07 (K01) 17:11	08:21 17:11	15:02 (K02) 18:33	06:05 21:00	04:29 23:38
17	09:43 15:41	13:07 (K01) 17:14	08:18 17:14	15:03 (K02) 18:36	06:01 21:03	04:26 23:39
18	09:41 15:43	13:07 (K01) 17:17	08:15 17:17	15:05 (K02) 18:39	05:58 21:06	04:24 23:40
19	09:39 15:46	13:06 (K01) 17:21	08:12 17:21	15:08 (K02) 18:41	05:55 21:09	04:21 23:40
20	09:36 15:49	13:06 (K01) 17:24	08:08 17:24	06:36 18:44	05:51 21:12	04:18 23:41
21	09:34 15:52	13:07 (K01) 17:26	08:05 17:26	06:33 18:47	05:48 21:15	04:15 23:41
22	09:32 15:55	13:06 (K01) 17:29	08:02 17:29	06:29 18:50	05:45 21:18	04:13 23:41
23	09:29 16:01	13:07 (K01) 17:35	07:59 17:35	06:26 18:55	05:41 21:23	04:10 23:41
24	09:27 16:04	13:42 (K10) 17:38	07:56 17:38	10:16 (K10) 17:01 (K03)	06:22 18:58	04:07 23:41
25	09:24 16:07	13:42 (K10) 17:41	07:52 17:41	10:12 (K10) 17:03 (K03)	06:19 19:01	04:05 23:41
26	09:22 16:10	13:42 (K01) 17:44	07:49 17:44	16:46 (K03) 17:05 (K03)	06:16 19:04	03:27 23:40
27	09:19 16:13	13:43 (K01) 17:47	07:46 17:47	17:03 (K03) 16:43 (K03)	19:01 06:09	22:57 03:29
28	09:17 16:16	10:07 (K10) 15:19 (K02)	07:44 17:47	16:44 (K03) 17:05 (K03)	06:12 19:07	04:00 23:40
29	09:14 16:19	13:43 (K01) 15:21 (K02)	07:43 17:47	17:05 (K03) 07:05	06:09 20:09	03:29 23:40
30	09:11 16:22	10:05 (K10) 15:23 (K02)	07:43 17:47	07:02 20:12	05:19 21:41	03:31 23:38
31	09:08 16:22	10:05 (K10) 15:23 (K02)	06:59 20:15	06:59 20:15	03:50 23:10	03:28 23:38
Potential sun hours	185	243	364	446	557	601
Total, worst case	1015	976	293			
Sun reduction	0.16	0.29	0.40			
Oper. time red.	0.97	0.97	0.97			
Wind dir. red.	0.68	0.66	0.62			
Total reduction	0.11	0.19	0.24			
Total, real	110	185	71			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AH - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (98)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December						
1	03:32	04:47	06:15	07:37	17:26 (K03)	08:05	09:41 (K10)	09:32	12:49 (K01)			
	23:37	22:27	20:46	19:05	12	17:38 (K03)	16:24	44	14:59 (K02)	15:08	25	13:14 (K01)
2	03:34	04:50	06:18	07:39	17:23 (K03)	08:08	09:39 (K10)	09:35	12:50 (K01)			
	23:36	22:24	20:43	19:01	17	17:40 (K03)	16:21	47	14:58 (K02)	15:06	24	13:14 (K01)
3	03:35	04:53	06:21	07:42	17:20 (K03)	08:11	09:38 (K10)	09:37	12:52 (K01)			
	23:35	22:21	20:40	18:58	20	17:40 (K03)	16:18	58	14:59 (K02)	15:04	22	13:14 (K01)
4	03:37	04:56	06:23	07:45	17:19 (K03)	08:14	09:37 (K10)	09:40	12:53 (K01)			
	23:33	22:18	20:36	18:55	22	17:41 (K03)	16:15	67	14:58 (K02)	15:03	21	13:14 (K01)
5	03:39	04:58	06:26	07:48	17:17 (K03)	08:17	09:37 (K10)	09:42	12:54 (K01)			
	23:32	22:15	20:33	18:51	25	17:42 (K03)	16:12	71	14:58 (K02)	15:01	19	13:13 (K01)
6	03:40	05:01	06:29	07:50	17:17 (K03)	08:20	09:36 (K10)	09:44	12:56 (K01)			
	23:30	22:11	20:30	18:48	26	17:43 (K03)	16:09	74	14:57 (K02)	15:00	17	13:13 (K01)
7	03:42	05:04	06:32	07:53	17:16 (K03)	08:23	09:36 (K10)	09:46	12:57 (K01)			
	23:29	22:08	20:26	18:45	27	17:43 (K03)	16:06	77	14:57 (K02)	14:59	15	13:12 (K01)
8	03:44	05:07	06:34	07:56	17:16 (K03)	08:26	09:36 (K10)	09:48	12:59 (K01)			
	23:27	22:05	20:23	18:41	27	17:43 (K03)	16:03	80	14:57 (K02)	14:57	13	13:12 (K01)
9	03:46	05:10	06:37	07:59	17:15 (K03)	08:29	09:36 (K10)	09:50	13:00 (K01)			
	23:25	22:02	20:19	18:38	28	17:43 (K03)	16:01	79	14:56 (K02)	14:56	10	13:10 (K01)
10	03:48	05:13	06:40	08:01	17:15 (K03)	08:32	09:36 (K10)	09:52	13:02 (K01)			
	23:23	21:59	20:16	18:35	27	17:42 (K03)	15:58	78	14:55 (K02)	14:55	7	13:09 (K01)
11	03:51	05:16	06:42	08:04	17:15 (K03)	08:35	09:36 (K10)	09:54				
	23:21	21:56	20:13	18:31	27	17:42 (K03)	15:55	76	14:53 (K02)	14:54		
12	03:53	05:19	06:45	08:07	17:16 (K03)	08:38	09:37 (K10)	09:56				
	23:19	21:53	20:09	18:28	25	17:41 (K03)	15:52	73	14:52 (K02)	14:53		
13	03:55	05:22	06:48	08:10	17:16 (K03)	08:41	09:38 (K10)	09:58				
	23:17	21:49	20:06	18:25	24	17:40 (K03)	15:49	69	14:51 (K02)	14:53		
14	03:58	05:24	06:51	08:13	17:17 (K03)	08:44	09:39 (K10)	09:59				
	23:15	21:46	20:02	18:22	22	17:39 (K03)	15:47	62	14:48 (K02)	14:52		
15	04:00	05:27	06:53	08:15	17:18 (K03)	08:47	09:39 (K10)	10:01				
	23:13	21:43	19:59	18:18	19	17:37 (K03)	15:44	53	13:15 (K01)	14:52		
16	04:03	05:30	06:56	08:18	17:19 (K03)	08:50	09:42 (K10)	10:02				
	23:10	21:40	19:56	18:15	16	17:35 (K03)	15:41	51	13:16 (K01)	14:51		
17	04:05	05:33	06:59	08:21	17:22 (K03)	08:53	09:46 (K10)	10:03				
	23:08	21:36	19:52	18:12	9	17:31 (K03)	15:39	45	13:16 (K01)	14:51		
18	04:08	05:36	07:01	08:24		08:56	09:50 (K10)	10:04				
	23:05	21:33	19:49	18:08		15:36	13:16 (K01)	14:51				
19	04:10	05:39	07:04	08:27		08:59	12:42 (K01)	10:05				
	23:03	21:30	19:45	18:05		15:34	13:17 (K01)	14:51				
20	04:13	05:42	07:07	08:30		09:02	12:41 (K01)	10:06				
	23:00	21:27	19:42	18:02		15:31	13:16 (K01)	14:51				
21	04:16	05:44	07:09	08:33		09:05	12:42 (K01)	10:07				
	22:58	21:23	19:39	17:59		15:29	13:16 (K01)	14:52				
22	04:19	05:47	07:12	08:35		15:41 (K02)	09:08	12:43 (K01)	10:07			
	22:55	21:20	19:35	17:56	6	15:47 (K02)	15:26	33	13:16 (K01)	14:52		
23	04:21	05:50	07:15	08:38		15:37 (K02)	09:11	12:43 (K01)	10:08			
	22:52	21:17	19:32	17:52	14	15:51 (K02)	15:24	33	13:16 (K01)	14:53		
24	04:24	05:53	07:18	08:41		15:34 (K02)	09:13	12:44 (K01)	10:08			
	22:50	21:13	19:29	17:49	19	15:53 (K02)	15:22	33	13:17 (K01)	14:53		
25	04:27	05:56	07:20	07:44		14:32 (K02)	09:16	12:45 (K01)	10:08			
	22:47	21:10	19:25	16:46	23	14:55 (K02)	15:20	32	13:17 (K01)	14:54		
26	04:30	05:58	07:23	07:47		14:30 (K02)	09:19	12:45 (K01)	10:08			
	22:44	21:07	19:22	16:43	25	14:55 (K02)	15:17	31	13:16 (K01)	14:55		
27	04:32	06:01	07:26	07:50		14:30 (K02)	09:22	12:46 (K01)	10:08			
	22:41	21:03	19:18	16:40	27	14:57 (K02)	15:15	30	13:16 (K01)	14:56		
28	04:35	06:04	07:28	07:53		14:29 (K02)	09:24	12:47 (K01)	10:08			
	22:38	21:00	19:15	16:37	28	14:57 (K02)	15:13	29	13:16 (K01)	14:57		
29	04:38	06:07	07:31	07:56		14:29 (K02)	09:27	12:48 (K01)	10:08			
	22:36	20:57	19:12	16:33	29	14:58 (K02)	15:11	28	13:16 (K01)	14:58		
30	04:41	06:10	07:34	07:59		14:28 (K02)	09:30	12:49 (K01)	10:08			
	22:33	20:53	19:08	16:30	30	14:58 (K02)	15:09	26	13:15 (K01)	15:00		
31	04:44	06:12		08:02		09:43 (K10)			10:07			
	22:30	20:50		16:27	38	14:58 (K02)			15:01			
Potential sun hours	591	501	391	308	208				154			
Total, worst case				612		1522			173			
Sun reduction				0.26		0.15			0.11			
Oper. time red.				0.97		0.97			0.97			
Wind dir. red.				0.64		0.67			0.68			
Total reduction				0.16		0.10			0.07			
Total, real				99		149			13			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AI - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (80)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March		April		May		June	
1	10:06	11:24 (K11)	09:06	11:32 (K11)	07:39	16:47 (K01)	06:55	05:15	03:48			
	15:03	13	11:37 (K11)	16:25	79	15:08 (K14)	17:50	24	17:11 (K01)	20:18	21:44	23:12
2	10:06	11:23 (K11)	09:03	11:35 (K11)	07:36	16:46 (K01)	06:52		05:12	03:46		
	15:05	15	11:38 (K11)	16:28	72	15:08 (K14)	17:53	25	17:11 (K01)	20:21	21:47	23:14
3	10:05	11:23 (K11)	09:00	13:13 (K10)	07:33	16:46 (K01)	06:48		05:09	03:44		
	15:07	17	11:40 (K11)	16:31	60	15:08 (K14)	17:56	25	17:11 (K01)	20:23	21:50	23:16
4	10:04	11:22 (K11)	08:57	13:13 (K10)	07:29	16:45 (K01)	06:45		05:06	03:42		
	15:09	18	11:40 (K11)	16:35	57	15:07 (K14)	17:59	25	17:10 (K01)	20:26	21:53	23:19
5	10:03	11:23 (K11)	08:54	13:14 (K10)	07:26	16:46 (K01)	06:42		05:03	03:40		
	15:11	19	11:42 (K11)	16:38	54	15:06 (K14)	18:02	25	17:11 (K01)	20:29	21:56	23:21
6	10:01	11:22 (K11)	08:51	13:14 (K10)	07:23	16:47 (K01)	06:38		05:00	03:39		
	15:13	21	11:43 (K11)	16:41	49	15:04 (K14)	18:04	23	17:10 (K01)	20:32	21:59	23:23
7	10:00	11:22 (K11)	08:48	13:15 (K10)	07:19	16:47 (K01)	06:35		04:56	03:37		
	15:15	21	11:43 (K11)	16:44	39	15:00 (K14)	18:07	22	17:09 (K01)	20:35	22:02	23:25
8	09:59	11:22 (K11)	08:45	13:15 (K10)	07:16	16:48 (K01)	06:31		04:53	03:35		
	15:17	27	13:27 (K10)	16:47	36	13:51 (K10)	18:10	20	17:08 (K01)	20:37	22:05	23:27
9	09:57	11:21 (K11)	08:42	13:17 (K10)	07:13	16:48 (K01)	06:28		04:50	03:34		
	15:20	36	13:31 (K10)	16:50	33	13:50 (K10)	18:13	18	17:06 (K01)	20:40	22:08	23:28
10	09:56	11:22 (K11)	08:39	13:19 (K10)	07:09	16:51 (K01)	06:25		04:47	03:32		
	15:22	40	13:34 (K10)	16:53	31	13:50 (K10)	18:16	14	17:05 (K01)	20:43	22:11	23:30
11	09:54	11:21 (K11)	08:36	13:19 (K10)	07:06	16:53 (K01)	06:21		04:44	03:31		
	15:25	44	13:35 (K10)	16:56	29	13:48 (K10)	18:19	8	17:01 (K01)	20:46	22:14	23:32
12	09:52	11:21 (K11)	08:33	13:22 (K10)	07:03		06:18		04:41	03:30		
	15:27	47	13:37 (K10)	16:59	25	13:47 (K10)	18:22		20:49	22:17	23:33	
13	09:51	11:21 (K11)	08:30	13:23 (K10)	06:59		06:15		04:38	03:29		
	15:30	51	13:39 (K10)	17:02	21	13:44 (K10)	18:24		20:52	22:20	23:35	
14	09:49	11:22 (K11)	08:27	13:27 (K10)	06:56		06:11		04:35	03:28		
	15:32	52	13:40 (K10)	17:05	14	13:41 (K10)	18:27		20:54	22:23	23:36	
15	09:47	11:22 (K11)	08:24		06:53		06:08		04:32	03:27		
	15:35	56	13:42 (K10)	17:08		18:30		20:57	22:25	23:37		
16	09:45	11:22 (K11)	08:21		06:49		06:05		04:29	03:27		
	15:38	58	13:43 (K10)	17:11		18:33		21:00	22:28	23:38		
17	09:43	11:22 (K11)	08:18		06:46		06:01		04:26	03:26		
	15:40	59	13:44 (K10)	17:14		18:36		21:03	22:31	23:39		
18	09:41	11:22 (K11)	08:15		06:43		05:58		04:24	03:26		
	15:43	61	13:45 (K10)	17:17		18:39		21:06	22:34	23:40		
19	09:38	11:22 (K11)	08:12		06:39		05:55		04:21	03:25		
	15:46	64	13:46 (K10)	17:20		18:41		21:09	22:37	23:40		
20	09:36	11:23 (K11)	08:08		06:36		05:51		04:18	03:25		
	15:49	69	14:52 (K14)	17:23		18:44		21:12	22:40	23:41		
21	09:34	11:23 (K11)	08:05		06:32		05:48		04:15	03:25		
	15:52	74	14:56 (K14)	17:26		18:47		21:15	22:43	23:41		
22	09:32	11:23 (K11)	08:02		06:29		05:45		04:13	03:25		
	15:55	80	15:00 (K14)	17:29		18:50		21:18	22:46	23:41		
23	09:29	11:24 (K11)	07:59		06:26		05:41		04:10	03:25		
	15:58	85	15:04 (K14)	17:32		18:53		21:20	22:48	23:41		
24	09:27	11:25 (K11)	07:56		06:22	16:55 (K01)	05:38		04:07	03:26		
	16:01	89	15:07 (K14)	17:35	3	16:58 (K01)	18:55		21:23	22:51	23:41	
25	09:24	11:25 (K11)	07:52		06:19	16:52 (K01)	05:35		04:05	03:26		
	16:04	89	15:07 (K14)	17:38	10	17:02 (K01)	18:58		21:26	22:54	23:41	
26	09:22	11:26 (K11)	07:49		06:15	16:50 (K01)	05:32		04:02	03:27		
	16:07	90	15:08 (K14)	17:41	15	17:05 (K01)	19:01		21:29	22:57	23:41	
27	09:19	11:26 (K11)	07:46		06:12	16:49 (K01)	05:28		04:00	03:28		
	16:10	89	15:08 (K14)	17:44	19	17:08 (K01)	19:04		21:32	22:59	23:40	
28	09:16	11:27 (K11)	07:43		06:09	16:47 (K01)	05:25		03:57	03:29		
	16:13	88	15:08 (K14)	17:47	23	17:10 (K01)	19:07		21:35	23:02	23:39	
29	09:14	11:28 (K11)			07:05		05:22		03:55	03:30		
	16:16	88	15:09 (K14)		07:05		20:09		21:38	23:04	23:39	
30	09:11	11:29 (K11)			07:02		05:19		03:53	03:31		
	16:19	87	15:09 (K14)		07:02		20:12		21:41	23:07	23:38	
31	09:08	11:31 (K11)			06:59				03:50			
	16:22	82	15:09 (K14)		06:59		20:15		23:09			
Potential sun hours	185		243		364		446		557		601	
Total, worst case	1729		669		229							
Sun reduction	0.16		0.29		0.40							
Oper. time red.	0.97		0.97		0.97							
Wind dir. red.	0.67		0.67		0.62							
Total reduction	0.11		0.19		0.24							
Total, real	185		129		55							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AI - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (80)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Table with 12 columns (Jan-Dec) and 1 row of values: 0.97, 2.54, 4.68, 6.30, 8.61, 9.20, 8.65, 6.68, 4.67, 2.58, 1.03, 0.55

Operational time

Table with 13 columns (N to Sum) and 1 row of values: 655, 459, 397, 401, 441, 806, 1,020, 1,265, 1,030, 811, 627, 615, 8,527

Main data table with columns for months (July-December) and rows for each day (1-31) showing sun rise/set times and shadow reduction metrics.

Table layout: For each day in each month the following matrix apply

Summary table with 4 columns: Day in month, Sun rise/set, Minutes with flicker, and First/Last time with flicker.

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AJ - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (79)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January		February		March		April	May	June	
1	10:06	12:18 (K11)	09:06	12:24 (K11)	07:39		06:55	05:15	03:48	
	15:03	18 12:36 (K11)	16:25	51 15:10 (K10)	17:50		20:18	21:44	23:12	
2	10:05	12:18 (K11)	09:03	12:25 (K11)	07:36		06:52	05:12	03:46	
	15:05	19 12:37 (K11)	16:28	52 15:12 (K10)	17:53		20:20	21:47	23:14	
3	10:05	12:18 (K11)	09:00	12:27 (K11)	07:33		06:48	05:09	03:44	
	15:07	21 12:39 (K11)	16:31	52 15:14 (K10)	17:56		20:23	21:50	23:16	
4	10:04	12:17 (K11)	08:57	12:29 (K11)	07:29		06:45	05:06	03:42	
	15:09	22 12:39 (K11)	16:35	50 15:15 (K10)	17:59		20:26	21:53	23:19	
5	10:03	12:18 (K11)	08:54	12:33 (K11)	07:26		06:42	05:03	03:40	
	15:11	23 12:41 (K11)	16:38	46 15:16 (K10)	18:02		20:29	21:56	23:21	
6	10:01	12:17 (K11)	08:51	14:40 (K10)	07:23		17:26 (K01)	06:38	05:00	03:39
	15:13	24 12:41 (K11)	16:41	36 15:16 (K10)	18:04	4	17:30 (K01)	20:32	21:59	23:23
7	10:00	12:17 (K11)	08:48	14:40 (K10)	07:19		17:23 (K01)	06:35	04:56	03:37
	15:15	25 12:42 (K11)	16:44	38 15:18 (K10)	18:07	10	17:33 (K01)	20:35	22:02	23:25
8	09:59	12:17 (K11)	08:45	14:39 (K10)	07:16		17:22 (K01)	06:31	04:53	03:35
	15:17	26 12:43 (K11)	16:47	39 15:18 (K10)	18:10	14	17:36 (K01)	20:37	22:05	23:27
9	09:57	12:16 (K11)	08:42	14:39 (K10)	07:13		17:20 (K01)	06:28	04:50	03:34
	15:20	28 12:44 (K11)	16:50	40 15:19 (K10)	18:13	18	17:38 (K01)	20:40	22:08	23:28
10	09:56	12:16 (K11)	08:39	14:39 (K10)	07:09		17:20 (K01)	06:25	04:47	03:32
	15:22	28 12:44 (K11)	16:53	40 15:19 (K10)	18:16	21	17:41 (K01)	20:43	22:11	23:30
11	09:54	12:16 (K11)	08:36	14:39 (K10)	07:06		17:19 (K01)	06:21	04:44	03:31
	15:25	29 12:45 (K11)	16:56	40 15:19 (K10)	18:19	21	17:40 (K01)	20:46	22:14	23:32
12	09:52	12:16 (K11)	08:33	14:39 (K10)	07:03		17:19 (K01)	06:18	04:41	03:30
	15:27	30 12:46 (K11)	16:59	41 15:20 (K10)	18:22	22	17:41 (K01)	20:49	22:17	23:33
13	09:51	12:16 (K11)	08:30	14:38 (K10)	06:59		17:19 (K01)	06:15	04:38	03:29
	15:30	31 12:47 (K11)	17:02	41 15:19 (K10)	18:24	21	17:40 (K01)	20:52	22:20	23:35
14	09:49	12:17 (K11)	08:27	14:39 (K10)	06:56		17:19 (K01)	06:11	04:35	03:28
	15:32	31 12:48 (K11)	17:05	41 15:20 (K10)	18:27	20	17:39 (K01)	20:54	22:22	23:36
15	09:47	12:17 (K11)	08:24	14:39 (K10)	06:53		17:19 (K01)	06:08	04:32	03:27
	15:35	32 12:49 (K11)	17:08	40 15:19 (K10)	18:30	19	17:38 (K01)	20:57	22:25	23:37
16	09:45	12:17 (K11)	08:21	14:39 (K10)	06:49		17:20 (K01)	06:05	04:29	03:27
	15:38	33 12:50 (K11)	17:11	40 15:19 (K10)	18:33	17	17:37 (K01)	21:00	22:28	23:38
17	09:43	12:17 (K11)	08:18	14:39 (K10)	06:46		17:22 (K01)	06:01	04:26	03:26
	15:40	33 12:50 (K11)	17:14	40 15:19 (K10)	18:36	14	17:36 (K01)	21:03	22:31	23:39
18	09:41	12:17 (K11)	08:15	14:40 (K10)	06:43		17:24 (K01)	05:58	04:24	03:26
	15:43	33 12:50 (K11)	17:17	39 15:19 (K10)	18:39	8	17:32 (K01)	21:06	22:34	23:39
19	09:38	12:17 (K11)	08:11	14:40 (K10)	06:39			05:55	04:21	03:25
	15:46	34 12:51 (K11)	17:20	37 15:17 (K10)	18:41			21:09	22:37	23:40
20	09:36	12:18 (K11)	08:08	14:41 (K10)	06:36			05:51	04:18	03:25
	15:49	34 12:52 (K11)	17:23	36 15:17 (K10)	18:44			21:12	22:40	23:41
21	09:34	12:17 (K11)	08:05	14:43 (K10)	06:32			05:48	04:15	03:25
	15:52	34 12:51 (K11)	17:26	33 15:16 (K10)	18:47			21:15	22:43	23:41
22	09:32	12:18 (K11)	08:02	14:43 (K10)	06:29			05:45	04:13	03:25
	15:55	34 12:52 (K11)	17:29	32 15:15 (K10)	18:50			21:18	22:46	23:41
23	09:29	12:18 (K11)	07:59	14:45 (K10)	06:26			05:41	04:10	03:25
	15:58	35 12:53 (K11)	17:32	29 15:14 (K10)	18:53			21:20	22:48	23:41
24	09:27	12:19 (K11)	07:55	14:46 (K10)	06:22			05:38	04:07	03:26
	16:01	34 12:53 (K11)	17:35	25 15:11 (K10)	18:55			21:23	22:51	23:41
25	09:24	12:19 (K11)	07:52	14:49 (K10)	06:19			05:35	04:05	03:26
	16:04	34 12:53 (K11)	17:38	20 15:09 (K10)	18:58			21:26	22:54	23:41
26	09:22	12:20 (K11)	07:49	14:53 (K10)	06:15			05:32	04:02	03:27
	16:07	33 12:53 (K11)	17:41	12 15:05 (K10)	19:01			21:29	22:56	23:40
27	09:19	12:19 (K11)	07:46		06:12			05:28	04:00	03:28
	16:10	33 12:52 (K11)	17:44		19:04			21:32	22:59	23:40
28	09:16	12:20 (K11)	07:42		06:09			05:25	03:57	03:29
	16:13	33 12:53 (K11)	17:47		19:06			21:35	23:02	23:39
29	09:14	12:22 (K11)			07:05			05:22	03:55	03:30
	16:16	42 15:03 (K10)			20:09			21:38	23:04	23:39
30	09:11	12:22 (K11)			07:02			05:19	03:53	03:31
	16:19	48 15:06 (K10)			20:12			21:41	23:07	23:38
31	09:08	12:23 (K11)			06:59				03:50	
	16:22	50 15:09 (K10)			20:15				23:09	
Potential sun hours	185		243		364		446	557	601	
Total, worst case	964		990		209					
Sun reduction	0.16		0.29		0.40					
Oper. time red.	0.97		0.97		0.97					
Wind dir. red.	0.69		0.67		0.59					
Total reduction	0.11		0.19		0.23					
Total, real	106		191		49					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AJ - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (79)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December								
1	03:32	04:47	06:15	07:36	17:58 (K01)	08:05	14:09 (K10)	09:32	11:59 (K11)					
	23:37	22:27	20:46	19:05	22	18:20 (K01)	16:24	40	14:49 (K10)	15:08	29	12:28 (K11)		
2	03:34	04:50	06:18	07:39	17:57 (K01)	08:08	14:09 (K10)	09:35	12:00 (K11)					
	23:36	22:24	20:43	19:01	22	18:19 (K01)	16:21	39	14:48 (K10)	15:06	28	12:28 (K11)		
3	03:35	04:53	06:21	07:42	17:57 (K01)	08:11	14:10 (K10)	09:37	12:01 (K11)					
	23:34	22:21	20:40	18:58	21	18:18 (K01)	16:18	38	14:48 (K10)	15:04	27	12:28 (K11)		
4	03:37	04:55	06:23	07:45	17:58 (K01)	08:14	14:10 (K10)	09:39	12:01 (K11)					
	23:33	22:17	20:36	18:55	19	18:17 (K01)	16:15	37	14:47 (K10)	15:03	26	12:27 (K11)		
5	03:39	04:58	06:26	07:47	17:58 (K01)	08:17	14:11 (K10)	09:42	12:02 (K11)					
	23:32	22:14	20:33	18:51	16	18:14 (K01)	16:12	36	14:47 (K10)	15:01	25	12:27 (K11)		
6	03:40	05:01	06:29	07:50	17:59 (K01)	08:20	12:02 (K11)	09:44	12:04 (K11)					
	23:30	22:11	20:29	18:48	12	18:11 (K01)	16:09	46	14:45 (K10)	15:00	24	12:26 (K11)		
7	03:42	05:04	06:32	07:53	18:00 (K01)	08:23	11:59 (K11)	09:46	12:04 (K11)					
	23:29	22:08	20:26	18:45	7	18:07 (K01)	16:06	51	14:45 (K10)	14:58	23	12:27 (K11)		
8	03:44	05:07	06:34	07:56	18:03 (K01)	08:26	11:57 (K11)	09:48	12:06 (K11)					
	23:27	22:05	20:23	18:41	1	18:04 (K01)	16:03	51	14:43 (K10)	14:57	21	12:27 (K11)		
9	03:46	05:10	06:37	07:58	18:04 (K01)	08:29	11:56 (K11)	09:50	12:06 (K11)					
	23:25	22:02	20:19	18:38		16:01	52	14:43 (K10)	14:56	21	12:27 (K11)			
10	03:48	05:13	06:40	08:01		08:32	11:55 (K11)	09:52	12:07 (K11)					
	23:23	21:59	20:16	18:35		15:58	53	14:42 (K10)	14:55	20	12:27 (K11)			
11	03:51	05:16	06:42	08:04		08:35	11:54 (K11)	09:54	12:08 (K11)					
	23:21	21:56	20:13	18:31		15:55	49	14:39 (K10)	14:54	18	12:26 (K11)			
12	03:53	05:19	06:45	08:07		08:38	11:54 (K11)	09:56	12:09 (K11)					
	23:19	21:52	20:09	18:28		15:52	47	14:38 (K10)	14:53	17	12:26 (K11)			
13	03:55	05:21	06:48	08:10		08:41	11:53 (K11)	09:57	12:10 (K11)					
	23:17	21:49	20:06	18:25		15:49	42	14:35 (K10)	14:53	16	12:26 (K11)			
14	03:58	05:24	06:50	08:12		08:44	11:52 (K11)	09:59	12:11 (K11)					
	23:15	21:46	20:02	18:21		15:47	32	12:24 (K11)	14:52	15	12:26 (K11)			
15	04:00	05:27	06:53	08:15		15:29 (K10)	08:47	11:52 (K11)	10:00	12:12 (K11)				
	23:12	21:43	19:59	18:18	4	15:33 (K10)	15:44	33	12:25 (K11)	14:52	14	12:26 (K11)		
16	04:03	05:30	06:56	08:18		15:22 (K10)	08:50	11:52 (K11)	10:02	12:14 (K11)				
	23:10	21:39	19:56	18:15	17	15:39 (K10)	15:41	34	12:26 (K11)	14:51	12	12:26 (K11)		
17	04:05	05:33	06:59	08:21		15:20 (K10)	08:53	11:53 (K11)	10:03	12:15 (K11)				
	23:08	21:36	19:52	18:12	22	15:42 (K10)	15:39	34	12:27 (K11)	14:51	11	12:26 (K11)		
18	04:08	05:36	07:01	08:24		15:17 (K10)	08:56	11:53 (K11)	10:04	12:15 (K11)				
	23:05	21:33	19:49	18:08	27	15:44 (K10)	15:36	34	12:27 (K11)	14:51	11	12:26 (K11)		
19	04:10	05:39	07:04	08:27		15:15 (K10)	08:59	11:52 (K11)	10:05	12:16 (K11)				
	23:03	21:30	19:45	18:05	30	15:45 (K10)	15:34	35	12:27 (K11)	14:51	10	12:26 (K11)		
20	04:13	05:42	07:07	08:30		15:14 (K10)	09:02	11:53 (K11)	10:06	12:17 (K11)				
	23:00	21:26	19:42	18:02	32	15:46 (K10)	15:31	34	12:27 (K11)	14:51	9	12:26 (K11)		
21	04:16	05:44	07:09	08:32		15:12 (K10)	09:05	11:53 (K11)	10:06	12:17 (K11)				
	22:58	21:23	19:39	17:59	35	15:47 (K10)	15:29	34	12:27 (K11)	14:52	10	12:27 (K11)		
22	04:18	05:47	07:12	08:35		15:11 (K10)	09:08	11:54 (K11)	10:07	12:17 (K11)				
	22:55	21:20	19:35	17:55	36	15:47 (K10)	15:26	34	12:28 (K11)	14:52	10	12:27 (K11)		
23	04:21	05:50	07:15	08:38		15:11 (K10)	09:10	11:54 (K11)	10:08	12:18 (K11)				
	22:52	21:16	19:32	17:52	38	15:49 (K10)	15:24	34	12:28 (K11)	14:53	9	12:27 (K11)		
24	04:24	05:53	07:17	08:41		15:10 (K10)	09:13	11:54 (K11)	10:08	12:18 (K11)				
	22:50	21:13	19:28	17:49	39	15:49 (K10)	15:22	33	12:27 (K11)	14:53	10	12:28 (K11)		
25	04:27	05:56	07:20	07:44		18:09 (K01)	09:16	11:54 (K11)	10:08	12:18 (K11)				
	22:47	21:10	19:25	5	18:14 (K01)	16:46	40	14:49 (K10)	15:20	34	12:28 (K11)	14:54	11	12:29 (K11)
26	04:30	05:58	07:23	07:47		18:05 (K01)	09:19	11:55 (K11)	10:08	12:18 (K11)				
	22:44	21:06	19:22	12	18:17 (K01)	16:43	41	14:49 (K10)	15:17	33	12:28 (K11)	14:55	12	12:30 (K11)
27	04:32	06:01	07:26	07:50		18:03 (K01)	09:22	11:56 (K11)	10:08	12:18 (K11)				
	22:41	21:03	19:18	16	18:19 (K01)	16:40	40	14:49 (K10)	15:15	32	12:28 (K11)	14:56	13	12:31 (K11)
28	04:35	06:04	07:28	07:53		18:01 (K01)	09:24	11:57 (K11)	10:08	12:18 (K11)				
	22:38	21:00	19:15	18	18:19 (K01)	16:37	41	14:49 (K10)	15:13	31	12:28 (K11)	14:57	14	12:32 (K11)
29	04:38	06:07	07:31	07:56		18:00 (K01)	09:27	11:58 (K11)	10:08	12:18 (K11)				
	22:35	20:56	19:11	19	18:19 (K01)	16:33	41	14:49 (K10)	15:11	30	12:28 (K11)	14:58	14	12:32 (K11)
30	04:41	06:10	07:34	07:59		17:59 (K01)	09:30	11:58 (K11)	10:07	12:18 (K11)				
	22:32	20:53	19:08	21	18:20 (K01)	16:30	41	14:49 (K10)	15:09	29	12:27 (K11)	15:00	16	12:34 (K11)
31	04:44	06:12		08:02		14:08 (K10)		10:07	12:18 (K11)					
	22:30	20:50		16:27	40	14:48 (K10)		15:01	17	12:35 (K11)				
Potential sun hours	591	501	391	308		208		154						
Total, worst case			91	684		1141		513						
Sun reduction			0.36	0.26		0.15		0.11						
Oper. time red.			0.97	0.97		0.97		0.97						
Wind dir. red.			0.59	0.66		0.68		0.69						
Total reduction			0.21	0.17		0.10		0.07						
Total, real			19	114		114		38						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AK - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (97)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:06	09:06	13:40 (K11)	07:39	06:55	03:48
	15:03	16:25	18	13:58 (K11)	17:50	20:18
	21:44	23:12		20:18	21:44	23:12
2	10:05	13:37 (K11)	09:03	13:42 (K11)	07:36	06:52
	15:05	4 13:41 (K11)	16:28	15 13:57 (K11)	17:53	20:20
	21:47	23:14		20:20	21:47	23:14
3	10:05	13:36 (K11)	09:00	13:45 (K11)	07:33	06:48
	15:07	8 13:44 (K11)	16:31	10 13:55 (K11)	17:56	20:23
	21:50	23:16		20:23	21:50	23:16
4	10:04	13:34 (K11)	08:57		07:29	06:45
	15:09	11 13:45 (K11)	16:34		17:59	20:26
	21:53	23:19		20:26	21:53	23:19
5	10:03	13:34 (K11)	08:54	15:37 (K10)	07:26	06:42
	15:11	14 13:48 (K11)	16:38	11 15:48 (K10)	18:02	20:29
	21:56	23:21		20:29	21:56	23:21
6	10:01	13:34 (K11)	08:51	15:34 (K10)	07:23	06:38
	15:13	15 13:49 (K11)	16:41	16 15:50 (K10)	18:04	20:32
	21:59	23:23		20:32	21:59	23:23
7	10:00	13:33 (K11)	08:48	15:33 (K10)	07:19	06:35
	15:15	17 13:50 (K11)	16:44	19 15:52 (K10)	18:07	20:35
	22:02	23:25		20:35	22:02	23:25
8	09:59	13:32 (K11)	08:45	15:31 (K10)	07:16	06:31
	15:17	19 13:51 (K11)	16:47	22 15:53 (K10)	18:10	20:37
	22:05	23:27		20:37	22:05	23:27
9	09:57	13:32 (K11)	08:42	15:31 (K10)	07:13	06:28
	15:20	20 13:52 (K11)	16:50	24 15:55 (K10)	18:13	20:40
	22:08	23:28		20:40	22:08	23:28
10	09:56	13:32 (K11)	08:39	15:30 (K10)	07:09	06:25
	15:22	21 13:53 (K11)	16:53	26 15:56 (K10)	18:16	20:43
	22:11	23:30		20:43	22:11	23:30
11	09:54	13:32 (K11)	08:36	15:29 (K10)	07:06	06:21
	15:24	22 13:54 (K11)	16:56	27 15:56 (K10)	18:19	20:46
	22:14	23:32		20:46	22:14	23:32
12	09:52	13:31 (K11)	08:33	15:29 (K10)	07:03	06:18
	15:27	24 13:55 (K11)	16:59	28 15:57 (K10)	18:22	20:49
	22:17	23:33		20:49	22:17	23:33
13	09:51	13:31 (K11)	08:30	15:28 (K10)	06:59	06:15
	15:30	25 13:56 (K11)	17:02	29 15:57 (K10)	18:24	20:52
	22:20	23:35		20:52	22:20	23:35
14	09:49	13:31 (K11)	08:27	15:29 (K10)	06:56	06:11
	15:32	26 13:57 (K11)	17:05	29 15:58 (K10)	18:27	20:54
	22:22	23:36		20:54	22:22	23:36
15	09:47	13:32 (K11)	08:24	15:28 (K10)	06:53	06:08
	15:35	26 13:58 (K11)	17:08	29 15:57 (K10)	18:30	20:57
	22:25	23:37		20:57	22:25	23:37
16	09:45	13:32 (K11)	08:21	15:29 (K10)	06:49	06:05
	15:38	27 13:59 (K11)	17:11	29 15:58 (K10)	18:33	21:00
	22:28	23:38		21:00	22:28	23:38
17	09:43	13:32 (K11)	08:18	15:28 (K10)	06:46	06:01
	15:40	27 13:59 (K11)	17:14	29 15:57 (K10)	18:36	21:03
	22:31	23:39		21:03	22:31	23:39
18	09:41	13:31 (K11)	08:15	15:29 (K10)	06:42	05:58
	15:43	28 13:59 (K11)	17:17	28 15:57 (K10)	18:38	21:06
	22:34	23:39		21:06	22:34	23:39
19	09:38	13:32 (K11)	08:11	15:29 (K10)	06:39	05:55
	15:46	28 14:00 (K11)	17:20	27 15:56 (K10)	18:41	21:09
	22:37	23:40		21:09	22:37	23:40
20	09:36	13:32 (K11)	08:08	15:30 (K10)	06:36	05:51
	15:49	29 14:01 (K11)	17:23	25 15:55 (K10)	18:44	21:12
	22:40	23:41		21:12	22:40	23:41
21	09:34	13:32 (K11)	08:05	15:31 (K10)	06:32	05:48
	15:52	29 14:01 (K11)	17:26	23 15:54 (K10)	18:47	21:15
	22:43	23:41		21:15	22:43	23:41
22	09:32	13:32 (K11)	08:02	15:33 (K10)	06:29	05:45
	15:55	29 14:01 (K11)	17:29	20 15:53 (K10)	18:50	21:17
	22:46	23:41		21:17	22:46	23:41
23	09:29	13:33 (K11)	07:59	15:35 (K10)	06:26	05:41
	15:58	29 14:02 (K11)	17:32	17 15:52 (K10)	18:52	21:20
	22:48	23:41		21:20	22:48	23:41
24	09:27	13:34 (K11)	07:55	15:38 (K10)	06:22	05:38
	16:01	28 14:02 (K11)	17:35	10 15:48 (K10)	18:55	21:23
	22:51	23:41		21:23	22:51	23:41
25	09:24	13:33 (K11)	07:52		06:19	05:35
	16:04	29 14:02 (K11)	17:38		18:58	21:26
	22:54	23:41		18:58	21:26	22:54
26	09:22	13:34 (K11)	07:49		06:15	05:31
	16:07	28 14:02 (K11)	17:41		19:01	21:29
	22:56	23:40		19:01	21:29	22:56
27	09:19	13:34 (K11)	07:46		06:12	05:28
	16:10	27 14:01 (K11)	17:44		19:04	21:32
	22:59	23:40		19:04	21:32	22:59
28	09:16	13:35 (K11)	07:42		06:09	05:25
	16:13	26 14:01 (K11)	17:47		19:06	21:35
	23:02	23:39		19:06	21:35	23:02
29	09:14	13:37 (K11)			07:05	05:22
	16:16	24 14:01 (K11)			20:09	21:38
	23:04	23:39		20:09	21:38	23:04
30	09:11	13:37 (K11)			07:02	05:19
	16:19	23 14:00 (K11)			20:12	21:41
	23:07	23:38		20:12	21:41	23:07
31	09:08	13:39 (K11)			06:58	03:50
	16:22	21 14:00 (K11)			20:15	23:09
	23:09				20:15	23:09
Potential sun hours	185	243	364	446	557	601
Total, worst case	684	511				
Sun reduction	0.16	0.29				
Oper. time red.	0.97	0.97				
Wind dir. red.	0.67	0.64				
Total reduction	0.11	0.18				
Total, real	74	94				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AK - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (97)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32	04:47	06:15	07:36	08:05	15:00 (K10) 09:32 13:14 (K11)
	23:37	22:27	20:46	19:05	16:24 25	15:25 (K10) 15:08 22 13:36 (K11)
2	03:34	04:50	06:18	07:39	08:08	15:00 (K10) 09:35 13:15 (K11)
	23:36	22:24	20:43	19:01	16:21 24	15:24 (K10) 15:06 21 13:36 (K11)
3	03:35	04:53	06:21	07:42	08:11	15:02 (K10) 09:37 13:16 (K11)
	23:34	22:20	20:40	18:58	16:18 21	15:23 (K10) 15:04 20 13:36 (K11)
4	03:37	04:55	06:23	07:45	08:14	15:03 (K10) 09:39 13:17 (K11)
	23:33	22:17	20:36	18:55	16:15 19	15:22 (K10) 15:03 18 13:35 (K11)
5	03:38	04:58	06:26	07:47	08:17	15:05 (K10) 09:42 13:18 (K11)
	23:32	22:14	20:33	18:51	16:12 15	15:20 (K10) 15:01 17 13:35 (K11)
6	03:40	05:01	06:29	07:50	08:20	15:07 (K10) 09:44 13:20 (K11)
	23:30	22:11	20:29	18:48	16:09 10	15:17 (K10) 15:00 15 13:35 (K11)
7	03:42	05:04	06:31	07:53	08:23	15:09 15 13:35 (K11)
	23:29	22:08	20:26	18:45	16:06	14:58 13 13:34 (K11)
8	03:44	05:07	06:34	07:56	08:26	13:15 (K11) 09:48 13:23 (K11)
	23:27	22:05	20:23	18:41	16:03 10	13:25 (K11) 14:57 11 13:34 (K11)
9	03:46	05:10	06:37	07:58	08:29	13:12 (K11) 09:50 13:24 (K11)
	23:25	22:02	20:19	18:38	16:00 16	13:28 (K11) 14:56 9 13:33 (K11)
10	03:48	05:13	06:40	08:01	08:32	13:11 (K11) 09:52 13:26 (K11)
	23:23	21:59	20:16	18:35	15:58 19	13:30 (K11) 14:55 5 13:31 (K11)
11	03:51	05:16	06:42	08:04	08:35	13:09 (K11) 09:54 14:54
	23:21	21:56	20:12	18:31	15:55 22	13:31 (K11) 14:54 09:56
12	03:53	05:19	06:45	08:07	08:38	13:09 (K11) 09:56 14:53
	23:19	21:52	20:09	18:28	15:52 23	13:32 (K11) 14:53 09:57
13	03:55	05:21	06:48	08:10	08:41	13:08 (K11) 09:57 14:53
	23:17	21:49	20:06	18:25	15:49 25	13:33 (K11) 14:53 09:59
14	03:58	05:24	06:50	08:12	08:44	13:07 (K11) 14:52 14:52
	23:15	21:46	20:02	18:21	15:47 26	13:33 (K11) 14:52 10:00
15	04:00	05:27	06:53	08:15	08:47	13:07 (K11) 14:52 10:02
	23:12	21:43	19:59	18:18	15:44 27	13:34 (K11) 14:52 14:51
16	04:03	05:30	06:56	08:18	08:50	13:07 (K11) 14:51 10:03
	23:10	21:39	19:56	18:15	15:41 28	13:35 (K11) 14:51 10:04
17	04:05	05:33	06:59	08:21	16:14 (K10) 08:53	13:07 (K11) 14:51 10:04
	23:08	21:36	19:52	18:12	2 16:16 (K10) 15:39	29 13:36 (K11) 14:51 10:04
18	04:08	05:36	07:01	08:24	16:08 (K10) 08:56	13:07 (K11) 14:51 10:05
	23:05	21:33	19:49	18:08	13 16:21 (K10) 15:36	28 13:35 (K11) 14:51 10:05
19	04:10	05:39	07:04	08:27	16:05 (K10) 08:59	13:07 (K11) 14:51 10:06
	23:03	21:30	19:45	18:05	18 16:23 (K10) 15:34	29 13:36 (K11) 14:51 10:06
20	04:13	05:41	07:07	08:30	16:03 (K10) 09:02	13:07 (K11) 14:51 10:06
	23:00	21:26	19:42	18:02	21 16:24 (K10) 15:31	29 13:36 (K11) 14:51 10:06
21	04:16	05:44	07:09	08:32	16:01 (K10) 09:05	13:08 (K11) 14:51 10:07
	22:58	21:23	19:39	17:59	24 16:25 (K10) 15:29	29 13:37 (K11) 14:52 10:07
22	04:18	05:47	07:12	08:35	16:00 (K10) 09:08	13:08 (K11) 14:52 10:08
	22:55	21:20	19:35	17:55	26 16:26 (K10) 15:26	29 13:37 (K11) 14:52 10:08
23	04:21	05:50	07:15	08:38	16:00 (K10) 09:10	13:09 (K11) 14:52 10:08
	22:52	21:16	19:32	17:52	27 16:27 (K10) 15:24	28 13:37 (K11) 14:53 10:08
24	04:24	05:53	07:17	08:41	15:59 (K10) 09:13	13:08 (K11) 14:53 10:08
	22:50	21:13	19:28	17:49	28 16:27 (K10) 15:22	28 13:36 (K11) 14:53 10:08
25	04:27	05:56	07:20	07:44	14:58 (K10) 09:16	13:09 (K11) 14:54 10:08
	22:47	21:10	19:25	16:46	29 15:27 (K10) 15:20	28 13:37 (K11) 14:54 10:08
26	04:30	05:58	07:23	07:47	14:58 (K10) 09:19	13:10 (K11) 14:55 10:08
	22:44	21:06	19:22	16:43	29 15:27 (K10) 15:17	27 13:37 (K11) 14:55 10:08
27	04:32	06:01	07:26	07:50	14:58 (K10) 09:22	13:11 (K11) 14:56 10:08
	22:41	21:03	19:18	16:40	29 15:27 (K10) 15:15	26 13:37 (K11) 14:56 10:08
28	04:35	06:04	07:28	07:53	14:58 (K10) 09:24	13:12 (K11) 14:57 10:08
	22:38	21:00	19:15	16:36	29 15:27 (K10) 15:13	25 13:37 (K11) 14:57 10:08
29	04:38	06:07	07:31	07:56	14:58 (K10) 09:27	13:13 (K11) 14:58 10:08
	22:35	20:56	19:11	16:33	28 15:26 (K10) 15:11	24 13:37 (K11) 14:58 10:07
30	04:41	06:09	07:34	07:59	14:59 (K10) 09:30	13:13 (K11) 14:59 15:00
	22:32	20:53	19:08	16:30	27 15:26 (K10) 15:09	23 13:36 (K11) 15:00 10:07
31	04:44	06:12	08:02	08:27	14:59 (K10) 09:33	13:14 (K11) 15:01 10:07
	22:30	20:50	16:27	26 15:25 (K10) 09:36	13:14 (K11) 15:01 10:07	
Potential sun hours	591	501	391	308	208	154
Total, worst case				356	692	151
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.64	0.67	0.67
Total reduction				0.16	0.10	0.07
Total, real				58	67	11

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AL - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (73)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:49 23:11	03:33 23:36	04:47 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:02 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:47 23:13	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:34 15:06
3	10:04 15:07	09:00 16:32	07:32 17:56	06:48 20:23	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:20	06:21 20:39	07:42 18:58	08:11 16:18	09:37 15:05
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:37 23:32	04:56 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:55	03:41 23:20	03:39 23:31	04:59 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:41 15:02
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:58	03:39 23:22	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:34	04:57 22:01	03:37 23:24	03:43 23:28	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:58 15:18	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:04	03:36 23:26	03:45 23:26	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:07	03:34 23:28	03:47 23:24	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:57
10	09:55 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:10	03:33 23:29	03:49 23:22	05:13 21:58	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:13	03:32 23:31	03:51 23:21	05:16 21:55	06:42 20:12	08:04 18:31	08:35 15:55	09:54 14:55
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:16	03:30 23:32	03:53 23:18	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:55 14:54
13	09:50 15:30	08:30 17:02	06:59 18:24	06:15 20:51	04:38 22:19	03:29 23:34	03:56 23:16	05:22 21:49	06:48 20:06	08:09 18:25	08:41 15:50	09:57 14:53
14	09:48 15:33	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:29 23:35	03:58 23:14	05:25 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:58 14:53
15	09:46 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:28 23:36	04:01 23:12	05:27 21:42	06:53 18:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:44 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:37	04:03 23:10	05:30 21:39	06:56 19:55	08:18 18:15	08:50 15:42	10:01 14:52
17	09:42 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:27 22:31	03:27 23:38	04:06 23:07	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:02 14:52
18	09:40 15:44	08:14 17:17	06:42 18:38	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:03 14:52
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:39	04:11 23:02	05:39 21:29	07:04 19:45	08:26 18:05	08:58 15:34	10:04 14:52
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:11	04:18 22:39	03:26 23:40	04:13 23:00	05:42 21:26	07:07 19:42	08:29 18:02	09:01 15:31	10:05 14:52
21	09:33 15:52	08:05 17:26	06:32 18:47	05:48 21:14	04:16 22:42	03:26 23:40	04:16 22:57	05:44 21:23	07:09 19:38	08:32 17:59	09:04 15:29	10:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:26 23:40	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:07 15:27	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:52	05:41 21:20	04:10 22:48	03:26 23:40	04:22 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53
24	09:26 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:08 22:51	03:26 23:40	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:07 14:54
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:53	03:27 23:40	04:27 22:46	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:21 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:58 21:06	07:23 19:22	07:47 16:43	09:18 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:39	04:33 22:41	06:01 21:03	07:25 19:18	07:50 16:40	09:21 15:16	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:58 23:01	03:29 23:39	04:36 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:13 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 15:12	10:07 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:06	03:32 23:37	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00
31	09:08 16:22		06:58 20:15	05:18 21:41	03:51 23:09		04:44 22:29	06:12 20:50	08:02 16:27			10:06 15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AM - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (94)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December	
1	10:06 15:03	09:05 16:25	07:39 17:50	17:00 (K10) 20:18	06:55 21:44	05:15 23:12	03:48 23:37	03:32 22:26	04:47 20:46	06:15 19:05	07:36 17:50 (K10)	08:05 16:24	15:00 (K11) 09:32
2	10:05 15:05	09:03 16:28	07:36 17:53	17:14 (K10) 20:20	06:52 21:47	05:12 23:14	03:46 23:36	03:34 22:23	04:50 20:43	06:18 19:01	07:39 17:52 (K10)	08:08 16:21	15:00 (K11) 09:35
3	10:05 15:07	09:00 16:31	07:33 17:56	16:58 (K10) 20:23	06:48 21:50	05:09 23:16	03:44 23:34	03:35 22:20	04:52 20:40	06:20 18:58	07:42 17:53 (K10)	08:11 16:18	15:00 (K11) 09:37
4	10:04 15:09	08:57 16:34	07:29 17:59	16:56 (K10) 20:26	06:45 21:53	05:06 23:18	03:42 23:33	03:37 22:17	04:55 20:36	06:23 18:55	07:45 17:54 (K10)	08:14 16:15	15:01 (K11) 09:39
5	10:02 15:11	08:54 16:38	07:26 18:02	16:56 (K10) 20:29	06:42 21:56	05:03 23:21	03:40 23:32	03:38 22:14	04:58 20:33	06:26 18:51	07:47 17:53 (K10)	08:17 16:12	15:03 (K11) 09:42
6	10:01 15:13	08:51 16:41	07:23 18:04	16:55 (K10) 20:32	06:38 21:59	05:03 23:23	03:40 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 17:33 (K10)	08:23 16:09	15:03 (K11) 09:44
7	10:00 15:15	08:48 16:44	07:19 18:07	16:56 (K10) 20:34	06:35 22:02	04:56 23:25	03:37 23:28	03:42 22:08	06:31 20:26	07:53 18:45	08:23 17:55 (K10)	08:26 16:06	15:05 (K11) 09:46
8	09:59 15:17	08:45 16:47	07:16 18:10	16:55 (K10) 20:37	06:31 22:05	04:53 23:27	03:35 23:27	03:44 22:05	06:34 20:23	07:56 18:41	08:26 17:31 (K10)	08:26 16:03	15:07 (K11) 09:48
9	09:57 15:20	08:42 16:50	07:13 18:13	16:56 (K10) 20:40	06:28 22:08	04:50 23:28	03:34 23:25	03:46 22:02	06:37 20:19	07:58 18:38	08:29 17:53 (K10)	08:29 16:00	15:09 09:50
10	09:56 15:22	08:39 16:53	07:09 18:16	16:58 (K10) 20:43	06:25 22:11	04:47 23:30	03:32 23:23	03:48 21:59	05:13 20:16	08:01 18:35	08:32 17:52 (K10)	08:32 15:58	15:09 14:55
11	09:54 15:24	08:36 16:56	07:06 18:19	16:58 (K10) 20:46	06:21 22:14	04:44 23:32	03:31 23:21	03:51 21:55	05:16 20:12	06:42 18:31	08:04 17:51 (K10)	08:35 15:55	15:09 14:54
12	09:52 15:27	08:33 16:59	07:03 18:22	17:01 (K10) 20:49	06:18 22:17	04:41 23:33	03:30 23:19	03:53 21:52	05:19 20:09	06:45 18:28	08:07 17:49 (K10)	08:38 15:52	15:09 14:53
13	09:51 15:30	08:30 17:02	06:59 18:24	17:05 (K10) 20:52	06:15 22:19	04:38 23:34	03:29 23:17	03:55 21:49	05:21 20:06	06:48 18:25	08:10 17:46 (K10)	08:41 15:49	15:09 14:53
14	09:49 15:32	08:27 17:05	06:56 18:27	17:06 (K10) 20:51	06:11 22:22	04:35 23:36	03:28 23:15	03:58 21:46	05:24 20:02	06:50 18:21	08:12 17:42 (K10)	08:44 15:47	15:09 14:52
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:27 23:37	03:27 23:12	04:00 21:43	05:27 19:59	06:53 18:18	08:15 17:32 (K10)	08:47 15:44	15:00 14:52
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:28	03:26 23:38	04:03 23:10	03:30 21:39	05:30 19:55	06:56 18:15	08:18 17:05 (K11)	08:50 15:41	15:00 14:51
17	09:43 15:40	08:18 17:14	06:46 18:36	06:01 21:03	04:26 22:31	03:26 23:39	04:05 23:08	03:33 21:36	06:58 19:52	08:21 18:12	08:53 17:31 (K10)	09:00 15:39	15:03 14:51
18	09:41 15:43	08:15 17:17	06:42 18:38	05:58 21:06	04:23 22:34	03:25 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 17:32 (K10)	09:08 15:36	15:04 14:51
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40	04:10 23:03	05:39 21:30	07:04 19:45	08:27 18:05	09:09 17:05 (K11)	09:29 15:34	15:05 14:51
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:40	04:13 23:00	05:41 21:26	07:07 19:42	08:29 18:02	09:02 16:08 (K11)	09:29 15:31	15:06 14:51
21	09:34 15:52	08:05 17:26	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41	04:16 22:58	05:44 21:23	07:09 19:38	08:32 17:59	09:05 16:19 (K11)	09:29 15:29	15:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:12 22:45	03:25 23:41	04:18 22:55	05:47 21:20	07:12 19:35	08:35 17:55	09:07 16:21 (K11)	09:29 15:26	15:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:52	05:41 21:20	04:10 22:48	03:25 23:41	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 16:22 (K11)	09:29 15:24	15:07 14:53
24	09:27 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 16:24 (K11)	09:29 15:22	15:08 14:53
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:26 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:25 (K11)	09:29 15:19	15:08 14:54
26	09:22 16:07	07:49 17:41	06:15 19:01	05:31 21:29	04:02 22:56	03:27 23:40	04:30 22:44	05:58 21:06	07:23 19:22	07:47 16:43	09:19 15:25 (K11)	09:29 15:17	15:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:32 22:41	06:01 21:03	07:25 19:18	07:50 16:40	09:22 15:26 (K11)	09:29 15:15	15:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:02	03:29 23:39	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:36	09:24 14:59 (K11)	09:29 15:13	15:08 14:57
29	09:14 16:16	07:41 17:50	06:05 19:09	05:22 21:38	03:55 23:04	03:30 23:39	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 14:59 (K11)	09:29 15:11	15:08 14:58
30	09:11 16:19	07:40 17:55	06:04 19:10	05:18 21:41	03:53 23:07	03:31 23:38	04:41 22:32	06:09 20:53	07:34 19:08	07:59 16:30	09:29 14:59 (K11)	09:29 15:09	15:07 15:00
31	09:08 16:22	07:40 18:00	06:58 19:15	03:50 23:09	04:58 22:29	03:50 23:50	04:44 20:50	06:12 20:50	08:02 16:27	08:02 15:25 (K11)	09:29 15:09	09:29 15:01	15:07 15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	157	154
Total, worst case													
Sun reduction		0.29		0.40						0.26		0.15	
Oper. time red.		0.97		0.97						0.97		0.97	
Wind dir. red.		0.64		0.61						0.63		0.64	
Total reduction		0.18		0.24						0.16		0.09	
Total, real		75		55						79		15	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AN - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (74) Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December					
1	10:06	09:05	07:39	06:55	05:15		03:48		04:47	21:11 (K12)	06:15	07:36	08:05	09:32			
2	15:04	16:25	17:50	20:18	21:44		23:11	16	21:23 (K12)	23:36	22:26	26	21:37 (K12)	20:46	19:05	16:24	15:08
3	10:04	09:00	07:32	06:48	05:09		03:44	14	21:23 (K12)	23:35	04:50	25	21:36 (K12)	20:43	19:01	16:21	15:06
4	10:03	08:57	07:29	06:45	05:06		03:42	12	21:21 (K12)	23:34	04:53	23	21:35 (K12)	20:39	18:58	16:18	15:04
5	15:09	16:35	17:59	20:26	21:53		23:18	9	21:20 (K12)	23:33	04:56	19	21:32 (K12)	20:36	18:55	16:15	15:03
6	10:01	08:51	07:23	06:38	05:00	4	21:09 (K12)	03:41	04:58	21:14 (K12)	06:26	07:47	08:17	09:41			
7	15:13	16:41	18:04	20:32	21:58	9	21:15 (K12)	03:39	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
8	10:00	08:48	07:19	06:35	04:56	14	21:18 (K12)	03:37	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
9	15:18	16:44	18:07	20:34	22:01	14	21:18 (K12)	03:37	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
10	09:57	08:42	07:13	06:28	04:50	21	21:02 (K12)	03:34	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
11	15:20	16:50	18:13	20:40	22:07	21	21:23 (K12)	03:28	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
12	09:55	08:39	07:09	06:25	04:47	21	21:02 (K12)	03:33	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
13	15:22	16:53	18:16	20:43	22:10	24	21:26 (K12)	03:30	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
14	09:54	08:36	07:06	06:21	04:44	25	21:26 (K12)	03:31	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
15	15:25	16:56	18:19	20:46	22:13	25	21:26 (K12)	03:31	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
16	09:52	08:33	07:03	06:18	04:41	26	21:26 (K12)	03:33	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
17	15:27	16:59	18:22	20:49	22:16	26	21:26 (K12)	03:33	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
18	09:50	08:30	07:00	06:15	04:38	27	21:27 (K12)	03:34	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
19	15:30	17:02	18:24	20:51	22:19	27	21:27 (K12)	03:34	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
20	09:48	08:27	06:56	06:11	04:35	28	21:27 (K12)	03:35	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
21	15:32	17:05	18:27	20:54	22:22	28	21:27 (K12)	03:35	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
22	09:46	08:24	06:53	06:08	04:32	28	21:27 (K12)	03:35	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
23	15:35	17:08	18:30	20:57	22:25	27	21:27 (K12)	03:36	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
24	09:44	08:21	06:49	06:05	04:29	28	21:27 (K12)	03:37	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
25	15:38	17:11	18:33	21:00	22:28	28	21:28 (K12)	03:37	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
26	09:42	08:18	06:46	06:01	04:27	28	21:27 (K12)	03:38	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
27	15:41	17:14	18:36	21:03	22:31	28	21:27 (K12)	03:38	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
28	09:40	08:14	06:42	05:58	04:24	28	21:28 (K12)	03:39	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
29	15:43	17:17	18:38	21:06	22:34	28	21:28 (K12)	03:39	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
30	09:38	08:11	06:39	05:55	04:21	28	21:28 (K12)	03:40	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
31	15:46	17:20	18:41	21:09	22:37	28	21:28 (K12)	03:40	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
32	09:36	08:08	06:36	05:51	04:18	28	21:28 (K12)	03:40	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
33	15:49	17:23	18:44	21:11	22:39	28	21:27 (K12)	03:40	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
34	09:34	08:05	06:32	05:48	04:15	27	21:27 (K12)	03:40	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
35	15:52	17:26	18:47	21:14	22:42	27	21:27 (K12)	03:40	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
36	09:31	08:02	06:29	05:45	04:13	27	21:27 (K12)	03:41	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
37	15:55	17:29	18:50	21:17	22:45	27	21:27 (K12)	03:41	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
38	09:29	07:59	06:26	05:41	04:10	26	21:27 (K12)	03:41	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
39	15:58	17:32	18:52	21:20	22:48	26	21:27 (K12)	03:41	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
40	09:26	07:55	06:22	05:38	04:07	26	21:27 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
41	16:01	17:35	18:55	21:23	22:51	26	21:27 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
42	09:24	07:52	06:19	05:35	04:05	24	21:26 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
43	16:04	17:38	18:58	21:26	22:53	24	21:26 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
44	09:21	07:49	06:15	05:32	04:02	24	21:26 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
45	16:07	17:41	19:01	21:29	22:56	24	21:26 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
46	09:19	07:46	06:12	05:28	04:00	24	21:26 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
47	16:10	17:44	19:04	21:32	22:59	22	21:25 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
48	09:16	07:42	06:09	05:25	03:57	22	21:24 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
49	16:13	17:47	19:06	21:35	23:01	22	21:26 (K12)	03:42	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
50	09:13	07:05	05:22	03:55	02:27	21	21:05 (K12)	03:30	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
51	16:16	17:09	18:28	20:54	22:20	20	21:25 (K12)	03:38	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
52	09:11	07:02	05:19	03:53	02:25	20	21:05 (K12)	03:31	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
53	16:19	17:12	18:31	20:56	22:22	19	21:24 (K12)	03:37	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
54	09:08	06:58	05:24	03:51	02:17	19	21:07 (K12)	03:24	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
55	16:22	17:15	18:34	20:59	22:29	17	21:24 (K12)	03:29	04:58	21:30 (K12)	06:26	07:47	08:17	09:41			
Potential sun hours	185	243	364	446	556	616	600	590	577	501	391	308	208	155			
Total, worst case						0.48			0.48								
Sun reduction						0.97			0.97								
Oper. time red.						0.62			0.62								
Wind dir. red.						0.29			0.28								
Total reduction						0.178			0.16								
Total, real																	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)



Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AO - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (93)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31). Each cell contains a time range (hh:mm) and some cells include a number of flickers in parentheses. Summary rows at the bottom show 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_without_forest Shadow receptor: AP - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (76)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31). Includes potential sun hours, sun reduction, and total reduction data.

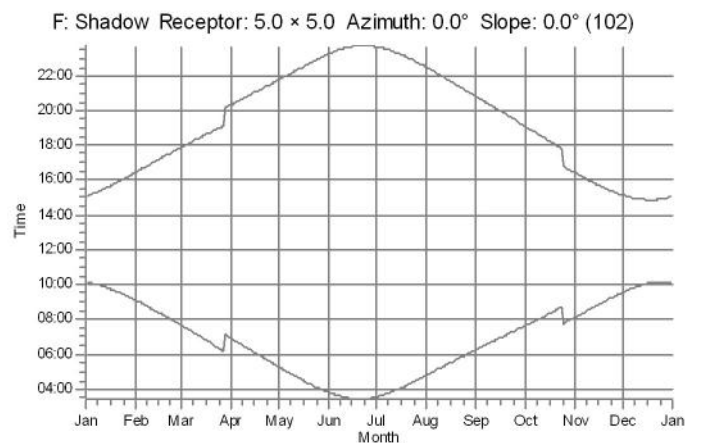
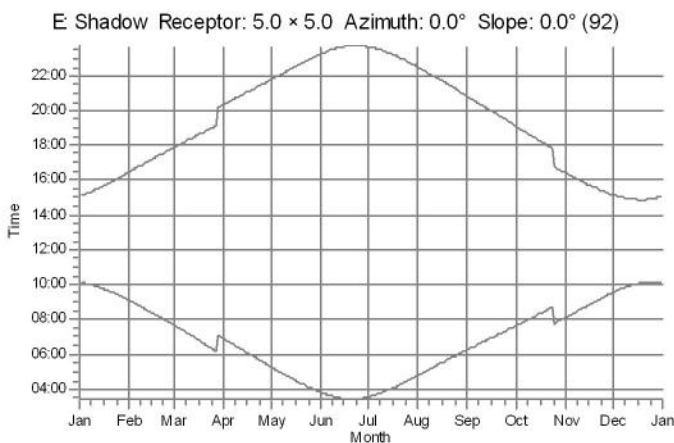
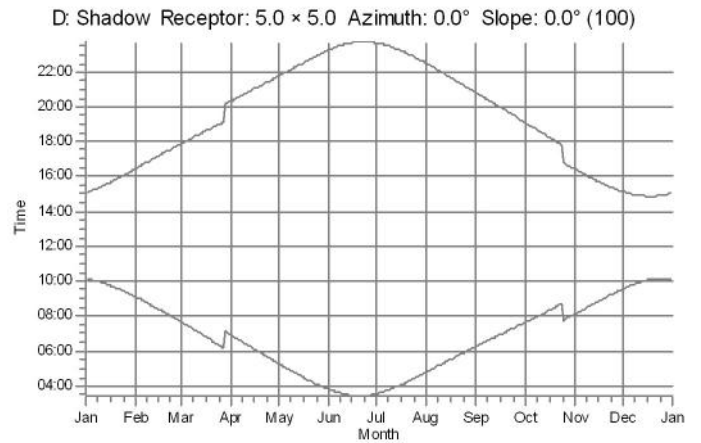
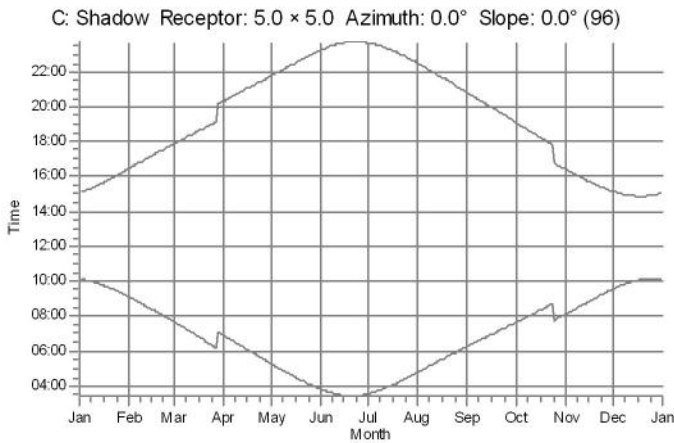
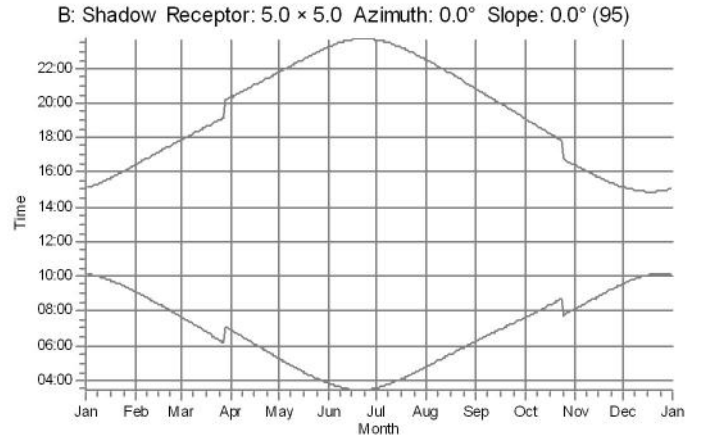
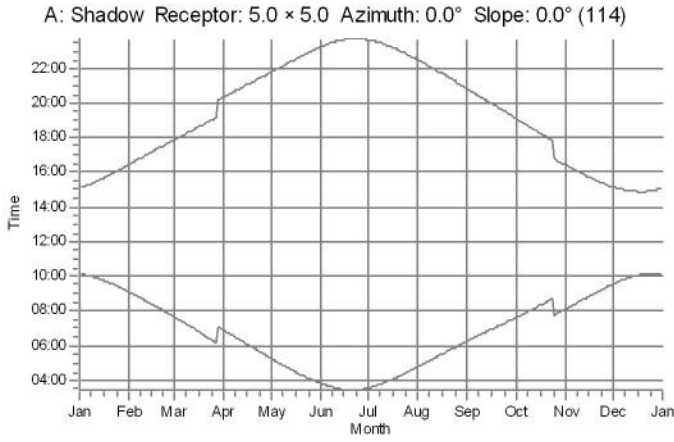
Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar, graphical

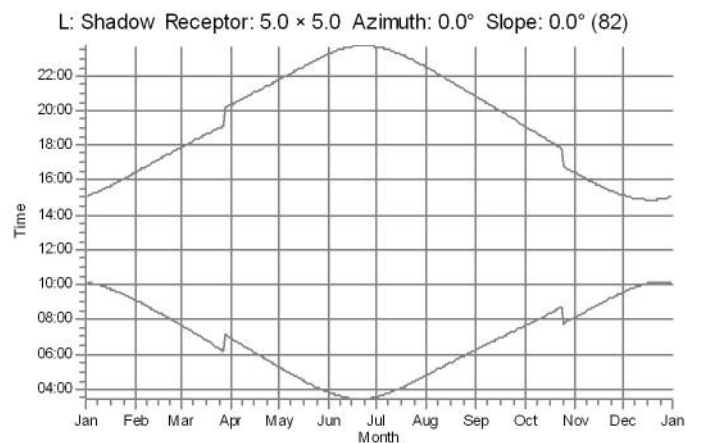
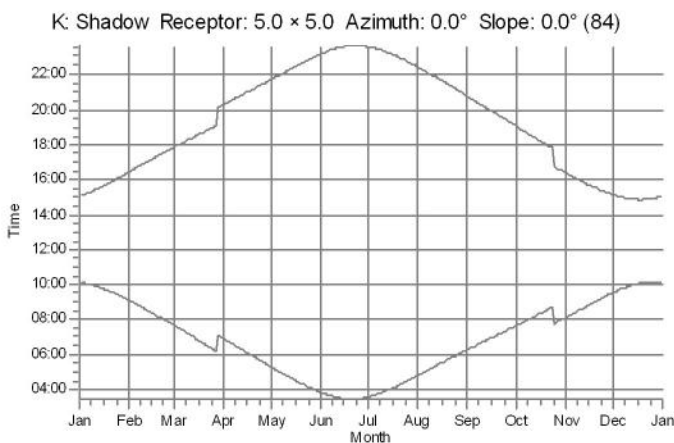
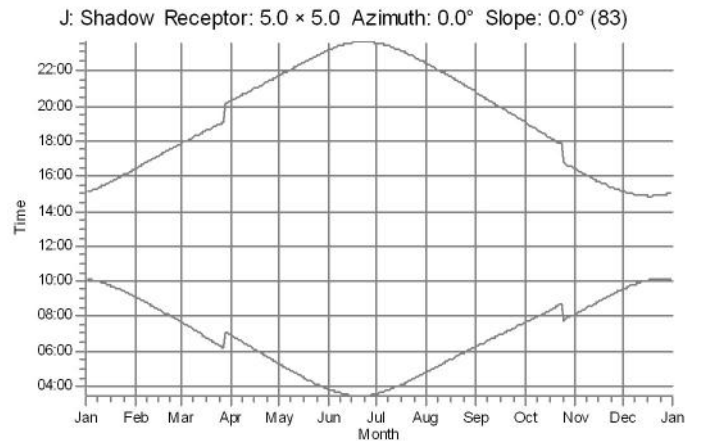
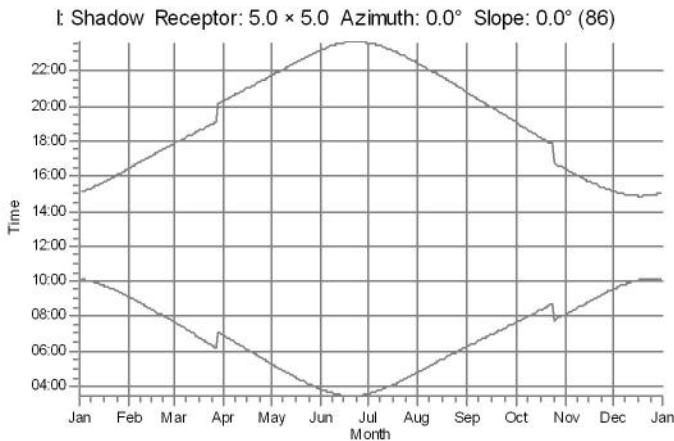
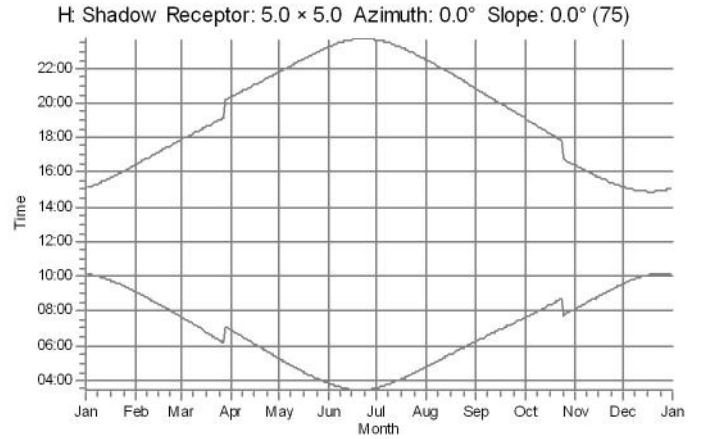
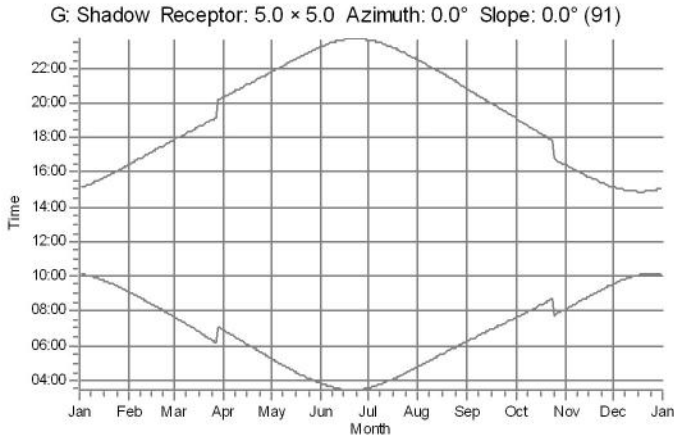
Calculation: VE1: Kattiharju+extension_without_forest



WTGs

SHADOW - Calendar, graphical

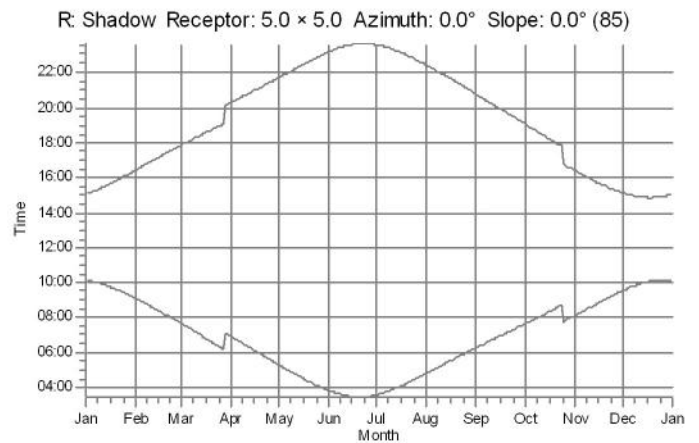
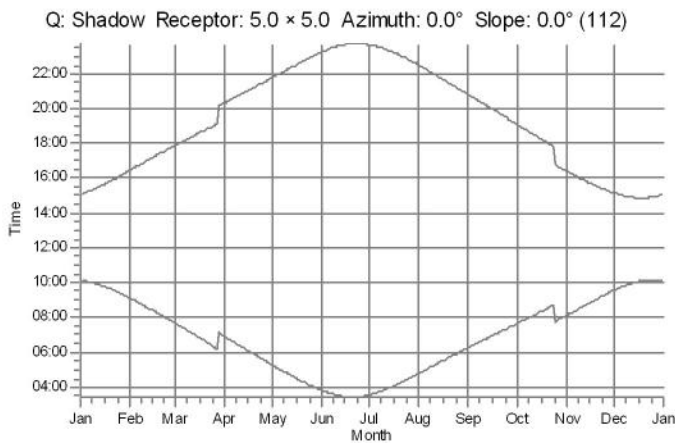
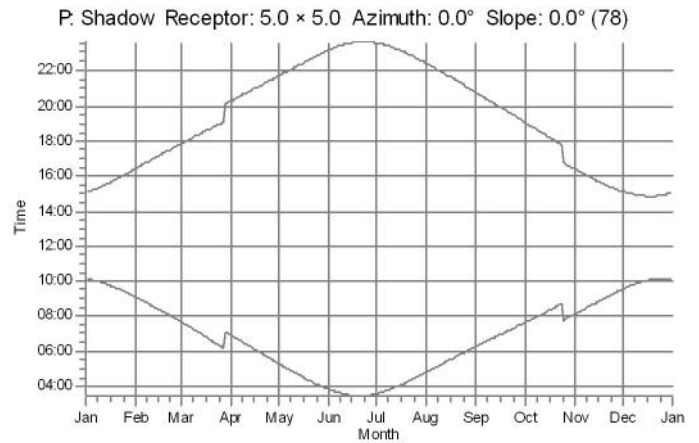
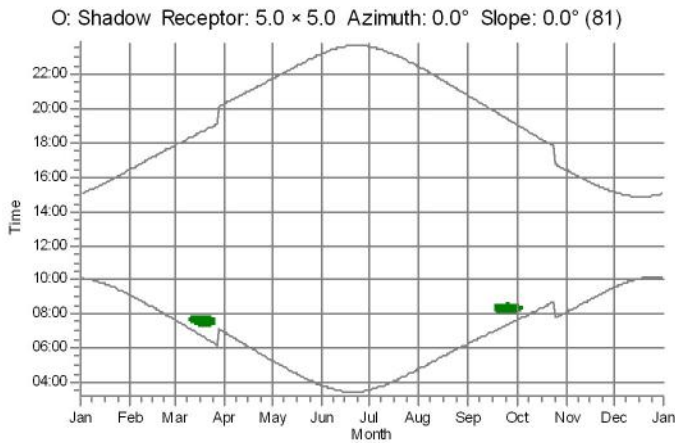
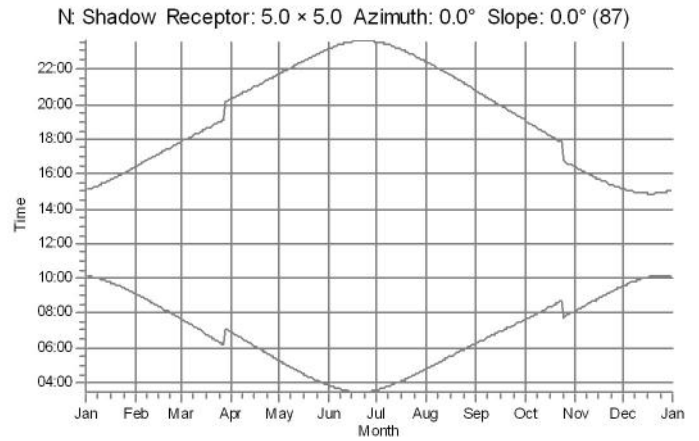
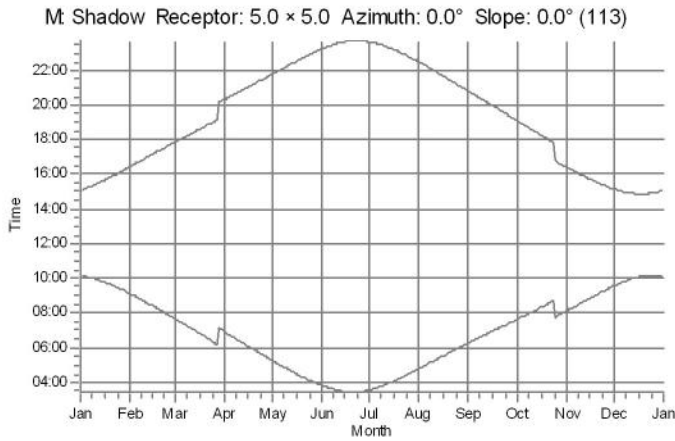
Calculation: VE1: Kattiharju+extension_without_forest




WTGs

SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_without_forest

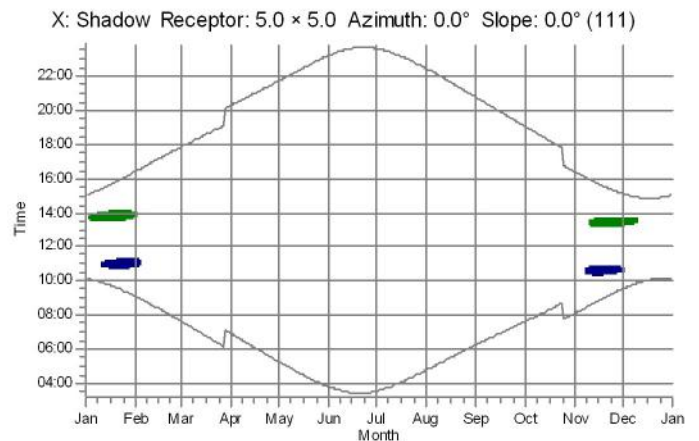
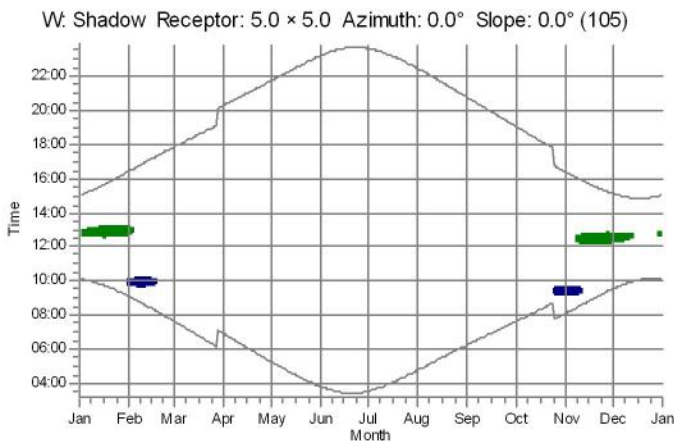
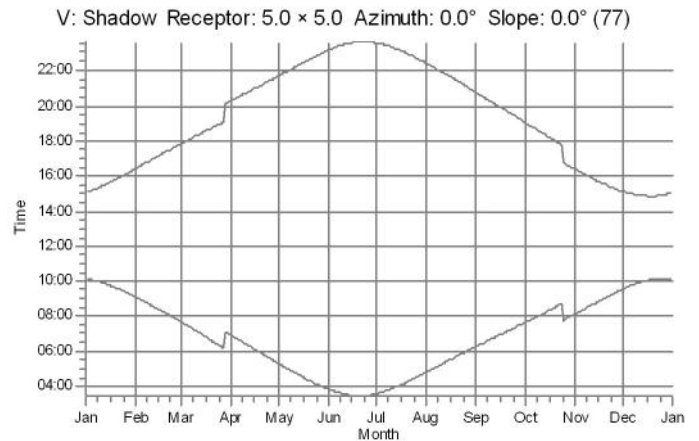
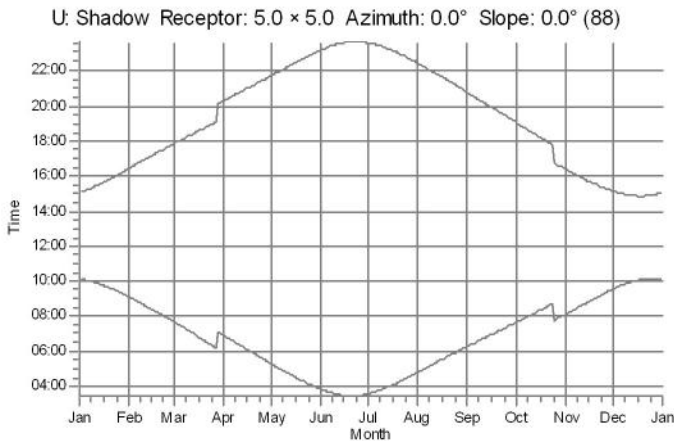
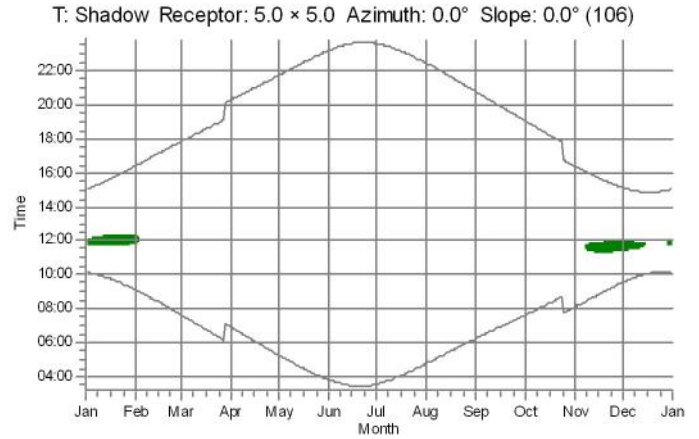
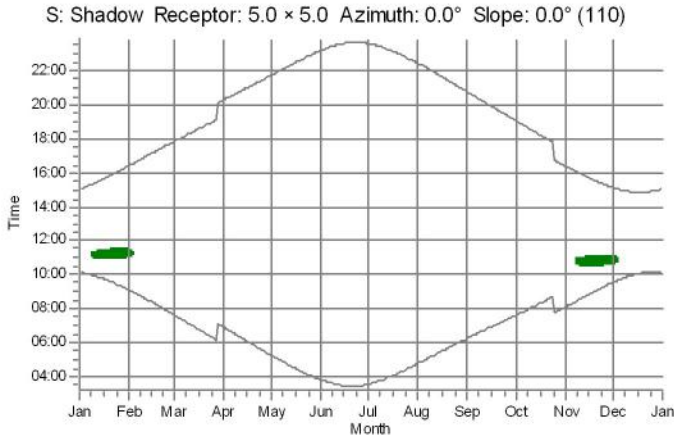


WTGs

 Extension WTG 01: NORDEX Generic 180-169 6800 180.0 I-I hub: 169.0 m (TOT: 259.0 m) (93)

SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_without_forest



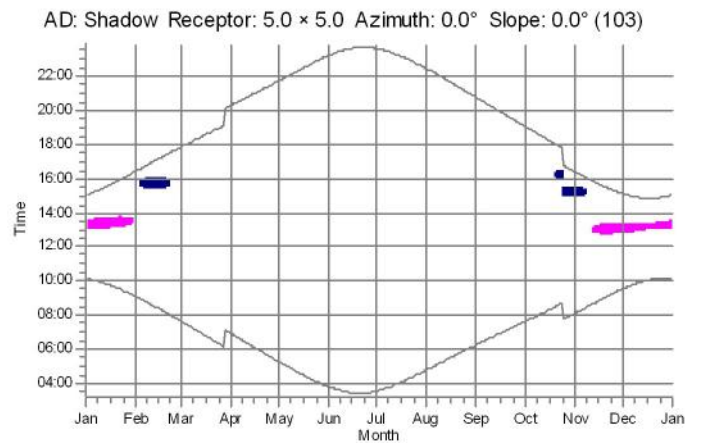
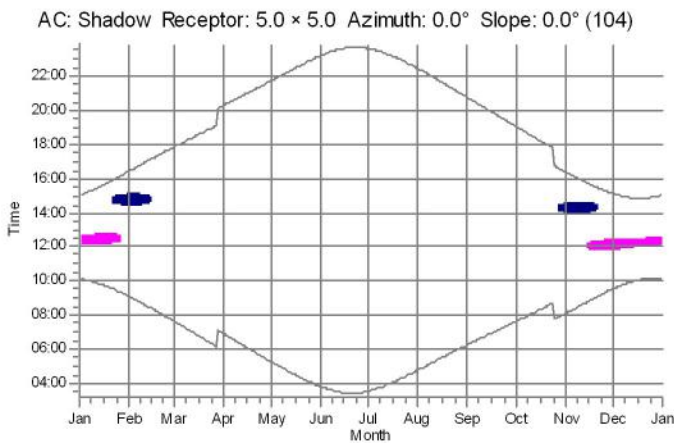
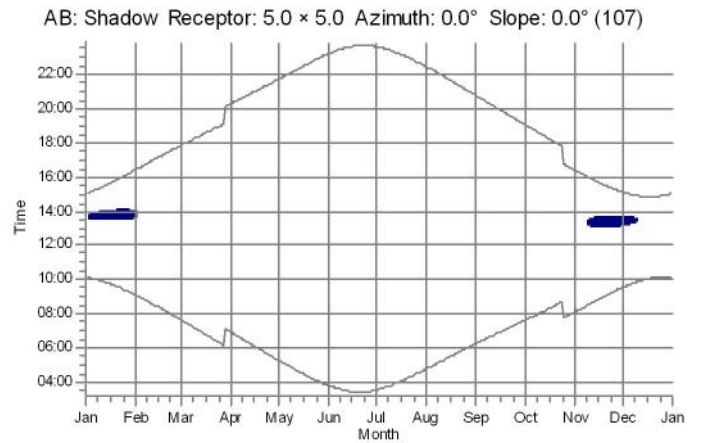
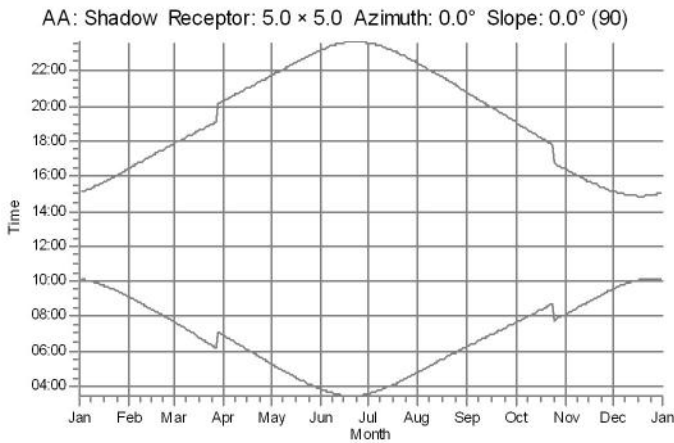
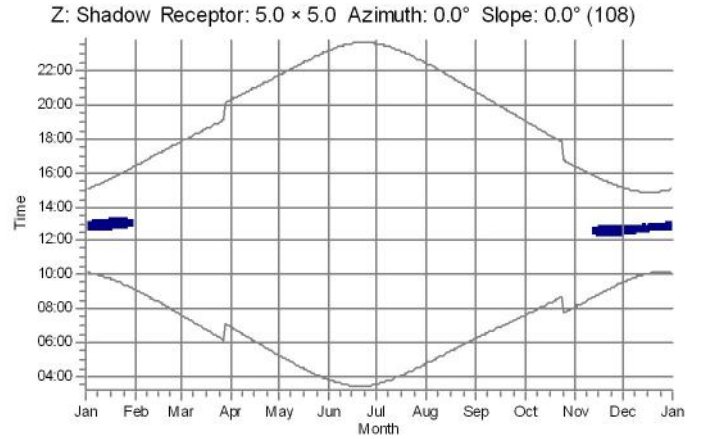
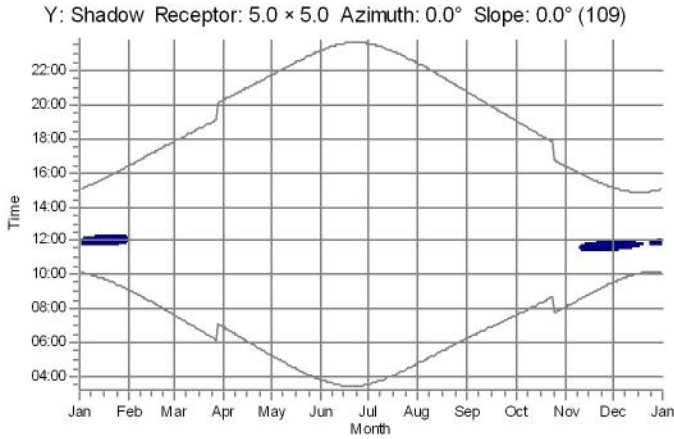
WTGs

■ Extension WTG 01: NORDEX Generic 180-169 6800 180.0 I-I hub: 169.0 m (TOT: 259.0 m) (93)

■ K05: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (5)

SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_without_forest



WTGs

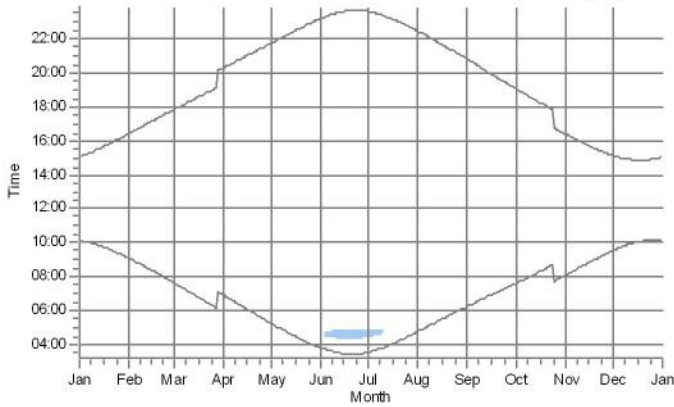
K03: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (3)

K05: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (5)

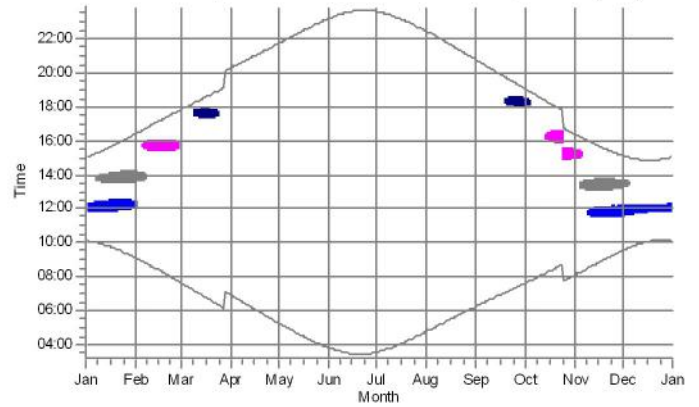
SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_without_forest

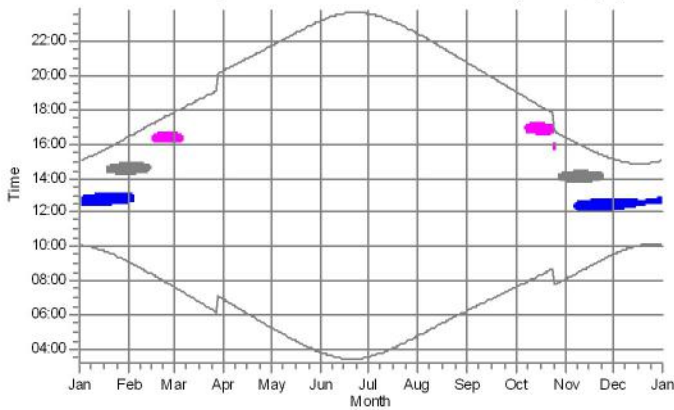
AE: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (89)



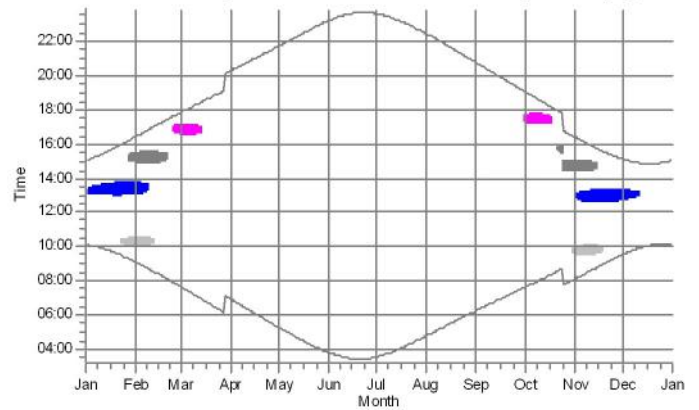
AF: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (101)



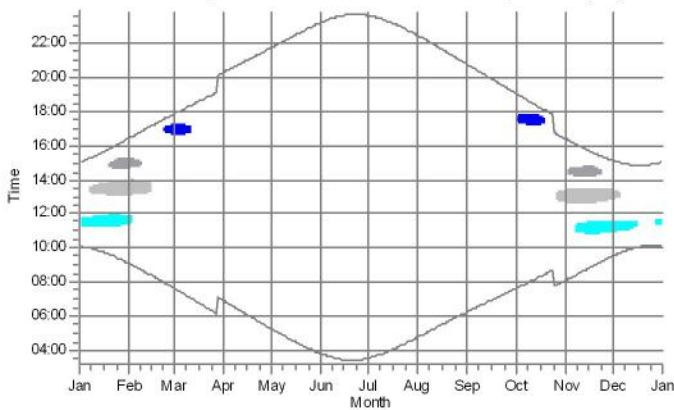
AG: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (99)



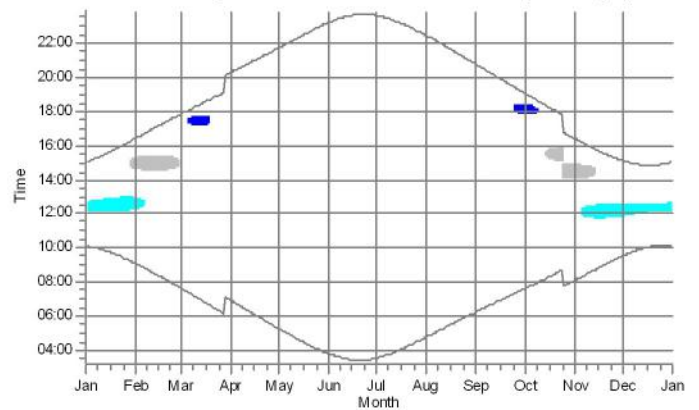
AH: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (98)



AI: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (80)



AJ: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (79)



WTGs

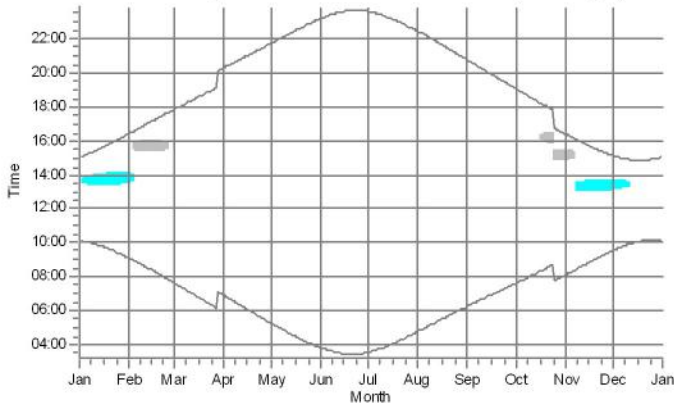
- K01: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (1)
- K02: NORDEX N163/6.X 6800 163.0 IOI hub: 149.5 m (TOT: 231.0 m) (2)
- K03: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (3)
- K05: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (5)

- K10: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (10)
- K11: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (11)
- K13: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (13)
- K14: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (14)

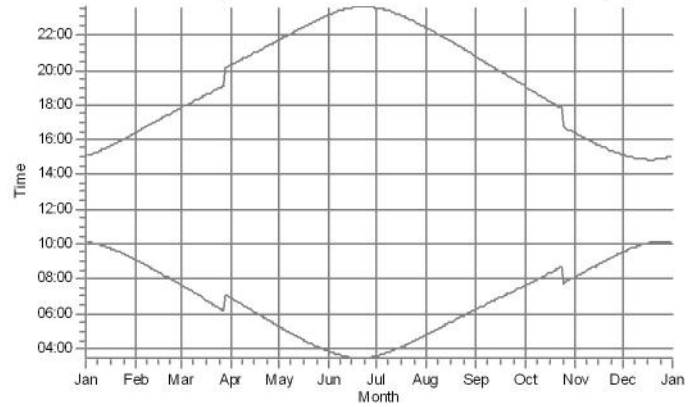
SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_without_forest

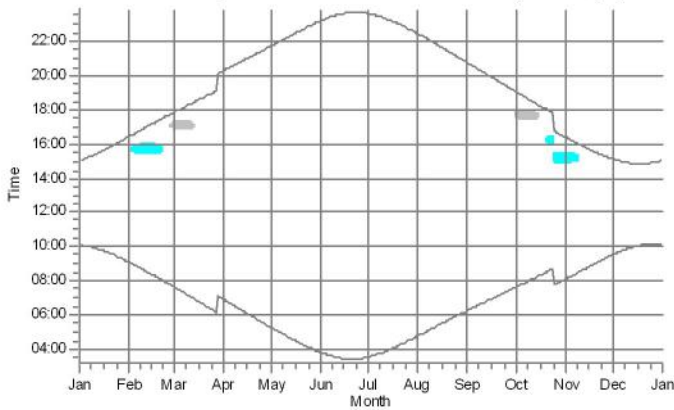
AK: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (97)



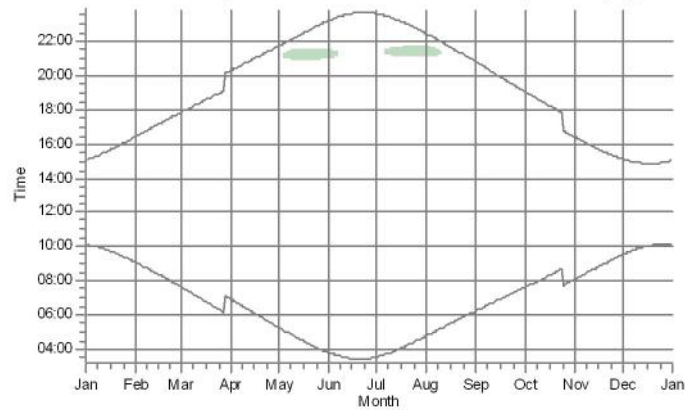
AL: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (73)



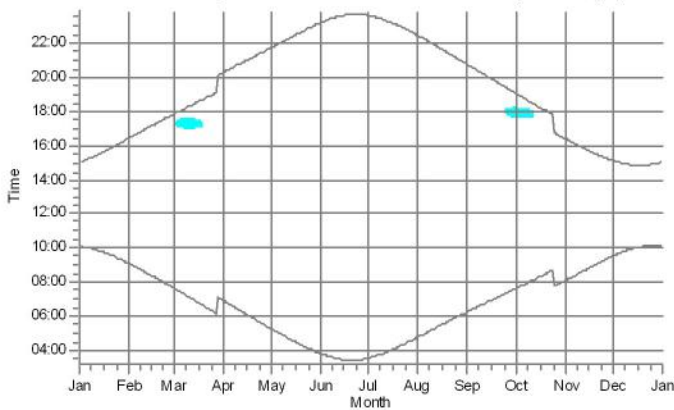
AM: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (94)



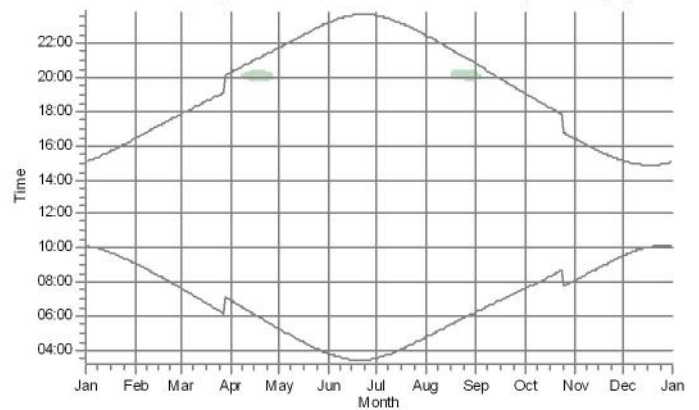
AN: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (74)



AO: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (93)



AP: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (76)



WTGs

- K10: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (10)
- K11: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (11)

- K12: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (12)

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: Extension WTG 01 - NORDEX Generic 180-169 6800 180.0 I-I hub: 169.0 m (TOT: 259.0 m) (93)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:07 12:42-12:53/11 15:04 11:50-12:01/11	09:06 12:49-13:07/18 11:09-11:24/15 16:26 11:59-12:12/13	07:40 17:50	06:55 20:18	05:16 21:44	03:49 23:12
2	10:06 12:42-12:54/12 15:05 11:50-12:02/12	09:03 12:52-13:05/13 11:11-11:23/12 16:29 12:04-12:09/5	07:36 17:53	06:52 20:21	05:13 21:47	03:46 23:14
3	10:05 13:42-13:45/3 11:50-12:04/14 15:07 12:41-12:55/14	09:00 12:55-13:01/6 16:32 11:15-11:18/3	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17
4	10:04 13:40-13:48/8 11:49-12:05/16 15:09 12:41-12:57/16	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:19
5	10:03 13:39-13:49/10 11:49-12:05/16 15:11 12:41-12:57/16	08:55 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21
6	10:02 13:39-13:51/12 11:49-12:07/18 15:13 12:41-12:59/18	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23
7	10:01 13:39-13:52/13 11:49-12:08/19 15:15 12:41-13:00/19	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25
8	09:59 13:38-13:53/15 11:48-12:09/21 15:18 12:40-13:01/21	08:46 16:47	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:27
9	09:58 13:38-13:54/16 11:48-12:10/22 15:20 12:40-13:02/22 11:06-11:13/7	08:43 16:50	07:13 18:13	06:28 20:41	04:51 22:08	03:34 23:29
10	09:56 13:37-13:55/18 11:48-12:11/23 15:22 12:40-13:03/23 11:05-11:15/10	08:40 16:53	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:31
11	09:55 13:37-13:56/19 11:48-12:12/24 15:25 12:40-13:04/24 11:04-11:17/13	08:37 16:56	07:06 07:38-07:43/5 18:19	06:22 20:46	04:44 22:14	03:31 23:32
12	09:53 13:37-13:57/20 11:48-12:12/24 15:27 12:40-13:05/25 11:03-11:18/15	08:34 17:00	07:03 07:34-07:45/11 18:22	06:18 20:49	04:41 22:17	03:30 23:34
13	09:51 13:37-13:58/21 11:48-12:13/25 15:30 12:40-13:06/26 11:03-11:20/17	08:31 17:03	07:00 07:31-07:47/16 18:25	06:15 20:52	04:38 22:20	03:29 23:35
14	09:49 13:37-13:59/22 11:48-12:14/26 15:33 12:40-13:07/27 11:03-11:21/18	08:28 17:06	06:56 07:27-07:47/20 18:28	06:12 20:55	04:35 22:23	03:28 23:36
15	09:47 13:38-14:00/22 11:48-12:15/27 15:35 12:40-13:07/27 11:03-11:22/19	08:24 17:09	06:53 07:25-07:48/23 18:30	06:08 20:58	04:33 22:26	03:28 23:37
16	09:45 13:37-14:00/23 11:48-12:15/27 15:38 12:39-13:07/28 11:02-11:23/21	08:21 17:12	06:50 07:25-07:49/24 18:33	06:05 21:01	04:30 22:29	03:27 23:38
17	09:43 13:37-14:01/24 11:48-12:16/28 15:41 12:40-13:08/28 11:02-11:23/21	08:18 17:15	06:46 07:23-07:48/25 18:36	06:02 21:03	04:27 22:32	03:26 23:39
18	09:41 13:38-14:01/23 11:48-12:16/28 15:44 12:40-13:09/29 11:02-11:24/22	08:15 17:18	06:43 07:23-07:49/26 18:39	05:58 21:06	04:24 22:35	03:26 23:40
19	09:39 13:38-14:02/24 11:49-12:17/28 15:46 12:40-13:10/30 11:02-11:25/23	08:12 17:21	06:40 07:23-07:48/25 18:42	05:55 21:09	04:21 22:37	03:26 23:40
20	09:37 13:38-14:02/24 11:48-12:17/29 15:49 12:40-13:09/29 11:01-11:25/24	08:09 17:24	06:36 07:23-07:47/24 18:45	05:52 21:12	04:18 22:40	03:25 23:41
21	09:34 13:38-14:02/24 11:49-12:17/28 15:52 12:40-13:10/30 11:02-11:26/24	08:06 17:27	06:33 07:23-07:46/23 18:47	05:48 21:15	04:16 22:43	03:25 23:41
22	09:32 13:39-14:03/24 11:50-12:18/28 15:55 12:41-13:11/30 11:02-11:27/25	08:02 17:30	06:29 07:23-07:45/22 18:50	05:45 21:18	04:13 22:46	03:26 23:41
23	09:30 13:39-14:02/23 11:49-12:17/28 15:58 12:41-13:10/29 11:03-11:28/25	07:59 17:33	06:26 07:25-07:44/19 18:53	05:42 21:21	04:10 22:49	03:26 23:42
24	09:27 13:40-14:03/23 11:50-12:18/28 16:01 12:42-13:11/29 11:02-11:27/25	07:56 17:36	06:23 07:25-07:42/17 18:56	05:38 21:24	04:08 22:51	03:26 23:41
25	09:25 13:41-14:03/22 11:51-12:18/27 16:04 12:42-13:11/29 11:03-11:28/25	07:53 17:39	06:19 07:27-07:39/12 18:58	05:35 21:27	04:05 22:54	03:27 23:41
26	09:22 13:41-14:02/21 11:51-12:17/26 16:07 12:42-13:10/28 11:03-11:27/24	07:49 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:27 23:41
27	09:19 13:42-14:02/20 11:52-12:17/25 16:10 12:43-13:10/27 11:04-11:27/23	07:46 17:45	06:12 19:04	05:29 21:33	04:00 23:00	03:28 23:40
28	09:17 13:44-14:02/18 11:54-12:17/23 16:13 12:45-13:11/26 11:05-11:28/23	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:40
29	09:14 13:45-14:00/15 11:54-12:16/22 16:16 12:45-13:09/24 11:05-11:27/22		07:06 20:10	05:22 21:38	03:55 23:05	03:30 23:39
30	09:11 13:47-13:59/12 11:56-12:16/20 16:19 12:46-13:09/23 11:06-11:26/20		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38
31	09:09 13:51-13:55/4 11:57-12:14/17 16:23 12:47-13:08/21 11:07-11:25/18		06:59 20:15		03:51 23:10	
Potential sun hours	185	243	364	446	557	601
Sum of minutes with flicker	2438	85	292	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: Extension WTG 01 - NORDEX Generic 180-169 6800 180.0 I-I hub: 169.0 m (TOT: 259.0 m) (93)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	July	August	September	October	November	December
1	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:12-08:25/13 16:25	09:33 15:08
2	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:15-08:23/8 16:21	09:35 15:06
3	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:18-08:19/1 16:18	09:37 15:05
4	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:15	09:40 15:03
5	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:48	08:20 16:10	09:44 15:00
7	03:43 23:29	05:05 22:09	06:32 20:26	07:53 18:45	08:23 16:07	09:47 14:59
8	03:45 23:27	05:07 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:51 14:56
10	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:53 14:55
11	03:51 23:22	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	03:53 23:19	05:19 21:53	06:45 20:10	08:07 18:28	08:38 15:52	09:56 14:54
13	03:56 23:17	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:50	09:58 14:53
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	04:00 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:44	10:01 14:52
16	04:03 23:11	05:30 21:40	06:56 19:56	08:19 18:15	08:50 15:42	10:02 14:52
17	04:06 23:08	05:33 21:37	06:59 19:53	08:21 18:12	08:53 15:39	10:03 14:52
18	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:51
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:05 14:52
20	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:07 14:52
23	04:22 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:49	09:14 15:22	10:08 14:54
25	04:27 22:47	05:56 21:10	07:21 19:25	08:44 17:46	09:16 15:20	10:09 14:54
26	04:30 22:44	05:59 21:07	07:23 19:22	08:47 17:43	09:19 15:18	10:09 14:55
27	04:33 22:42	06:02 21:04	07:26 19:19	08:50 17:40	09:22 15:16	10:09 14:56
28	04:36 22:39	06:04 21:00	07:29 19:15	08:53 17:37	09:25 15:14	10:09 14:57
29	04:38 22:36	06:07 20:57	07:31 19:12	08:56 17:34	09:27 15:12	10:08 14:59
30	04:41 22:33	06:10 20:53	07:34 19:08	08:59 17:31	09:30 15:10	10:08 15:00
31	04:44 22:30	06:13 20:50		09:02 17:28		10:07 15:02
Potential sun hours	591	501	391	308	208	154
Sum of minutes with flicker	0	0	276	22	1993	600

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:18/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: Extension WTG 02 - NORDEX Generic 180-169 6800 180.0 I-I hub: 169.0 m (TOT: 259.0 m) (92) Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

| January | February | March | April | May | June | July | August | September | October | November | December

1	10:07	09:06	07:40	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:26	17:50	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:25	15:08
2	10:06	09:03	07:36	06:52	05:13	03:47	03:34	04:50	06:18	07:40	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:24	21:50	23:17	23:35	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:30	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:37	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:13	15:02
6	10:02	08:52	07:23	06:39	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:12	20:30	18:48	16:10	15:00
7	10:00	08:49	07:20	06:35	04:57	03:37	03:43	05:05	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:07	06:35	07:56	08:26	09:49
	15:18	16:47	18:11	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:58	08:43	07:13	06:28	04:51	03:34	03:47	05:10	06:37	07:59	08:29	09:51
	15:20	16:50	18:13	20:41	22:08	23:29	23:25	22:02	20:20	18:38	16:01	14:57
10	09:56	08:40	07:10	06:25	04:48	03:33	03:49	05:13	06:40	08:02	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:56
11	09:54	08:37	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:53	08:34	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	17:00	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:54
13	09:51	08:31	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:58
	15:30	17:03	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:12	04:36	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:01	05:28	06:53	08:16	08:47	10:01
	15:35	17:09	18:30	20:58	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:50	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:01	22:29	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:32	23:39	23:08	21:37	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:40	23:06	21:33	19:49	18:09	15:37	14:52
19	09:39	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:09	06:36	05:52	04:18	03:26	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:32	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:48	07:12	08:36	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:39	09:11	10:08
	15:58	17:33	18:53	21:21	22:49	23:41	22:53	21:17	19:32	17:53	15:24	14:53
24	09:27	07:56	06:23	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:14	10:08
	16:01	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:53	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:39	18:58	21:27	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:03	03:27	04:30	05:59	07:23	07:47	09:19	10:09
	16:07	17:42	19:01	21:30	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:29	04:00	03:28	04:33	06:02	07:26	07:50	09:22	10:09
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:19	16:40	15:16	14:56
28	09:17	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:29	07:53	09:25	10:08
	16:13	17:47	19:07	21:35	23:02	23:40	22:39	21:00	19:15	16:37	15:14	14:58
29	09:14		07:06	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:10	21:38	23:05	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:09		06:59		03:51		04:44	06:13		08:02		10:07
	16:23		20:15		23:10		22:30	20:50		16:28		15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K01 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (1)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:06 12:33-12:50/17 15:04 11:58-12:15/17	09:06 13:11-13:42/31 12:14-12:20/6 16:25 12:41-13:02/21	07:39 16:47-17:11/24 17:50	06:55 20:18	05:16 21:44	03:48 23:12
2	10:06 13:13-13:19/6 11:58-12:16/18 15:05 12:32-12:50/18	09:03 13:11-13:41/30 16:28 12:43-13:00/17	07:36 16:46-17:11/25 17:53	06:52 20:21	05:12 21:47	03:46 23:14
3	10:05 13:12-13:22/10 11:58-12:17/19 15:07 12:33-12:52/19	09:00 13:13-13:41/28 16:32 12:46-12:59/13	07:33 16:46-17:11/25 17:56	06:49 20:23	05:09 21:50	03:44 23:16
4	10:04 13:10-13:23/13 11:58-12:18/20 15:09 12:33-12:53/20	08:57 13:13-13:39/26 16:35	07:29 16:45-17:10/25 17:59	06:45 20:26	05:06 21:53	03:42 23:19
5	10:03 13:10-13:25/15 11:58-12:19/21 15:11 12:32-12:54/22	08:54 13:15-13:39/24 16:38	07:26 16:46-17:11/25 18:02	06:42 20:29	05:03 21:56	03:41 23:21
6	10:01 13:09-13:27/18 11:58-12:19/21 15:13 12:32-12:54/22	08:51 13:17-13:37/20 16:41	07:23 17:26-17:30/4 18:05 16:47-17:10/23	06:38 20:32	05:00 21:59	03:39 23:23
7	10:00 13:09-13:28/19 11:57-12:20/23 15:15 12:32-12:55/23	08:48 13:20-13:35/15 16:44	07:20 17:23-17:33/10 18:07 16:47-17:09/22	06:35 20:35	04:57 22:02	03:37 23:25
8	09:59 13:09-13:30/21 11:58-12:22/24 15:18 12:32-12:57/25	08:45 13:25-13:31/6 16:47	07:16 17:22-17:36/14 18:10 16:48-17:08/20	06:32 20:38	04:53 22:05	03:35 23:27
9	09:57 13:09-13:31/22 11:58-12:22/24 15:20 12:32-12:58/26	08:42 16:50	07:13 17:20-17:38/18 18:13 16:48-17:06/18	06:28 20:40	04:50 22:08	03:34 23:28
10	09:56 13:08-13:32/24 11:58-12:23/25 15:22 12:32-12:59/27	08:39 16:53	07:10 17:20-17:41/21 18:16 16:51-17:05/14	06:25 20:43	04:47 22:11	03:33 23:30
11	09:54 13:08-13:33/25 11:58-12:24/26 15:25 12:32-12:59/27	08:36 16:56	07:06 17:19-17:40/21 18:19 16:53-17:01/8	06:21 20:46	04:44 22:14	03:31 23:32
12	09:53 13:08-13:34/26 11:58-12:25/27 15:27 12:32-13:00/28	08:33 16:59	07:03 17:19-17:41/22 18:22	06:18 20:49	04:41 22:17	03:30 23:33
13	09:51 13:08-13:35/27 11:58-12:26/28 15:30 12:32-13:01/29	08:30 17:02	06:59 17:19-17:40/21 18:25	06:15 20:52	04:38 22:20	03:29 23:35
14	09:49 13:07-13:35/28 11:58-12:25/27 15:32 12:31-13:01/30	08:27 17:05	06:56 17:19-17:39/20 18:27	06:11 20:55	04:35 22:23	03:28 23:36
15	09:47 13:07-13:36/29 11:58-12:26/28 15:35 12:32-13:02/30	08:24 17:08	06:53 17:19-17:38/19 18:30	06:08 20:57	04:32 22:26	03:27 23:37
16	09:45 13:07-13:37/30 11:58-12:27/29 15:38 12:32-13:03/31	08:21 17:12	06:49 17:20-17:37/17 18:33	06:05 21:00	04:29 22:28	03:27 23:38
17	09:43 13:07-13:38/31 11:59-12:27/28 15:41 12:32-13:03/31	08:18 17:15	06:46 17:22-17:36/14 18:36	06:01 21:03	04:27 22:31	03:26 23:39
18	09:41 13:07-13:39/32 11:59-12:28/29 15:43 12:33-13:04/31	08:15 17:18	06:43 17:24-17:32/8 18:39	05:58 21:06	04:24 22:34	03:26 23:40
19	09:39 13:06-13:39/33 11:59-12:28/29 15:46 12:32-13:04/32	08:12 17:21	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40
20	09:36 13:07-13:40/33 11:59-12:28/29 15:49 12:33-13:05/32	08:08 17:24	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:41
21	09:34 13:07-13:41/34 12:00-12:29/29 15:52 12:33-13:05/32	08:05 17:27	06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:41
22	09:32 13:06-13:41/35 12:00-12:28/28 15:55 12:33-13:05/32	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:41
23	09:29 13:07-13:42/35 12:01-12:29/28 15:58 12:34-13:05/31	07:59 17:32	06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41
24	09:27 13:07-13:42/35 12:02-12:29/27 16:01 12:34-13:06/32	07:56 16:55-16:58/3 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41
25	09:24 13:07-13:42/35 12:02-12:28/26 16:04 12:34-13:05/31	07:52 16:52-17:02/10 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41
26	09:22 13:08-13:43/35 12:03-12:28/25 16:07 12:35-13:06/31	07:49 16:50-17:05/15 17:41	06:16 19:01	05:32 21:29	04:02 22:57	03:27 23:41
27	09:19 13:08-13:43/35 12:04-12:28/24 16:10 12:36-13:06/30	07:46 16:49-17:08/19 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40
28	09:16 13:08-13:43/35 12:05-12:27/22 16:13 12:36-13:05/29	07:43 16:47-17:10/23 17:47	06:09 19:07	05:25 21:35	03:57 23:02	03:29 23:39
29	09:14 13:09-13:43/34 12:06-12:26/20 16:16 12:38-13:05/27		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:39
30	09:11 13:09-13:42/33 12:07-12:25/18 16:19 12:38-13:04/26		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38
31	09:08 13:10-13:42/32 12:10-12:23/13 16:22 12:40-13:03/23		06:59 20:15		03:51 23:09	
Potential sun hours	185	243	364	446	557	601
Sum of minutes with flicker	2416	307	438	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K01 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (1)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	July	August	September	October	November	December	
1	03:33 23:37	04:47 22:27	06:15 20:46	07:37 17:58-18:20/22 19:05	08:05 16:24	09:32 12:49-13:14/25 11:40-12:06/26 15:08 12:14-12:42/28	
2	03:34 23:36	04:50 22:24	06:18 20:43	07:39 17:57-18:19/22 19:02	08:08 16:21	09:35 12:50-13:14/24 11:40-12:05/25 15:06 12:14-12:41/27	
3	03:35 23:35	04:53 22:21	06:21 20:40	07:42 17:57-18:18/21 18:58 17:29-17:41/12	08:11 12:53-13:01/8 16:18	09:37 12:52-13:14/22 11:41-12:06/25 15:04 12:15-12:41/26	
4	03:37 23:33	04:56 22:18	06:23 20:36	07:45 17:58-18:17/19 18:55 17:27-17:43/16	08:14 12:49-13:05/16 16:15	09:40 12:53-13:14/21 11:42-12:06/24 15:03 12:17-12:41/24	
5	03:39 23:32	04:59 22:14	06:26 20:33	07:48 17:58-18:14/16 18:51 17:25-17:44/19	08:17 12:47-13:07/20 16:12	09:42 12:54-13:13/19 11:43-12:05/22 15:01 12:17-12:41/24	
6	03:41 23:30	05:01 22:11	06:29 20:30	07:50 17:59-18:11/12 18:48 17:24-17:45/21	08:20 12:45-13:08/23 16:09	09:44 12:56-13:13/17 11:44-12:06/22 15:00 12:18-12:41/23	
7	03:42 23:29	05:04 22:08	06:32 20:26	07:53 18:00-18:07/7 18:45 17:23-17:46/23	08:23 12:44-13:10/26 16:06 12:20-12:24/4	09:46 12:57-13:12/15 11:44-12:05/21 14:59 12:19-12:40/21	
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:03-18:04/1 18:41 17:22-17:46/24	08:26 12:43-13:12/29 16:04 12:16-12:29/13	09:48 12:59-13:12/13 11:46-12:06/20 14:57 12:20-12:41/21	
9	03:47 23:25	05:10 22:02	06:37 20:19	07:59 17:21-17:46/25 18:38	08:29 12:42-13:12/30 16:01 12:13-12:31/18	09:50 13:00-13:10/10 11:46-12:05/19 14:56 12:21-12:40/19	
10	03:49 23:23	05:13 21:59	06:40 20:16	08:01 17:20-17:45/25 18:35	08:32 12:42-13:13/31 11:44-11:51/7 15:58 12:12-12:33/21	09:52 13:02-13:09/7 11:48-12:06/18 14:55 12:22-12:40/18	
11	03:51 23:21	05:16 21:56	06:43 20:13	08:04 17:20-17:45/25 18:31	08:35 12:41-13:13/32 11:41-11:55/14 15:55 12:11-12:35/24	09:54 12:23-12:40/17 14:54 11:49-12:06/17	
12	03:53 23:19	05:19 21:52	06:45 20:09	08:07 17:20-17:44/24 18:28	08:38 12:41-13:14/33 11:39-11:56/17 15:52 12:10-12:35/25	09:56 12:25-12:40/15 14:54 11:50-12:06/16	
13	03:55 23:17	05:22 21:49	06:48 20:06	08:10 17:20-17:43/23 18:25	08:41 12:41-13:15/34 11:38-11:58/20 15:50 12:09-12:37/28	09:57 12:25-12:39/14 14:53 11:51-12:06/15	
14	03:58 23:15	05:25 21:46	06:51 20:02	08:13 17:20-17:42/22 18:22	08:44 12:41-13:15/34 11:37-12:00/23 15:47 12:09-12:38/29	09:59 12:26-12:39/13 14:52 11:51-12:05/14	
15	04:00 23:13	05:27 21:43	06:53 19:59	08:15 17:21-17:39/18 18:18	08:47 12:40-13:15/35 11:36-12:00/24 15:44 12:08-12:38/30	10:00 12:28-12:40/12 14:52 11:52-12:06/14	
16	04:03 23:10	05:30 21:40	06:56 19:56	08:18 17:23-17:36/13 18:15	08:50 12:40-13:16/36 11:36-12:01/25 15:41 12:08-12:38/30	10:02 12:28-12:39/11 14:52 11:53-12:05/12	
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 17:25-17:33/8 18:12	08:53 12:41-13:16/35 11:36-12:02/26 15:39 12:08-12:39/31	10:03 12:29-12:39/10 14:51 11:54-12:05/11	
18	04:08 23:05	05:36 21:33	07:01 19:49	08:24 17:28-17:29/1 18:09	08:56 12:41-13:16/35 11:36-12:03/27 15:36 12:08-12:40/32	10:04 12:31-12:39/8 14:51 11:55-12:06/11	
19	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 12:42-13:17/35 11:36-12:04/28 15:34 12:09-12:40/31	10:05 12:31-12:39/8 14:51 11:55-12:05/10	
20	04:13 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 12:41-13:16/35 11:35-12:03/28 15:31 12:08-12:40/32	10:06 12:32-12:39/7 14:52 11:56-12:05/9	
21	04:16 22:58	05:44 21:23	07:09 19:39	08:33 17:59	09:05 12:42-13:16/34 11:35-12:04/29 15:29 12:08-12:40/32	10:07 12:33-12:39/6 14:52 11:57-12:06/9	
22	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:08 12:43-13:16/33 11:35-12:04/29 15:27 12:09-12:41/32	10:07 12:33-12:40/7 14:52 11:57-12:07/10	
23	04:21 22:52	05:50 21:17	07:15 19:32	08:38 17:52	09:11 12:43-13:16/33 11:36-12:05/29 15:24 12:09-12:41/32	10:08 12:34-12:41/7 14:53 11:58-12:07/9	
24	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	09:13 12:44-13:17/33 11:36-12:05/29 15:22 12:10-12:41/31	10:08 12:34-12:41/7 14:53 11:58-12:08/10	
25	04:27 22:47	05:56 21:10	07:20 18:09-18:14/5 19:25	07:44 16:46	09:16 12:45-13:17/32 11:37-12:06/29 15:20 12:10-12:42/32	10:08 12:33-12:42/9 14:54 11:58-12:08/10	
26	04:30 22:44	05:59 21:07	07:23 18:05-18:17/12 19:22	07:47 16:43	09:19 12:45-13:16/31 11:36-12:05/29 15:18 12:10-12:41/31	10:08 12:34-12:43/9 14:55 11:59-12:10/11	
27	04:33 22:41	06:01 21:03	07:26 18:03-18:19/16 19:18	07:50 16:40	09:22 12:46-13:16/30 11:37-12:05/28 15:15 12:11-12:41/30	10:08 12:34-12:44/10 14:56 11:59-12:10/11	
28	04:35 22:38	06:04 21:00	07:28 18:01-18:19/18 19:15	07:53 16:37	09:24 12:47-13:16/29 11:38-12:05/27 15:13 12:12-12:41/29	10:08 12:33-12:45/12 14:57 11:58-12:11/13	
29	04:38 22:35	06:07 20:57	07:31 18:00-18:19/19 19:12	07:56 16:34	09:27 12:48-13:16/28 11:39-12:06/27 15:12 12:12-12:41/29	10:08 12:34-12:46/12 14:59 11:58-12:12/14	
30	04:41 22:33	06:10 20:53	07:34 17:59-18:20/21 19:08	07:59 16:30	09:30 12:49-13:15/26 11:39-12:06/27 15:10 12:13-12:42/29	10:08 12:33-12:47/14 15:00 11:58-12:13/15	
31	04:44 22:30	06:12 20:50		08:02 16:27		10:07 12:33-12:48/15 15:01 11:58-12:14/16	
	Potential sun hours Sum of minutes with flicker	591 0	501 0	391 91	308 419	208 2013	154 1106

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K02 - NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (2)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

January		February		March	April	May	June		
1	10:06 15:04	09:06 16:25	15:01-15:25/24 14:20-14:51/31	13:41-14:07/26	07:39 17:50	06:55 20:18	05:16 21:44	03:48 23:12	
2	10:06 15:05	09:03 16:29	15:00-15:25/25 14:19-14:50/31	13:41-14:06/25	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14	
3	10:05 15:07	09:00 16:32	14:59-15:27/28 14:20-14:51/31	13:43-14:05/22	07:33 17:56	06:49 20:23	05:09 21:50	03:44 23:16	
4	10:04 15:09	08:57 16:35	14:58-15:27/29 14:20-14:50/30	13:44-14:03/19	07:30 17:59	06:45 20:26	05:06 21:53	03:42 23:19	
5	10:03 15:11	08:54 16:38	14:58-15:28/30 14:21-14:50/29	13:46-14:02/16	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	
6	10:02 15:13	08:51 16:41	14:57-15:28/31 14:21-14:49/28	13:50-14:00/10	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	
7	10:00 15:15	08:48 16:44	14:58-15:29/31 14:22-14:49/27		07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	
8	09:59 15:18	08:46 16:47	14:58-15:29/31 14:23-14:49/26		07:16 18:10	06:32 20:38	04:54 22:05	03:36 23:27	
9	09:57 15:20	08:43 16:50	14:58-15:29/31 14:24-14:48/24		07:13 18:13	06:28 20:40	04:50 22:08	03:34 23:29	
10	09:56 15:22	08:40 16:53	14:58-15:29/31 14:25-14:47/22		07:10 18:16	06:25 20:43	04:47 22:11	03:33 23:30	
11	09:54 15:25	08:37 16:56	14:58-15:29/31 14:27-14:45/18		07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32	
12	09:53 15:27	08:33 16:59	14:59-15:29/30 14:30-14:43/13		07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	
13	09:51 15:30	08:30 17:02	14:59-15:28/29 14:35-14:37/2		07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35	
14	09:49 15:33	08:27 17:05	15:00-15:28/28		06:56 18:27	06:11 20:55	04:35 22:23	03:28 23:36	
15	09:47 15:35	08:24 17:09	15:00-15:27/27		06:53 18:30	06:08 20:57	04:32 22:26	03:27 23:37	
16	09:45 15:38	08:21 17:12	15:02-15:26/24		06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	
17	09:43 15:41	08:18 17:15	15:03-15:25/22		06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:39	
18	09:41 15:44	08:15 17:18	15:05-15:23/18		06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:40	
19	09:39 15:46	08:12 17:21	15:08-15:21/13		06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	
20	09:36 15:49	08:08 17:24			06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:41	
21	09:34 15:52	08:05 17:27	14:24-14:41/17		06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:41	
22	09:32 15:55	08:02 17:30	14:22-14:42/20		06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:41	
23	09:29 15:58	07:59 17:33	14:22-14:44/22		06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41	
24	09:27 16:01	07:56 17:36	14:21-14:45/24		06:22 18:55	05:38 21:24	04:07 22:51	03:26 23:41	
25	09:24 16:04	07:52 17:38	14:20-14:46/26		06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	
26	09:22 16:07	07:49 17:41	14:20-14:47/27		06:16 19:01	05:32 21:29	04:02 22:57	03:27 23:41	
27	09:19 16:10	07:46 17:44	14:20-14:48/28		06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	
28	09:17 16:13	07:43 17:47	15:07-15:15/8 14:19-14:48/29	13:38-14:07/29	06:09 19:07	05:25 21:35	03:57 23:02	03:29 23:39	
29	09:14 16:16	07:40 17:49	15:05-15:19/14 14:19-14:49/30	13:38-14:07/29	07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:39	
30	09:11 16:19	07:37 17:56	15:02-15:21/19 14:19-14:49/30	13:38-14:07/29	07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38	
31	09:08 16:22	07:34 17:59	15:02-15:23/21 14:19-14:50/31	13:40-14:07/27	06:59 20:15	05:16 21:44	03:51 23:09	03:30 23:37	
Potential sun hours		185	243		364	446	557	601	0
Sum of minutes with flicker		949	943		0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K02 - NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (2)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	July	August	September	October	November	December
1	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 14:28-14:59/31 16:24 13:55-14:17/22	09:32 13:22-13:38/16 15:08
2	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:02	08:08 14:27-14:58/31 16:21 13:53-14:17/24	09:35 13:23-13:36/13 15:06
3	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 14:28-14:59/31 16:18 13:52-14:19/27	09:37 13:25-13:35/10 15:04
4	03:37 23:33	04:56 22:18	06:23 20:36	07:45 18:55	08:14 14:27-14:58/31 16:15 13:51-14:19/28	09:40 13:27-13:33/6 15:03
5	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 14:28-14:58/30 13:19-13:30/11 16:12 13:51-14:20/29	09:42 15:01
6	03:41 23:30	05:01 22:11	06:29 20:30	07:50 18:48	08:20 14:28-14:57/29 13:15-13:32/17 16:09 13:50-14:20/30	09:44 15:00
7	03:42 23:29	05:04 22:08	06:32 20:26	07:53 18:45	08:23 14:29-14:57/28 13:14-13:34/20 16:06 13:50-14:21/31	09:46 14:59
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:41	08:26 14:30-14:57/27 13:13-13:36/23 16:04 13:51-14:21/30	09:48 14:57
9	03:47 23:25	05:10 22:02	06:37 20:19	07:59 18:38	08:29 14:30-14:56/26 13:12-13:36/24 16:01 13:50-14:21/31	09:50 14:56
10	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 14:32-14:55/23 13:11-13:38/27 15:58 13:50-14:21/31	09:52 14:55
11	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 14:32-14:53/21 13:11-13:39/28 15:55 13:51-14:22/31	09:54 14:54
12	03:53 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 14:34-14:52/18 13:10-13:38/28 15:52 13:51-14:21/30	09:56 14:54
13	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 14:37-14:51/14 13:10-13:39/29 15:50 13:51-14:21/30	09:58 14:53
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 14:40-14:48/8 13:10-13:40/30 15:47 13:52-14:21/29	09:59 14:52
15	04:00 23:13	05:27 21:43	06:53 19:59	08:15 18:18	08:47 13:52-14:20/28 15:44 13:10-13:40/30	10:00 14:52
16	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 13:53-14:20/27 15:42 13:10-13:40/30	10:02 14:52
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 13:54-14:20/26 15:39 13:10-13:40/30	10:03 14:51
18	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:09	08:56 13:55-14:19/24 15:36 13:11-13:41/30	10:04 14:51
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 13:57-14:19/22 15:34 13:11-13:41/30	10:05 14:51
20	04:13 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 13:57-14:17/20 15:31 13:11-13:40/29	10:06 14:52
21	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 13:59-14:16/17 15:29 13:12-13:40/28	10:07 14:52
22	04:19 22:55	05:47 21:20	07:12 19:35	08:36 15:41-15:47/6 17:56	09:08 14:01-14:15/14 15:27 13:12-13:40/28	10:07 14:52
23	04:21 22:52	05:50 21:17	07:15 19:32	08:38 15:37-15:51/14 17:52	09:11 14:03-14:13/10 15:24 13:13-13:41/28	10:08 14:53
24	04:24 22:50	05:53 21:13	07:18 19:29	08:41 15:34-15:53/19 17:49	09:13 13:14-13:41/27 15:22	10:08 14:53
25	04:27 22:47	05:56 21:10	07:20 19:25	07:44 14:32-14:55/23 16:46	09:16 13:15-13:40/25 15:20	10:08 14:54
26	04:30 22:44	05:59 21:07	07:23 19:22	07:47 14:30-14:55/25 16:43	09:19 13:15-13:39/24 15:18	10:08 14:55
27	04:33 22:41	06:01 21:03	07:26 19:18	07:50 14:30-14:57/27 16:40	09:22 13:16-13:39/23 15:16	10:08 14:56
28	04:35 22:38	06:04 21:00	07:28 19:15	07:53 14:29-14:57/28 16:37	09:24 13:17-13:39/22 15:14	10:08 14:57
29	04:38 22:36	06:07 20:57	07:31 19:12	07:56 14:29-14:58/29 16:34 14:03-14:10/7	09:27 13:19-13:39/20 15:12	10:08 14:59
30	04:41 22:33	06:10 20:53	07:34 19:08	07:59 14:28-14:58/30 16:30 13:58-14:13/15	09:30 13:20-13:38/18 15:10	10:08 15:00
31	04:44 22:30	06:12 20:50		08:02 14:27-14:58/31 16:27 13:56-14:15/19		10:07 15:02
Potential sun hours	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	273	1598	45

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K03 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (3)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:06 13:13-13:28/15	09:06	07:39 16:42-17:07/25	06:55	05:16	03:48
	15:04 12:13-12:33/20	16:25	17:50 16:09-16:36/27	20:18	21:44	23:12
2	10:06 13:13-13:29/16	09:03	07:36 16:41-17:06/25	06:52	05:12	03:46
	15:05 12:14-12:34/20	16:29	17:53 16:10-16:35/25	20:21	21:47	23:14
3	10:05 13:13-13:30/17	09:00	07:33 16:41-17:07/26	06:49	05:09	03:44
	15:07 12:13-12:34/21	16:32	17:56 16:11-16:34/23	20:24	21:50	23:17
4	10:04 13:13-13:31/18	08:57	07:30 16:41-17:08/27	06:45	05:06	03:42
	15:09 12:14-12:35/21	16:35	17:59 16:13-16:33/20	20:26	21:53	23:19
5	10:03 13:13-13:32/19	08:54	07:26 16:40-17:07/27	06:42	05:03	03:41
	15:11 12:14-12:35/21	16:38	18:02 16:14-16:30/16	20:29	21:56	23:21
6	10:02 13:12-13:32/20	08:51 15:44-15:46/2	07:23 16:40-17:07/27	06:38	05:00	03:39
	15:13 12:15-12:37/22	16:41	18:05 16:18-16:27/9	20:32	21:59	23:23
7	10:00 13:13-13:34/21	08:49 15:38-15:51/13	07:20 16:40-17:06/26	06:35	04:57	03:37
	15:15 12:15-12:37/22	16:44	18:08	20:35	22:02	23:25
8	09:59 13:13-13:34/21	08:46 15:36-15:54/18	07:16 16:41-17:06/25	06:32	04:54	03:36
	15:18 12:15-12:38/23	16:47	18:10	20:38	22:05	23:27
9	09:58 13:13-13:35/22	08:43 15:34-15:55/21	07:13 16:41-17:04/23	06:28	04:50	03:34
	15:20 12:15-12:38/23	16:50	18:13	20:40	22:08	23:29
10	09:56 13:13-13:36/23	08:40 15:34-15:57/23	07:10 16:42-17:04/22	06:25	04:47	03:33
	15:22 12:15-12:39/24	16:53	18:16	20:43	22:11	23:30
11	09:54 13:13-13:36/23	08:37 15:32-15:57/25	07:06 16:43-17:01/18	06:22	04:44	03:31
	15:25 12:15-12:39/24	16:56	18:19	20:46	22:14	23:32
12	09:53 13:13-13:37/24	08:34 15:32-15:59/27	07:03 16:45-17:00/15	06:18	04:41	03:30
	15:27 12:16-12:40/24	16:59	18:22	20:49	22:17	23:33
13	09:51 13:14-13:38/24	08:30 15:31-15:59/28	07:00 16:48-16:55/7	06:15	04:38	03:29
	15:30 12:16-12:40/24	17:02	18:25	20:52	22:20	23:35
14	09:49 13:14-13:39/25	08:27 15:31-16:00/29	06:56	06:11	04:35	03:28
	15:33 12:17-12:41/24	17:05	18:27	20:55	22:23	23:36
15	09:47 13:13-13:38/25	08:24 15:30-16:00/30	06:53	06:08	04:32	03:27
	15:35 12:16-12:40/24	17:09	18:30	20:58	22:26	23:37
16	09:45 13:14-13:39/25	08:21 16:21-16:26/5	06:49	06:05	04:30	03:27
	15:38 12:17-12:41/24	17:12 15:30-16:00/30	18:33	21:00	22:29	23:38
17	09:43 13:14-13:40/26	08:18 16:17-16:31/14	06:46	06:01	04:27	03:26
	15:41 12:17-12:41/24	17:15 15:30-16:01/31	18:36	21:03	22:31	23:39
18	09:41 13:15-13:40/25	08:15 16:14-16:32/18	06:43	05:58	04:24	03:26
	15:44 12:18-12:42/24	17:18 15:30-16:00/30	18:39	21:06	22:34	23:40
19	09:39 13:15-13:40/25	08:12 16:13-16:34/21	06:39	05:55	04:21	03:25
	15:46 12:19-12:42/23	17:21 15:31-16:00/29	18:42	21:09	22:37	23:40
20	09:36 13:15-13:40/25	08:09 16:12-16:35/23	06:36	05:51	04:18	03:25
	15:49 12:19-12:41/22	17:24 15:30-15:59/29	18:44	21:12	22:40	23:41
21	09:34 13:16-13:40/24	08:05 16:11-16:36/25	06:33	05:48	04:15	03:25
	15:52 12:20-12:41/21	17:27 15:31-15:59/28	18:47	21:15	22:43	23:41
22	09:32 13:17-13:41/24	08:02 16:10-16:37/27	06:29	05:45	04:13	03:25
	15:55 12:22-12:41/19	17:30 15:31-15:58/27	18:50	21:18	22:46	23:41
23	09:29 13:17-13:40/23	07:59 16:10-16:37/27	06:26	05:42	04:10	03:26
	15:58 12:22-12:40/18	17:33 15:33-15:57/24	18:53	21:21	22:49	23:41
24	09:27 13:18-13:40/22	07:56 16:09-16:37/28	06:22	05:38	04:07	03:26
	16:01 12:24-12:39/15	17:36 15:34-15:55/21	18:56	21:24	22:51	23:41
25	09:24 13:20-13:40/20	07:52 16:49-17:01/12 15:36-15:54/18	06:19	05:35	04:05	03:27
	16:04 12:26-12:38/12	17:38 16:09-16:38/29	18:58	21:26	22:54	23:41
26	09:22 13:20-13:39/19	07:49 16:46-17:03/17 15:38-15:51/13	06:16	05:32	04:02	03:27
	16:07 12:28-12:36/8	17:41 16:08-16:37/29	19:01	21:29	22:57	23:41
27	09:19 13:22-13:38/16	07:46 16:44-17:05/21	06:12	05:28	04:00	03:28
	16:10	17:44 16:09-16:37/28	19:04	21:32	22:59	23:40
28	09:17 13:24-13:36/12	07:43 16:43-17:05/22	06:09	05:25	03:57	03:29
	16:13	17:47 16:08-16:36/28	19:07	21:35	23:02	23:40
29	09:14 13:27-13:34/7		07:06	05:22	03:55	03:30
	16:16		20:10	21:38	23:05	23:39
30	09:11		07:02	05:19	03:53	03:31
	16:19		20:12	21:41	23:07	23:38
31	09:09		06:59		03:51	
	16:22		20:15		23:10	
Potential sun hours	185	243	364	446	557	601
Sum of minutes with flicker	1153	870	413	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K03 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (3)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	17:26-17:38/12	08:05 16:24
2	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:02	17:23-17:40/17	08:08 16:21
3	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	17:20-17:40/20	08:11 16:18
4	03:37 23:33	04:56 22:18	06:24 20:36	07:45 18:55	17:19-17:41/22	08:14 16:15
5	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	17:17-17:42/25	08:17 16:12
6	03:41 23:30	05:01 22:12	06:29 20:30	07:50 18:48	17:17-17:43/26	08:20 16:09
7	03:42 23:29	05:04 22:08	06:32 20:26	07:53 18:45	17:16-17:43/27	08:23 16:07
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:42	17:16-17:43/27	08:26 16:04
9	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	17:15-17:43/28	08:29 16:01
10	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	17:15-17:42/27	08:32 15:58
11	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	17:15-17:42/27	08:35 15:55
12	03:53 23:19	05:19 21:53	06:45 20:09	08:07 18:28	17:16-17:41/25	08:38 15:52
13	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	17:16-17:40/24	08:41 15:50
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	17:17-17:39/22	08:44 15:47
15	04:00 23:13	05:27 21:43	06:53 19:59	08:16 18:18	17:18-17:37/19	08:47 15:44
16	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	16:41-17:10/29	08:50 15:42
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	17:22-17:31/9	08:53 15:39
18	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:09	16:41-17:09/28	08:56 15:36
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	16:41-17:08/27	08:59 15:34
20	04:13 23:00	05:42 21:27	07:07 19:42	08:30 18:02	16:41-17:07/26	09:02 15:31
21	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	16:41-17:06/25	09:05 15:29
22	04:19 22:55	05:47 21:20	07:12 19:35	08:36 17:56	16:42-17:05/23	09:08 15:27
23	04:21 22:53	05:50 21:17	07:15 19:32	08:38 17:52	16:44-17:04/20	09:11 15:24
24	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	16:45-17:02/17	09:13 15:22
25	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	15:47-15:59/12	09:16 15:20
26	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	15:00-15:30/30	09:19 15:18
27	04:33 22:41	06:01 21:03	07:26 19:18	07:50 16:40	15:00-15:30/30	09:22 15:16
28	04:35 22:39	06:04 21:00	07:28 19:15	07:53 16:37	15:00-15:29/29	09:25 15:14
29	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	15:01-15:29/28	09:27 15:12
30	04:41 22:33	06:10 20:53	07:34 19:08	07:59 16:31	15:01-15:28/27	09:30 15:10
31	04:44 22:30	06:13 20:50		08:02 16:27	15:02-15:27/25	
Potential sun hours	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	1234	769	1010

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:18/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K04 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (4) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

|January |February |March |April |May |June |July |August |September|October |November|December

1	10:06	09:06	07:39	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:26	17:50	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:24	21:50	23:17	23:35	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:30	06:45	05:06	03:42	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:37	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:12	15:01
6	10:02	08:52	07:23	06:38	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:12	20:30	18:48	16:10	15:00
7	10:00	08:49	07:20	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:07	06:35	07:56	08:26	09:49
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:58	08:43	07:13	06:28	04:51	03:34	03:47	05:10	06:37	07:59	08:29	09:51
	15:20	16:50	18:13	20:40	22:08	23:29	23:25	22:02	20:20	18:38	16:01	14:56
10	09:56	08:40	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:02	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:37	07:06	06:22	04:44	03:31	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:53	08:34	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:54
13	09:51	08:31	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:58
	15:30	17:03	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:12	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:00	05:28	06:53	08:16	08:47	10:01
	15:35	17:09	18:30	20:58	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:50	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:29	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:26	04:05	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:40	23:06	21:33	19:49	18:09	15:36	14:51
19	09:39	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:51
20	09:36	08:09	06:36	05:52	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:36	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:39	09:11	10:08
	15:58	17:33	18:53	21:21	22:49	23:41	22:53	21:17	19:32	17:53	15:24	14:53
24	09:27	07:56	06:23	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:14	10:08
	16:01	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:53	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:39	18:58	21:27	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:09
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:29	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:19	16:40	15:16	14:56
28	09:17	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:29	07:53	09:25	10:08
	16:13	17:47	19:07	21:35	23:02	23:40	22:39	21:00	19:15	16:37	15:14	14:57
29	09:14		07:06	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:10	21:38	23:05	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:09		06:59		03:51		04:44	06:13		08:02		10:07
	16:22		20:15		23:10		22:30	20:50		16:28		15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K05 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (5)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:07 12:45-13:03/18 15:04 11:49-12:03/14	09:06 14:32-15:01/29 10:56-11:13/17 16:25 13:46-13:55/9 09:50-10:00/10	07:39 17:50	06:55 20:18	05:16 21:44	03:48 23:12
2	10:06 12:45-13:04/19 15:05 11:49-12:04/15	09:03 14:32-15:00/28 09:49-10:02/13 16:29 10:58-11:13/15	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14
3	10:05 13:38-13:42/4 11:48-12:05/17 15:07 12:45-13:04/19	09:00 14:32-15:01/29 09:47-10:03/16 16:32 11:00-11:10/10	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17
4	10:04 13:37-13:45/8 11:49-12:06/17 15:09 12:45-13:05/20	08:57 15:40-15:46/6 09:46-10:05/19 16:35 14:33-15:02/29	07:30 17:59	06:45 20:26	05:06 21:53	03:42 23:19
5	10:03 13:36-13:47/11 11:48-12:07/19 15:11 12:45-13:06/21	08:54 15:37-15:50/13 09:45-10:05/20 16:38 14:33-15:01/28	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21
6	10:02 13:36-13:49/13 11:49-12:08/19 15:13 12:46-13:07/21	08:52 15:36-15:53/17 09:45-10:06/21 16:41 14:33-15:01/28	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23
7	10:00 13:36-13:50/14 11:49-12:09/20 15:15 12:45-13:08/23	08:49 15:34-15:54/20 09:44-10:06/22 16:44 14:33-15:00/27	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25
8	09:59 13:35-13:51/16 11:49-12:10/21 15:18 12:45-13:09/24	08:46 15:34-15:55/21 09:44-10:07/23 16:47 14:35-15:00/25	07:16 18:10	06:32 20:38	04:54 22:05	03:35 23:27
9	09:58 13:35-13:52/17 11:48-12:10/22 15:20 12:45-13:09/24	08:43 15:33-15:55/22 09:44-10:07/23 16:50 14:35-14:59/24	07:13 18:13	06:28 20:41	04:50 22:08	03:34 23:29
10	09:56 13:34-13:53/19 11:48-12:11/23 15:22 12:45-13:10/25	08:40 15:33-15:57/24 09:44-10:07/23 16:53 14:36-14:59/23	07:10 18:16	17:35-17:42/7 20:43	06:25 22:11	04:47 23:30
11	09:54 13:34-13:54/20 11:48-12:12/24 15:25 12:46-13:11/25	08:37 15:32-15:56/24 09:45-10:08/23 16:56 14:37-14:57/20	07:06 18:19	17:31-17:44/13 20:46	06:22 22:14	04:44 23:32
12	09:53 13:34-13:55/21 11:49-12:13/24 15:27 12:46-13:11/25 10:57-11:02/5	08:34 15:32-15:57/25 09:45-10:07/22 16:59 14:40-14:55/15	07:03 18:22	17:30-17:47/17 20:49	06:18 22:17	04:41 23:34
13	09:51 13:34-13:56/22 11:49-12:14/25 15:30 12:46-13:12/26 10:55-11:05/10	08:31 15:31-15:57/26 09:46-10:06/20 17:02 14:43-14:53/10	07:00 18:25	17:28-17:47/19 20:52	06:15 22:20	04:38 23:35
14	09:49 13:34-13:57/23 11:49-12:14/25 15:33 12:46-13:13/27 10:54-11:07/13	08:27 15:32-15:57/25 17:06 09:46-10:05/19	06:56 18:28	17:27-17:48/21 20:55	06:12 22:23	04:35 23:36
15	09:47 13:34-13:58/24 11:49-12:15/26 15:35 12:47-13:13/26 10:53-11:08/15	08:24 15:33-15:58/25 17:09 09:48-10:04/16	06:53 18:30	17:27-17:49/22 20:58	06:08 22:26	04:32 23:37
16	09:45 13:34-13:58/24 11:49-12:15/26 15:38 12:46-13:13/27 10:52-11:09/17	08:21 15:32-15:57/25 17:12 09:49-10:02/13	06:50 18:33	17:26-17:48/22 21:00	06:05 22:29	04:30 23:38
17	09:43 13:34-13:59/25 11:49-12:15/26 15:41 12:47-13:14/27 10:52-11:10/18	08:18 15:33-15:56/23 17:15 09:52-09:59/7	06:46 18:36	17:26-17:49/23 21:03	06:02 22:32	04:27 23:39
18	09:41 13:34-14:00/26 11:50-12:16/26 15:44 12:47-13:14/27 10:52-11:11/19	08:15 15:34-15:55/21 17:18	06:43 18:39	17:26-17:47/21 21:06	05:58 22:34	04:24 23:40
19	09:39 13:35-14:00/25 11:50-12:17/27 15:46 12:48-13:15/27 10:52-11:12/20	08:12 15:35-15:54/19 17:21	06:39 18:42	17:26-17:47/21 21:09	05:55 22:37	04:21 23:40
20	09:37 13:34-14:00/26 11:50-12:16/26 15:49 12:48-13:14/26 10:51-11:12/21	08:09 15:36-15:52/16 17:24	06:36 18:44	17:26-17:46/20 21:12	05:52 22:40	04:18 23:41
21	09:34 13:35-14:01/26 11:51-12:17/26 15:52 12:49-13:14/25 10:51-11:13/22	08:05 15:39-15:50/11 17:27	06:33 18:47	17:27-17:45/18 21:15	05:48 22:43	04:15 23:41
22	09:32 14:39-14:49/10 12:50-13:15/25 10:51-11:14/23 15:55 13:35-14:01/26 11:51-12:17/26	08:02 17:30	06:29 18:50	17:29-17:43/14 21:18	05:45 22:46	04:13 23:41
23	09:29 14:37-14:51/14 12:50-13:14/24 10:51-11:14/23 15:58 13:35-14:01/26 11:51-12:17/26	07:59 17:33	06:26 18:53	17:31-17:39/8 21:21	05:42 22:49	04:10 23:41
24	09:27 14:36-14:53/17 12:51-13:14/23 10:51-11:15/24 16:01 13:36-14:01/25 11:52-12:17/25	07:56 17:36	06:23 18:56	05:38 21:24	04:07 22:51	03:26 23:41
25	09:24 14:35-14:55/20 12:52-13:14/22 10:52-11:16/24 16:04 13:37-14:02/25 11:53-12:17/24	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:27 23:41
26	09:22 14:34-14:56/22 12:53-13:13/20 10:51-11:15/24 16:07 13:37-14:01/24 11:54-12:16/22	07:49 17:41	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:41
27	09:19 14:34-14:57/23 12:54-13:12/18 10:52-11:16/24 16:10 13:38-14:01/23 11:55-12:16/21	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:28 23:40
28	09:17 14:32-14:58/26 12:56-13:11/15 10:53-11:16/23 16:13 13:38-14:00/22 11:57-12:15/18	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:40
29	09:14 14:32-14:59/27 12:58-13:09/11 10:53-11:15/22 16:16 13:40-14:00/20 11:58-12:13/15	07:40 17:44	06:06 19:07	05:22 21:38	03:55 23:05	03:30 23:39
30	09:11 14:33-15:00/27 12:01-12:12/11 16:19 13:42-13:59/17 10:54-11:15/21	07:37 17:41	06:03 19:07	05:19 21:41	03:53 23:07	03:31 23:38
31	09:09 14:32-15:00/28 10:55-11:14/19 16:22 13:43-13:57/14	07:34 17:38	06:00 19:04	05:16 21:38	03:50 23:04	03:28 23:37
Potential sun hours	185	243	364	446	557	601
Sum of minutes with flicker	2503	1039	246	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K05 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (5)
Assumptions for shadow calculations

Shine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (July to December) and rows for each day of the month, showing sun rise/set times and shadow flicker minutes.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K06 - NORDEX N163/6.X 6800 163.0 !O! hub: 148.5 m (TOT: 230.0 m) (6)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:25	17:50	20:18	21:44	21:12	23:37	22:27	20:46	19:05	16:24	15:08
2	10:05	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:16	23:34	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:29	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:52	16:12	15:01
6	10:01	08:51	07:23	06:38	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:20	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:30	22:08	20:26	18:45	16:07	14:59
8	09:59	08:45	07:16	06:32	04:54	03:36	03:45	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:41	16:04	14:58
9	09:57	08:42	07:13	06:28	04:50	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:39	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:36	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:52	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:54
13	09:51	08:30	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:57
	15:30	17:02	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:27	20:55	22:23	23:36	23:15	21:46	20:02	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:32	03:28	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:09	18:30	20:57	22:25	23:37	23:12	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:01	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:36	14:51
19	09:38	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:41	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:40	23:00	21:26	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:06
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:35	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:38	09:10	10:08
	15:58	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:36	18:55	21:23	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:56	23:40	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:16	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:07
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:08		06:59		03:51		04:44	06:13		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K07 - NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (7) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

[January | February | March | April | May | June | July | August | September | October | November | December

1	10:06	09:06	07:39	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:26	17:50	20:18	21:44	21:44	23:12	22:27	20:47	19:05	16:24	15:08
2	10:05	09:03	07:36	06:52	05:12	03:47	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:45	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:16	23:34	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:29	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:39
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:52	16:12	15:02
6	10:01	08:51	07:23	06:38	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:10	15:00
7	10:00	08:48	07:20	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:28	22:08	20:26	18:45	16:07	14:59
8	09:59	08:45	07:16	06:32	04:54	03:36	03:45	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:42	07:13	06:28	04:51	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:01	14:57
10	09:56	08:39	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:56
11	09:54	08:36	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:52	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:54
13	09:51	08:30	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:57
	15:30	17:03	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:12	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:27	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:01	05:28	06:53	08:15	08:47	10:00
	15:35	17:09	18:30	20:57	22:25	23:37	23:12	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:36	14:52
19	09:38	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:08	06:36	05:52	04:18	03:26	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:40	23:00	21:26	19:42	18:02	15:32	14:52
21	09:34	08:05	06:33	05:48	04:16	03:26	04:16	05:45	07:10	08:33	09:05	10:06
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:35	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:38	09:10	10:08
	15:58	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:24	14:53
24	09:27	07:56	06:22	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:36	18:56	21:23	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:39	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:03	03:28	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:56	23:40	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:29	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:16	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:58
29	09:14		07:06	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:07
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:08		06:59		03:51		04:44	06:13		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:28		15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K08 - NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (8)
 Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

[January | February | March | April | May | June | July | August | September | October | November | December]

1	10:06 15:04	09:06 16:26	07:39 17:50	06:55 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:24	09:32 15:08
2	10:06 15:05	09:03 16:29	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:02	08:08 16:21	09:35 15:06
3	10:05 15:07	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:16	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:05
4	10:04 15:09	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:19	03:37 23:33	04:56 22:18	06:24 20:36	07:45 18:55	08:14 16:15	09:40 15:03
5	10:03 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:12	09:42 15:01
6	10:02 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:30	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:47	07:16 18:10	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:07 22:05	06:34 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:43 16:50	07:13 18:13	06:28 20:40	04:51 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:50 14:56
10	09:56 15:22	08:40 16:53	07:10 18:16	06:25 20:43	04:47 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:32 23:32	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:53 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	03:53 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	09:51 15:30	08:30 17:02	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:06	06:56 18:27	06:12 20:55	04:35 22:23	03:28 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:35	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:26	03:28 23:37	04:00 23:13	05:28 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:12	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:39	04:06 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:40	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:09	08:56 15:36	10:04 14:51
19	09:39 15:46	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:05 14:52
20	09:36 15:49	08:09 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:25 23:41	04:13 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:25 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:36 17:56	09:08 15:27	10:07 14:52
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:38 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:22 18:56	05:38 21:24	04:08 22:51	03:26 23:41	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	09:13 15:22	10:08 14:54
25	09:24 16:04	07:52 17:39	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:29	04:02 22:57	03:27 23:41	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:28 23:40	04:33 22:41	06:01 21:03	07:26 19:18	07:50 16:40	09:22 15:16	10:08 14:56
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:39	04:36 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:57
29	09:14 16:16	07:41 17:41	06:06 20:09	05:22 21:38	03:55 23:04	03:30 23:39	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:19	07:38 17:44	06:03 20:12	05:19 21:41	03:53 23:07	03:31 23:38	04:41 22:33	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	10:08 15:00
31	09:08 16:22	07:35 17:41	06:00 20:15	05:16 21:41	03:51 23:09	03:29 23:39	04:44 22:30	06:13 20:50	07:34 16:27	07:59 15:12	09:30 14:52	10:08 15:02

Potential sun hours	185	243	364	446	556	601	591	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K09 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (9)
Assumptions for shadow calculations

Shine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

[January | February | March | April | May | June | July | August | September | October | November | December

Table with 12 columns (months) and 31 rows (days). Each cell contains a time range (hh:mm) representing shadow periods. The last row shows 'Potential sun hours' and 'Sum of minutes with flicker' for each month.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker



SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K10 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (10) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:06 15:03	09:06 14:45-15:10/25 10:06-10:29/23 16:25 13:11-13:53/42	07:39 17:00-17:14/14 17:50	06:55 20:18	05:15 21:44	03:48 23:12
2	10:05 15:05	09:03 14:44-15:12/28 10:05-10:29/24 16:28 13:12-13:53/41	07:36 16:58-17:17/19 17:53	06:52 20:21	05:12 21:47	03:46 23:14
3	10:05 15:07	09:00 14:43-15:14/31 10:06-10:29/23 16:32 13:13-13:54/41	07:33 16:58-17:18/20 17:56	06:48 20:23	05:09 21:50	03:44 23:16
4	10:04 15:09	08:57 14:42-15:15/33 10:05-10:29/24 16:35 13:13-13:53/40	07:29 16:56-17:18/22 17:59	06:45 20:26	05:06 21:53	03:42 23:18
5	10:03 15:11	08:54 15:37-15:48/11 13:14-13:53/39 16:38 14:41-15:16/35 10:06-10:29/23	07:26 16:56-17:19/23 18:02	06:42 20:29	05:03 21:56	03:40 23:21
6	10:01 15:13	08:51 15:34-15:50/16 13:14-13:52/38 16:41 14:40-15:16/36 10:06-10:28/22	07:23 16:55-17:18/23 18:05	06:38 20:32	05:00 21:59	03:39 23:23
7	10:00 15:15	08:48 15:33-15:52/19 13:15-13:52/37 16:44 14:40-15:18/38 10:07-10:28/21	07:19 16:56-17:18/22 18:07	06:35 20:35	04:56 22:02	03:37 23:25
8	09:59 13:22-13:27/5 15:17	08:45 15:31-15:53/22 13:15-13:51/36 16:47 14:39-15:18/39 10:09-10:27/18	07:16 16:55-17:17/22 18:10	06:32 20:37	04:53 22:05	03:35 23:27
9	09:57 13:19-13:31/12 15:20	08:42 15:31-15:55/24 13:17-13:50/33 16:50 14:39-15:19/40 10:10-10:26/16	07:13 16:56-17:17/21 18:13	06:28 20:40	04:50 22:08	03:34 23:28
10	09:56 13:19-13:34/15 15:22	08:39 15:30-15:56/26 13:19-13:50/31 16:53 14:39-15:19/40 10:12-10:24/12	07:09 16:58-17:16/18 18:16	06:25 20:43	04:47 22:11	03:33 23:30
11	09:54 13:17-13:35/18 15:25	08:36 15:29-15:56/27 13:19-13:48/29 16:56 14:39-15:19/40 10:15-10:20/5	07:06 16:58-17:14/16 18:19	06:21 20:46	04:44 22:14	03:31 23:32
12	09:52 13:16-13:37/21 15:27	08:33 15:29-15:57/28 13:22-13:47/25 16:59 14:39-15:20/41	07:03 17:01-17:12/11 18:22	06:18 20:49	04:41 22:17	03:30 23:33
13	09:51 13:15-13:39/24 15:30	08:30 15:28-15:57/29 13:23-13:44/21 17:02 14:38-15:19/41	06:59 17:05-17:06/1 18:24	06:15 20:52	04:38 22:20	03:29 23:34
14	09:49 13:15-13:40/25 15:32	08:27 15:29-15:58/29 13:27-13:41/14 17:05 14:39-15:20/41	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:36
15	09:47 13:14-13:42/28 15:35	08:24 15:28-15:57/29 17:08 14:39-15:19/40	06:53 18:30	06:08 20:57	04:32 22:25	03:27 23:37
16	09:45 13:14-13:43/29 15:38	08:21 15:29-15:58/29 17:11 14:39-15:19/40	06:49 18:33	06:05 21:00	04:29 22:28	03:27 23:38
17	09:43 13:14-13:44/30 15:41	08:18 15:28-15:57/29 17:14 14:39-15:19/40	06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:39
18	09:41 13:13-13:45/32 15:43	08:15 15:29-15:57/28 17:17 14:40-15:19/39	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39
19	09:38 13:12-13:46/34 15:46	08:12 15:29-15:56/27 17:20 14:40-15:17/37	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40
20	09:36 13:12-13:47/35 15:49	08:08 15:30-15:55/25 17:23 14:41-15:17/36	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:40
21	09:34 13:12-13:48/36 15:52	08:05 15:31-15:54/23 17:26 14:43-15:16/33	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41
22	09:32 13:12-13:49/37 15:55	08:02 15:33-15:53/20 17:29 14:43-15:15/32	06:29 18:50	05:45 21:18	04:13 22:45	03:25 23:41
23	09:29 13:12-13:50/38 15:58	07:59 15:35-15:52/17 17:32 14:45-15:14/29	06:26 18:53	05:41 21:20	04:10 22:48	03:26 23:41
24	09:27 13:12-13:51/39 16:01 10:16-10:20/4	07:56 15:38-15:48/10 17:35 14:46-15:11/25	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41
25	09:24 13:11-13:51/40 16:04 10:12-10:22/10	07:52 14:49-15:09/20 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41
26	09:22 13:11-13:52/41 16:07 10:09-10:24/15	07:49 14:53-15:05/12 17:41	06:16 19:01	05:32 21:29	04:02 22:56	03:27 23:40
27	09:19 13:11-13:51/40 16:10 10:07-10:25/18	07:46 17:06-17:08/2 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40
28	09:16 13:11-13:52/41 16:13 10:06-10:26/20	07:43 17:02-17:11/9 17:47	06:09 19:07	05:25 21:35	03:57 23:02	03:29 23:39
29	09:14 14:52-15:03/11 10:06-10:27/21 16:16 13:12-13:53/41		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:39
30	09:11 14:48-15:06/18 10:05-10:27/22 16:19 13:11-13:53/42		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38
31	09:08 14:47-15:09/22 10:05-10:28/23 16:22 13:12-13:53/41		06:59 20:15		03:51 23:09	
Potential sun hours	185	243	364	446	556	601
Sum of minutes with flicker	928	2048	232	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K10 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (10) Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32 23:37	04:47 22:27	06:15 20:46	07:36 19:05	17:41-17:50/9	08:05 16:24
2	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:01	17:37-17:52/15	08:08 16:21
3	03:35 23:34	04:53 22:20	06:21 20:40	07:42 18:58	17:35-17:53/18	08:11 16:18
4	03:37 23:33	04:56 22:17	06:23 20:36	07:45 18:55	17:34-17:54/20	08:14 16:15
5	03:39 23:32	04:58 22:14	06:26 20:33	07:47 18:51	17:33-17:54/21	08:17 16:12
6	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	17:33-17:55/22	08:20 16:09
7	03:42 23:28	05:04 22:08	06:32 20:26	07:53 18:45	17:32-17:55/23	08:23 16:06
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:41	17:31-17:53/22	08:26 16:03
9	03:46 23:25	05:10 22:02	06:37 20:19	07:58 18:38	17:31-17:53/22	08:29 16:01
10	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	17:31-17:52/21	08:32 15:58
11	03:51 23:21	05:16 21:56	06:42 20:13	08:04 18:31	17:32-17:51/19	08:35 15:55
12	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	17:32-17:49/17	08:38 15:52
13	03:55 23:17	05:22 21:49	06:48 20:06	08:10 18:25	17:33-17:46/13	08:41 15:49
14	03:58 23:15	05:24 21:46	06:51 20:02	08:12 18:22	17:35-17:42/7	08:44 15:47
15	04:00 23:12	05:27 21:43	06:53 19:59	08:15 18:18	15:29-15:33/4	08:47 15:44
16	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	15:22-15:39/17	08:50 15:41
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	16:14-16:16/2	08:53 15:39
18	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	16:08-16:21/13	08:56 15:36
19	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	16:05-16:23/18	08:59 15:34
20	04:13 23:00	05:42 21:26	07:07 19:42	08:30 18:02	16:03-16:24/21	09:02 15:31
21	04:16 22:58	05:44 21:23	07:09 19:39	08:32 17:59	16:01-16:25/24	09:05 15:29
22	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	16:00-16:26/26	09:08 15:26
23	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	16:00-16:27/27	09:10 15:24
24	04:24 22:50	05:53 21:13	07:17 19:28	08:41 17:49	15:59-16:27/28	09:13 15:22
25	04:27 22:47	05:56 21:10	07:20 19:25	08:44 16:46	14:58-15:27/29	09:16 15:20
26	04:30 22:44	05:58 21:06	07:23 19:22	08:47 16:43	14:58-15:27/29	09:19 15:18
27	04:33 22:41	06:01 21:03	07:26 19:18	08:50 16:40	14:58-15:27/29	09:22 15:15
28	04:35 22:38	06:04 21:00	07:28 19:15	08:53 16:37	14:58-15:27/29	09:24 15:13
29	04:38 22:35	06:07 20:56	07:31 19:12	08:56 16:33	14:58-15:26/28	09:27 15:11
30	04:41 22:32	06:10 20:53	07:34 19:08	08:59 16:30	14:59-15:26/27	09:30 15:10
31	04:44 22:30	06:12 20:50		09:02 16:27	14:59-15:25/26	
Potential sun hours	591	501	391	308	208	155
Sum of minutes with flicker	0	0	0	1267	1914	51

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K11 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (11)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:06 12:18-12:36/18 15:03 11:24-11:37/13	09:05 13:40-13:58/18 11:32-11:48/16 16:25 12:24-12:50/26	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:12
2	10:05 13:37-13:41/4 11:23-11:38/15 15:05 12:18-12:37/19	09:03 13:42-13:57/15 11:35-11:46/11 16:28 12:25-12:49/24	07:36 17:53	06:52 20:20	05:12 21:47	03:46 23:14
3	10:04 13:36-13:44/8 11:23-11:40/17 15:07 12:18-12:39/21	09:00 15:37-15:46/9 12:27-12:48/21 16:31 13:45-13:55/10	07:33 17:15-17:21/6 17:56	06:48 20:23	05:09 21:50	03:44 23:16
4	10:04 13:34-13:45/11 11:22-11:40/18 15:09 12:17-12:39/22	08:57 15:35-15:49/14 16:35 12:29-12:46/17	07:29 17:12-17:23/11 17:59	06:45 20:26	05:06 21:53	03:42 23:18
5	10:02 13:34-13:48/14 11:23-11:42/19 15:11 12:18-12:41/23	08:54 15:34-15:52/18 16:38 12:33-12:44/11	07:26 17:10-17:27/17 18:02	06:42 20:29	05:03 21:56	03:40 23:21
6	10:01 13:34-13:49/15 11:22-11:43/21 15:13 12:17-12:41/24	08:51 15:32-15:53/21 16:41	07:23 17:09-17:29/20 18:04	06:38 20:32	05:00 21:59	03:39 23:23
7	10:00 13:33-13:50/17 11:22-11:43/21 15:15 12:17-12:42/25	08:48 15:31-15:54/23 16:44	07:19 17:08-17:30/22 18:07	06:35 20:35	04:56 22:02	03:37 23:25
8	09:59 13:32-13:51/19 11:22-11:44/22 15:17 12:17-12:43/26	08:45 15:30-15:54/24 16:47	07:16 17:07-17:30/23 18:10	06:31 20:37	04:53 22:05	03:35 23:26
9	09:57 13:32-13:52/20 11:21-11:45/24 15:20 12:16-12:44/28	08:42 15:30-15:55/25 16:50	07:13 17:07-17:31/24 18:13	06:28 20:40	04:50 22:08	03:34 23:28
10	09:56 13:32-13:53/21 11:22-11:47/25 15:22 12:16-12:44/28	08:39 15:29-15:55/26 16:53	07:09 17:07-17:31/24 18:16	06:25 20:43	04:47 22:11	03:33 23:30
11	09:54 13:32-13:54/22 11:21-11:47/26 15:25 12:16-12:45/29	08:36 15:30-15:56/26 16:56	07:06 17:06-17:30/24 18:19	06:21 20:46	04:44 22:14	03:31 23:31
12	09:52 13:31-13:55/24 11:21-11:47/26 15:27 12:16-12:46/30	08:33 15:30-15:57/27 16:59	07:03 17:07-17:30/23 18:22	06:18 20:49	04:41 22:16	03:30 23:33
13	09:51 13:31-13:56/25 11:21-11:48/27 15:30 12:16-12:47/31	08:30 15:30-15:56/26 17:02	06:59 17:07-17:29/22 18:24	06:15 20:52	04:38 22:19	03:29 23:34
14	09:49 13:31-13:57/26 11:22-11:49/27 15:32 12:17-12:48/31	08:27 15:30-15:56/26 17:05	06:56 17:08-17:28/20 18:27	06:11 20:54	04:35 22:22	03:28 23:36
15	09:47 13:32-13:58/26 11:22-11:50/28 15:35 12:17-12:49/32	08:24 15:30-15:56/26 17:08	06:53 17:08-17:26/18 18:30	06:08 20:57	04:32 22:25	03:27 23:37
16	09:45 13:32-13:59/27 11:22-11:51/29 15:38 12:17-12:50/33	08:21 15:31-15:56/25 17:11	06:49 17:10-17:24/14 18:33	06:05 21:00	04:29 22:28	03:27 23:38
17	09:43 13:32-13:59/27 11:22-11:51/29 15:41 12:17-12:50/33	08:18 15:31-15:54/23 17:14	06:46 17:12-17:21/9 18:36	06:01 21:03	04:27 22:31	03:26 23:39
18	09:41 13:31-13:59/28 11:22-11:51/29 15:43 12:17-12:50/33	08:15 15:33-15:54/21 17:17	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39
19	09:38 13:32-14:00/28 11:22-11:52/30 15:46 12:17-12:51/34	08:11 15:33-15:52/19 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40
20	09:36 13:32-14:01/29 11:23-11:53/30 15:49 12:18-12:52/34	08:08 15:36-15:50/14 17:23	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:41
21	09:34 13:32-14:01/29 11:23-11:53/30 15:52 12:17-12:51/34	08:05 15:39-15:47/8 17:26	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41
22	09:31 13:32-14:01/29 11:23-11:53/30 15:55 12:18-12:52/34	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:25 23:41
23	09:29 13:33-14:02/29 11:24-11:53/29 15:58 12:18-12:53/35	07:59 17:32	06:26 18:53	05:41 21:20	04:10 22:48	03:26 23:41
24	09:27 13:34-14:02/28 11:25-11:54/29 16:01 12:19-12:53/34	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41
25	09:24 13:33-14:02/29 11:25-11:53/28 16:04 12:19-12:53/34	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41
26	09:22 13:34-14:02/28 11:26-11:53/27 16:07 12:20-12:53/33	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	03:27 23:40
27	09:19 13:34-14:01/27 11:26-11:52/26 16:10 12:19-12:52/33	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40
28	09:16 13:35-14:01/26 11:27-11:52/25 16:13 12:20-12:53/33	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:02	03:29 23:39
29	09:14 13:37-14:01/24 11:28-11:52/24 16:16 12:22-12:53/31		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38
30	09:11 13:37-14:00/23 11:29-11:51/22 16:19 12:22-12:52/30		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38
31	09:08 13:39-14:00/21 11:31-11:50/19 16:22 12:23-12:51/28		06:59 20:15		03:51 23:09	
Potential sun hours	185	243	364	446	556	600
Sum of minutes with flicker	2362	570	277	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K11 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (11) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	July	August	September	October	November	December
1	03:32 23:37	04:47 22:26	06:15 20:46	07:36 17:45-18:08/23 19:05	08:05 15:00-15:26/26 16:24	09:32 13:14-13:36/22 11:04-11:29/25 15:08 11:59-12:28/29
2	03:34 23:36	04:50 22:23	06:18 20:43	07:39 17:45-18:08/23 19:01	08:08 15:00-15:25/25 16:21	09:35 13:15-13:36/21 11:05-11:29/24 15:06 12:00-12:28/28
3	03:35 23:34	04:53 22:20	06:21 20:40	07:42 17:44-18:08/24 18:58	08:11 15:00-15:24/24 16:18	09:37 13:16-13:36/20 11:06-11:29/23 15:04 12:01-12:28/27
4	03:37 23:33	04:56 22:17	06:23 20:36	07:45 17:44-18:08/24 18:55	08:14 15:01-15:23/22 16:15	09:39 13:17-13:35/18 11:06-11:28/22 15:03 12:01-12:27/26
5	03:39 23:32	04:58 22:14	06:26 20:33	07:47 17:44-18:08/24 18:51	08:17 15:03-15:23/20 16:12	09:42 13:18-13:35/17 11:07-11:29/22 15:01 12:02-12:27/25
6	03:41 23:30	05:01 22:11	06:29 20:29	07:50 17:44-18:07/23 18:48	08:20 15:03-15:21/18 16:09 12:02-12:14/12	09:44 13:20-13:35/15 11:09-11:29/20 15:00 12:04-12:28/24
7	03:42 23:28	05:04 22:08	06:32 20:26	07:53 17:45-18:06/21 18:45	08:23 15:05-15:19/14 16:06 11:59-12:17/18	09:46 13:21-13:34/13 11:09-11:28/19 14:59 12:04-12:27/23
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 17:44-18:03/19 18:41	08:26 15:07-15:15/8 11:57-12:18/21 16:03 13:15-13:25/10	09:48 13:23-13:34/11 11:11-11:29/18 14:57 12:06-12:27/21
9	03:46 23:25	05:10 22:02	06:37 20:19	07:58 17:46-18:00/14 18:38	08:29 13:12-13:28/16 11:05-11:17/12 16:01 11:56-12:20/24	09:50 13:24-13:33/9 11:11-11:28/17 14:56 12:06-12:27/21
10	03:49 23:23	05:13 21:59	06:40 20:16	08:01 17:47-17:56/9 18:35	08:32 13:11-13:30/19 11:03-11:20/17 15:58 11:55-12:22/27	09:52 13:26-13:31/5 11:12-11:28/16 14:55 12:07-12:27/20
11	03:51 23:21	05:16 21:55	06:42 20:13	08:04 17:50-17:53/3 18:31	08:35 13:09-13:31/22 11:01-11:21/20 15:55 11:54-12:22/28	09:54 12:08-12:26/18 14:54 11:14-11:27/13
12	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 13:09-13:32/23 11:01-11:22/21 15:52 11:54-12:23/29	09:56 12:09-12:26/17 14:54 11:17-11:27/10
13	03:55 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 13:08-13:33/25 11:00-11:24/24 15:49 11:53-12:24/31	09:57 12:10-12:26/16 14:53 11:20-11:27/7
14	03:58 23:15	05:24 21:46	06:50 20:02	08:12 18:21	08:44 13:07-13:33/26 10:59-11:24/25 15:47 11:52-12:24/32	09:59 12:11-12:26/15 14:52 11:23-11:27/4
15	04:00 23:12	05:27 21:43	06:53 19:59	08:15 18:18	08:47 13:07-13:34/27 10:58-11:25/27 15:44 11:52-12:25/33	10:00 12:12-12:26/14 14:52 11:25-11:26/1
16	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:50 13:07-13:35/28 10:58-11:26/28 15:41 11:52-12:26/34	10:02 12:14-12:26/12 14:52
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 13:07-13:36/29 10:58-11:27/29 15:39 11:53-12:27/34	10:03 12:15-12:26/11 14:51
18	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 13:07-13:35/28 10:59-11:28/29 15:36 11:53-12:27/34	10:04 12:15-12:26/11 14:51
19	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 13:07-13:36/29 10:58-11:27/29 15:34 11:52-12:27/35	10:05 12:16-12:26/10 14:51
20	04:13 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 13:07-13:36/29 10:58-11:28/30 15:31 11:53-12:27/34	10:06 12:17-12:26/9 14:51
21	04:16 22:57	05:44 21:23	07:09 19:39	08:32 16:08-16:19/11 17:59	09:05 13:08-13:37/29 10:58-11:28/30 15:29 11:53-12:27/34	10:06 12:17-12:27/10 14:52
22	04:19 22:55	05:47 21:20	07:12 19:35	08:35 16:05-16:21/16 17:56	09:07 13:08-13:37/29 10:59-11:29/30 15:26 11:54-12:28/34	10:07 12:17-12:27/10 14:52
23	04:21 22:52	05:50 21:16	07:15 19:32	08:38 16:03-16:22/19 17:52	09:10 13:09-13:37/28 10:59-11:29/30 15:24 11:54-12:28/34	10:07 12:18-12:27/9 14:53
24	04:24 22:49	05:53 21:13	07:17 19:28	08:41 16:02-16:24/22 17:49	09:13 13:08-13:36/28 11:00-11:29/29 15:22 11:54-12:27/33	10:08 12:18-12:28/10 14:53
25	04:27 22:47	05:56 21:10	07:20 19:25	07:44 15:01-15:25/24 16:46	09:16 13:09-13:37/28 11:00-11:29/29 15:20 11:54-12:28/34	10:08 12:18-12:29/11 14:54
26	04:30 22:44	05:58 21:06	07:23 17:57-18:02/5 19:22	07:47 15:00-15:25/25 16:43	09:19 13:10-13:37/27 11:00-11:29/29 15:18 11:55-12:28/33	10:08 12:18-12:30/12 14:55
27	04:33 22:41	06:01 21:03	07:26 17:52-18:05/13 19:18	07:50 15:00-15:26/26 16:40	09:22 13:11-13:37/26 11:01-11:29/28 15:15 11:56-12:28/32	10:08 12:18-12:31/13 14:56
28	04:35 22:38	06:04 21:00	07:28 17:50-18:07/17 19:15	07:53 14:59-15:26/27 16:37	09:24 13:12-13:37/25 11:02-11:29/27 15:13 11:57-12:28/31	10:08 12:18-12:32/14 14:57
29	04:38 22:35	06:07 20:56	07:31 17:48-18:08/20 19:11	07:56 14:59-15:25/26 16:33	09:27 13:13-13:37/24 11:03-11:29/26 15:11 11:58-12:28/30	10:08 12:18-12:32/14 14:59 11:31-11:34/3
30	04:41 22:32	06:10 20:53	07:34 17:47-18:09/22 19:08	07:59 14:59-15:26/27 16:30	09:29 13:13-13:36/23 11:04-11:30/26 15:10 11:58-12:27/29	10:07 12:18-12:34/16 15:00 11:29-11:35/6
31	04:44 22:29	06:12 20:50	06:12 20:50	08:02 14:59-15:25/26 16:27	08:02 14:59-15:25/26 16:27	10:07 12:18-12:35/17 15:01 11:27-11:36/9
Potential sun hours	590	501	391	308	208	155
Sum of minutes with flicker	0	0	77	456	2060	923

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K12 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (12)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 21:07-21:23/16 23:11
2	10:05 15:05	09:03 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:46 21:09-21:23/14 23:14
3	10:04 15:07	09:00 16:32	07:33 17:56	06:48 20:23	05:09 21:50	03:44 21:09-21:21/12 23:16
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 21:11-21:20/9 23:18
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	21:09-21:13/4 03:41 21:13-21:19/6 23:20
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:59	21:06-21:15/9 03:39 23:22
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:35	04:57 22:02	21:04-21:18/14 03:37 23:24
8	09:59 15:18	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:05	21:04-21:21/17 03:36 23:26
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:08	20:04-20:05/1 21:02-21:23/21 03:34 23:28
10	09:56 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:11	20:01-20:07/6 21:02-21:26/24 03:33 23:30
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:13	19:59-20:10/11 21:01-21:26/25 03:31 23:31
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:16	19:56-20:12/16 21:00-21:26/26 03:30 23:33
13	09:50 15:30	08:30 17:02	06:59 18:24	06:15 20:52	04:38 22:19	19:55-20:15/20 21:00-21:27/27 03:29 23:34
14	09:49 15:32	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	19:54-20:18/24 20:59-21:27/28 03:28 23:35
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	19:54-20:18/24 21:00-21:27/27 03:27 23:37
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:28	19:53-20:18/25 21:00-21:28/28 03:27 23:38
17	09:43 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:27 22:31	19:52-20:17/25 20:59-21:27/28 03:26 23:38
18	09:40 15:43	08:15 17:17	06:43 18:39	05:58 21:06	04:24 22:34	19:52-20:17/25 21:00-21:28/28 03:26 23:39
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	19:52-20:17/25 21:00-21:28/28 03:26 23:40
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:12	04:18 22:40	19:52-20:17/25 20:59-21:27/28 03:25 23:40
21	09:34 15:52	08:05 17:26	06:32 18:47	05:48 21:15	04:15 22:42	19:53-20:16/23 21:00-21:27/27 03:25 23:41
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	19:54-20:15/21 21:00-21:27/27 03:26 23:41
23	09:29 15:58	07:59 17:32	06:26 18:52	05:41 21:20	04:10 22:48	19:54-20:14/20 21:01-21:27/26 03:26 23:41
24	09:26 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	19:56-20:13/17 21:01-21:27/26 03:26 23:41
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	19:58-20:11/13 21:02-21:26/24 03:27 23:41
26	09:21 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	20:00-20:07/7 21:02-21:26/24 03:27 23:40
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	21:03-21:25/22 03:28 23:40
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:02	21:04-21:26/22 03:29 23:39
29	09:14 16:16		07:05 20:09	05:22 21:38	03:55 23:04	21:05-21:25/20 23:38
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	21:05-21:24/19 23:37
31	09:08 16:22		06:59 20:15		03:51 23:09	21:07-21:24/17
Potential sun hours	185	243	364	446	556	600
Sum of minutes with flicker	0	0	0	328	616	57

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K12 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (12)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:33 23:36	04:47 21:11-21:37/26 22:26	06:15 19:58-20:09/11 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	03:34 23:35	04:50 21:11-21:36/25 22:23	06:18 19:59-20:05/6 20:43	07:39 19:01	08:08 16:21	09:34 15:06
3	03:36 23:34	04:53 21:12-21:35/23 22:20	06:21 20:02-20:03/1 20:40	07:42 18:58	08:11 16:18	09:37 15:04
4	03:37 23:33	04:56 21:13-21:32/19 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	03:39 23:31	04:58 21:14-21:30/16 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:42 15:01
6	03:41 23:30	05:01 21:15-21:27/12 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	03:43 21:21-21:24/3 23:28	05:04 21:17-21:25/8 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	03:45 21:19-21:26/7 23:27	05:07 21:20-21:21/1 22:05	06:34 20:23	07:56 18:41	08:26 16:03	09:48 14:57
9	03:47 21:18-21:28/10 23:25	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56
10	03:49 21:17-21:30/13 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	03:51 21:15-21:30/15 23:21	05:16 21:55	06:42 20:12	08:04 18:31	08:35 15:55	09:54 14:54
12	03:53 21:15-21:31/16 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	03:56 21:14-21:33/19 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:49	09:57 14:53
14	03:58 21:14-21:34/20 23:14	05:24 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:59 14:52
15	04:00 21:13-21:34/21 23:12	05:27 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	04:03 21:13-21:35/22 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:50 15:41	10:01 14:52
17	04:05 21:12-21:36/24 23:07	05:33 20:06-20:15/9 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:51
18	04:08 21:12-21:36/24 23:05	05:36 20:04-20:17/13 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:04 14:51
19	04:11 21:11-21:37/26 23:03	05:39 20:01-20:18/17 21:30	07:04 19:45	08:27 18:05	08:59 15:34	10:05 14:51
20	04:13 21:11-21:37/26 23:00	05:42 20:00-20:20/20 21:26	07:07 19:42	08:29 18:02	09:02 15:31	10:05 14:52
21	04:16 21:11-21:37/26 22:57	05:44 19:58-20:20/22 21:23	07:09 19:39	08:32 17:59	09:05 15:29	10:06 14:52
22	04:19 21:10-21:37/27 22:55	05:47 19:57-20:21/24 21:20	07:12 19:35	08:35 17:56	09:07 15:27	10:07 14:52
23	04:21 21:11-21:38/27 22:52	05:50 19:57-20:21/24 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53
24	04:24 21:10-21:38/28 22:49	05:53 19:56-20:21/25 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:08 14:53
25	04:27 21:10-21:38/28 22:47	05:56 19:56-20:21/25 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	04:30 21:10-21:38/28 22:44	05:58 19:55-20:20/25 21:06	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:55
27	04:33 21:10-21:38/28 22:41	06:01 19:55-20:20/25 21:03	07:26 19:18	07:50 16:40	09:21 15:15	10:08 14:56
28	04:35 21:10-21:38/28 22:38	06:04 19:55-20:19/24 21:00	07:28 19:15	07:53 16:37	09:24 15:13	10:08 14:57
29	04:38 21:11-21:38/27 22:35	06:07 19:55-20:18/23 20:56	07:31 19:11	07:56 16:33	09:27 15:12	10:08 14:59
30	04:41 21:10-21:38/28 22:32	06:10 19:56-20:16/20 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00
31	04:44 21:10-21:37/27 22:29	06:12 19:56-20:12/16 20:50		08:02 16:27		10:07 15:02
Potential sun hours	590	501	391	308	208	155
Sum of minutes with flicker	548	442	18	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K13 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (13)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:33-04:48/15 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:03 16:28	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14	03:34 23:35	04:35-04:49/14 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:35 15:06
3	10:04 15:07	09:00 16:32	07:33 17:56	06:48 20:23	05:09 21:50	03:44 23:16	03:36 23:34	04:36-04:49/13 22:20	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:04
4	10:04 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:18	04:36-04:38/2 23:33	04:37-04:48/11 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	04:35-04:39/4 23:32	04:38-04:47/9 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:42 15:01
6	10:01 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	04:34-04:41/7 23:30	04:40-04:48/8 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:35	04:57 22:02	03:37 23:25	04:33-04:42/9 23:28	04:41-04:46/5 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:59 15:18	08:45 16:47	07:16 18:10	06:32 20:37	04:53 22:05	03:36 23:26	04:32-04:42/10 23:27	04:43-04:46/3 22:05	06:34 20:23	07:56 18:41	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:08	03:34 23:28	04:31-04:43/12 23:25	06:37 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56
10	09:56 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:11	03:33 23:30	04:30-04:43/13 23:23	06:40 21:59	08:01 20:16	08:32 18:35	09:32 15:58	09:52 14:55
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:14	03:31 23:31	04:30-04:45/15 23:21	06:42 21:56	08:04 20:13	08:35 18:31	09:54 15:55	09:54 14:55
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	04:29-04:45/16 23:19	06:45 21:52	08:07 20:09	08:38 18:28	09:38 15:52	09:56 14:54
13	09:51 15:30	08:30 17:02	06:59 18:25	06:15 20:52	04:38 22:19	03:29 23:34	04:28-04:45/17 23:17	06:48 21:49	08:10 20:06	08:41 18:25	09:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:36	04:28-04:46/18 23:15	06:51 21:46	08:12 20:02	08:44 18:22	09:49 15:47	09:59 14:52
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:28 23:37	04:27-04:46/19 23:12	06:53 21:43	08:15 19:59	08:47 18:18	09:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:27-04:46/19 23:10	06:56 21:39	08:18 19:56	08:50 18:15	09:50 15:41	10:01 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:39	04:27-04:47/20 23:08	06:59 21:36	08:21 19:52	08:53 18:12	09:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:27-04:47/20 23:05	07:01 21:33	08:24 19:49	08:56 18:08	09:54 15:36	10:04 14:51
19	09:38 15:46	08:11 17:21	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:40	04:27-04:48/21 23:03	07:04 21:30	08:27 19:45	08:59 18:05	09:59 15:34	10:05 14:51
20	09:36 15:49	08:08 17:24	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:40	04:27-04:48/21 23:00	07:07 21:26	08:30 19:42	09:02 18:02	10:06 15:31	10:06 14:52
21	09:34 15:52	08:05 17:27	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41	04:27-04:48/21 22:57	07:09 21:23	08:32 19:39	09:05 17:59	10:06 15:29	10:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:26 23:41	04:27-04:48/21 22:55	07:12 21:20	08:35 19:35	09:07 17:56	10:07 15:27	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:53	05:41 21:20	04:10 22:48	03:26 23:41	04:28-04:49/21 22:52	07:15 21:16	08:38 19:32	09:10 17:52	10:07 15:24	10:07 14:53
24	09:27 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:28-04:48/20 22:49	07:17 21:13	08:41 19:28	09:13 17:49	10:08 15:22	10:08 14:54
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:29-04:49/20 22:47	07:20 21:10	07:44 19:25	09:16 16:46	10:08 15:20	10:08 14:54
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:29	04:02 22:56	03:27 23:40	04:29-04:48/19 22:44	07:23 21:06	07:47 19:22	09:19 16:43	10:08 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:30-04:49/19 22:41	07:26 21:03	07:50 19:18	09:22 16:40	10:08 15:16	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:39	04:31-04:49/18 22:38	07:28 21:00	07:53 19:15	09:24 16:37	10:08 15:14	10:08 14:57
29	09:14 16:16	07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:31-04:48/17 22:35	04:38 22:35	07:31 20:56	07:56 19:12	09:27 16:34	10:08 15:12	10:08 14:59
30	09:11 16:19	07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:07	04:32-04:48/16 23:38	04:41 22:32	07:34 20:53	07:59 19:08	09:29 16:30	10:07 15:10	10:07 15:00
31	09:08 16:22	06:59 20:15	05:19 21:41	03:51 23:09	03:51 23:09	04:44 22:29	04:44 22:29	08:02 20:50	08:27 16:27	09:29 15:02	10:07 15:02	10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	435	78	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:18/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_without_forest WTG: K14 - NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (14)
Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for time slots (e.g., 1 | 10:06, 15:04, 2 | 10:05, 15:05, etc.). Includes summary rows for 'Potential sun hours' and 'Sum of minutes with flicker'.

Table layout: For each day in each month the following matrix apply

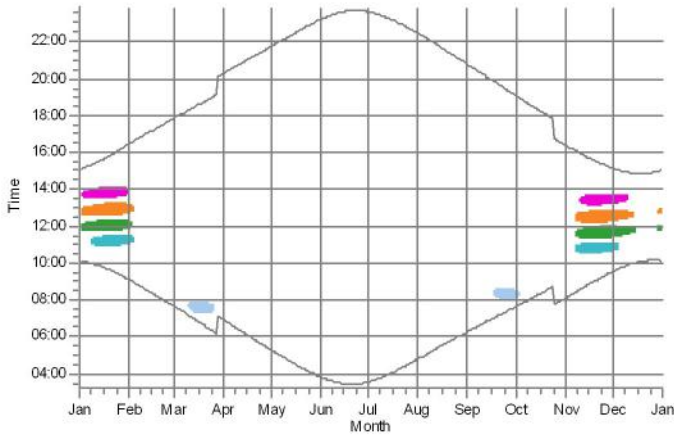
Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker



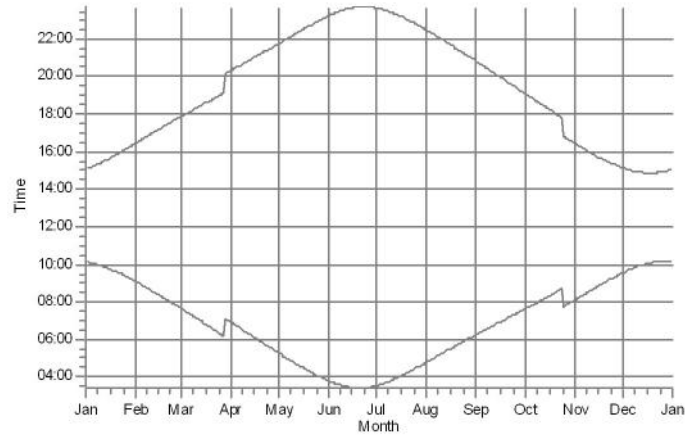
SHADOW - Calendar per WTG, graphical

Calculation: VE1: Kattiharju+extension_without_forest

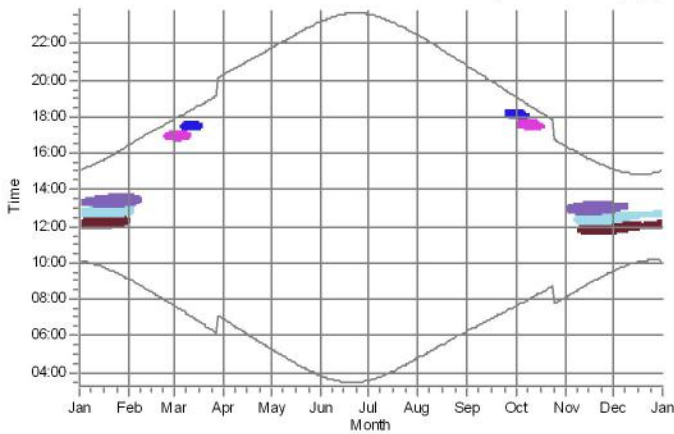
Extension WTG 01: NORDEX Generic 180-169 6800 180.0 !hub: 169.0 m



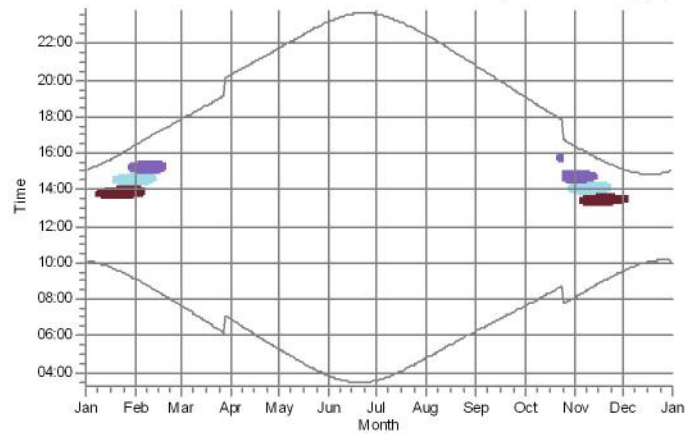
Extension WTG 02: NORDEX Generic 180-169 6800 180.0 !hub: 169.0 m



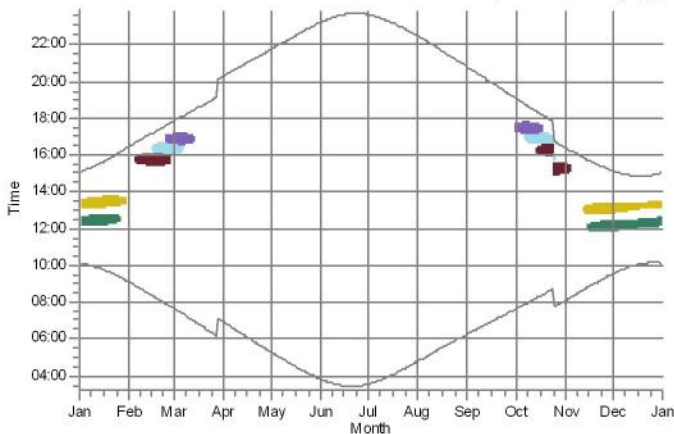
K01: NORDEX N163/6.X 6800 163.0 !hub: 150.5 m (TOT: 232.0 m) (1)



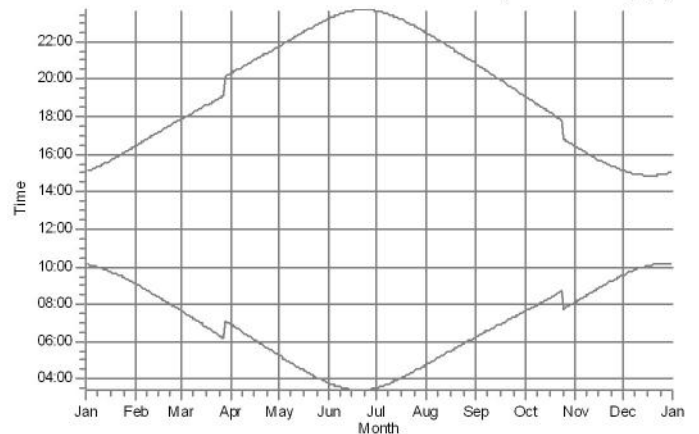
K02: NORDEX N163/6.X 6800 163.0 !hub: 149.5 m (TOT: 231.0 m) (2)



K03: NORDEX N163/6.X 6800 163.0 !hub: 150.5 m (TOT: 232.0 m) (3)



K04: NORDEX N163/6.X 6800 163.0 !hub: 150.5 m (TOT: 232.0 m) (4)



Shadow receptors

- O: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (81)
- S: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (110)
- T: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (106)
- W: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (105)

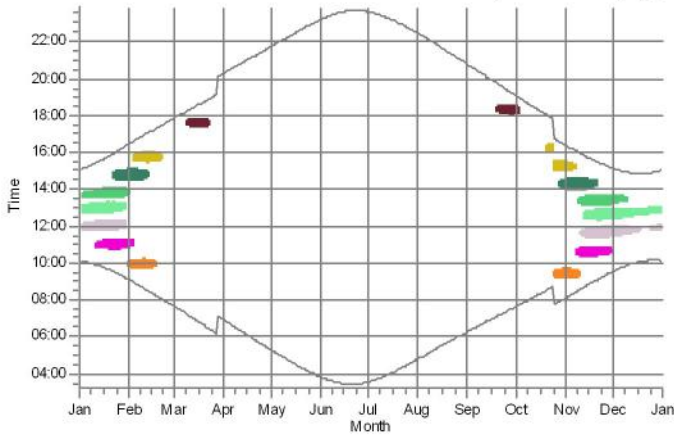
- X: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (111)
- AC: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (104)
- AD: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (103)
- AF: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (101)

- AG: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (99)
- AH: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (98)
- AI: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (80)
- AJ: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (79)

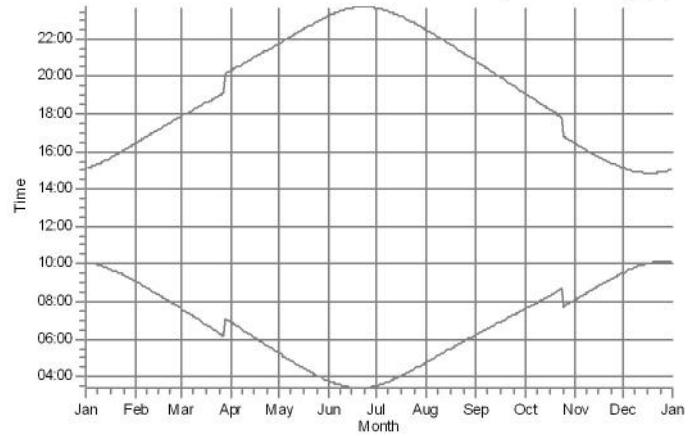
SHADOW - Calendar per WTG, graphical

Calculation: VE1: Kattiharju+extension_without_forest

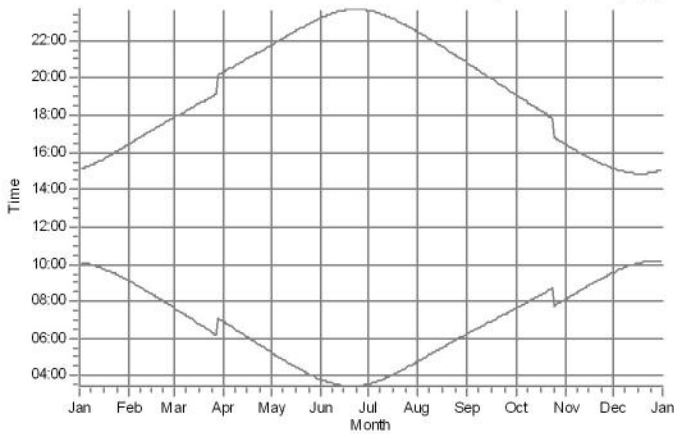
K05: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (5)



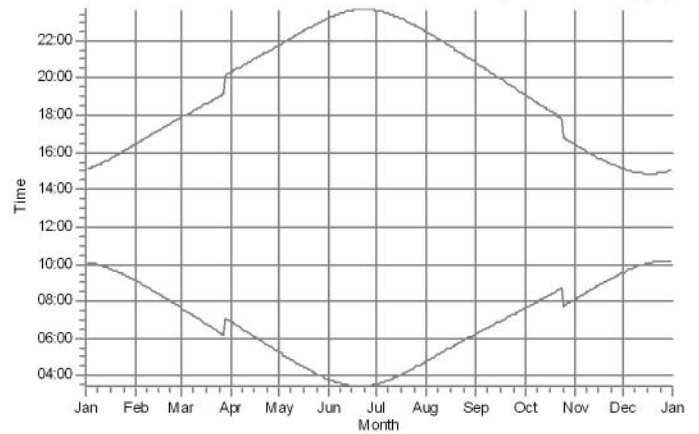
K06: NORDEX N163/6.X 6800 163.0 !O! hub: 148.5 m (TOT: 230.0 m) (6)



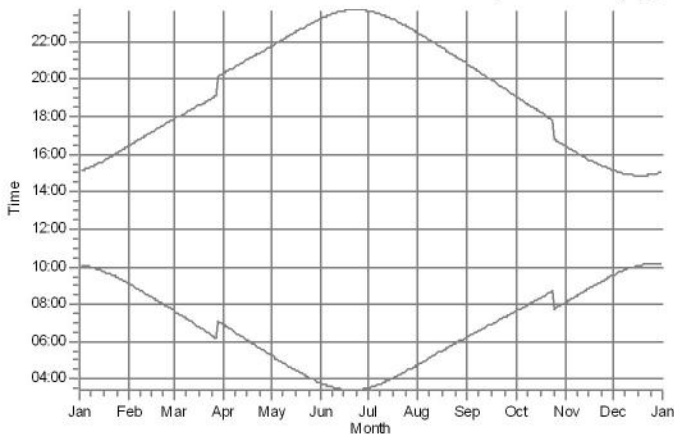
K07: NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (7)



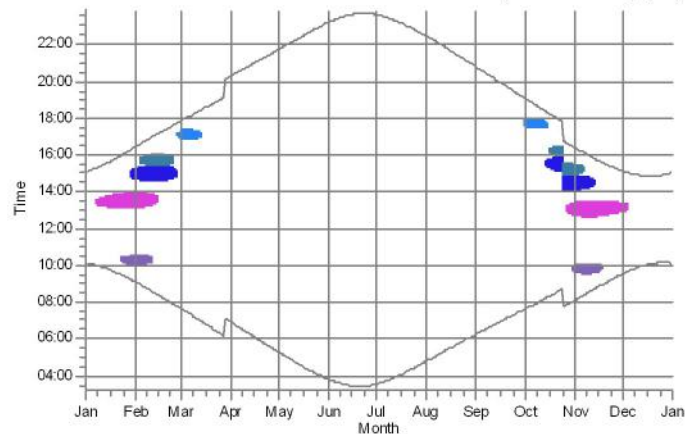
K08: NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (8)



K09: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (9)



K10: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (10)



Shadow receptors

- W: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (105)
- X: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (111)
- Y: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (109)
- Z: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (108)
- AB: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (107)

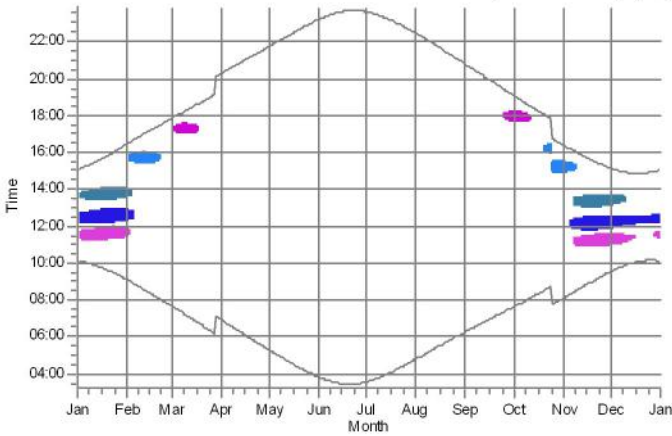
- AC: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (104)
- AD: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (103)
- AF: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (101)
- AH: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (98)
- AI: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (80)

- AJ: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (79)
- AK: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (97)
- AM: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (94)

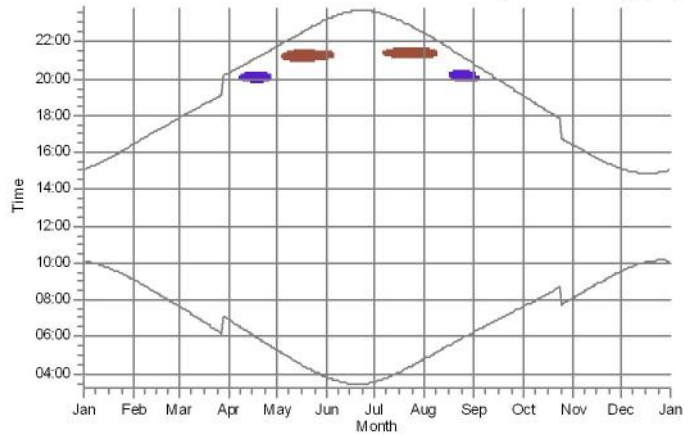
SHADOW - Calendar per WTG, graphical

Calculation: VE1: Kattiharju+extension_without_forest

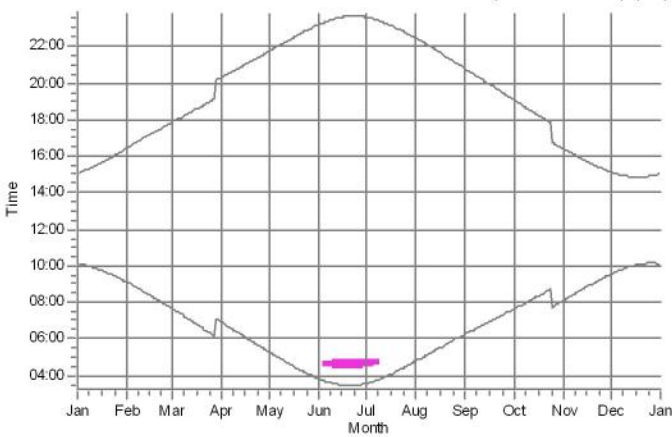
K11: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (11)



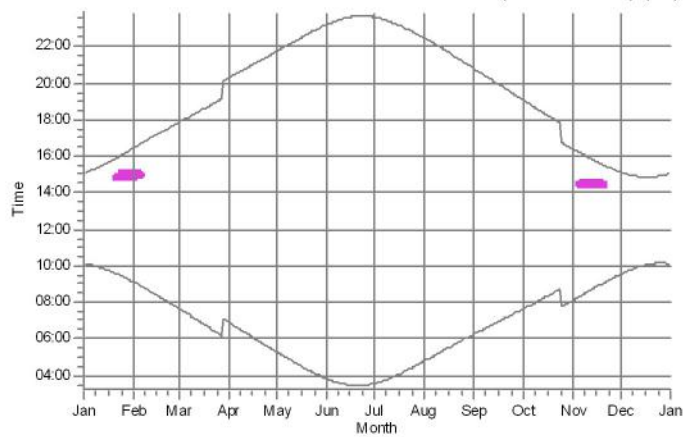
K12: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (12)



K13: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (13)



K14: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (14)



Shadow receptors

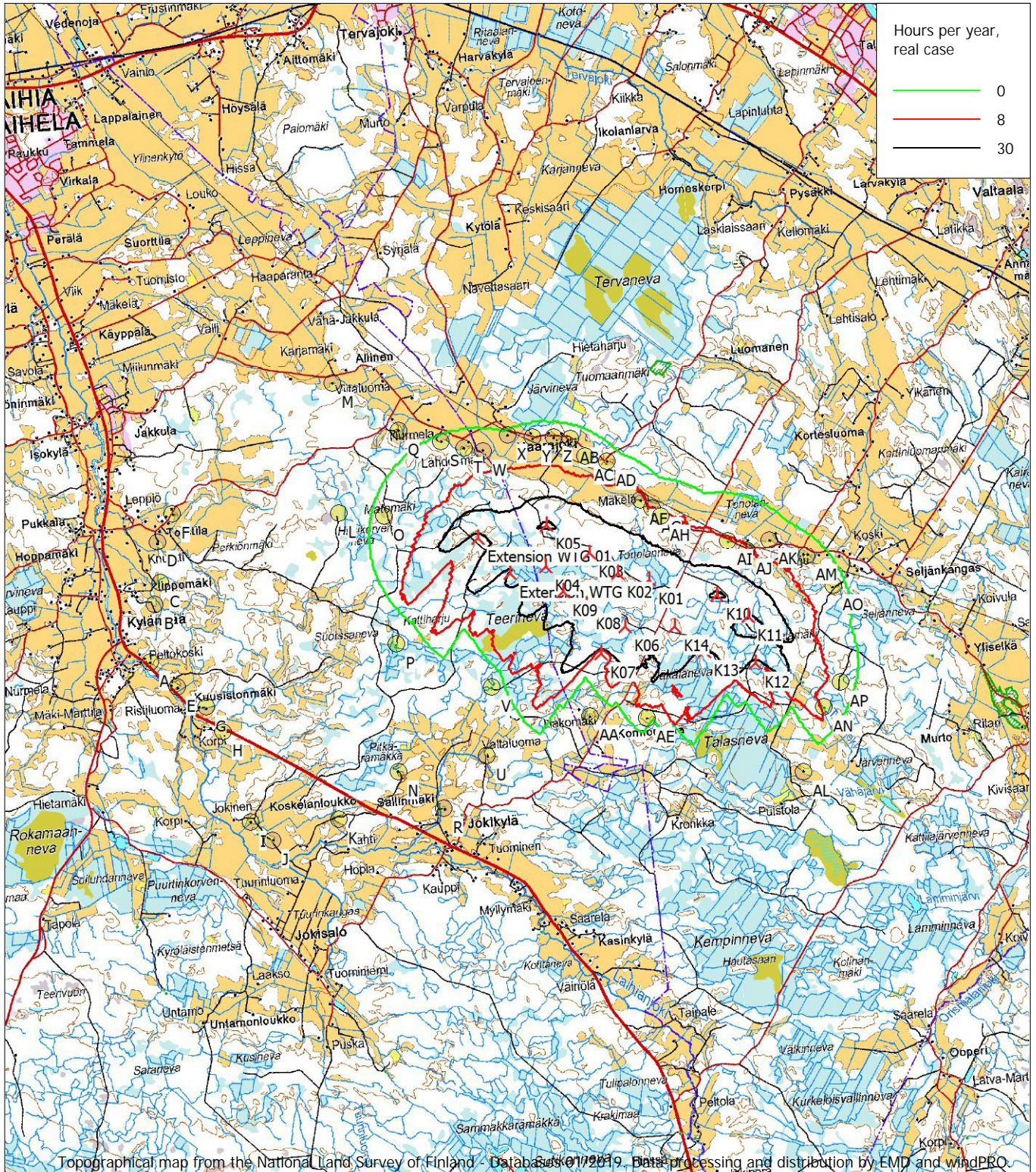
- AE: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (89)
- AI: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (80)
- AJ: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (79)

- AK: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (97)
- AM: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (94)
- AN: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (74)

- AO: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (93)
- AP: Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (76)

SHADOW - Map

Calculation: VE1: Kattiharju+extension_without_forest



Map: Finnish Topographic Map, Print scale 1:100,000, Map center Finish TM ETRS-TM35FIN-ETRS89 East: 256,348 North: 6,984,253

📍 New WTG 📍 Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_ONLINEDATA_0.wpo (1)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 2.0 m

SHADOW - Main Result

Calculation: VE1: Kattiharju+extension_with_forest

Assumptions for shadow calculations

Maximum distance for influence
 Calculate only when more than 20 % of sun is covered by the blade
 Please look in WTG table

Minimum sun height over horizon for influence 3 °
 Day step for calculation 1 days
 Time step for calculation 1 minutes

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time
 N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
 Height contours used: Height Contours: CONTOURLINE_ONLINEDATA_0.wpo
 Area object(s) used in calculation:
 Area object (Heights a.g.l. for e.g. Forest (ORA tool) or ZVI obstructions): RECA
 Obstacles used in calculation
 Receptor grid resolution: 1.0 m

All coordinates are in
 Finish TM ETRS-TM35FIN-ETRS89

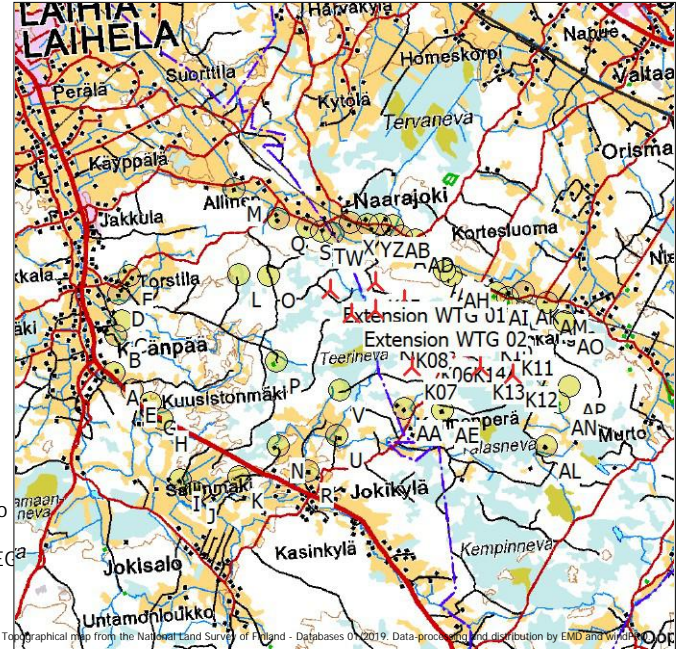
WTGs

	East	North	Z	Row data/Description	WTG type			Shadow data				
					Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Calculation distance [m]	RPM [RPM]
Extension WTG 01	255,944	6,985,328	50.0	NORDEX Generic 180-...	Yes	NORDEX	Generic 180-169-6,800	6,800	180.0	169.0	1,893	10.8
Extension WTG 02	256,455	6,984,657	50.0	NORDEX Generic 180-...	Yes	NORDEX	Generic 180-169-6,800	6,800	180.0	169.0	1,893	10.8
K01	258,892	6,984,359	45.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K02	258,361	6,984,512	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	149.5	1,786	-
K03	257,878	6,984,922	48.7	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K04	257,087	6,984,720	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K05	257,163	6,985,462	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K06	258,414	6,983,575	51.8	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	148.5	1,786	-
K07	257,962	6,983,145	55.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	149.5	1,786	-
K08	257,766	6,984,006	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	149.5	1,786	-
K09	257,382	6,984,262	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K10	260,052	6,984,010	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K11	260,574	6,983,589	45.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K12	260,637	6,982,769	47.5	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K13	259,773	6,983,040	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-
K14	259,278	6,983,511	50.0	NORDEX N163/6.X 68...	Yes	NORDEX	N163/6.X-6,800	6,800	163.0	150.5	1,786	-

Shadow receptor-Input

No.	East	North	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
	[m]	[m]	[m]	[m]	[m]	[m]	[°]		[m]
A	250,049	6,983,575	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
B	250,198	6,984,576	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
C	250,341	6,984,961	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
D	250,343	6,985,667	28.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
E	250,494	6,983,108	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
F	250,645	6,986,141	29.9	5.0	5.0	2.0	0.0	"Green house mode"	2.0
G	250,968	6,982,726	34.7	5.0	5.0	2.0	0.0	"Green house mode"	2.0
H	251,226	6,982,266	34.3	5.0	5.0	2.0	0.0	"Green house mode"	2.0
I	251,592	6,980,644	37.4	5.0	5.0	2.0	0.0	"Green house mode"	2.0
J	251,960	6,980,299	35.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
K	253,131	6,980,587	43.3	5.0	5.0	2.0	0.0	"Green house mode"	2.0
L	253,546	6,985,931	45.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
M	253,607	6,988,208	24.5	5.0	5.0	2.0	0.0	"Green house mode"	2.0

To be continued on next page...



SHADOW - Main Result

Calculation: VE1: Kattiharju+extension_with_forest

...continued from previous page

No.	East	North	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
N	254,248	6,981,332	42.1	5.0	5.0	2.0	0.0	"Green house mode"	2.0
O	254,339	6,985,826	55.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
P	254,373	6,983,560	46.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
Q	254,693	6,987,302	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
R	255,007	6,980,631	40.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
S	255,437	6,987,054	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
T	255,814	6,986,908	29.4	5.0	5.0	2.0	0.0	"Green house mode"	2.0
U	255,826	6,981,493	42.9	5.0	5.0	2.0	0.0	"Green house mode"	2.0
V	255,991	6,982,694	45.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
W	256,145	6,986,833	25.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
X	256,601	6,987,078	25.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
Y	257,040	6,987,001	26.9	5.0	5.0	2.0	0.0	"Green house mode"	2.0
Z	257,405	6,986,979	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AA	257,676	6,982,066	50.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AB	257,698	6,986,934	29.8	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AC	257,931	6,986,612	28.2	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AD	258,308	6,986,493	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AE	258,674	6,981,951	50.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AF	258,840	6,985,771	30.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AG	259,027	6,985,623	32.8	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AH	259,178	6,985,473	37.8	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AI	260,319	6,984,939	45.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AJ	260,630	6,984,768	39.4	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AK	261,049	6,984,913	35.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AL	261,344	6,980,808	50.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AM	261,661	6,984,584	36.4	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AN	261,796	6,981,916	50.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AO	262,098	6,984,032	40.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0
AP	262,110	6,982,324	50.0	5.0	5.0	2.0	0.0	"Green house mode"	2.0

Calculation Results

Shadow receptor

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
A	0:00	0	0:00	0:00
B	0:00	0	0:00	0:00
C	0:00	0	0:00	0:00
D	0:00	0	0:00	0:00
E	0:00	0	0:00	0:00
F	0:00	0	0:00	0:00
G	0:00	0	0:00	0:00
H	0:00	0	0:00	0:00
I	0:00	0	0:00	0:00
J	0:00	0	0:00	0:00
K	0:00	0	0:00	0:00
L	0:00	0	0:00	0:00
M	0:00	0	0:00	0:00
N	0:00	0	0:00	0:00
O	0:00	0	0:00	0:00
P	0:00	0	0:00	0:00
Q	0:00	0	0:00	0:00
R	0:00	0	0:00	0:00
S	0:00	0	0:00	0:00
T	24:52	71	0:29	2:28
U	0:00	0	0:00	0:00
V	0:00	0	0:00	0:00
W	36:45	100	0:30	4:18
X	17:30	58	0:24	1:44
Y	23:43	75	0:27	2:17
Z	0:00	0	0:00	0:00
AA	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: VE1: Kattiharju+extension_with_forest

...continued from previous page

No.	Shadow, worst case		Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
AB	19:56	60	0:26	1:59
AC	41:45	108	0:32	4:33
AD	23:38	78	0:26	2:15
AE	0:00	0	0:00	0:00
AF	16:45	42	0:31	2:46
AG	0:00	0	0:00	0:00
AH	0:00	0	0:00	0:00
AI	0:00	0	0:00	0:00
AJ	0:00	0	0:00	0:00
AK	24:16	66	0:29	2:28
AL	0:00	0	0:00	0:00
AM	0:00	0	0:00	0:00
AN	0:00	0	0:00	0:00
AO	9:21	31	0:24	1:52
AP	0:00	0	0:00	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
Extension WTG 01	NORDEX Generic 180-169 6800 180.0 !-! hub: 169.0 m (TOT: 259.0 m) (93)	68:42	6:55
Extension WTG 02	NORDEX Generic 180-169 6800 180.0 !-! hub: 169.0 m (TOT: 259.0 m) (92)	0:00	0:00
	K01 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (1)	0:00	0:00
	K02 NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (2)	0:00	0:00
	K03 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (3)	64:25	7:15
	K04 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (4)	0:00	0:00
	K05 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (5)	71:47	8:08
	K06 NORDEX N163/6.X 6800 163.0 !O! hub: 148.5 m (TOT: 230.0 m) (6)	0:00	0:00
	K07 NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (7)	0:00	0:00
	K08 NORDEX N163/6.X 6800 163.0 !O! hub: 149.5 m (TOT: 231.0 m) (8)	0:00	0:00
	K09 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (9)	0:00	0:00
	K10 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (10)	0:00	0:00
	K11 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (11)	33:37	4:21
	K12 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (12)	0:00	0:00
	K13 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (13)	0:00	0:00
	K14 NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (14)	0:00	0:00

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: A - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (114)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with 12 columns for months (January to December) and 31 rows for days. Each cell contains a 2x2 matrix of times (Sun rise, Sun set, First time, Last time) and a 'Minutes with flicker' value. Summary rows at the bottom include 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: B - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (95) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:09
2	10:06 15:06	09:03 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:35 23:36	04:51 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:04
5	10:03 15:12	08:55 16:38	07:27 18:02	06:42 20:30	05:04 21:57	03:41 23:21	03:40 23:32	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:02
6	10:02 15:14	08:52 16:42	07:24 18:05	06:39 20:33	05:00 22:00	03:39 23:23	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:03	03:38 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:21	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:08	03:35 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:14 21:59	06:40 20:17	08:02 18:35	08:33 15:59	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:32	03:52 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:04 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:19 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:56 14:54
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:18	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:48	10:00 14:53
15	09:48 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:46 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:27 23:39	04:04 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:52
17	09:43 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:04 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:24 22:35	03:27 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:41	04:11 23:03	05:40 21:30	07:05 19:46	08:27 18:06	09:00 15:35	10:06 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:12	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:03 15:32	10:06 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:43	03:26 23:42	04:17 22:58	05:45 21:24	07:10 19:39	08:33 18:00	09:05 15:30	10:07 14:53
22	09:32 15:56	08:03 17:30	06:30 18:51	05:46 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	08:00 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:09 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:06 22:55	03:27 23:41	04:28 22:48	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:20	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:31 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:05	05:29 21:33	04:01 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:10 19:07	05:26 21:36	03:58 23:02	03:30 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17	07:40 17:48	06:06 19:07	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:20	07:37 17:43	06:03 19:03	05:19 21:42	03:54 23:08	03:32 23:38	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	07:34 17:46	06:59 19:06	03:51 23:10	03:51 23:10	03:51 23:10	04:45 22:30	06:13 20:51	08:03 16:28	09:08 15:08	10:08 15:02	
Potential sun hours	185	243	364	446	556	601	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: C - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (96)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31). Each cell contains a 2x2 matrix of times (hh:mm) representing sun rise, sun set, and shadow reduction data.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: D - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (100) Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:19	05:16 21:45	03:49 23:13	03:33 23:38	04:48 22:27	06:16 20:47	07:37 19:06	08:06 16:25	09:33 15:08
2	10:06 15:06	09:04 16:29	07:37 17:54	06:53 20:21	05:13 21:48	03:47 23:15	03:34 23:37	04:50 22:24	06:19 20:44	07:40 19:02	08:09 16:22	09:35 15:07
3	10:05 15:08	09:01 16:32	07:33 17:57	06:49 20:24	05:10 21:51	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:05
4	10:04 15:10	08:58 16:35	07:30 18:00	06:46 20:27	05:07 21:54	03:43 23:19	03:38 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:03
5	10:03 15:12	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:57	03:41 23:22	03:39 23:33	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:02
6	10:02 15:14	08:52 16:42	07:24 18:05	06:39 20:33	05:00 22:00	03:39 23:24	03:41 23:31	05:02 22:12	06:30 20:30	07:51 18:49	08:21 16:10	09:45 15:01
7	10:01 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:03	03:38 23:26	03:43 23:29	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	10:00 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:06	03:36 23:27	03:45 23:28	05:08 22:06	06:35 20:24	07:57 18:42	08:27 16:04	09:49 14:58
9	09:58 15:20	08:43 16:51	07:14 18:14	06:29 20:41	04:51 22:09	03:35 23:29	03:47 23:26	05:11 22:03	06:38 20:20	07:59 18:39	08:30 16:01	09:51 14:57
10	09:57 15:23	08:40 16:54	07:10 18:17	06:26 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:14 22:00	06:40 20:17	08:02 18:35	08:33 15:58	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:20	06:22 20:47	04:45 22:14	03:32 23:33	03:51 23:22	05:17 21:56	06:43 20:13	08:05 18:32	08:36 15:56	09:55 14:55
12	09:53 15:28	08:34 17:00	07:04 18:22	06:19 20:50	04:42 22:17	03:31 23:34	03:54 23:20	05:19 21:53	06:46 20:10	08:08 18:29	08:39 15:53	09:57 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:35	03:56 23:18	05:22 21:50	06:49 20:07	08:10 18:26	08:42 15:50	09:58 14:54
14	09:50 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:37	03:58 23:16	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:53
15	09:48 15:36	08:25 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:44	06:54 20:00	08:16 18:19	08:48 15:45	10:01 14:53
16	09:46 15:39	08:22 17:12	06:50 18:34	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:57 19:56	08:19 18:16	08:51 15:42	10:02 14:52
17	09:44 15:41	08:19 17:15	06:47 18:37	06:02 21:04	04:27 22:32	03:27 23:40	04:06 23:09	05:34 21:37	06:59 19:53	08:22 18:12	08:54 15:40	10:04 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:07	04:24 22:35	03:26 23:40	04:09 23:06	05:37 21:34	07:02 19:50	08:25 18:09	08:57 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:10	04:22 22:38	03:26 23:41	04:11 23:04	05:39 21:30	07:05 19:46	08:28 18:06	09:00 15:34	10:06 14:52
20	09:37 15:50	08:09 17:24	06:37 18:45	05:52 21:13	04:19 22:41	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:03	09:03 15:32	10:07 14:52
21	09:35 15:53	08:06 17:27	06:33 18:48	05:49 21:15	04:16 22:44	03:26 23:42	04:17 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:06 15:30	10:07 14:52
22	09:32 15:56	08:03 17:30	06:30 18:51	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:21	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:59	08:00 17:33	06:26 18:53	05:42 21:21	04:11 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:16 19:33	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:27 23:42	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:14 15:23	10:09 14:54
25	09:25 16:05	07:53 17:39	06:20 18:59	05:36 21:27	04:05 22:55	03:27 23:42	04:28 22:48	05:56 21:11	07:21 19:26	07:45 16:47	09:17 15:20	10:09 14:55
26	09:22 16:08	07:50 17:42	06:16 19:02	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:45	05:59 21:07	07:24 19:22	07:48 16:44	09:20 15:18	10:09 14:56
27	09:20 16:11	07:47 17:45	06:13 19:05	05:29 21:33	04:00 23:00	03:29 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:03	03:30 23:40	04:36 22:39	06:05 21:01	07:29 19:16	07:54 16:37	09:25 15:14	10:09 14:58
29	09:15 16:17	07:41 17:46	06:06 19:06	05:23 21:39	03:56 23:05	03:31 23:39	04:39 22:36	06:08 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:20	07:38 17:43	06:03 19:03	05:19 21:42	03:53 23:08	03:32 23:39	04:42 22:33	06:10 20:54	07:35 19:09	08:00 16:31	09:30 15:10	10:08 15:01
31	09:09 16:23	07:35 17:48	06:59 19:06	03:51 23:10	03:51 23:10	03:51 23:10	04:45 22:30	06:13 20:51	08:03 16:28	09:08 15:02	10:08 15:02	10:08 15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: E - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (92)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with 12 columns for months (January to December) and 31 rows for days. Each cell contains a 2x2 matrix of times (hh:mm) representing sun rise, sun set, and shadow times. Summary rows at the bottom show potential sun hours and various reductions.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: F - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (102)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07	09:06	07:40	06:56	05:16	03:49	03:33	04:48	06:16	07:37	08:06	09:33
	15:04	16:26	17:51	20:18	21:45	23:13	23:38	22:27	20:47	19:06	16:25	15:08
2	10:06	09:04	07:37	06:53	05:13	03:47	03:34	04:50	06:19	07:40	08:09	09:36
	15:06	16:29	17:54	20:21	21:48	23:15	23:37	22:24	20:44	19:02	16:22	15:07
3	10:05	09:01	07:33	06:49	05:10	03:45	03:36	04:53	06:21	07:43	08:12	09:38
	15:08	16:32	17:57	20:24	21:51	23:17	23:35	22:21	20:40	18:59	16:19	15:05
4	10:05	08:58	07:30	06:46	05:07	03:43	03:38	04:56	06:24	07:45	08:15	09:40
	15:10	16:35	17:59	20:27	21:54	23:19	23:34	22:18	20:37	18:55	16:16	15:03
5	10:03	08:55	07:27	06:42	05:03	03:41	03:39	04:59	06:27	07:48	08:18	09:43
	15:12	16:38	18:02	20:30	21:57	23:22	23:33	22:15	20:34	18:52	16:13	15:02
6	10:02	08:52	07:24	06:39	05:00	03:39	03:41	05:02	06:30	07:51	08:21	09:45
	15:14	16:41	18:05	20:33	22:00	23:24	23:31	22:12	20:30	18:49	16:10	15:00
7	10:01	08:49	07:20	06:36	04:57	03:38	03:43	05:05	06:32	07:54	08:24	09:47
	15:16	16:45	18:08	20:35	22:03	23:26	23:29	22:09	20:27	18:45	16:07	14:59
8	10:00	08:46	07:17	06:32	04:54	03:36	03:45	05:08	06:35	07:56	08:27	09:49
	15:18	16:48	18:11	20:38	22:06	23:28	23:28	22:06	20:24	18:42	16:04	14:58
9	09:58	08:43	07:14	06:29	04:51	03:34	03:47	05:11	06:38	07:59	08:30	09:51
	15:20	16:51	18:14	20:41	22:09	23:29	23:26	22:03	20:20	18:39	16:01	14:57
10	09:57	08:40	07:10	06:25	04:48	03:33	03:49	05:14	06:40	08:02	08:33	09:53
	15:23	16:54	18:17	20:44	22:12	23:31	23:24	22:00	20:17	18:35	15:58	14:56
11	09:55	08:37	07:07	06:22	04:45	03:32	03:51	05:16	06:43	08:05	08:36	09:55
	15:25	16:57	18:20	20:47	22:14	23:33	23:22	21:56	20:13	18:32	15:56	14:55
12	09:53	08:34	07:03	06:19	04:42	03:31	03:54	05:19	06:46	08:08	08:39	09:57
	15:28	17:00	18:22	20:50	22:17	23:34	23:20	21:53	20:10	18:29	15:53	14:54
13	09:51	08:31	07:00	06:15	04:39	03:30	03:56	05:22	06:49	08:10	08:42	09:58
	15:30	17:03	18:25	20:52	22:20	23:35	23:18	21:50	20:07	18:26	15:50	14:53
14	09:50	08:28	06:57	06:12	04:36	03:29	03:58	05:25	06:51	08:13	08:45	10:00
	15:33	17:06	18:28	20:55	22:23	23:37	23:16	21:47	20:03	18:22	15:47	14:53
15	09:48	08:25	06:53	06:09	04:33	03:28	04:01	05:28	06:54	08:16	08:48	10:01
	15:36	17:09	18:31	20:58	22:26	23:38	23:13	21:44	20:00	18:19	15:45	14:52
16	09:46	08:22	06:50	06:05	04:30	03:27	04:03	05:31	06:57	08:19	08:51	10:03
	15:38	17:12	18:34	21:01	22:29	23:39	23:11	21:40	19:56	18:16	15:42	14:52
17	09:44	08:19	06:47	06:02	04:27	03:27	04:06	05:34	06:59	08:22	08:54	10:04
	15:41	17:15	18:37	21:04	22:32	23:40	23:09	21:37	19:53	18:12	15:39	14:52
18	09:41	08:15	06:43	05:59	04:24	03:26	04:08	05:37	07:02	08:25	08:57	10:05
	15:44	17:18	18:39	21:07	22:35	23:40	23:06	21:34	19:50	18:09	15:37	14:52
19	09:39	08:12	06:40	05:55	04:21	03:26	04:11	05:39	07:05	08:27	09:00	10:06
	15:47	17:21	18:42	21:10	22:38	23:41	23:04	21:30	19:46	18:06	15:34	14:52
20	09:37	08:09	06:37	05:52	04:19	03:26	04:14	05:42	07:07	08:30	09:03	10:07
	15:50	17:24	18:45	21:13	22:41	23:41	23:01	21:27	19:43	18:03	15:32	14:52
21	09:35	08:06	06:33	05:49	04:16	03:26	04:16	05:45	07:10	08:33	09:06	10:07
	15:53	17:27	18:48	21:15	22:44	23:42	22:58	21:24	19:39	17:59	15:29	14:52
22	09:32	08:03	06:30	05:45	04:13	03:26	04:19	05:48	07:13	08:36	09:08	10:08
	15:56	17:30	18:51	21:18	22:46	23:42	22:56	21:21	19:36	17:56	15:27	14:53
23	09:30	08:00	06:26	05:42	04:11	03:26	04:22	05:51	07:16	08:39	09:11	10:08
	15:59	17:33	18:53	21:21	22:49	23:42	22:53	21:17	19:33	17:53	15:25	14:53
24	09:27	07:56	06:23	05:39	04:08	03:27	04:25	05:54	07:18	08:42	09:14	10:09
	16:02	17:36	18:56	21:24	22:52	23:42	22:50	21:14	19:29	17:50	15:23	14:54
25	09:25	07:53	06:20	05:36	04:05	03:27	04:28	05:56	07:21	07:45	09:17	10:09
	16:05	17:39	18:59	21:27	22:55	23:42	22:48	21:11	19:26	16:47	15:20	14:55
26	09:22	07:50	06:16	05:32	04:03	03:28	04:30	05:59	07:24	07:48	09:20	10:09
	16:08	17:42	19:02	21:30	22:57	23:41	22:45	21:07	19:22	16:44	15:18	14:56
27	09:20	07:47	06:13	05:29	04:00	03:29	04:33	06:02	07:26	07:51	09:22	10:09
	16:11	17:45	19:04	21:33	23:00	23:41	22:42	21:04	19:19	16:40	15:16	14:57
28	09:17	07:43	06:09	05:26	03:58	03:29	04:36	06:05	07:29	07:54	09:25	10:09
	16:14	17:48	19:07	21:36	23:03	23:40	22:39	21:01	19:16	16:37	15:14	14:58
29	09:15		07:06	05:23	03:56	03:31	04:39	06:08	07:32	07:57	09:28	10:09
	16:17		20:10	21:39	23:05	23:40	22:36	20:57	19:12	16:34	15:12	14:59
30	09:12		07:03	05:19	03:53	03:32	04:42	06:10	07:35	08:00	09:30	10:08
	16:20		20:13	21:42	23:08	23:39	22:33	20:54	19:09	16:31	15:10	15:01
31	09:09		06:59	03:51	03:51		04:45	06:13		08:03		10:08
	16:23		20:16	23:10			22:30	20:51		16:28		15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: G - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (91)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with 13 columns (January to December) and 33 rows of data. Each row contains 13 pairs of time values (hh:mm) representing sunrise and sunset for each month. Summary rows at the bottom include 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: H - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (75)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with 13 columns (January to December) and 33 rows of data. Each row contains time intervals (hh:mm) for each month. Summary rows at the bottom include 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: I - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (86)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Table with 12 columns: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec. Values: 0.97, 2.54, 4.68, 6.30, 8.61, 9.20, 8.65, 6.68, 4.67, 2.58, 1.03, 0.55

Operational time

Table with 13 columns: N, NNE, ENE, E, ESE, SSE, S, SSW, WSW, W, WNW, NNW, Sum. Values: 655, 459, 397, 401, 441, 806, 1,020, 1,265, 1,030, 811, 627, 615, 8,527

Large table showing shadow data for each day from January to December. Columns include months and times from 10:06 to 16:23. Rows include potential sun hours and various reduction factors.

Table layout: For each day in each month the following matrix apply

Matrix for table layout: Day in month, Sun rise (hh:mm), Sun set (hh:mm), Minutes with flicker, First time (hh:mm) with flicker, Last time (hh:mm) with flicker, (WTG causing flicker first time), (WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: J - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (83)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:40	06:56	05:16	03:50	03:34	04:48	06:16	07:37	08:05	09:32
	15:05	16:26	17:51	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:25	15:09
2	10:06	09:03	07:36	06:52	05:13	03:47	03:35	04:51	06:19	07:40	08:08	09:35
	15:06	16:29	17:54	20:21	21:47	23:14	23:36	22:24	20:44	19:02	16:22	15:07
3	10:05	09:00	07:33	06:49	05:10	03:45	03:37	04:54	06:21	07:43	08:11	09:37
	15:08	16:32	17:57	20:24	21:50	23:16	23:34	22:21	20:40	18:59	16:19	15:05
4	10:04	08:57	07:30	06:46	05:07	03:44	03:38	04:56	06:24	07:45	08:14	09:40
	15:10	16:35	17:59	20:27	21:53	23:19	23:33	22:18	20:37	18:55	16:16	15:04
5	10:03	08:55	07:27	06:42	05:04	03:42	03:40	04:59	06:27	07:48	08:17	09:42
	15:12	16:39	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:13	15:02
6	10:01	08:52	07:23	06:39	05:01	03:40	03:42	05:02	06:30	07:51	08:20	09:44
	15:14	16:42	18:05	20:32	21:59	23:23	23:30	22:12	20:30	18:49	16:10	15:01
7	10:00	08:49	07:20	06:36	04:57	03:38	03:44	05:05	06:32	07:54	08:23	09:46
	15:16	16:45	18:08	20:35	22:02	23:25	23:28	22:08	20:27	18:45	16:07	15:00
8	09:59	08:46	07:17	06:32	04:54	03:37	03:46	05:08	06:35	07:56	08:26	09:48
	15:19	16:48	18:11	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:43	07:13	06:29	04:51	03:35	03:48	05:11	06:38	07:59	08:29	09:50
	15:21	16:51	18:14	20:41	22:08	23:28	23:25	22:02	20:20	18:39	16:01	14:57
10	09:56	08:40	07:10	06:26	04:48	03:34	03:50	05:14	06:40	08:02	08:32	09:52
	15:23	16:54	18:17	20:44	22:11	23:30	23:23	21:59	20:16	18:35	15:59	14:56
11	09:54	08:37	07:07	06:22	04:45	03:33	03:52	05:17	06:43	08:05	08:35	09:54
	15:26	16:57	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:56	14:55
12	09:53	08:34	07:03	06:19	04:42	03:31	03:54	05:20	06:46	08:07	08:38	09:56
	15:28	17:00	18:22	20:49	22:17	23:33	23:19	21:53	20:10	18:29	15:53	14:55
13	09:51	08:31	07:00	06:15	04:39	03:30	03:57	05:22	06:49	08:10	08:41	09:57
	15:31	17:03	18:25	20:52	22:20	23:34	23:17	21:50	20:06	18:25	15:50	14:54
14	09:49	08:28	06:57	06:12	04:36	03:29	03:59	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:48	14:53
15	09:47	08:25	06:53	06:09	04:33	03:29	04:01	05:28	06:54	08:16	08:47	10:00
	15:36	17:09	18:31	20:58	22:26	23:37	23:12	21:43	20:00	18:19	15:45	14:53
16	09:45	08:21	06:50	06:05	04:30	03:28	04:04	05:31	06:57	08:19	08:50	10:02
	15:39	17:12	18:34	21:01	22:29	23:38	23:10	21:40	19:56	18:16	15:42	14:53
17	09:43	08:18	06:47	06:02	04:28	03:27	04:06	05:34	06:59	08:21	08:53	10:03
	15:42	17:15	18:36	21:04	22:31	23:39	23:08	21:37	19:53	18:12	15:40	14:53
18	09:41	08:15	06:43	05:59	04:25	03:27	04:09	05:37	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:37	14:52
19	09:39	08:12	06:40	05:55	04:22	03:27	04:12	05:40	07:05	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:06	15:35	14:52
20	09:36	08:09	06:36	05:52	04:19	03:27	04:14	05:42	07:07	08:30	09:02	10:06
	15:50	17:24	18:45	21:12	22:40	23:40	23:00	21:27	19:43	18:03	15:32	14:53
21	09:34	08:06	06:33	05:49	04:16	03:27	04:17	05:45	07:10	08:33	09:05	10:06
	15:53	17:27	18:48	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:30	14:53
22	09:32	08:02	06:30	05:46	04:14	03:27	04:20	05:48	07:13	08:36	09:08	10:07
	15:56	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:36	17:56	15:27	14:53
23	09:29	07:59	06:26	05:42	04:11	03:27	04:22	05:51	07:15	08:39	09:11	10:08
	15:59	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:25	14:54
24	09:27	07:56	06:23	05:39	04:08	03:27	04:25	05:54	07:18	08:42	09:13	10:08
	16:02	17:36	18:56	21:24	22:51	23:41	22:50	21:14	19:29	17:50	15:23	14:55
25	09:24	07:53	06:20	05:36	04:06	03:28	04:28	05:56	07:21	07:45	09:16	10:08
	16:05	17:39	18:59	21:27	22:54	23:41	22:47	21:10	19:26	16:47	15:21	14:55
26	09:22	07:50	06:16	05:32	04:03	03:29	04:31	05:59	07:23	07:47	09:19	10:08
	16:08	17:42	19:02	21:30	22:57	23:40	22:44	21:07	19:22	16:44	15:19	14:56
27	09:19	07:46	06:13	05:29	04:01	03:29	04:34	06:02	07:26	07:50	09:22	10:08
	16:11	17:45	19:04	21:33	22:59	23:40	22:41	21:04	19:19	16:40	15:16	14:57
28	09:17	07:43	06:09	05:26	03:59	03:30	04:36	06:05	07:29	07:53	09:24	10:08
	16:14	17:48	19:07	21:35	23:02	23:39	22:39	21:00	19:16	16:37	15:14	14:58
29	09:14		07:06	05:23	03:56	03:31	04:39	06:08	07:32	07:56	09:27	10:08
	16:17		20:10	21:38	23:04	23:38	22:36	20:57	19:12	16:34	15:12	15:00
30	09:11		07:03	05:19	03:54	03:32	04:42	06:10	07:34	07:59	09:30	10:08
	16:20		20:13	21:41	23:07	23:38	22:33	20:54	19:09	16:31	15:11	15:01
31	09:09		06:59		03:52		04:45	06:13		08:02		10:07
	16:23		20:15		23:09		22:30	20:50		16:28		15:03
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: K - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (84)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:49 23:12	03:34 23:37	04:48 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:09
2	10:05 15:06	09:03 16:29	07:36 17:54	06:52 20:21	05:13 21:47	03:47 23:14	03:35 23:36	04:51 22:24	06:19 20:43	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:10 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:59	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:42	07:30 17:59	06:46 20:27	05:07 21:53	03:43 23:18	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:04
5	10:03 15:12	08:54 16:38	07:27 18:02	06:42 20:29	05:04 21:56	03:42 23:21	03:40 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:52 16:42	07:23 18:05	06:39 20:32	05:00 21:59	03:40 23:23	03:42 23:30	05:02 22:12	06:29 20:30	07:51 18:49	08:20 16:10	09:44 15:01
7	10:00 15:16	08:49 16:45	07:20 18:08	06:36 20:35	04:57 22:02	03:38 23:25	03:43 23:28	05:05 22:08	06:32 20:27	07:53 18:45	08:23 16:07	09:46 15:00
8	09:59 15:18	08:46 16:48	07:17 18:11	06:32 20:38	04:54 22:05	03:37 23:26	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:28	03:48 23:25	05:11 22:02	06:38 20:20	07:59 18:39	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:17	06:25 20:44	04:48 22:11	03:34 23:30	03:50 23:23	05:14 21:59	06:40 20:16	08:02 18:35	08:32 15:59	09:52 14:56
11	09:54 15:26	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:52 23:21	05:17 21:56	06:43 20:13	08:05 18:32	08:35 15:56	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:46 20:10	08:07 18:29	08:38 15:53	09:56 14:55
13	09:51 15:31	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:54
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:59 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:48	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:31	06:09 20:58	04:33 22:26	03:29 23:37	04:01 23:12	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:39	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:28	03:28 23:38	04:04 23:10	05:31 21:40	06:56 19:56	08:19 18:16	08:50 15:42	10:02 14:53
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:39	04:06 23:08	05:34 21:37	06:59 19:53	08:21 18:12	08:53 15:40	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:59 21:06	04:25 22:34	03:27 23:39	04:09 23:05	05:37 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:37	03:27 23:40	04:11 23:03	05:39 21:30	07:05 19:46	08:27 18:06	08:59 15:35	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:26 23:40	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:03	09:02 15:32	10:06 14:52
21	09:34 15:53	08:06 17:27	06:33 18:47	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:30	10:06 14:53
22	09:32 15:56	08:02 17:30	06:30 18:50	05:45 21:18	04:14 22:46	03:27 23:41	04:20 22:55	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:27 23:41	04:22 22:52	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:54 21:14	07:18 19:29	08:42 17:50	09:13 15:23	10:08 14:54
25	09:24 16:05	07:53 17:39	06:19 18:59	05:36 21:27	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:26	07:44 16:47	09:16 15:21	10:08 14:55
26	09:22 16:08	07:49 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:28 23:40	04:31 22:44	05:59 21:07	07:23 19:22	07:47 16:44	09:19 15:18	10:08 14:56
27	09:19 16:11	07:46 17:45	06:13 19:04	05:29 21:32	04:01 22:59	03:29 23:40	04:33 22:41	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:05 21:00	07:29 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:23 21:38	03:56 23:04	03:31 23:38	04:39 22:36	06:07 20:57	07:32 19:12	07:56 16:34	09:27 15:12	10:08 15:00
30	09:11 16:20		07:03 20:13	05:19 21:41	03:54 23:07	03:32 23:38	04:42 22:33	06:10 20:53	07:34 19:09	07:59 16:31	09:30 15:10	10:07 15:01
31	09:09 16:23		06:59 20:15	03:52 23:09	04:45 23:09		04:45 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: L - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (82)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:49 23:12	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:33 15:08
2	10:06 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:48	03:47 23:15	03:34 23:36	04:50 22:24	06:18 20:44	07:40 19:02	08:08 16:22	09:35 15:06
3	10:05 15:07	09:01 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:59	08:11 16:19	09:38 15:05
4	10:04 15:09	08:58 16:35	07:30 17:59	06:46 20:27	05:06 21:53	03:43 23:19	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:49	08:20 16:10	09:45 15:00
7	10:01 15:16	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:53 18:45	08:23 16:07	09:47 14:59
8	09:59 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:14	06:29 20:41	04:51 22:08	03:34 23:29	03:47 23:26	05:10 22:03	06:37 20:20	07:59 18:39	08:29 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:33 15:58	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:36 15:55	09:55 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:29	08:39 15:53	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:29 23:35	03:56 23:18	05:22 21:50	06:48 20:06	08:10 18:25	08:42 15:50	09:58 14:53
14	09:49 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:36 22:23	03:28 23:36	03:58 23:15	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:53
15	09:47 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:28 23:38	04:01 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:44	10:01 14:52
16	09:45 15:38	08:22 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:56 19:56	08:19 18:15	08:51 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:39	04:06 23:08	05:33 21:37	06:59 19:53	08:22 18:12	08:54 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:07	04:24 22:35	03:26 23:40	04:08 23:06	05:36 21:34	07:02 19:49	08:24 18:09	08:56 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:38	03:26 23:41	04:11 23:03	05:39 21:30	07:05 19:46	08:27 18:06	08:59 15:34	10:06 14:52
20	09:37 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:40	03:26 23:41	04:14 23:01	05:42 21:27	07:07 19:43	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:06 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:03 17:30	06:30 18:50	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:53
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:22 22:53	05:51 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:50	09:14 15:22	10:09 14:54
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:54	03:27 23:42	04:27 22:47	05:56 21:10	07:21 19:26	07:45 16:46	09:17 15:20	10:09 14:55
26	09:22 16:07	07:50 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:28 23:41	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:19 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:48	06:09 19:07	05:26 21:36	03:58 23:02	03:29 23:40	04:36 22:39	06:05 21:00	07:29 19:15	07:54 16:37	09:25 15:14	10:09 14:58
29	09:14 16:17	07:40 18:00	06:06 19:10	05:23 21:39	03:55 23:05	03:30 23:39	04:39 22:36	06:07 20:57	07:32 19:12	07:56 16:34	09:28 15:12	10:08 14:59
30	09:12 16:20	07:37 18:03	06:03 19:10	05:20 21:42	03:53 23:07	03:31 23:38	04:42 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23	07:34 18:08	06:00 19:15	05:17 21:45	03:51 23:10	03:30 23:39	04:44 22:30	06:13 20:50	07:36 16:28	07:59 15:02	09:30 15:02	10:08 15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: M - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (113)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:45	03:48 23:13	03:32 23:38	04:47 22:27	06:16 20:47	07:37 19:05	08:06 16:25	09:33 15:08
2	10:06 15:05	09:03 16:29	07:37 17:53	06:52 20:21	05:13 21:48	03:46 23:15	03:34 23:37	04:50 22:24	06:18 20:44	07:40 19:02	08:09 16:22	09:36 15:06
3	10:06 15:07	09:01 16:32	07:33 17:56	06:49 20:24	05:09 21:51	03:44 23:17	03:35 23:35	04:53 22:21	06:21 20:40	07:43 18:59	08:12 16:19	09:38 15:04
4	10:05 15:09	08:58 16:35	07:30 17:59	06:45 20:27	05:06 21:54	03:42 23:20	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:15 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:27 18:02	06:42 20:30	05:03 21:57	03:40 23:22	03:39 23:33	04:59 22:15	06:27 20:34	07:48 18:52	08:18 16:13	09:43 15:01
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 22:00	03:39 23:24	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:49	08:21 16:10	09:45 15:00
7	10:01 15:15	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:03	03:37 23:26	03:42 23:30	05:05 22:09	06:32 20:27	07:54 18:45	08:24 16:07	09:47 14:59
8	10:00 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:06	03:35 23:28	03:44 23:28	05:07 22:06	06:35 20:23	07:56 18:42	08:27 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:14	06:29 20:41	04:51 22:08	03:34 23:29	03:46 23:26	05:10 22:03	06:37 20:20	07:59 18:38	08:30 16:01	09:51 14:56
10	09:57 15:22	08:40 16:53	07:10 18:16	06:25 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:17	08:02 18:35	08:33 15:58	09:53 14:55
11	09:55 15:25	08:37 16:57	07:07 18:19	06:22 20:47	04:44 22:14	03:31 23:33	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:36 15:55	09:55 14:54
12	09:53 15:27	08:34 17:00	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:29	08:39 15:52	09:57 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:36	03:55 23:18	05:22 21:50	06:48 20:06	08:10 18:25	08:42 15:50	09:58 14:53
14	09:50 15:33	08:28 17:06	06:57 18:28	06:12 20:55	04:35 22:23	03:28 23:37	03:58 23:16	05:25 21:47	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:52
15	09:48 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:27 23:38	04:00 23:13	05:28 21:43	06:54 20:00	08:16 18:19	08:48 15:44	10:01 14:52
16	09:46 15:38	08:22 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:31 21:40	06:56 19:56	08:19 18:15	08:51 15:42	10:03 14:52
17	09:44 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:40	04:05 23:09	05:33 21:37	06:59 19:53	08:22 18:12	08:54 15:39	10:04 14:51
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:07	04:24 22:35	03:26 23:41	04:08 23:06	05:36 21:34	07:02 19:49	08:24 18:09	08:57 15:37	10:05 14:51
19	09:39 15:46	08:12 17:21	06:40 18:42	05:55 21:10	04:21 22:38	03:25 23:41	04:11 23:04	05:39 21:30	07:04 19:46	08:27 18:06	09:00 15:34	10:06 14:51
20	09:37 15:49	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:41	03:25 23:42	04:13 23:01	05:42 21:27	07:07 19:43	08:30 18:02	09:03 15:32	10:07 14:52
21	09:35 15:52	08:06 17:27	06:33 18:48	05:48 21:15	04:16 22:44	03:25 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:03 17:30	06:30 18:50	05:45 21:18	04:13 22:46	03:25 23:42	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:52
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:50	09:14 15:22	10:09 14:53
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:55	03:26 23:42	04:27 22:48	05:56 21:10	07:21 19:26	07:45 16:46	09:17 15:20	10:09 14:54
26	09:22 16:07	07:50 17:42	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:42	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:20 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:51 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:48	06:09 19:07	05:25 21:36	03:58 23:03	03:29 23:40	04:36 22:39	06:04 21:00	07:29 19:15	07:54 16:37	09:25 15:14	10:09 14:57
29	09:15 16:16		07:06 20:10	05:22 21:39	03:55 23:05	03:30 23:40	04:38 22:36	06:07 20:57	07:32 19:12	07:57 16:34	09:28 15:12	10:09 14:59
30	09:12 16:19		07:02 20:13	05:19 21:42	03:53 23:08	03:31 23:39	04:41 22:33	06:10 20:54	07:34 19:09	08:00 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23		06:59 20:15	03:51 23:10			04:44 22:30	06:13 20:50		08:03 16:28		10:08 15:02
Potential sun hours	184	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: N - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (87)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:40	06:56	05:16	03:49	03:33	04:48	06:16	07:37	08:05	09:32
	15:04	16:26	17:51	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:25	15:08
2	10:06	09:03	07:36	06:52	05:13	03:47	03:35	04:50	06:18	07:40	08:08	09:35
	15:06	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:22	15:07
3	10:05	09:00	07:33	06:49	05:10	03:45	03:36	04:53	06:21	07:42	08:11	09:37
	15:08	16:32	17:56	20:24	21:50	23:16	23:34	22:21	20:40	18:59	16:19	15:05
4	10:04	08:57	07:30	06:46	05:07	03:43	03:38	04:56	06:24	07:45	08:14	09:40
	15:10	16:35	17:59	20:27	21:53	23:19	23:33	22:18	20:37	18:55	16:16	15:04
5	10:03	08:54	07:26	06:42	05:03	03:41	03:40	04:59	06:27	07:48	08:17	09:42
	15:12	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:13	15:02
6	10:01	08:52	07:23	06:39	05:00	03:40	03:41	05:02	06:29	07:51	08:20	09:44
	15:14	16:41	18:05	20:32	21:59	23:23	23:30	22:12	20:30	18:49	16:10	15:01
7	10:00	08:49	07:20	06:35	04:57	03:38	03:43	05:05	06:32	07:53	08:23	09:46
	15:16	16:44	18:08	20:35	22:02	23:25	23:28	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:08	06:35	07:56	08:26	09:48
	15:18	16:48	18:11	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:43	07:13	06:29	04:51	03:35	03:47	05:11	06:37	07:59	08:29	09:50
	15:21	16:51	18:14	20:41	22:08	23:28	23:25	22:02	20:20	18:39	16:01	14:57
10	09:56	08:40	07:10	06:25	04:48	03:33	03:49	05:14	06:40	08:02	08:32	09:52
	15:23	16:54	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:56
11	09:54	08:37	07:06	06:22	04:45	03:32	03:52	05:16	06:43	08:04	08:35	09:54
	15:25	16:57	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:56	14:55
12	09:53	08:34	07:03	06:19	04:42	03:31	03:54	05:19	06:46	08:07	08:38	09:56
	15:28	17:00	18:22	20:49	22:17	23:33	23:19	21:53	20:10	18:29	15:53	14:54
13	09:51	08:31	07:00	06:15	04:39	03:30	03:56	05:22	06:48	08:10	08:41	09:57
	15:31	17:03	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:54
14	09:49	08:27	06:56	06:12	04:36	03:29	03:59	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:09	04:33	03:28	04:01	05:28	06:54	08:16	08:47	10:00
	15:36	17:09	18:31	20:58	22:26	23:37	23:12	21:43	19:59	18:19	15:45	14:53
16	09:45	08:21	06:50	06:05	04:30	03:28	04:04	05:31	06:56	08:19	08:50	10:02
	15:39	17:12	18:33	21:01	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:27	04:06	05:34	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:53	18:12	15:39	14:52
18	09:41	08:15	06:43	05:59	04:24	03:27	04:09	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:37	14:52
19	09:39	08:12	06:40	05:55	04:22	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:06	15:34	14:52
20	09:36	08:09	06:36	05:52	04:19	03:26	04:14	05:42	07:07	08:30	09:02	10:06
	15:50	17:24	18:45	21:12	22:40	23:40	23:00	21:27	19:42	18:02	15:32	14:52
21	09:34	08:05	06:33	05:49	04:16	03:26	04:17	05:45	07:10	08:33	09:05	10:06
	15:53	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:30	14:53
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:48	07:13	08:36	09:08	10:07
	15:56	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:36	17:56	15:27	14:53
23	09:29	07:59	06:26	05:42	04:11	03:27	04:22	05:51	07:15	08:39	09:11	10:08
	15:59	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:25	14:54
24	09:27	07:56	06:23	05:39	04:08	03:27	04:25	05:53	07:18	08:42	09:13	10:08
	16:02	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:50	15:23	14:54
25	09:24	07:53	06:19	05:35	04:06	03:28	04:28	05:56	07:21	07:44	09:16	10:08
	16:05	17:39	18:59	21:27	22:54	23:41	22:47	21:10	19:25	16:47	15:20	14:55
26	09:22	07:49	06:16	05:32	04:03	03:28	04:30	05:59	07:23	07:47	09:19	10:08
	16:08	17:42	19:01	21:29	22:57	23:40	22:44	21:07	19:22	16:43	15:18	14:56
27	09:19	07:46	06:13	05:29	04:01	03:29	04:33	06:02	07:26	07:50	09:22	10:08
	16:11	17:45	19:04	21:32	22:59	23:40	22:41	21:03	19:19	16:40	15:16	14:57
28	09:17	07:43	06:09	05:26	03:58	03:30	04:36	06:05	07:29	07:53	09:24	10:08
	16:14	17:48	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:58
29	09:14		07:06	05:22	03:56	03:31	04:39	06:07	07:31	07:56	09:27	10:08
	16:17		20:10	21:38	23:04	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:54	03:32	04:42	06:10	07:34	07:59	09:30	10:07
	16:20		20:13	21:41	23:07	23:38	22:33	20:53	19:09	16:31	15:10	15:01
31	09:09		06:59		03:51		04:45	06:13		08:02		10:07
	16:23		20:15		23:09		22:30	20:50		16:28		15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: O - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (81) Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:50	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:33 15:08
2	10:06 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:15	03:34 23:36	04:50 22:24	06:18 20:44	07:40 19:02	08:08 16:22	09:35 15:06
3	10:05 15:07	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:45 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:59	08:11 16:19	09:38 15:05
4	10:04 15:09	08:58 16:35	07:30 17:59	06:45 20:27	05:06 21:53	03:43 23:19	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:55 16:38	07:27 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:48	08:20 16:10	09:45 15:00
7	10:01 15:16	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:29	05:05 22:09	06:32 20:27	07:53 18:45	08:23 16:07	09:47 14:59
8	09:59 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:14	06:29 20:41	04:51 22:08	03:34 23:29	03:47 23:26	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:51 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:44	04:48 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:53 14:56
11	09:55 15:25	08:37 16:57	07:07 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:35 15:55	09:55 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:46 20:10	08:07 18:29	08:38 15:53	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:29 23:35	03:56 23:17	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:50	09:58 14:53
14	09:49 15:33	08:28 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:28 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:44	10:01 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:38	04:03 23:11	05:31 21:40	06:56 19:56	08:19 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:39	04:06 23:08	05:33 21:37	06:59 19:53	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:35	03:26 23:40	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:05 14:52
19	09:39 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:38	03:26 23:41	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:37 15:49	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:40	03:26 23:41	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:06 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:25 23:41	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:42	04:19 22:56	05:48 21:20	07:13 19:36	08:36 17:56	09:08 15:27	10:08 14:52
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:22 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:50	09:14 15:22	10:08 14:54
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:21 19:26	07:45 16:46	09:17 15:20	10:09 14:54
26	09:22 16:07	07:50 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:27 23:41	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:19 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:13 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:48	06:09 19:07	05:25 21:36	03:58 23:02	03:29 23:40	04:36 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:25 15:14	10:09 14:58
29	09:14 16:16	07:40 18:00	06:06 19:10	05:22 21:39	03:55 23:05	03:30 23:39	04:39 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:28 15:12	10:08 14:59
30	09:12 16:20	07:37 18:03	06:03 19:10	05:19 21:42	03:53 23:07	03:31 23:38	04:41 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23	07:34 18:08	06:00 19:15	05:16 21:45	03:50 23:10	03:29 23:39	04:44 22:30	06:13 20:50	07:37 16:28	07:59 15:02	09:30 15:02	10:08 15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: P - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (78)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time
N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with 13 columns for months (January-December) and 31 rows for days. Each cell contains a 2x2 matrix of sun rise/set times and shadow reduction values. Summary rows at the bottom show total sun hours and various reduction metrics.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: Q - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (112)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

Table with 13 columns: N, NNE, ENE, E, ESE, SSE, S, SSW, WSW, W, WNW, NNW, Sum. Values range from 401 to 8,527.

Main shadow calculation table with columns for months (January to December) and rows for days (1-31). Includes summary rows for Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, Total, real.

Table layout: For each day in each month the following matrix apply

Matrix with 4 columns: Day in month, Sun rise (hh:mm), Sun set (hh:mm), Minutes with flicker, First time (hh:mm) with flicker, Last time (hh:mm) with flicker, (WTG causing flicker first time), (WTG causing flicker last time).

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: R - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (85)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:40 17:51	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:48 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:08
2	10:05 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:35 23:35	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:10 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:41	07:30 18:05	06:45 20:32	05:06 21:59	03:43 23:23	03:38 23:30	04:56 22:11	06:24 20:30	07:45 18:48	08:14 16:10	09:39 15:01
5	10:02 15:12	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:20	03:40 23:31	04:59 22:14	06:27 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:51 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:40 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:51 18:48	08:20 16:10	09:44 15:01
7	10:00 15:16	08:48 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:38 23:25	03:43 23:28	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:48	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:26	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:21	08:43 16:51	07:13 18:14	06:29 20:41	04:51 22:08	03:35 23:28	03:47 23:25	05:11 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:43	04:48 22:11	03:34 23:30	03:49 23:23	05:14 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:37 16:57	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:31	03:52 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:56	09:54 14:55
12	09:52 15:28	08:34 17:00	07:03 18:22	06:19 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:46 20:09	08:07 18:29	08:38 15:53	09:56 14:54
13	09:51 15:31	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:54
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:29 23:35	03:59 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:31	06:08 20:58	04:33 22:25	03:28 23:37	04:01 23:12	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:39	08:21 17:12	06:50 18:33	06:05 21:00	04:30 22:28	03:28 23:38	04:04 23:10	05:31 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:38	04:06 23:08	05:34 21:36	06:59 19:53	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:27 23:39	04:09 23:05	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:38 15:47	08:12 17:21	06:40 18:42	05:55 21:09	04:22 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:45	05:52 21:12	04:19 22:40	03:26 23:40	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:53	08:05 17:27	06:33 18:47	05:49 21:15	04:16 22:43	03:26 23:41	04:17 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:30	10:06 14:53
22	09:32 15:56	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:45	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:59	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:27 23:41	04:22 22:52	05:51 21:17	07:15 19:32	08:39 17:53	09:10 15:25	10:07 14:54
24	09:27 16:02	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:53 21:13	07:18 19:29	08:41 17:50	09:13 15:23	10:08 14:54
25	09:24 16:05	07:53 17:39	06:19 18:58	05:35 21:26	04:06 22:54	03:28 23:41	04:28 22:47	05:56 21:10	07:21 19:25	07:44 16:47	09:16 15:20	10:08 14:55
26	09:22 16:08	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:11	07:46 17:45	06:13 19:04	05:29 21:32	04:01 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:05 21:00	07:29 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:22 21:38	03:56 23:04	03:31 23:38	04:39 22:35	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:20		07:02 20:12	05:19 21:41	03:54 23:07	03:32 23:37	04:42 22:33	06:10 20:53	07:34 19:09	07:59 16:31	09:30 15:10	10:07 15:01
31	09:08 16:23		06:59 20:15	03:51 23:09			04:45 22:30	06:13 20:50		08:02 16:28		10:07 15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: S - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (110)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:04	09:06 16:26	07:40 17:50	06:56 20:18	05:16 21:44	03:48 23:12	03:32 23:38	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:25	09:33 15:08
2	10:06 15:05	09:03 16:29	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:15	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:21	09:35 15:06
3	10:05 15:07	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:38 15:04
4	10:04 15:09	08:58 16:35	07:30 17:59	06:45 20:27	05:06 21:53	03:42 23:19	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:15	09:40 15:03
5	10:03 15:11	08:55 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:40 23:21	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:12	09:42 15:01
6	10:02 15:13	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:48	08:20 16:10	09:45 15:00
7	10:01 15:15	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:42 23:29	05:04 22:09	06:32 20:27	07:53 18:45	08:23 16:07	09:47 14:59
8	09:59 15:18	08:46 16:47	07:17 18:11	06:32 20:38	04:54 22:05	03:35 23:27	03:44 23:27	05:07 22:06	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:57
9	09:58 15:20	08:43 16:50	07:13 18:13	06:28 20:41	04:50 22:08	03:34 23:29	03:46 23:26	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:51 14:56
10	09:56 15:22	08:40 16:53	07:10 18:16	06:25 20:44	04:47 22:11	03:33 23:31	03:49 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:53 14:55
11	09:55 15:25	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32	03:51 23:22	05:16 21:56	06:43 20:13	08:05 18:32	08:35 15:55	09:55 14:54
12	09:53 15:27	08:34 17:00	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:45 20:10	08:07 18:28	08:38 15:52	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35	03:55 23:18	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:50	09:58 14:53
14	09:49 15:33	08:28 17:06	06:56 18:28	06:12 20:55	04:35 22:23	03:28 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:45 15:47	10:00 14:52
15	09:47 15:35	08:25 17:09	06:53 18:31	06:08 20:58	04:32 22:26	03:27 23:38	04:00 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:48 15:44	10:01 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:39	04:03 23:11	05:30 21:40	06:56 19:56	08:19 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:04	04:27 22:32	03:26 23:39	04:05 23:08	05:33 21:37	06:59 19:53	08:21 18:12	08:53 15:39	10:04 14:51
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:35	03:26 23:40	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:36	10:05 14:51
19	09:39 15:46	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:38	03:25 23:41	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:06 14:51
20	09:37 15:49	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:40	03:25 23:41	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:52
21	09:34 15:52	08:06 17:27	06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:42	04:16 22:58	05:45 21:24	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:42	04:19 22:56	05:47 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:08 14:52
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:38 21:24	04:07 22:52	03:26 23:42	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:49	09:14 15:22	10:09 14:53
25	09:25 16:04	07:53 17:39	06:19 18:59	05:35 21:27	04:05 22:54	03:27 23:42	04:27 22:47	05:56 21:10	07:21 19:25	07:45 16:46	09:17 15:20	10:09 14:54
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:41	04:30 22:45	05:59 21:07	07:23 19:22	07:48 16:43	09:19 15:18	10:09 14:55
27	09:20 16:10	07:46 17:45	06:12 19:04	05:29 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	10:09 14:56
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:36	03:57 23:02	03:29 23:40	04:36 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:25 15:14	10:09 14:57
29	09:14 16:16	07:40 17:44	06:06 19:07	05:22 21:39	03:55 23:05	03:30 23:39	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:28 15:12	10:09 14:59
30	09:12 16:19	07:37 17:41	06:02 19:07	05:19 21:42	03:53 23:07	03:31 23:39	04:41 22:33	06:10 20:54	07:34 19:09	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:22	07:34 17:45	06:59 20:15	03:51 23:10	03:51 23:10	03:31 23:39	04:44 22:30	06:13 20:50	08:02 16:28	09:09 15:01	10:08 15:01	10:08 15:01
Potential sun hours	184	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: T - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (106)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March	April	May	June
1	10:07	11:50 (Extension WTG 01)	09:06	11:59 (Extension WTG 01)	07:40	06:55	05:16	03:48
	15:04	12:01 (Extension WTG 01)	16:26	12:12 (Extension WTG 01)	17:50	20:18	21:44	23:12
2	10:06	11:50 (Extension WTG 01)	09:03	12:04 (Extension WTG 01)	07:36	06:52	05:12	03:46
	15:05	12:02 (Extension WTG 01)	16:29	12:09 (Extension WTG 01)	17:53	20:21	21:47	23:15
3	10:05	11:50 (Extension WTG 01)	09:00		07:33	06:49	05:09	03:44
	15:07	12:04 (Extension WTG 01)	16:32		17:56	20:24	21:50	23:17
4	10:04	11:49 (Extension WTG 01)	08:58		07:30	06:45	05:06	03:42
	15:09	12:05 (Extension WTG 01)	16:35		17:59	20:27	21:53	23:19
5	10:03	11:49 (Extension WTG 01)	08:55		07:26	06:42	05:03	03:40
	15:11	12:05 (Extension WTG 01)	16:38		18:02	20:29	21:56	23:21
6	10:02	11:49 (Extension WTG 01)	08:52		07:23	06:39	05:00	03:39
	15:13	12:07 (Extension WTG 01)	16:41		18:05	20:32	21:59	23:23
7	10:01	11:49 (Extension WTG 01)	08:49		07:20	06:35	04:57	03:37
	15:15	12:08 (Extension WTG 01)	16:44		18:08	20:35	22:02	23:25
8	09:59	11:48 (Extension WTG 01)	08:46		07:16	06:32	04:54	03:35
	15:18	12:09 (Extension WTG 01)	16:47		18:11	20:38	22:05	23:27
9	09:58	11:48 (Extension WTG 01)	08:43		07:13	06:28	04:50	03:34
	15:20	12:10 (Extension WTG 01)	16:50		18:13	20:41	22:08	23:29
10	09:56	11:48 (Extension WTG 01)	08:40		07:10	06:25	04:47	03:33
	15:22	12:11 (Extension WTG 01)	16:53		18:16	20:44	22:11	23:31
11	09:55	11:48 (Extension WTG 01)	08:37		07:06	06:22	04:44	03:31
	15:25	12:12 (Extension WTG 01)	16:56		18:19	20:46	22:14	23:32
12	09:53	11:48 (Extension WTG 01)	08:34		07:03	06:18	04:41	03:30
	15:27	12:12 (Extension WTG 01)	16:59		18:22	20:49	22:17	23:34
13	09:51	11:48 (Extension WTG 01)	08:31		07:00	06:15	04:38	03:29
	15:30	12:13 (Extension WTG 01)	17:03		18:25	20:52	22:20	23:35
14	09:49	11:48 (Extension WTG 01)	08:28		06:56	06:12	04:35	03:28
	15:33	12:14 (Extension WTG 01)	17:06		18:28	20:55	22:23	23:36
15	09:47	11:48 (Extension WTG 01)	08:25		06:53	06:08	04:32	03:27
	15:35	12:15 (Extension WTG 01)	17:09		18:30	20:58	22:26	23:38
16	09:45	11:48 (Extension WTG 01)	08:21		06:50	06:05	04:30	03:27
	15:38	12:15 (Extension WTG 01)	17:12		18:33	21:01	22:29	23:39
17	09:43	11:48 (Extension WTG 01)	08:18		06:46	06:02	04:27	03:26
	15:41	12:16 (Extension WTG 01)	17:15		18:36	21:04	22:32	23:39
18	09:41	11:48 (Extension WTG 01)	08:15		06:43	05:58	04:24	03:26
	15:44	12:16 (Extension WTG 01)	17:18		18:39	21:06	22:35	23:40
19	09:39	11:49 (Extension WTG 01)	08:12		06:40	05:55	04:21	03:25
	15:46	12:17 (Extension WTG 01)	17:21		18:42	21:09	22:38	23:41
20	09:37	11:48 (Extension WTG 01)	08:09		06:36	05:52	04:18	03:25
	15:49	12:17 (Extension WTG 01)	17:24		18:45	21:12	22:40	23:41
21	09:34	11:49 (Extension WTG 01)	08:06		06:33	05:48	04:15	03:25
	15:52	12:17 (Extension WTG 01)	17:27		18:47	21:15	22:43	23:42
22	09:32	11:50 (Extension WTG 01)	08:02		06:29	05:45	04:13	03:25
	15:55	12:18 (Extension WTG 01)	17:30		18:50	21:18	22:46	23:42
23	09:30	11:49 (Extension WTG 01)	07:59		06:26	05:42	04:10	03:26
	15:58	12:17 (Extension WTG 01)	17:33		18:53	21:21	22:49	23:42
24	09:27	11:50 (Extension WTG 01)	07:56		06:23	05:38	04:07	03:26
	16:01	12:18 (Extension WTG 01)	17:36		18:56	21:24	22:52	23:42
25	09:25	11:51 (Extension WTG 01)	07:53		06:19	05:35	04:05	03:26
	16:04	12:18 (Extension WTG 01)	17:39		18:59	21:27	22:54	23:42
26	09:22	11:51 (Extension WTG 01)	07:49		06:16	05:32	04:02	03:27
	16:07	12:17 (Extension WTG 01)	17:42		19:01	21:30	22:57	23:41
27	09:20	11:52 (Extension WTG 01)	07:46		06:12	05:29	04:00	03:28
	16:10	12:17 (Extension WTG 01)	17:44		19:04	21:33	23:00	23:41
28	09:17	11:54 (Extension WTG 01)	07:43		06:09	05:25	03:57	03:29
	16:13	12:17 (Extension WTG 01)	17:47		19:07	21:36	23:02	23:40
29	09:14	11:54 (Extension WTG 01)			07:06	05:22	03:55	03:30
	16:16	12:16 (Extension WTG 01)			20:10	21:39	23:05	23:39
30	09:12	11:56 (Extension WTG 01)			07:02	05:19	03:53	03:31
	16:19	12:16 (Extension WTG 01)			20:12	21:41	23:07	23:38
31	09:09	11:57 (Extension WTG 01)			06:59		03:51	
	16:22	12:14 (Extension WTG 01)			20:15		23:10	
Potential sun hours	184		243		364	446	557	601
Total, worst case	710		18					
Sun reduction	0.16		0.29					
Oper. time red.	0.97		0.97					
Wind dir. red.	0.68		0.68					
Total reduction	0.11		0.19					
Total, real	76		3					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: T - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (106)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December	
1	03:32	04:47	06:15	07:37	08:05	09:33	11:30 (Extension WTG 01)
	23:37	22:27	20:47	19:05	16:24	15:08	24 11:54 (Extension WTG 01)
2	03:34	04:50	06:18	07:40	08:08	09:35	11:31 (Extension WTG 01)
	23:36	22:24	20:43	19:02	16:21	15:06	23 11:54 (Extension WTG 01)
3	03:35	04:53	06:21	07:42	08:11	09:38	11:31 (Extension WTG 01)
	23:35	22:21	20:40	18:58	16:18	15:04	22 11:53 (Extension WTG 01)
4	03:37	04:56	06:24	07:45	08:14	09:40	11:33 (Extension WTG 01)
	23:34	22:18	20:37	18:55	16:15	15:03	20 11:53 (Extension WTG 01)
5	03:39	04:59	06:26	07:48	08:17	09:42	11:34 (Extension WTG 01)
	23:32	22:15	20:33	18:52	16:12	15:01	19 11:53 (Extension WTG 01)
6	03:40	05:02	06:29	07:51	08:20	09:45	11:34 (Extension WTG 01)
	23:31	22:12	20:30	18:48	16:10	15:00	19 11:53 (Extension WTG 01)
7	03:42	05:04	06:32	07:53	08:23	09:47	11:36 (Extension WTG 01)
	23:29	22:09	20:27	18:45	16:07	14:59	17 11:53 (Extension WTG 01)
8	03:44	05:07	06:35	07:56	08:26	09:49	11:36 (Extension WTG 01)
	23:27	22:06	20:23	18:42	16:04	14:57	16 11:52 (Extension WTG 01)
9	03:46	05:10	06:37	07:59	08:29	11:34 (Extension WTG 01)	09:51 11:38 (Extension WTG 01)
	23:26	22:02	20:20	18:38	16:01	6 11:40 (Extension WTG 01)	14:56 14 11:52 (Extension WTG 01)
10	03:49	05:13	06:40	08:02	08:32	11:30 (Extension WTG 01)	09:53 11:39 (Extension WTG 01)
	23:24	21:59	20:16	18:35	15:58	13 11:43 (Extension WTG 01)	14:55 13 11:52 (Extension WTG 01)
11	03:51	05:16	06:43	08:04	08:35	11:28 (Extension WTG 01)	09:55 11:40 (Extension WTG 01)
	23:22	21:56	20:13	18:32	15:55	18 11:46 (Extension WTG 01)	14:54 11 11:51 (Extension WTG 01)
12	03:53	05:19	06:45	08:07	08:38	11:27 (Extension WTG 01)	09:56 11:42 (Extension WTG 01)
	23:20	21:53	20:10	18:28	15:52	20 11:47 (Extension WTG 01)	14:54 9 11:51 (Extension WTG 01)
13	03:55	05:22	06:48	08:10	08:41	11:26 (Extension WTG 01)	09:58 11:44 (Extension WTG 01)
	23:18	21:50	20:06	18:25	15:50	22 11:48 (Extension WTG 01)	14:53 6 11:50 (Extension WTG 01)
14	03:58	05:25	06:51	08:13	08:44	11:25 (Extension WTG 01)	10:00 11:47 (Extension WTG 01)
	23:15	21:46	20:03	18:22	15:47	24 11:49 (Extension WTG 01)	14:52 2 11:49 (Extension WTG 01)
15	04:00	05:28	06:54	08:16	08:47	11:25 (Extension WTG 01)	10:01
	23:13	21:43	19:59	18:19	15:44	25 11:50 (Extension WTG 01)	14:52
16	04:03	05:30	06:56	08:19	08:50	11:25 (Extension WTG 01)	10:02
	23:11	21:40	19:56	18:15	15:42	26 11:51 (Extension WTG 01)	14:52
17	04:05	05:33	06:59	08:21	08:53	11:24 (Extension WTG 01)	10:03
	23:08	21:37	19:53	18:12	15:39	27 11:51 (Extension WTG 01)	14:51
18	04:08	05:36	07:02	08:24	08:56	11:24 (Extension WTG 01)	10:05
	23:06	21:33	19:49	18:09	15:36	28 11:52 (Extension WTG 01)	14:51
19	04:11	05:39	07:04	08:27	08:59	11:24 (Extension WTG 01)	10:06
	23:03	21:30	19:46	18:05	15:34	28 11:52 (Extension WTG 01)	14:51
20	04:13	05:42	07:07	08:30	09:02	11:25 (Extension WTG 01)	10:06
	23:01	21:27	19:42	18:02	15:31	28 11:53 (Extension WTG 01)	14:52
21	04:16	05:45	07:10	08:33	09:05	11:25 (Extension WTG 01)	10:07
	22:58	21:24	19:39	17:59	15:29	28 11:53 (Extension WTG 01)	14:52
22	04:19	05:47	07:12	08:36	09:08	11:25 (Extension WTG 01)	10:08
	22:56	21:20	19:36	17:56	15:27	28 11:53 (Extension WTG 01)	14:52
23	04:21	05:50	07:15	08:39	09:11	11:25 (Extension WTG 01)	10:08
	22:53	21:17	19:32	17:53	15:24	28 11:53 (Extension WTG 01)	14:53
24	04:24	05:53	07:18	08:42	09:14	11:26 (Extension WTG 01)	10:09
	22:50	21:14	19:29	17:49	15:22	28 11:54 (Extension WTG 01)	14:53
25	04:27	05:56	07:21	07:45	09:17	11:26 (Extension WTG 01)	10:09
	22:47	21:10	19:25	16:46	15:20	28 11:54 (Extension WTG 01)	14:54
26	04:30	05:59	07:23	07:47	09:19	11:27 (Extension WTG 01)	10:09
	22:45	21:07	19:22	16:43	15:18	27 11:54 (Extension WTG 01)	14:55
27	04:33	06:02	07:26	07:50	09:22	11:28 (Extension WTG 01)	10:09
	22:42	21:04	19:19	16:40	15:16	26 11:54 (Extension WTG 01)	14:56
28	04:36	06:04	07:29	07:53	09:25	11:28 (Extension WTG 01)	10:09
	22:39	21:00	19:15	16:37	15:14	26 11:54 (Extension WTG 01)	14:57
29	04:38	06:07	07:31	07:56	09:28	11:28 (Extension WTG 01)	10:08
	22:36	20:57	19:12	16:34	15:12	26 11:54 (Extension WTG 01)	14:59
30	04:41	06:10	07:34	07:59	09:30	11:29 (Extension WTG 01)	10:08
	22:33	20:54	19:08	16:31	15:10	25 11:54 (Extension WTG 01)	15:00 6 11:58 (Extension WTG 01)
31	04:44	06:13	07:37	08:02		10:08	11:51 (Extension WTG 01)
	22:30	20:50	19:05	16:28		15:01	8 11:59 (Extension WTG 01)
Potential sun hours	591	501	391	308	208	154	
Total, worst case					535		229
Sun reduction					0.15		0.11
Oper. time red.					0.97		0.97
Wind dir. red.					0.68		0.68
Total reduction					0.10		0.07
Total, real					52		17

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: U - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (88)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:39 17:50	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:16 20:47	07:37 19:05	08:05 16:25	09:32 15:08
2	10:05 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:35 23:35	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:22	09:35 15:07
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:10 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:19	09:37 15:05
4	10:04 15:10	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:39 15:03
5	10:03 15:12	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:14	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:51 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:01
7	10:00 15:16	08:48 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:38 23:25	03:43 23:28	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:47	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:26	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:43 16:50	07:13 18:13	06:29 20:40	04:51 22:08	03:35 23:28	03:47 23:25	05:11 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:37 16:57	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:31	03:52 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:52 15:28	08:33 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:53	09:56 14:54
13	09:51 15:30	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:54
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:25	03:28 23:37	04:01 23:12	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:45	10:00 14:53
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:31 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:39	04:06 23:08	05:34 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:09 23:05	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:38 15:47	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:44	05:52 21:12	04:19 22:40	03:26 23:40	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:53	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:06 14:52
22	09:32 15:56	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:11 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:38 17:53	09:10 15:25	10:07 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:53 21:13	07:18 19:29	08:41 17:50	09:13 15:22	10:08 14:54
25	09:24 16:04	07:53 17:39	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:21 19:25	08:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	08:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:11	07:46 17:45	06:12 19:04	05:29 21:32	04:00 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:19	08:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:14	07:43 17:48	06:09 19:07	05:26 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:04 21:00	07:29 19:15	08:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:22 21:38	03:56 23:04	03:31 23:38	04:39 22:35	06:07 20:57	07:31 19:12	08:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:20		07:02 20:12	05:19 21:41	03:53 23:07	03:32 23:38	04:42 22:33	06:10 20:53	07:34 19:08	08:59 16:31	09:30 15:10	10:07 15:01
31	09:08 16:23		06:59 20:15	05:15 23:09	03:51 23:09		04:45 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	244	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: V - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (77)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:40 17:50	06:56 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:25	09:32 15:08
2	10:06 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:22	09:35 15:06
3	10:05 15:08	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:19	09:37 15:05
4	10:04 15:09	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:19	03:38 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:16	09:40 15:03
5	10:03 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:14	08:51 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:00
7	10:00 15:16	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:38 23:25	03:43 23:29	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:47	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:08 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:43 16:50	07:13 18:13	06:28 20:41	04:51 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:40 16:54	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:37 16:57	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:32	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:53 15:28	08:34 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:53	09:56 14:54
13	09:51 15:30	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:23	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:36	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:26	03:28 23:37	04:01 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:31 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:39	04:06 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:39 15:47	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:06	08:59 15:34	10:05 14:52
20	09:36 15:50	08:09 17:24	06:36 18:44	05:52 21:12	04:19 22:40	03:26 23:41	04:14 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:25	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:39 21:24	04:08 22:51	03:27 23:41	04:25 22:50	05:53 21:13	07:18 19:29	08:41 17:50	09:13 15:22	10:08 14:54
25	09:24 16:04	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:57	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:10	07:46 17:45	06:12 19:04	05:29 21:32	04:00 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:57
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:30 23:39	04:36 22:38	06:04 21:00	07:29 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:17		07:06 20:10	05:22 21:38	03:56 23:04	03:31 23:39	04:39 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:20		07:02 20:12	05:19 21:41	03:53 23:07	03:32 23:38	04:42 22:33	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:23		06:59 20:15	03:51 23:09			04:44 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: W - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (105)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March	April	May	June
1	10:07	12:42 (Extension WTG 01)	09:06		09:50 (K05)	07:40	06:55	03:48
	15:04	11 12:53 (Extension WTG 01)	16:25	28	13:07 (Extension WTG 01)	17:50	20:18	23:12
2	10:06	12:42 (Extension WTG 01)	09:03		09:49 (K05)	07:36	06:52	03:46
	15:05	12 12:54 (Extension WTG 01)	16:29	26	13:05 (Extension WTG 01)	17:53	20:21	23:15
3	10:05	12:41 (Extension WTG 01)	09:00		09:47 (K05)	07:33	06:49	03:44
	15:07	14 12:55 (Extension WTG 01)	16:32	22	13:01 (Extension WTG 01)	17:56	20:24	23:17
4	10:04	12:41 (Extension WTG 01)	08:58		09:46 (K05)	07:30	06:45	03:42
	15:09	16 12:57 (Extension WTG 01)	16:35	19	10:05 (K05)	17:59	20:27	23:19
5	10:03	12:41 (Extension WTG 01)	08:55		09:45 (K05)	07:26	06:42	03:40
	15:11	16 12:57 (Extension WTG 01)	16:38	20	10:05 (K05)	18:02	20:29	23:21
6	10:02	12:41 (Extension WTG 01)	08:52		09:45 (K05)	07:23	06:39	03:39
	15:13	18 12:59 (Extension WTG 01)	16:41	21	10:06 (K05)	18:05	20:32	23:23
7	10:01	12:41 (Extension WTG 01)	08:49		09:44 (K05)	07:20	06:35	03:37
	15:15	19 13:00 (Extension WTG 01)	16:44	22	10:06 (K05)	18:08	20:35	23:25
8	09:59	12:40 (Extension WTG 01)	08:46		09:44 (K05)	07:16	06:32	03:35
	15:18	21 13:01 (Extension WTG 01)	16:47	23	10:07 (K05)	18:11	20:38	23:27
9	09:58	12:40 (Extension WTG 01)	08:43		09:44 (K05)	07:13	06:28	03:34
	15:20	22 13:02 (Extension WTG 01)	16:50	23	10:07 (K05)	18:13	20:41	23:29
10	09:56	12:40 (Extension WTG 01)	08:40		09:44 (K05)	07:10	06:25	03:33
	15:22	23 13:03 (Extension WTG 01)	16:53	23	10:07 (K05)	18:16	20:43	23:31
11	09:55	12:40 (Extension WTG 01)	08:37		09:45 (K05)	07:06	06:22	03:31
	15:25	24 13:04 (Extension WTG 01)	16:56	23	10:08 (K05)	18:19	20:46	23:32
12	09:53	12:40 (Extension WTG 01)	08:34		09:45 (K05)	07:03	06:18	03:30
	15:27	25 13:05 (Extension WTG 01)	16:59	22	10:07 (K05)	18:22	20:49	23:34
13	09:51	12:40 (Extension WTG 01)	08:31		09:46 (K05)	07:00	06:15	03:29
	15:30	26 13:06 (Extension WTG 01)	17:03	20	10:06 (K05)	18:25	20:52	23:35
14	09:49	12:40 (Extension WTG 01)	08:28		09:46 (K05)	06:56	06:12	03:28
	15:32	27 13:07 (Extension WTG 01)	17:06	19	10:05 (K05)	18:28	20:55	23:36
15	09:47	12:40 (Extension WTG 01)	08:24		09:48 (K05)	06:53	06:08	03:27
	15:35	27 13:07 (Extension WTG 01)	17:09	16	10:04 (K05)	18:30	20:58	23:38
16	09:45	12:39 (Extension WTG 01)	08:21		09:49 (K05)	06:50	06:05	03:27
	15:38	28 13:07 (Extension WTG 01)	17:12	13	10:02 (K05)	18:33	21:01	23:39
17	09:43	12:40 (Extension WTG 01)	08:18		09:52 (K05)	06:46	06:02	03:26
	15:41	28 13:08 (Extension WTG 01)	17:15	7	09:59 (K05)	18:36	21:03	23:39
18	09:41	12:40 (Extension WTG 01)	08:15			06:43	05:58	03:26
	15:44	29 13:09 (Extension WTG 01)	17:18			18:39	21:06	23:40
19	09:39	12:40 (Extension WTG 01)	08:12			06:40	05:55	03:25
	15:46	30 13:10 (Extension WTG 01)	17:21			18:42	21:09	23:41
20	09:37	12:40 (Extension WTG 01)	08:09			06:36	05:52	03:25
	15:49	29 13:09 (Extension WTG 01)	17:24			18:44	21:12	23:41
21	09:34	12:40 (Extension WTG 01)	08:06			06:33	05:48	03:25
	15:52	30 13:10 (Extension WTG 01)	17:27			18:47	21:15	23:42
22	09:32	12:41 (Extension WTG 01)	08:02			06:29	05:45	03:25
	15:55	30 13:11 (Extension WTG 01)	17:30			18:50	21:18	23:42
23	09:30	12:41 (Extension WTG 01)	07:59			06:26	05:42	03:26
	15:58	29 13:10 (Extension WTG 01)	17:33			18:53	21:21	23:42
24	09:27	12:42 (Extension WTG 01)	07:56			06:23	05:38	03:26
	16:01	29 13:11 (Extension WTG 01)	17:36			18:56	21:24	23:42
25	09:25	12:42 (Extension WTG 01)	07:53			06:19	05:35	03:26
	16:04	29 13:11 (Extension WTG 01)	17:39			18:58	21:27	23:41
26	09:22	12:42 (Extension WTG 01)	07:49			06:16	05:32	03:27
	16:07	28 13:10 (Extension WTG 01)	17:42			19:01	21:30	23:41
27	09:20	12:43 (Extension WTG 01)	07:46			06:12	05:29	03:28
	16:10	27 13:10 (Extension WTG 01)	17:44			19:04	21:33	23:41
28	09:17	12:45 (Extension WTG 01)	07:43			06:09	05:25	03:29
	16:13	26 13:11 (Extension WTG 01)	17:47			19:07	21:36	23:40
29	09:14	12:45 (Extension WTG 01)				07:06	05:22	03:30
	16:16	24 13:09 (Extension WTG 01)				20:10	21:38	23:39
30	09:12	12:46 (Extension WTG 01)				07:02	05:19	03:31
	16:19	23 13:09 (Extension WTG 01)				20:12	21:41	23:38
31	09:09	12:47 (Extension WTG 01)				06:59	03:51	
	16:22	21 13:08 (Extension WTG 01)				20:15	23:10	
Potential sun hours	184		243		364	446	557	601
Total, worst case	741		347					
Sun reduction	0.16		0.29					
Oper. time red.	0.97		0.97					
Wind dir. red.	0.69		0.64					
Total reduction	0.11		0.18					
Total, real	82		63					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: W - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (105)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32	04:47	06:15	07:37	08:05	09:14 (K05) 09:33
	23:37	22:27	20:47	19:05	16:24	23 09:37 (K05) 15:08
2	03:34	04:50	06:18	07:40	08:08	09:14 (K05) 09:35
	23:36	22:24	20:43	19:02	16:21	23 09:37 (K05) 15:06
3	03:35	04:53	06:21	07:42	08:11	09:14 (K05) 09:38
	23:35	22:21	20:40	18:58	16:18	23 09:37 (K05) 15:04
4	03:37	04:56	06:24	07:45	08:14	09:15 (K05) 09:40
	23:34	22:18	20:37	18:55	16:15	22 09:37 (K05) 15:03
5	03:39	04:59	06:26	07:48	08:17	09:14 (K05) 09:42
	23:32	22:15	20:33	18:52	16:12	22 09:36 (K05) 15:01
6	03:40	05:01	06:29	07:51	08:20	09:16 (K05) 09:45
	23:31	22:12	20:30	18:48	16:09	20 09:36 (K05) 15:00
7	03:42	05:04	06:32	07:53	08:23	09:16 (K05) 09:47
	23:29	22:09	20:26	18:45	16:07	18 09:34 (K05) 14:59
8	03:44	05:07	06:35	07:56	08:26	09:17 (K05) 09:49
	23:27	22:06	20:23	18:42	16:04	24 12:32 (Extension WTG 01) 14:57
9	03:46	05:10	06:37	07:59	08:29	09:19 (K05) 09:51
	23:26	22:02	20:20	18:38	16:01	28 12:36 (Extension WTG 01) 14:56
10	03:49	05:13	06:40	08:02	08:32	09:21 (K05) 09:53
	23:24	21:59	20:16	18:35	15:58	27 12:38 (Extension WTG 01) 14:55
11	03:51	05:16	06:43	08:04	08:35	12:19 (Extension WTG 01) 09:55
	23:22	21:56	20:13	18:32	15:55	20 12:39 (Extension WTG 01) 14:54
12	03:53	05:19	06:45	08:07	08:38	12:18 (Extension WTG 01) 09:56
	23:20	21:53	20:10	18:28	15:52	23 12:41 (Extension WTG 01) 14:54
13	03:55	05:22	06:48	08:10	08:41	12:17 (Extension WTG 01) 09:58
	23:17	21:50	20:06	18:25	15:50	24 12:41 (Extension WTG 01) 14:53
14	03:58	05:25	06:51	08:13	08:44	12:16 (Extension WTG 01) 09:59
	23:15	21:46	20:03	18:22	15:47	26 12:42 (Extension WTG 01) 14:52
15	04:00	05:28	06:54	08:16	08:47	12:16 (Extension WTG 01) 10:01
	23:13	21:43	19:59	18:18	15:44	27 12:43 (Extension WTG 01) 14:52
16	04:03	05:30	06:56	08:19	08:50	12:15 (Extension WTG 01) 10:02
	23:11	21:40	19:56	18:15	15:42	28 12:43 (Extension WTG 01) 14:52
17	04:05	05:33	06:59	08:21	08:53	12:15 (Extension WTG 01) 10:03
	23:08	21:37	19:53	18:12	15:39	29 12:44 (Extension WTG 01) 14:51
18	04:08	05:36	07:02	08:24	08:56	12:16 (Extension WTG 01) 10:05
	23:06	21:33	19:49	18:09	15:36	29 12:45 (Extension WTG 01) 14:51
19	04:11	05:39	07:04	08:27	08:59	12:16 (Extension WTG 01) 10:05
	23:03	21:30	19:46	18:05	15:34	29 12:45 (Extension WTG 01) 14:51
20	04:13	05:42	07:07	08:30	09:02	12:16 (Extension WTG 01) 10:06
	23:01	21:27	19:42	18:02	15:31	30 12:46 (Extension WTG 01) 14:51
21	04:16	05:45	07:10	08:33	09:05	12:17 (Extension WTG 01) 10:07
	22:58	21:24	19:39	17:59	15:29	29 12:46 (Extension WTG 01) 14:52
22	04:19	05:47	07:12	08:36	09:08	12:16 (Extension WTG 01) 10:08
	22:56	21:20	19:36	17:56	15:27	29 12:45 (Extension WTG 01) 14:52
23	04:21	05:50	07:15	08:39	09:11	12:17 (Extension WTG 01) 10:08
	22:53	21:17	19:32	17:53	15:24	29 12:46 (Extension WTG 01) 14:53
24	04:24	05:53	07:18	08:42	09:14	12:17 (Extension WTG 01) 10:08
	22:50	21:14	19:29	17:49	15:22	29 12:46 (Extension WTG 01) 14:53
25	04:27	05:56	07:21	07:45	09:21 (K05) 09:17	12:18 (Extension WTG 01) 10:09
	22:47	21:10	19:25	16:46	9 09:30 (K05) 15:20	28 12:46 (Extension WTG 01) 14:54
26	04:30	05:59	07:23	07:47	09:19 (K05) 09:19	12:18 (Extension WTG 01) 10:09
	22:45	21:07	19:22	16:43	13 09:32 (K05) 15:18	28 12:46 (Extension WTG 01) 14:55
27	04:33	06:01	07:26	07:50	09:17 (K05) 09:22	12:19 (Extension WTG 01) 10:09
	22:42	21:04	19:19	16:40	17 09:34 (K05) 15:16	28 12:47 (Extension WTG 01) 14:56
28	04:35	06:04	07:29	07:53	09:15 (K05) 09:25	12:19 (Extension WTG 01) 10:09
	22:39	21:00	19:15	16:37	19 09:34 (K05) 15:13	27 12:46 (Extension WTG 01) 14:57
29	04:38	06:07	07:31	07:56	09:15 (K05) 09:28	12:20 (Extension WTG 01) 10:08
	22:36	20:57	19:12	16:34	21 09:36 (K05) 15:12	26 12:46 (Extension WTG 01) 14:59
30	04:41	06:10	07:34	07:59	09:14 (K05) 09:30	12:21 (Extension WTG 01) 10:08
	22:33	20:54	19:08	16:31	22 09:36 (K05) 15:10	25 12:46 (Extension WTG 01) 15:00
31	04:44	06:13	08:02	09:14 (K05)	15:10	25 12:46 (Extension WTG 01) 10:08
	22:30	20:50	16:28	23 09:37 (K05)	15:01	7 12:51 (Extension WTG 01)
Potential sun hours	591	501	391	308	208	154
Total, worst case				124	773	220
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.63	0.68	0.69
Total reduction				0.16	0.10	0.08
Total, real				20	76	17

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: X - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (111)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	
1	10:07 15:03	09:06 16:25	07:40 17:50	06:55 20:18	05:16 21:44	03:48 23:12	
2	10:06 15:05	09:03 16:29	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:15	
3	10:05 15:07	3 13:42 (Extension WTG 01) 13:45 (Extension WTG 01)	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17
4	10:04 15:09	8 13:40 (Extension WTG 01) 13:48 (Extension WTG 01)	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:42 23:19
5	10:03 15:11	10 13:39 (Extension WTG 01) 13:49 (Extension WTG 01)	08:55 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:40 23:21
6	10:02 15:13	12 13:39 (Extension WTG 01) 13:51 (Extension WTG 01)	08:52 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23
7	10:01 15:15	13 13:39 (Extension WTG 01) 13:52 (Extension WTG 01)	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25
8	09:59 15:17	15 13:38 (Extension WTG 01) 13:53 (Extension WTG 01)	08:46 16:47	07:16 18:11	06:32 20:38	04:53 22:05	03:35 23:27
9	09:58 15:20	16 13:38 (Extension WTG 01) 13:54 (Extension WTG 01)	08:43 16:50	07:13 18:13	06:28 20:41	04:50 22:08	03:34 23:29
10	09:56 15:22	18 13:37 (Extension WTG 01) 13:55 (Extension WTG 01)	08:40 16:53	07:10 18:16	06:25 20:43	04:47 22:11	03:32 23:31
11	09:55 15:25	19 13:37 (Extension WTG 01) 13:56 (Extension WTG 01)	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32
12	09:53 15:27	20 13:37 (Extension WTG 01) 13:57 (Extension WTG 01)	08:34 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34
13	09:51 15:30	21 13:37 (Extension WTG 01) 13:58 (Extension WTG 01)	08:31 17:02	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35
14	09:49 15:32	22 13:37 (Extension WTG 01) 13:59 (Extension WTG 01)	08:28 17:06	06:56 18:28	06:12 20:55	04:35 22:23	03:28 23:36
15	09:47 15:35	22 13:38 (Extension WTG 01) 14:00 (Extension WTG 01)	08:24 17:09	06:53 18:30	06:08 20:58	04:32 22:26	03:27 23:38
16	09:45 15:38	23 13:37 (Extension WTG 01) 14:00 (Extension WTG 01)	08:21 17:12	06:50 18:33	06:05 21:01	04:29 22:29	03:27 23:39
17	09:43 15:41	24 13:37 (Extension WTG 01) 14:01 (Extension WTG 01)	08:18 17:15	06:46 18:36	06:01 21:03	04:27 22:32	03:26 23:39
18	09:41 15:43	23 13:38 (Extension WTG 01) 14:01 (Extension WTG 01)	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:35	03:26 23:40
19	09:39 15:46	24 13:38 (Extension WTG 01) 14:02 (Extension WTG 01)	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:38	03:25 23:41
20	09:37 15:49	24 13:38 (Extension WTG 01) 14:02 (Extension WTG 01)	08:09 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:25 23:41
21	09:34 15:52	24 13:38 (Extension WTG 01) 14:02 (Extension WTG 01)	08:06 17:27	06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:42
22	09:32 15:55	24 13:39 (Extension WTG 01) 14:03 (Extension WTG 01)	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:42
23	09:30 15:58	23 13:39 (Extension WTG 01) 14:02 (Extension WTG 01)	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:25 23:42
24	09:27 16:01	23 13:40 (Extension WTG 01) 14:03 (Extension WTG 01)	07:56 17:36	06:23 18:56	05:38 21:24	04:07 22:52	03:26 23:42
25	09:25 16:04	22 13:41 (Extension WTG 01) 14:03 (Extension WTG 01)	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:26 23:41
26	09:22 16:07	21 13:41 (Extension WTG 01) 14:02 (Extension WTG 01)	07:49 17:41	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:41
27	09:20 16:10	20 13:42 (Extension WTG 01) 14:02 (Extension WTG 01)	07:46 17:44	06:12 19:04	05:28 21:33	04:00 23:00	03:28 23:41
28	09:17 16:13	18 13:44 (Extension WTG 01) 14:02 (Extension WTG 01)	07:43 17:47	06:09 19:07	05:25 21:36	03:57 23:02	03:29 23:40
29	09:14 16:16	15 13:45 (Extension WTG 01) 14:00 (Extension WTG 01)	07:40 17:44	06:06 19:10	05:22 21:38	03:55 23:05	03:30 23:39
30	09:12 16:19	12 13:47 (Extension WTG 01) 13:59 (Extension WTG 01)	07:37 17:41	06:03 19:13	05:19 21:41	03:53 23:07	03:31 23:38
31	09:09 16:22	4 13:51 (Extension WTG 01) 13:55 (Extension WTG 01)	06:59 17:35	06:00 19:06	05:18 21:34	03:50 23:04	03:30 23:37
Potential sun hours	184	243	364	446	557	601	
Total, worst case	523						
Sun reduction	0.16						
Oper. time red.	0.97						
Wind dir. red.	0.67						
Total reduction	0.11						
Total, real	56						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: X - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (111)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December	
1	03:32	04:47	06:15	07:37	08:05	09:33	13:20 (Extension WTG 01)
	23:37	22:27	20:47	19:05	16:24	15:08	19 13:39 (Extension WTG 01)
2	03:34	04:50	06:18	07:40	08:08	09:35	13:21 (Extension WTG 01)
	23:36	22:24	20:43	19:02	16:21	15:06	18 13:39 (Extension WTG 01)
3	03:35	04:53	06:21	07:42	08:11	09:38	13:21 (Extension WTG 01)
	23:35	22:21	20:40	18:58	16:18	15:04	17 13:38 (Extension WTG 01)
4	03:37	04:56	06:24	07:45	08:14	09:40	13:22 (Extension WTG 01)
	23:34	22:18	20:37	18:55	16:15	15:03	16 13:38 (Extension WTG 01)
5	03:39	04:59	06:26	07:48	08:17	09:42	13:24 (Extension WTG 01)
	23:32	22:15	20:33	18:52	16:12	15:01	14 13:38 (Extension WTG 01)
6	03:40	05:01	06:29	07:51	08:20	09:45	13:24 (Extension WTG 01)
	23:31	22:12	20:30	18:48	16:09	15:00	13 13:37 (Extension WTG 01)
7	03:42	05:04	06:32	07:53	08:23	09:47	13:26 (Extension WTG 01)
	23:29	22:09	20:26	18:45	16:07	14:59	10 13:36 (Extension WTG 01)
8	03:44	05:07	06:35	07:56	08:26	09:49	13:27 (Extension WTG 01)
	23:27	22:06	20:23	18:42	16:04	14:57	8 13:35 (Extension WTG 01)
9	03:46	05:10	06:37	07:59	08:29	09:51	13:30 (Extension WTG 01)
	23:26	22:02	20:20	18:38	16:01	14:56	4 13:34 (Extension WTG 01)
10	03:49	05:13	06:40	08:02	08:32	09:53	
	23:24	21:59	20:16	18:35	15:58	14:55	
11	03:51	05:16	06:43	08:04	08:35	13:22 (Extension WTG 01)	09:55
	23:22	21:56	20:13	18:32	15:55	5 13:27 (Extension WTG 01)	14:54
12	03:53	05:19	06:45	08:07	08:38	13:19 (Extension WTG 01)	09:56
	23:20	21:53	20:09	18:28	15:52	12 13:31 (Extension WTG 01)	14:54
13	03:55	05:22	06:48	08:10	08:41	13:17 (Extension WTG 01)	09:58
	23:17	21:50	20:06	18:25	15:50	15 13:32 (Extension WTG 01)	14:53
14	03:58	05:25	06:51	08:13	08:44	13:16 (Extension WTG 01)	09:59
	23:15	21:46	20:03	18:22	15:47	17 13:33 (Extension WTG 01)	14:52
15	04:00	05:27	06:53	08:16	08:47	13:15 (Extension WTG 01)	10:01
	23:13	21:43	19:59	18:18	15:44	20 13:35 (Extension WTG 01)	14:52
16	04:03	05:30	06:56	08:19	08:50	13:14 (Extension WTG 01)	10:02
	23:11	21:40	19:56	18:15	15:41	21 13:35 (Extension WTG 01)	14:52
17	04:05	05:33	06:59	08:21	08:53	13:14 (Extension WTG 01)	10:03
	23:08	21:37	19:52	18:12	15:39	22 13:36 (Extension WTG 01)	14:51
18	04:08	05:36	07:02	08:24	08:56	13:14 (Extension WTG 01)	10:05
	23:06	21:33	19:49	18:09	15:36	23 13:37 (Extension WTG 01)	14:51
19	04:11	05:39	07:04	08:27	08:59	13:14 (Extension WTG 01)	10:05
	23:03	21:30	19:46	18:05	15:34	23 13:37 (Extension WTG 01)	14:51
20	04:13	05:42	07:07	08:30	09:02	13:14 (Extension WTG 01)	10:06
	23:01	21:27	19:42	18:02	15:31	24 13:38 (Extension WTG 01)	14:51
21	04:16	05:45	07:10	08:33	09:05	13:14 (Extension WTG 01)	10:07
	22:58	21:23	19:39	17:59	15:29	24 13:38 (Extension WTG 01)	14:52
22	04:19	05:47	07:12	08:36	09:08	13:14 (Extension WTG 01)	10:08
	22:56	21:20	19:36	17:56	15:27	24 13:38 (Extension WTG 01)	14:52
23	04:21	05:50	07:15	08:39	09:11	13:14 (Extension WTG 01)	10:08
	22:53	21:17	19:32	17:53	15:24	24 13:38 (Extension WTG 01)	14:53
24	04:24	05:53	07:18	08:42	09:14	13:15 (Extension WTG 01)	10:08
	22:50	21:14	19:29	17:49	15:22	24 13:39 (Extension WTG 01)	14:53
25	04:27	05:56	07:20	07:44	09:17	13:15 (Extension WTG 01)	10:09
	22:47	21:10	19:25	16:46	15:20	24 13:39 (Extension WTG 01)	14:54
26	04:30	05:59	07:23	07:47	09:19	13:16 (Extension WTG 01)	10:09
	22:45	21:07	19:22	16:43	15:18	23 13:39 (Extension WTG 01)	14:55
27	04:33	06:01	07:26	07:50	09:22	13:17 (Extension WTG 01)	10:09
	22:42	21:04	19:19	16:40	15:15	22 13:39 (Extension WTG 01)	14:56
28	04:35	06:04	07:29	07:53	09:25	13:18 (Extension WTG 01)	10:09
	22:39	21:00	19:15	16:37	15:13	21 13:39 (Extension WTG 01)	14:57
29	04:38	06:07	07:31	07:56	09:27	13:18 (Extension WTG 01)	10:08
	22:36	20:57	19:12	16:34	15:11	20 13:38 (Extension WTG 01)	14:58
30	04:41	06:10	07:34	07:59	09:30	13:19 (Extension WTG 01)	10:08
	22:33	20:53	19:08	16:31	15:10	20 13:39 (Extension WTG 01)	15:00
31	04:44	06:13		08:02			10:08
	22:30	20:50		16:27			15:01
Potential sun hours	591	501	391	308	208	154	
Total, worst case					408		119
Sun reduction					0.15		0.11
Oper. time red.					0.97		0.97
Wind dir. red.					0.67		0.67
Total reduction					0.10		0.07
Total, real					40		9

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: Y - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (109)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31) and summary rows (Potential sun hours, Total, worst case, Sun reduction, Oper. time red., Wind dir. red., Total reduction, Total, real).

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: Z - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (108)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07 15:03	09:06 16:25	07:40 17:50	06:55 20:18	05:15 21:44	03:48 23:12	03:32 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:24	09:33 15:08
2	10:06 15:05	09:03 16:28	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:15	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:02	08:08 16:21	09:35 15:06
3	10:05 15:07	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:38 15:04
4	10:04 15:09	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:42 23:19	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:15	09:40 15:03
5	10:03 15:11	08:55 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:40 23:21	03:39 23:32	04:58 22:15	06:26 20:33	07:48 18:52	08:17 16:12	09:42 15:01
6	10:02 15:13	08:52 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:40 23:31	05:01 22:12	06:29 20:30	07:50 18:48	08:20 16:09	09:45 15:00
7	10:01 15:15	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:42 23:29	05:04 22:09	06:32 20:26	07:53 18:45	08:23 16:06	09:47 14:59
8	09:59 15:17	08:46 16:47	07:16 18:10	06:32 20:38	04:53 22:05	03:35 23:27	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:42	08:26 16:04	09:49 14:57
9	09:58 15:20	08:43 16:50	07:13 18:13	06:28 20:41	04:50 22:08	03:34 23:29	03:46 23:26	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:51 14:56
10	09:56 15:22	08:40 16:53	07:10 18:16	06:25 20:43	04:47 22:11	03:32 23:31	03:48 23:24	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:53 14:55
11	09:55 15:25	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32	03:51 23:22	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:55 14:54
12	09:53 15:27	08:34 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34	03:53 23:20	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:53
13	09:51 15:30	08:31 17:02	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35	03:55 23:17	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:49	09:58 14:53
14	09:49 15:32	08:28 17:05	06:56 18:28	06:11 20:55	04:35 22:23	03:28 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:52
15	09:47 15:35	08:24 17:09	06:53 18:30	06:08 20:58	04:32 22:26	03:27 23:37	04:00 23:13	05:27 21:43	06:53 19:59	08:16 18:18	08:47 15:44	10:01 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:01	04:29 22:29	03:26 23:38	04:03 23:11	05:30 21:40	06:56 19:56	08:18 18:15	08:50 15:41	10:02 14:51
17	09:43 15:41	08:18 17:15	06:46 18:36	06:01 21:03	04:27 22:32	03:26 23:39	04:05 23:08	05:33 21:37	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:51
18	09:41 15:43	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:35	03:25 23:40	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:36	10:04 14:51
19	09:39 15:46	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:25 23:41	04:10 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:05 14:51
20	09:37 15:49	08:09 17:24	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:41	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:51
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:42	04:19 22:55	05:47 21:20	07:12 19:35	08:36 17:56	09:08 15:26	10:08 14:52
23	09:30 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:25 23:42	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:52	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:22 18:56	05:38 21:24	04:07 22:52	03:26 23:42	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	09:14 15:22	10:08 14:53
25	09:25 16:04	07:53 17:38	06:19 18:58	05:35 21:27	04:05 22:54	03:26 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:17 15:20	10:09 14:54
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:41	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:17	10:09 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:33	04:00 23:00	03:28 23:41	04:33 22:42	06:01 21:03	07:26 19:19	07:50 16:40	09:22 15:15	10:09 14:56
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:57 23:02	03:29 23:40	04:35 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:25 15:13	10:09 14:57
29	09:14 16:16	07:40 19:02	06:06 20:10	05:22 21:38	03:55 23:05	03:30 23:39	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:11	10:08 14:58
30	09:11 16:19	07:37 20:12	06:03 21:18	05:19 21:41	03:53 23:07	03:31 23:38	04:41 22:33	06:10 20:53	07:34 19:08	07:59 16:30	09:30 15:10	10:08 15:00
31	09:09 16:22	07:34 20:15	06:01 21:19	05:17 21:39	03:51 23:05	03:29 23:36	04:44 22:30	06:13 20:50	08:02 16:27	08:02 15:01	10:07 15:01	10:07 15:01
Potential sun hours	184	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AA - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (90°)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:06 16:26	07:39 17:50	06:55 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:15 20:46	07:37 19:05	08:05 16:25	09:32 15:08
2	10:05 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:13 21:47	03:47 23:14	03:34 23:35	04:50 22:24	06:18 20:43	07:39 19:02	08:08 16:21	09:35 15:06
3	10:04 15:07	09:00 16:32	07:33 17:56	06:49 20:23	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:05
4	10:04 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:37 23:33	04:56 22:17	06:24 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:14	06:26 20:33	07:48 18:52	08:17 16:13	09:42 15:02
6	10:01 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:00
7	10:00 15:16	08:48 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:28	05:05 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:45 16:47	07:16 18:10	06:32 20:38	04:54 22:05	03:36 23:26	03:45 23:27	05:07 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:51 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:39 16:53	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:36 16:56	07:06 18:19	06:22 20:46	04:45 22:14	03:32 23:31	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:52 15:28	08:33 17:00	07:03 18:22	06:18 20:49	04:42 22:17	03:31 23:33	03:54 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	09:51 15:30	08:30 17:03	07:00 18:25	06:15 20:52	04:39 22:20	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:36 22:22	03:29 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:35	08:24 17:09	06:53 18:30	06:08 20:57	04:33 22:25	03:28 23:37	04:01 23:12	05:28 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:12	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:27 23:38	04:06 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:38 15:47	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:05 14:52
20	09:36 15:49	08:08 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:26 23:40	04:14 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:06 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:45	03:26 23:41	04:19 22:55	05:48 21:20	07:12 19:35	08:35 17:56	09:08 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:48	03:26 23:41	04:22 22:52	05:50 21:17	07:15 19:32	08:38 17:53	09:10 15:25	10:07 14:53
24	09:27 16:01	07:56 17:36	06:22 18:56	05:38 21:23	04:08 22:51	03:27 23:41	04:24 22:49	05:53 21:13	07:18 19:29	08:41 17:49	09:13 15:22	10:08 14:54
25	09:24 16:04	07:52 17:39	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:42	06:16 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:56
27	09:19 16:10	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:29 23:40	04:33 22:41	06:02 21:03	07:26 19:18	07:50 16:40	09:22 15:16	10:08 14:57
28	09:16 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:39	04:36 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:16		07:06 20:09	05:22 21:38	03:55 23:04	03:31 23:38	04:39 22:35	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:32 23:38	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	10:07 15:00
31	09:08 16:23		06:59 20:15	03:51 23:09	03:51 23:09		04:44 22:30	06:13 20:50	08:02 16:28			10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AB - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (107)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for each day of the month, showing sun rise/set times and shadow reduction percentages.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AC - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (104)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January		February		March		April		May		June	
1	10:07	12:13 (K03)	09:06	14:32 (K05)	07:39	06:55	05:15	03:48				
	15:03	20 12:33 (K03)	16:25	29 15:01 (K05)	17:50	20:18	21:44	23:12				
2	10:06	12:14 (K03)	09:03	14:32 (K05)	07:36	06:52	05:12	03:46				
	15:05	20 12:34 (K03)	16:28	28 15:00 (K05)	17:53	20:21	21:47	23:15				
3	10:05	12:13 (K03)	09:00	14:32 (K05)	07:33	06:49	05:09	03:44				
	15:07	21 12:34 (K03)	16:32	29 15:01 (K05)	17:56	20:24	21:50	23:17				
4	10:04	12:14 (K03)	08:57	14:33 (K05)	07:30	06:45	05:06	03:42				
	15:09	21 12:35 (K03)	16:35	29 15:02 (K05)	17:59	20:26	21:53	23:19				
5	10:03	12:14 (K03)	08:54	14:33 (K05)	07:26	06:42	05:03	03:40				
	15:11	21 12:35 (K03)	16:38	28 15:01 (K05)	18:02	20:29	21:56	23:21				
6	10:02	12:15 (K03)	08:52	14:33 (K05)	07:23	06:38	05:00	03:39				
	15:13	22 12:37 (K03)	16:41	28 15:01 (K05)	18:05	20:32	21:59	23:23				
7	10:01	12:15 (K03)	08:49	14:33 (K05)	07:20	06:35	04:57	03:37				
	15:15	22 12:37 (K03)	16:44	27 15:00 (K05)	18:08	20:35	22:02	23:25				
8	09:59	12:15 (K03)	08:46	14:35 (K05)	07:16	06:32	04:53	03:35				
	15:17	23 12:38 (K03)	16:47	25 15:00 (K05)	18:10	20:38	22:05	23:27				
9	09:58	12:15 (K03)	08:43	14:35 (K05)	07:13	06:28	04:50	03:34				
	15:20	23 12:38 (K03)	16:50	24 14:59 (K05)	18:13	20:40	22:08	23:29				
10	09:56	12:15 (K03)	08:40	14:36 (K05)	07:10	06:25	04:47	03:32				
	15:22	24 12:39 (K03)	16:53	23 14:59 (K05)	18:16	20:43	22:11	23:31				
11	09:55	12:15 (K03)	08:37	14:37 (K05)	07:06	06:22	04:44	03:31				
	15:25	24 12:39 (K03)	16:56	20 14:57 (K05)	18:19	20:46	22:14	23:32				
12	09:53	12:16 (K03)	08:34	14:40 (K05)	07:03	06:18	04:41	03:30				
	15:27	24 12:40 (K03)	16:59	15 14:55 (K05)	18:22	20:49	22:17	23:34				
13	09:51	12:16 (K03)	08:31	14:43 (K05)	07:00	06:15	04:38	03:29				
	15:30	24 12:40 (K03)	17:02	10 14:53 (K05)	18:25	20:52	22:20	23:35				
14	09:49	12:17 (K03)	08:27		06:56	06:11	04:35	03:28				
	15:32	24 12:41 (K03)	17:05		18:27	20:55	22:23	23:36				
15	09:47	12:16 (K03)	08:24		06:53	06:08	04:32	03:27				
	15:35	24 12:40 (K03)	17:08		18:30	20:58	22:26	23:37				
16	09:45	12:17 (K03)	08:21		06:49	06:05	04:29	03:26				
	15:38	24 12:41 (K03)	17:12		18:33	21:00	22:29	23:38				
17	09:43	12:17 (K03)	08:18		06:46	06:01	04:26	03:26				
	15:41	24 12:41 (K03)	17:15		18:36	21:03	22:32	23:39				
18	09:41	12:18 (K03)	08:15		06:43	05:58	04:24	03:25				
	15:43	24 12:42 (K03)	17:18		18:39	21:06	22:35	23:40				
19	09:39	12:19 (K03)	08:12		06:39	05:55	04:21	03:25				
	15:46	23 12:42 (K03)	17:21		18:42	21:09	22:37	23:41				
20	09:37	12:19 (K03)	08:09		06:36	05:51	04:18	03:25				
	15:49	22 12:41 (K03)	17:24		18:44	21:12	22:40	23:41				
21	09:34	12:20 (K03)	08:05		06:33	05:48	04:15	03:25				
	15:52	21 12:41 (K03)	17:27		18:47	21:15	22:43	23:41				
22	09:32	12:22 (K03)	08:02		06:29	05:45	04:13	03:25				
	15:55	29 14:49 (K05)	17:30		18:50	21:18	22:46	23:42				
23	09:29	12:22 (K03)	07:59		06:26	05:42	04:10	03:25				
	15:58	32 14:51 (K05)	17:33		18:53	21:21	22:49	23:42				
24	09:27	12:24 (K03)	07:56		06:22	05:38	04:07	03:26				
	16:01	32 14:53 (K05)	17:35		18:56	21:24	22:51	23:42				
25	09:25	12:26 (K03)	07:53		06:19	05:35	04:05	03:26				
	16:04	32 14:55 (K05)	17:38		18:58	21:27	22:54	23:41				
26	09:22	12:28 (K03)	07:49		06:16	05:32	04:02	03:27				
	16:07	30 14:56 (K05)	17:41		19:01	21:30	22:57	23:41				
27	09:19	14:34 (K05)	07:46		06:12	05:28	04:00	03:28				
	16:10	23 14:57 (K05)	17:44		19:04	21:32	23:00	23:40				
28	09:17	14:32 (K05)	07:43		06:09	05:25	03:57	03:29				
	16:13	26 14:58 (K05)	17:47		19:07	21:35	23:02	23:40				
29	09:14	14:32 (K05)			07:05	05:22	03:55	03:30				
	16:16	27 14:59 (K05)			20:10	21:38	23:05	23:39				
30	09:11	14:33 (K05)			07:02	05:19	03:53	03:31				
	16:19	27 15:00 (K05)			20:12	21:41	23:07	23:38				
31	09:09	14:32 (K05)			06:59		03:50					
	16:22	28 15:00 (K05)			20:15		23:10					
Potential sun hours	184		243		364	446	557	601				
Total, worst case	761		315									
Sun reduction	0.16		0.29									
Oper. time red.	0.97		0.97									
Wind dir. red.	0.68		0.67									
Total reduction	0.11		0.19									
Total, real	83		61									

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AC - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (104)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32	04:47	06:15	07:37	08:05	09:33
	23:37	22:27	20:47	19:05	16:24	15:08
2	03:34	04:50	06:18	07:39	08:08	09:35
	23:36	22:24	20:43	19:02	16:21	15:06
3	03:35	04:53	06:21	07:42	08:11	09:37
	23:35	22:21	20:40	18:58	16:18	15:04
4	03:37	04:56	06:23	07:45	08:14	09:40
	23:34	22:18	20:37	18:55	16:15	15:03
5	03:39	04:58	06:26	07:48	08:17	09:42
	23:32	22:15	20:33	18:52	16:12	15:01
6	03:40	05:01	06:29	07:50	08:20	09:44
	23:31	22:12	20:30	18:48	16:09	15:00
7	03:42	05:04	06:32	07:53	08:23	09:47
	23:29	22:09	20:26	18:45	16:06	15:00
8	03:44	05:07	06:34	07:56	08:26	09:49
	23:27	22:05	20:23	18:41	16:04	15:00
9	03:46	05:10	06:37	07:59	08:29	09:51
	23:25	22:02	20:20	18:38	16:01	15:00
10	03:48	05:13	06:40	08:02	08:32	09:53
	23:24	21:59	20:16	18:35	15:58	14:55
11	03:51	05:16	06:43	08:04	08:35	09:54
	23:22	21:56	20:13	18:32	15:55	14:54
12	03:53	05:19	06:45	08:07	08:38	09:56
	23:19	21:53	20:09	18:28	15:52	14:53
13	03:55	05:22	06:48	08:10	08:41	09:58
	23:17	21:49	20:06	18:25	15:49	14:53
14	03:58	05:25	06:51	08:13	08:44	09:59
	23:15	21:46	20:03	18:22	15:47	14:52
15	04:00	05:27	06:53	08:16	08:47	10:01
	23:13	21:43	19:59	18:18	15:44	14:52
16	04:03	05:30	06:56	08:18	08:50	10:02
	23:11	21:40	19:56	18:15	15:41	14:51
17	04:05	05:33	06:59	08:21	08:53	10:03
	23:08	21:37	19:52	18:12	15:39	14:51
18	04:08	05:36	07:01	08:24	08:56	10:04
	23:06	21:33	19:49	18:09	15:36	14:51
19	04:10	05:39	07:04	08:27	08:59	10:05
	23:03	21:30	19:46	18:05	15:34	14:51
20	04:13	05:42	07:07	08:30	09:02	10:06
	23:01	21:27	19:42	18:02	15:31	14:51
21	04:16	05:44	07:10	08:33	09:05	10:07
	22:58	21:23	19:39	17:59	15:29	14:52
22	04:19	05:47	07:12	08:36	09:08	10:08
	22:55	21:20	19:35	17:56	15:26	14:52
23	04:21	05:50	07:15	08:39	09:11	10:08
	22:53	21:17	19:32	17:52	15:24	14:53
24	04:24	05:53	07:18	08:41	09:14	10:08
	22:50	21:13	19:29	17:49	15:22	14:53
25	04:27	05:56	07:20	07:44	09:16	10:09
	22:47	21:10	19:25	16:46	15:20	14:54
26	04:30	05:59	07:23	07:47	09:19	10:09
	22:44	21:07	19:22	16:43	15:17	14:55
27	04:33	06:01	07:26	07:50	09:22	10:09
	22:42	21:03	19:18	16:40	15:15	14:56
28	04:35	06:04	07:29	07:53	09:25	10:09
	22:39	21:00	19:15	16:37	15:13	14:57
29	04:38	06:07	07:31	07:56	09:27	10:08
	22:36	20:57	19:12	16:34	15:11	14:58
30	04:41	06:10	07:34	07:59	14:09 (K05)	10:08
	22:33	20:53	19:08	16:30	15:10	15:00
31	04:44	06:12	07:37	08:02	14:07 (K05)	10:07
	22:30	20:50	19:05	16:27	20 14:27 (K05)	15:01
Potential sun hours	591	501	391	308	208	154
Total, worst case				47	794	588
Sun reduction				0.26	0.15	0.11
Oper. time red.				0.97	0.97	0.97
Wind dir. red.				0.67	0.68	0.69
Total reduction				0.17	0.10	0.07
Total, real				8	78	44

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AD - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (103)
Assumptions for shadow calculations

Shine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31). Includes potential sun hours and reduction metrics at the bottom.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AE - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (89)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:05 16:26	07:39 17:50	06:55 20:18	05:16 21:44	03:49 23:11	03:33 23:36	04:47 22:26	06:15 20:46	07:37 19:05	08:05 16:24	09:32 15:08
2	10:05 15:06	09:03 16:29	07:36 17:53	06:52 20:21	05:12 21:47	03:47 23:14	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:02	08:08 16:21	09:34 15:06
3	10:04 15:07	09:00 16:32	07:33 17:56	06:49 20:23	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:20	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:05
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:37 23:33	04:56 22:17	06:24 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:20	03:39 23:31	04:59 22:14	06:26 20:33	07:48 18:51	08:17 16:12	09:42 15:02
6	10:01 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:22	03:41 23:30	05:02 22:11	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:00
7	10:00 15:16	08:48 16:44	07:19 18:08	06:35 20:35	04:57 22:02	03:37 23:24	03:43 23:28	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:45 16:47	07:16 18:10	06:32 20:37	04:54 22:05	03:36 23:26	03:45 23:27	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:51 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:59 18:38	08:29 16:01	09:50 14:57
10	09:56 15:23	08:39 16:53	07:09 18:16	06:25 20:43	04:48 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:36 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:32 23:31	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:52 15:28	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:16	03:31 23:33	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	09:50 15:30	08:30 17:02	06:59 18:25	06:15 20:52	04:38 22:19	03:30 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:06	06:56 18:27	06:12 20:54	04:36 22:22	03:29 23:35	03:58 23:14	05:25 21:46	06:51 20:02	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:35	08:24 17:09	06:53 18:30	06:08 20:57	04:33 22:25	03:28 23:37	04:01 23:12	05:28 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:12	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:50 15:42	10:01 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:01 21:03	04:27 22:31	03:27 23:38	04:06 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:09	08:56 15:37	10:04 14:52
19	09:38 15:47	08:12 17:21	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 15:34	10:05 14:52
20	09:36 15:49	08:08 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:26 23:40	04:14 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 15:32	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:26 23:41	04:16 22:57	05:45 21:23	07:09 19:39	08:32 17:59	09:05 15:29	10:06 14:52
22	09:31 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:45	03:26 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:07 15:27	10:07 14:53
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:20	04:10 22:48	03:26 23:41	04:22 22:52	05:50 21:16	07:15 19:32	08:38 17:53	09:10 15:24	10:07 14:53
24	09:27 16:01	07:56 17:36	06:22 18:55	05:38 21:23	04:08 22:51	03:26 23:41	04:24 22:49	05:53 21:13	07:18 19:29	08:41 17:49	09:13 15:22	10:08 14:54
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:40	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:55
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:28 23:40	04:33 22:41	06:01 21:03	07:26 19:18	07:50 16:40	09:21 15:16	10:08 14:56
28	09:16 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:39	04:36 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:14 16:16	07:41 17:49	06:07 19:09	05:22 21:38	03:55 23:04	03:30 23:38	04:39 22:35	06:07 20:56	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:19	07:38 17:52	06:04 19:12	05:19 21:41	03:53 23:07	03:32 23:37	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:31	09:29 15:10	10:07 15:00
31	09:08 16:22	07:35 18:05	06:01 19:15	05:16 21:44	03:50 23:09	03:31 23:38	04:44 22:29	06:13 20:50	07:37 18:59	08:02 16:28	09:07 15:02	10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AF - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (101)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with 12 columns for months (January to December) and 31 rows of daily data. Each cell contains a time range (hh:mm) and some cells include 'K03' or 'K03)' indicating shadow events. Summary rows at the bottom show 'Potential sun hours' and various reduction factors.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AG - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (99)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:15	03:48	03:32	04:47	06:15	07:37	08:05	09:32
	15:03	16:25	17:50	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:28	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:48	05:09	03:44	03:35	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:17	23:35	22:21	20:40	18:58	16:18	15:04
4	10:04	08:57	07:29	06:45	05:06	03:42	03:37	04:56	06:23	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:40	03:39	04:58	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:51	16:12	15:01
6	10:02	08:51	07:23	06:38	05:00	03:39	03:40	05:01	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:20	06:35	04:56	03:37	03:42	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:07	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:06	14:59
8	09:59	08:46	07:16	06:32	04:53	03:35	03:44	05:07	06:34	07:56	08:26	09:49
	15:17	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:41	16:03	14:57
9	09:58	08:43	07:13	06:28	04:50	03:34	03:46	05:10	06:37	07:59	08:29	09:51
	15:20	16:50	18:13	20:40	22:08	23:29	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:40	07:10	06:25	04:47	03:32	03:48	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:37	07:06	06:21	04:44	03:31	03:51	05:16	06:42	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:31	15:55	14:54
12	09:53	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:53
13	09:51	08:30	06:59	06:15	04:38	03:29	03:55	05:22	06:48	08:10	08:41	09:58
	15:30	17:02	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:49	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:24	06:51	08:13	08:44	09:59
	15:32	17:05	18:27	20:55	22:23	23:36	23:15	21:46	20:02	18:22	15:47	14:52
15	09:47	08:24	06:53	06:08	04:32	03:27	04:00	05:27	06:53	08:15	08:47	10:01
	15:35	17:08	18:30	20:57	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:29	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:11	18:33	21:00	22:29	23:38	23:10	21:40	19:56	18:15	15:41	14:51
17	09:43	08:18	06:46	06:01	04:26	03:26	04:05	05:33	06:59	08:21	08:53	10:03
	15:41	17:14	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:51
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:43	17:18	18:39	21:06	22:34	23:40	23:05	21:33	19:49	18:08	15:36	14:51
19	09:39	08:12	06:39	05:55	04:21	03:25	04:10	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:41	21:09	22:37	23:40	23:03	21:30	19:45	18:05	15:34	14:51
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:31	14:51
21	09:34	08:05	06:33	05:48	04:15	03:25	04:16	05:44	07:09	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:25	04:19	05:47	07:12	08:35	09:08	10:07
	15:55	17:29	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:26	14:52
23	09:29	07:59	06:26	05:41	04:10	03:25	04:21	05:50	07:15	08:38	09:11	10:08
	15:58	17:32	18:53	21:21	22:49	23:41	22:52	21:17	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:07	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:35	18:55	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:53
25	09:24	07:52	06:19	05:35	04:05	03:26	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:17	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:32	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:15	14:56
28	09:17	07:43	06:09	05:25	03:57	03:29	04:35	06:04	07:28	07:53	09:25	10:08
	16:13	17:47	19:07	21:35	23:02	23:40	22:38	21:00	19:15	16:37	15:13	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:05	23:39	22:36	20:57	19:12	16:33	15:11	14:58
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:30	15:09	15:00
31	09:08		06:59		03:50		04:44	06:12		08:02		10:07
	16:22		20:15		23:10		22:30	20:50		16:27		15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AH - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (98)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:03	09:06 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:12	03:32 23:37	04:47 22:27	06:15 20:46	07:37 19:05	08:05 16:24	09:32 15:08
2	10:06 15:05	09:03 16:28	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:01	08:08 16:21	09:35 15:06
3	10:05 15:07	09:00 16:31	07:33 17:56	06:48 20:23	05:09 21:50	03:44 23:17	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:04
4	10:04 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:19	03:37 23:33	04:56 22:18	06:23 20:36	07:45 18:55	08:14 16:15	09:40 15:03
5	10:03 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:40 23:21	03:39 23:32	04:58 22:15	06:26 20:33	07:48 18:51	08:17 16:12	09:42 15:01
6	10:02 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:40 23:30	05:01 22:11	06:29 20:30	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:20 18:07	06:35 20:35	04:56 22:02	03:37 23:25	03:42 23:25	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:59 15:17	08:46 16:47	07:16 18:10	06:32 20:38	04:53 22:05	03:35 23:27	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:03	09:48 14:57
9	09:57 15:20	08:43 16:50	07:13 18:13	06:28 20:40	04:50 22:08	03:34 23:29	03:46 23:25	05:10 22:02	06:37 20:19	07:59 18:38	08:29 16:01	09:50 14:56
10	09:56 15:22	08:40 16:53	07:10 18:16	06:25 20:43	04:47 22:11	03:32 23:30	03:48 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:14	03:31 23:32	03:51 23:21	05:16 21:56	06:42 20:13	08:04 18:31	08:35 15:55	09:54 14:54
12	09:53 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	03:53 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:53
13	09:51 15:30	08:30 17:02	06:59 18:25	06:15 20:52	04:38 22:20	03:29 23:35	03:55 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:49	09:58 14:53
14	09:49 15:32	08:27 17:05	06:56 18:27	06:11 20:55	04:35 22:23	03:28 23:36	03:58 23:15	05:24 21:46	06:51 20:02	08:13 18:22	08:44 15:47	09:59 14:52
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:26	03:27 23:37	04:00 23:13	05:27 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:01 14:52
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:29	03:27 23:38	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 15:41	10:02 14:51
17	09:43 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:26 22:31	03:26 23:39	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:51
18	09:41 15:43	08:15 17:17	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:40	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:04 14:51
19	09:39 15:46	08:12 17:21	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40	04:10 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 15:34	10:05 14:51
20	09:36 15:49	08:08 17:24	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:41	04:13 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:51
21	09:34 15:52	08:05 17:26	06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:41	04:16 22:58	05:44 21:23	07:09 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:29	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:08 15:26	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:53	05:41 21:21	04:10 22:48	03:25 23:41	04:21 22:52	05:50 21:17	07:15 19:32	08:38 17:52	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	09:13 15:22	10:08 14:53
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:26 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:29	04:02 22:57	03:27 23:41	04:30 22:44	05:58 21:07	07:23 19:22	07:47 16:43	09:19 15:17	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:32 22:41	06:01 21:03	07:26 19:18	07:50 16:40	09:22 15:15	10:08 14:56
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:57 23:02	03:29 23:40	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:13	10:08 14:57
29	09:14 16:16	07:40 17:44	06:05 19:09	05:22 21:38	03:55 23:05	03:30 23:39	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:33	09:27 15:11	10:08 14:58
30	09:11 16:19	07:37 17:41	06:02 19:12	05:19 21:41	03:53 23:07	03:31 23:38	04:41 22:33	06:10 20:53	07:34 19:08	07:59 16:30	09:30 15:09	10:08 15:00
31	09:08 16:22	07:34 17:45	06:59 20:15	05:50 23:10	04:44 23:20	03:50 23:30	04:44 22:30	06:12 20:50	08:02 16:27	08:02 15:09	10:07 15:01	10:07 15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AI - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (80)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:15	03:48	03:32	04:47	06:15	07:36	08:05	09:32
	15:03	16:25	17:50	20:18	21:44	23:12	23:37	22:27	20:46	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:28	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:01	16:21	15:06
3	10:05	09:00	07:33	06:48	05:09	03:44	03:35	04:53	06:21	07:42	08:11	09:37
	15:07	16:31	17:56	20:23	21:50	23:16	23:35	22:21	20:40	18:58	16:18	15:04
4	10:04	08:57	07:29	06:45	05:06	03:42	03:37	04:55	06:23	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:17	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:40	03:39	04:58	06:26	07:47	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:51	16:12	15:01
6	10:01	08:51	07:23	06:38	05:00	03:39	03:40	05:01	06:29	07:50	08:20	09:44
	15:13	16:41	18:04	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:19	06:35	04:56	03:37	03:42	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:07	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:06	14:58
8	09:59	08:45	07:16	06:31	04:53	03:35	03:44	05:07	06:34	07:56	08:26	09:48
	15:17	16:47	18:10	20:37	22:05	23:27	23:27	22:05	20:23	18:41	16:03	14:57
9	09:57	08:42	07:13	06:28	04:50	03:34	03:46	05:10	06:37	07:58	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:39	07:09	06:25	04:47	03:32	03:48	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:36	07:06	06:21	04:44	03:31	03:51	05:16	06:42	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:31	15:55	14:54
12	09:52	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:53
13	09:51	08:30	06:59	06:15	04:38	03:29	03:55	05:22	06:48	08:10	08:41	09:57
	15:30	17:02	18:24	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:49	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:24	06:50	08:12	08:44	09:59
	15:32	17:05	18:27	20:54	22:23	23:36	23:15	21:46	20:02	18:21	15:47	14:52
15	09:47	08:24	06:53	06:08	04:32	03:27	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:08	18:30	20:57	22:25	23:37	23:12	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:29	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:11	18:33	21:00	22:28	23:38	23:10	21:39	19:56	18:15	15:41	14:51
17	09:43	08:18	06:46	06:01	04:26	03:26	04:05	05:33	06:59	08:21	08:53	10:03
	15:40	17:14	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:51
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:43	17:17	18:39	21:06	22:34	23:40	23:05	21:33	19:49	18:08	15:36	14:51
19	09:38	08:12	06:39	05:55	04:21	03:25	04:10	05:39	07:04	08:27	08:59	10:05
	15:46	17:20	18:41	21:09	22:37	23:40	23:03	21:30	19:45	18:05	15:34	14:51
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:23	18:44	21:12	22:40	23:41	23:00	21:26	19:42	18:02	15:31	14:51
21	09:34	08:05	06:32	05:48	04:15	03:25	04:16	05:44	07:09	08:32	09:05	10:07
	15:52	17:26	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:25	04:18	05:47	07:12	08:35	09:08	10:07
	15:55	17:29	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:55	15:26	14:52
23	09:29	07:59	06:26	05:41	04:10	03:25	04:21	05:50	07:15	08:38	09:10	10:08
	15:58	17:32	18:53	21:20	22:48	23:41	22:52	21:16	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:07	03:26	04:24	05:53	07:17	08:41	09:13	10:08
	16:01	17:35	18:55	21:23	22:51	23:41	22:50	21:13	19:28	17:49	15:22	14:53
25	09:24	07:52	06:19	05:35	04:05	03:26	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:15	05:32	04:02	03:27	04:30	05:58	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:17	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:32	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:15	14:56
28	09:16	07:43	06:09	05:25	03:57	03:29	04:35	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:13	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:56	19:12	16:33	15:11	14:58
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:30	15:09	15:00
31	09:08		06:59		03:50		04:44	06:12		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AJ - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (79)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:03	09:06 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:12	03:32 23:37	04:47 22:27	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:03 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:46 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:01	08:08 16:21	09:35 15:06
3	10:05 15:07	09:00 16:31	07:33 17:56	06:48 20:23	05:09 21:50	03:44 23:16	03:35 23:34	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:04
4	10:04 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:19	03:37 23:33	04:55 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:03 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:40 23:21	03:39 23:32	04:58 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:42 15:01
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:59	03:39 23:23	03:40 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:35	04:56 22:02	03:37 23:25	03:42 23:29	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:58
8	09:59 15:17	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:05	03:35 23:27	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:03	09:48 14:57
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:08	03:34 23:28	03:46 23:25	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56
10	09:56 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:11	03:32 23:30	03:48 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:14	03:31 23:32	03:51 23:21	05:16 21:56	06:42 20:13	08:04 18:31	08:35 15:55	09:54 14:54
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:53
13	09:51 15:30	08:30 17:02	06:59 18:24	06:15 20:52	04:38 22:20	03:29 23:35	03:55 23:17	05:21 21:49	06:48 20:06	08:10 18:25	08:41 15:49	09:57 14:53
14	09:49 15:32	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:36	03:58 23:15	05:24 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:59 14:52
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:27 23:37	04:00 23:12	05:27 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:28	03:27 23:38	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:50 15:41	10:02 14:51
17	09:43 15:40	08:18 17:14	06:46 18:36	06:01 21:03	04:26 22:31	03:26 23:39	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:51
18	09:41 15:43	08:15 17:17	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:04 14:51
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40	04:10 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 15:34	10:05 14:51
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:41	04:13 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:51
21	09:34 15:52	08:05 17:26	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41	04:16 22:58	05:44 21:23	07:09 19:39	08:32 17:59	09:05 15:29	10:06 14:52
22	09:32 15:55	08:02 17:29	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:41	04:18 22:55	05:47 21:20	07:12 19:35	08:35 17:55	09:08 15:26	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:53	05:41 21:20	04:10 22:48	03:25 23:41	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:08 14:53
24	09:27 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:24 22:50	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:08 14:53
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:26 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:22 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	03:27 23:40	04:30 22:44	05:58 21:06	07:23 19:22	07:47 16:43	09:19 15:17	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:32 22:41	06:01 21:03	07:26 19:18	07:50 16:40	09:22 15:15	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:02	03:29 23:39	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:13	10:08 14:57
29	09:14 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:39	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 15:11	10:08 14:58
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:30	09:30 15:09	10:07 15:00
31	09:08 16:22		06:59 20:15	05:50 23:09	03:50 23:09		04:44 22:30	06:12 20:50	08:02 16:27			10:07 15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AL - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (73)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:49 23:11	03:33 23:36	04:47 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:02 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:47 23:13	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:34 15:06
3	10:04 15:07	09:00 16:32	07:32 17:56	06:48 20:23	05:09 21:50	03:45 23:16	03:36 23:34	04:53 22:20	06:21 20:39	07:42 18:58	08:11 16:18	09:37 15:05
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:43 23:18	03:37 23:32	04:56 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:55	03:41 23:20	03:39 23:31	04:59 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:41 15:02
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:58	03:39 23:22	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:34	04:57 22:01	03:37 23:24	03:43 23:28	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:58 15:18	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:04	03:36 23:26	03:45 23:26	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:07	03:34 23:28	03:47 23:24	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:57
10	09:55 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:10	03:33 23:29	03:49 23:22	05:13 21:58	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:56
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:13	03:32 23:31	03:51 23:21	05:16 21:55	06:42 20:12	08:04 18:31	08:35 15:55	09:54 14:55
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:16	03:30 23:32	03:53 23:18	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:55 14:54
13	09:50 15:30	08:30 17:02	06:59 18:24	06:15 20:51	04:38 22:19	03:29 23:34	03:56 23:16	05:22 21:49	06:48 20:06	08:09 18:25	08:41 15:50	09:57 14:53
14	09:48 15:33	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:29 23:35	03:58 23:14	05:25 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:58 14:53
15	09:46 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:28 23:36	04:01 23:12	05:27 21:42	06:53 18:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:44 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:37	04:03 23:10	05:30 21:39	06:56 19:55	08:18 18:15	08:50 15:42	10:01 14:52
17	09:42 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:27 22:31	03:27 23:38	04:06 23:07	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:02 14:52
18	09:40 15:44	08:14 17:17	06:42 18:38	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:03 14:52
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:39	04:11 23:02	05:39 21:29	07:04 19:45	08:26 18:05	08:58 15:34	10:04 14:52
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:11	04:18 22:39	03:26 23:40	04:13 23:00	05:42 21:26	07:07 19:42	08:29 18:02	09:01 15:31	10:05 14:52
21	09:33 15:52	08:05 17:26	06:32 18:47	05:48 21:14	04:16 22:42	03:26 23:40	04:16 22:57	05:44 21:23	07:09 19:38	08:32 17:59	09:04 15:29	10:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:26 23:40	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:07 15:27	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:52	05:41 21:20	04:10 22:48	03:26 23:40	04:22 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53
24	09:26 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:08 22:51	03:26 23:40	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:07 14:54
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:53	03:27 23:40	04:27 22:46	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:21 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:03 22:56	03:28 23:40	04:30 22:44	05:58 21:06	07:23 19:22	07:47 16:43	09:18 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:39	04:33 22:41	06:01 21:03	07:25 19:18	07:50 16:40	09:21 15:16	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:58 23:01	03:29 23:39	04:36 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:58
29	09:13 16:16	07:39 19:05	06:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 15:12	10:07 14:59
30	09:11 16:19	07:37 19:02	06:03 20:12	05:19 21:41	03:53 23:06	03:32 23:37	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00
31	09:08 16:22	07:35 20:15	06:58 20:58	05:51 21:41	04:31 23:09	03:51 23:09	04:44 22:29	06:12 20:50	08:02 16:27	08:02 15:02	10:06 15:02	10:06 15:02
Potential sun hours	185	244	364	446	556	600	590	500	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AM - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (94)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:05	07:39	06:55	05:15	03:48	03:32	04:47	06:15	07:36	08:05	09:32
	15:03	16:25	17:50	20:18	21:44	23:12	23:37	22:26	20:46	19:05	16:24	15:08
2	10:05	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:28	17:53	20:20	21:47	23:14	23:36	22:23	20:43	19:01	16:21	15:06
3	10:05	09:00	07:33	06:48	05:09	03:44	03:35	04:52	06:20	07:42	08:11	09:37
	15:07	16:31	17:56	20:23	21:50	23:16	23:34	22:20	20:40	18:58	16:18	15:04
4	10:04	08:57	07:29	06:45	05:06	03:42	03:37	04:55	06:23	07:45	08:14	09:39
	15:09	16:34	17:59	20:26	21:53	23:18	23:33	22:17	20:36	18:55	16:15	15:03
5	10:02	08:54	07:26	06:42	05:03	03:40	03:38	04:58	06:26	07:47	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:51	16:12	15:01
6	10:01	08:51	07:23	06:38	04:59	03:38	03:40	05:01	06:29	07:50	08:20	09:44
	15:13	16:41	18:04	20:32	21:59	23:23	23:30	22:11	20:29	18:48	16:09	15:00
7	10:00	08:48	07:19	06:35	04:56	03:37	03:42	05:04	06:31	07:53	08:23	09:46
	15:15	16:44	18:07	20:34	22:02	23:25	23:28	22:08	20:26	18:45	16:06	14:58
8	09:59	08:45	07:16	06:31	04:53	03:35	03:44	05:07	06:34	07:56	08:26	09:48
	15:17	16:47	18:10	20:37	22:05	23:27	23:27	22:05	20:23	18:41	16:03	14:57
9	09:57	08:42	07:13	06:28	04:50	03:34	03:46	05:10	06:37	07:58	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:00	14:56
10	09:56	08:39	07:09	06:25	04:47	03:32	03:48	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:36	07:06	06:21	04:44	03:31	03:51	05:16	06:42	08:04	08:35	09:54
	15:24	16:56	18:19	20:46	22:14	23:32	23:21	21:55	20:12	18:31	15:55	14:54
12	09:52	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:53
13	09:51	08:30	06:59	06:15	04:38	03:29	03:55	05:21	06:48	08:10	08:41	09:57
	15:30	17:02	18:24	20:52	22:19	23:34	23:17	21:49	20:06	18:25	15:49	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:24	06:50	08:12	08:44	09:59
	15:32	17:05	18:27	20:54	22:22	23:36	23:15	21:46	20:02	18:21	15:47	14:52
15	09:47	08:24	06:53	06:08	04:32	03:27	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:08	18:30	20:57	22:25	23:37	23:12	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:29	03:26	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:11	18:33	21:00	22:28	23:38	23:10	21:39	19:55	18:15	15:41	14:51
17	09:43	08:18	06:46	06:01	04:26	03:26	04:05	05:33	06:58	08:21	08:53	10:03
	15:40	17:14	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:51
18	09:41	08:15	06:42	05:58	04:23	03:25	04:08	05:36	07:01	08:24	08:56	10:04
	15:43	17:17	18:38	21:06	22:34	23:39	23:05	21:33	19:49	18:08	15:36	14:51
19	09:38	08:11	06:39	05:55	04:21	03:25	04:10	05:39	07:04	08:27	08:59	10:05
	15:46	17:20	18:41	21:09	22:37	23:40	23:03	21:30	19:45	18:05	15:34	14:51
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:41	07:07	08:29	09:02	10:06
	15:49	17:23	18:44	21:12	22:40	23:40	23:00	21:26	19:42	18:02	15:31	14:51
21	09:34	08:05	06:32	05:48	04:15	03:25	04:16	05:44	07:09	08:32	09:05	10:06
	15:52	17:26	18:47	21:15	22:43	23:41	22:58	21:23	19:38	17:59	15:29	14:52
22	09:31	08:02	06:29	05:45	04:12	03:25	04:18	05:47	07:12	08:35	09:07	10:07
	15:55	17:29	18:50	21:17	22:45	23:41	22:55	21:20	19:35	17:55	15:26	14:52
23	09:29	07:59	06:26	05:41	04:10	03:25	04:21	05:50	07:15	08:38	09:10	10:07
	15:58	17:32	18:52	21:20	22:48	23:41	22:52	21:16	19:32	17:52	15:24	14:53
24	09:27	07:55	06:22	05:38	04:07	03:26	04:24	05:53	07:17	08:41	09:13	10:08
	16:01	17:35	18:55	21:23	22:51	23:41	22:49	21:13	19:28	17:49	15:22	14:53
25	09:24	07:52	06:19	05:35	04:05	03:26	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:19	14:54
26	09:22	07:49	06:15	05:31	04:02	03:27	04:30	05:58	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:56	23:40	22:44	21:06	19:22	16:43	15:17	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:32	06:01	07:25	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:15	14:56
28	09:16	07:42	06:09	05:25	03:57	03:29	04:35	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:06	21:35	23:02	23:39	22:38	21:00	19:15	16:36	15:13	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:56	19:11	16:33	15:11	14:58
30	09:11		07:02	05:18	03:53	03:31	04:41	06:09	07:34	07:59	09:29	10:07
	16:19		20:12	21:41	23:07	23:38	22:32	20:53	19:08	16:30	15:09	15:00
31	09:08		06:58		03:50		04:44	06:12		08:02		10:07
	16:22		20:15		23:09		22:29	20:50		16:27		15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AN - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (74)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:11	03:33 23:36	04:47 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:02 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:46 23:14	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:34 15:06
3	10:04 15:07	09:00 16:31	07:32 17:56	06:48 20:23	05:09 21:50	03:44 23:16	03:36 23:34	04:53 22:20	06:21 20:39	07:42 18:58	08:11 16:18	09:37 15:04
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:18	03:37 23:33	04:56 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:20	03:39 23:31	04:58 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:41 15:01
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:58	03:39 23:22	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:34	04:56 22:01	03:37 23:24	03:43 23:28	05:04 22:08	06:31 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:58 15:18	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:04	03:36 23:26	03:45 23:26	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:03	09:48 14:57
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:07	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56
10	09:55 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:10	03:33 23:30	03:49 23:23	05:13 21:58	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:13	03:31 23:31	03:51 23:21	05:16 21:55	06:42 20:12	08:04 18:31	08:35 15:55	09:54 14:54
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:16	03:30 23:33	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:55 14:54
13	09:50 15:30	08:30 17:02	06:59 18:24	06:15 20:51	04:38 22:19	03:29 23:34	03:56 23:16	05:22 21:49	06:48 20:06	08:09 18:25	08:41 15:49	09:57 14:53
14	09:48 15:32	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:35	03:58 23:14	05:24 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:58 14:52
15	09:46 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:28 23:36	04:00 23:12	05:27 21:42	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:44 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:28	03:27 23:37	04:03 23:10	05:30 21:39	06:56 19:55	08:18 18:15	08:50 15:41	10:01 14:52
17	09:42 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:38	04:05 23:07	05:33 21:36	06:58 19:52	08:21 18:12	08:53 15:39	10:02 14:51
18	09:40 15:43	08:14 17:17	06:42 18:38	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:03 14:51
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:02	05:39 21:29	07:04 19:45	08:27 18:05	08:59 15:34	10:04 14:51
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:11	04:18 22:39	03:25 23:40	04:13 23:00	05:42 21:26	07:07 19:42	08:29 18:02	09:01 15:31	10:05 14:52
21	09:34 15:52	08:05 17:26	06:32 18:47	05:48 21:14	04:15 22:42	03:25 23:40	04:16 22:57	05:44 21:23	07:09 19:38	08:32 17:59	09:04 15:29	10:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:26 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:55	09:07 15:26	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:52	05:41 21:20	04:10 22:48	03:26 23:41	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53
24	09:26 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:40	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:07 14:53
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:53	03:27 23:40	04:27 22:46	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:21 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	03:27 23:40	04:30 22:44	05:58 21:06	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:39	04:33 22:41	06:01 21:03	07:25 19:18	07:50 16:40	09:21 15:15	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:01	03:29 23:39	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:13	10:08 14:57
29	09:13 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 15:11	10:07 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:06	03:31 23:37	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00
31	09:08 16:22		06:58 20:15	05:15 23:09	03:51 23:09		04:44 22:29	06:12 20:50	08:02 16:27			10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Kattiharju

Licensed user:

Norconsult AS
Postboks 8984
NO-7439 Trondheim
(+47) 480 50 480
Hanna Sabelström / hanna.sabelstrom@norconsult.com
Calculated:
2024-05-27 15:15/4.0.531

SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AO - Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (93)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

Table with columns for months (January to December) and rows for days (1 to 31). Each cell contains a time range (hh:mm) and some cells include a number of occurrences. Summary rows at the bottom show 'Potential sun hours', 'Total, worst case', 'Sun reduction', 'Oper. time red.', 'Wind dir. red.', 'Total reduction', and 'Total, real'.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) Minutes with flicker First time (hh:mm) with flicker Last time (hh:mm) with flicker (WTG causing flicker first time) (WTG causing flicker last time)



SHADOW - Calendar

Calculation: VE1: Kattiharju+extension_with_forest Shadow receptor: AP - Shadow Receptor: 5.0 × 5.0 Azimuth: 0.0° Slope: 0.0° (76)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

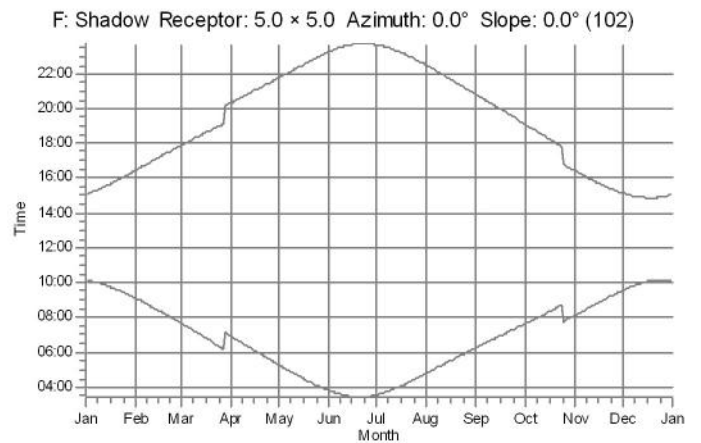
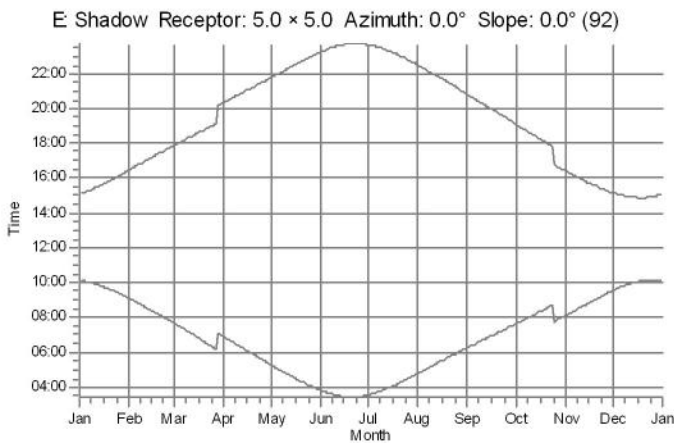
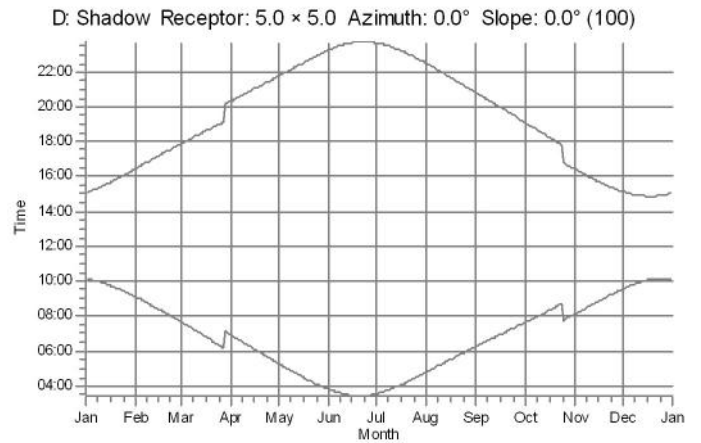
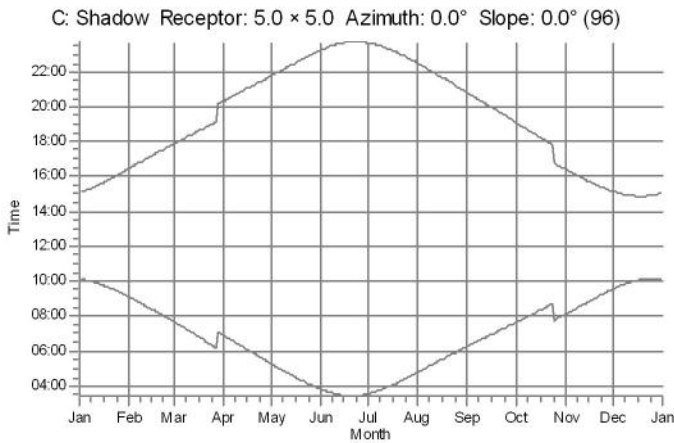
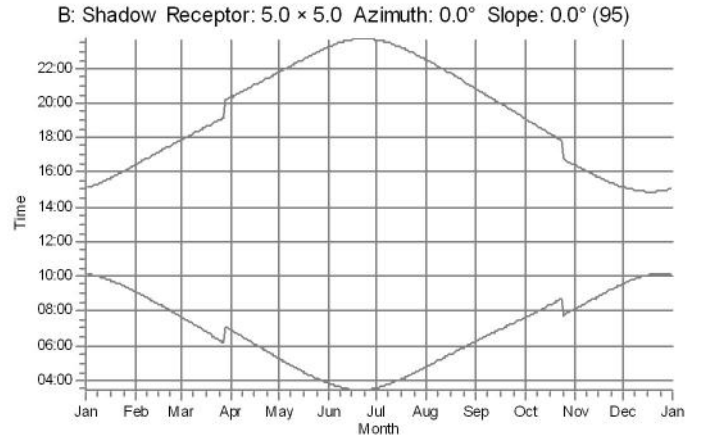
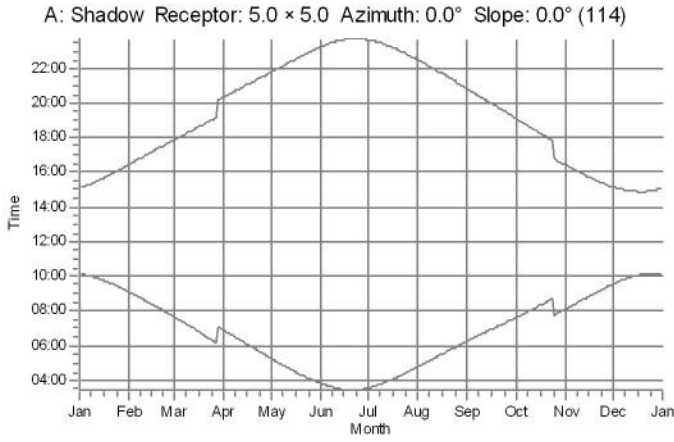
	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:03	09:05 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:11	03:33 23:36	04:47 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:02 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:46 23:14	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:34 15:06
3	10:04 15:07	09:00 16:31	07:32 17:56	06:48 20:23	05:09 21:50	03:44 23:16	03:35 23:34	04:53 22:20	06:20 20:39	07:42 18:58	08:11 16:18	09:37 15:04
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:18	03:37 23:33	04:55 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:20	03:39 23:31	04:58 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:41 15:01
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:59	03:39 23:22	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:34	04:56 22:01	03:37 23:24	03:42 23:28	05:04 22:08	06:31 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:58 15:17	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:04	03:35 23:26	03:44 23:26	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:03	09:48 14:57
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:07	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56
10	09:55 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:10	03:33 23:30	03:49 23:23	05:13 21:58	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:13	03:31 23:31	03:51 23:21	05:16 21:55	06:42 20:12	08:04 18:31	08:35 15:55	09:54 14:54
12	09:52 15:27	08:33 16:59	07:03 18:21	06:18 20:49	04:41 22:16	03:30 23:33	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:55 14:54
13	09:50 15:30	08:30 17:02	06:59 18:24	06:15 20:51	04:38 22:19	03:29 23:34	03:55 23:16	05:22 21:49	06:48 20:06	08:09 18:25	08:41 15:49	09:57 14:53
14	09:48 15:32	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:35	03:58 23:14	05:24 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:59 14:52
15	09:46 15:35	08:24 17:08	06:52 18:30	06:08 20:57	04:32 22:25	03:27 23:36	04:00 23:12	05:27 21:42	06:53 18:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:44 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:28	03:27 23:37	04:03 23:10	05:30 21:39	06:56 19:55	08:18 18:15	08:50 15:41	10:01 14:52
17	09:42 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:26 22:31	03:26 23:38	04:05 23:07	05:33 21:36	06:58 19:52	08:21 18:12	08:53 15:39	10:02 14:51
18	09:40 15:43	08:14 17:17	06:42 18:38	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:04 14:51
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:02	05:39 21:29	07:04 19:45	08:26 18:05	08:59 15:34	10:04 14:51
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:11	04:18 22:40	03:25 23:40	04:13 23:00	05:41 21:26	07:07 19:42	08:29 18:02	09:01 15:31	10:05 14:52
21	09:34 15:52	08:05 17:26	06:32 18:47	05:48 21:14	04:15 22:42	03:25 23:40	04:16 22:57	05:44 21:23	07:09 19:38	08:32 17:59	09:04 15:29	10:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:25 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:55	09:07 15:26	10:07 14:52
23	09:29 15:58	07:59 17:32	06:25 18:52	05:41 21:20	04:10 22:48	03:26 23:41	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53
24	09:26 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:08 14:53
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:53	03:27 23:40	04:27 22:46	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:21 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	03:27 23:40	04:30 22:44	05:58 21:06	07:23 19:21	07:47 16:43	09:19 15:17	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:33 22:41	06:01 21:03	07:25 19:18	07:50 16:40	09:21 15:15	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:01	03:29 23:39	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:36	09:24 15:13	10:08 14:57
29	09:13 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 15:11	10:07 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:06	03:31 23:37	04:41 22:32	06:09 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00
31	09:08 16:22		06:58 20:15	05:15 23:09	03:51 23:09		04:44 22:29	06:12 20:50	08:02 16:27			10:07 15:01
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar, graphical

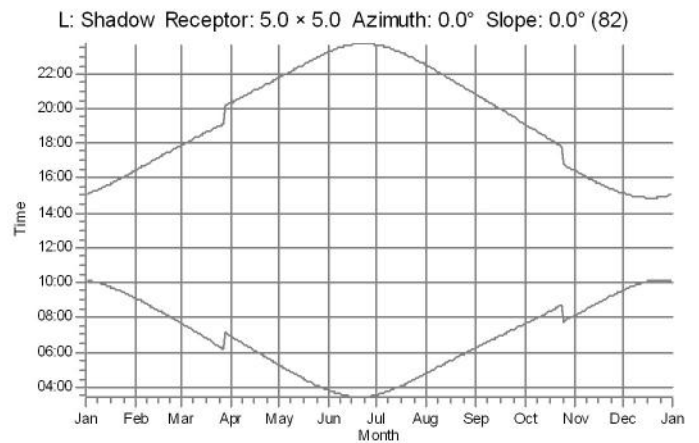
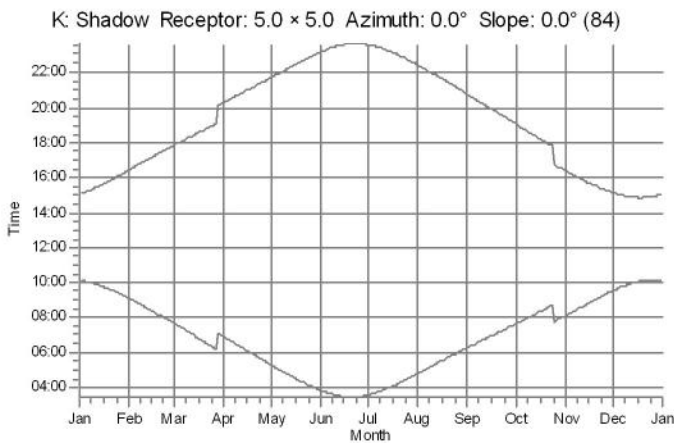
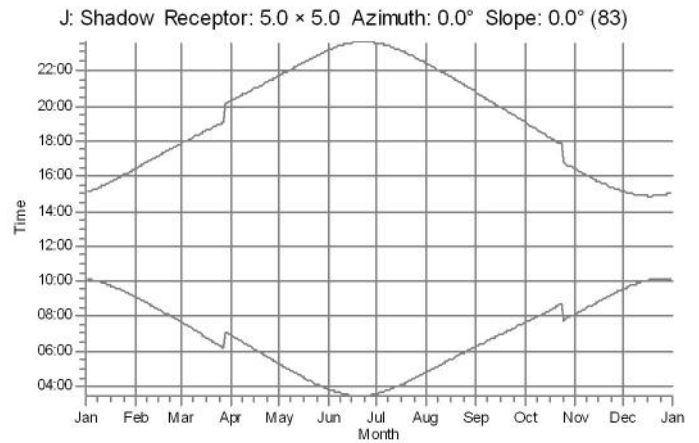
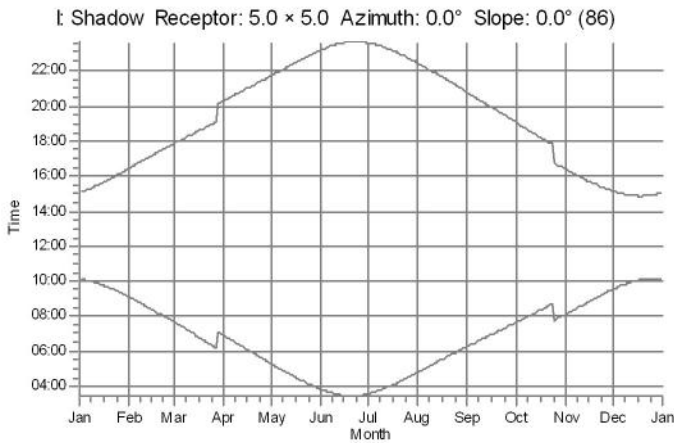
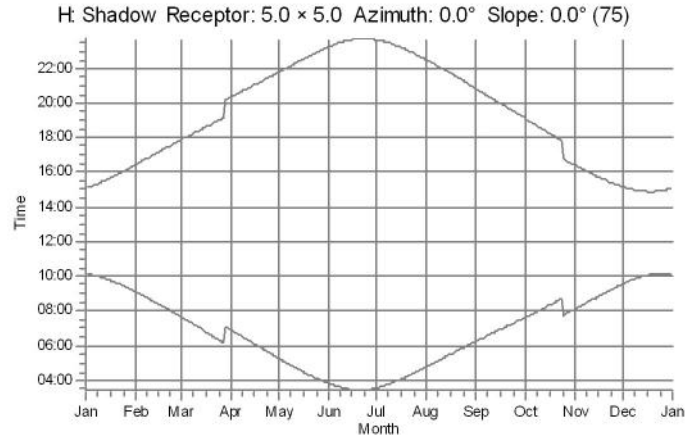
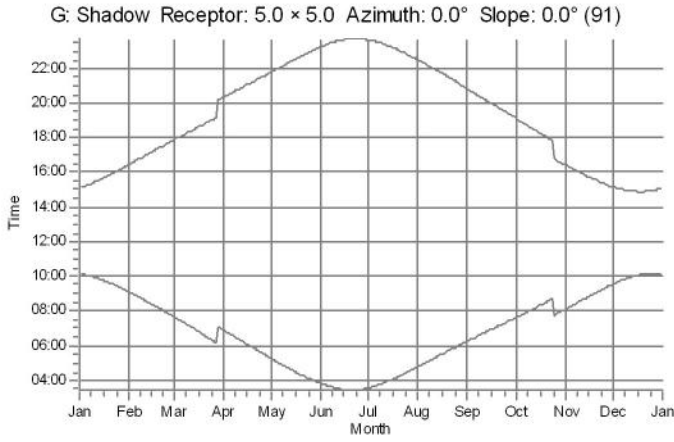
Calculation: VE1: Kattiharju+extension_with_forest



WTGs

SHADOW - Calendar, graphical

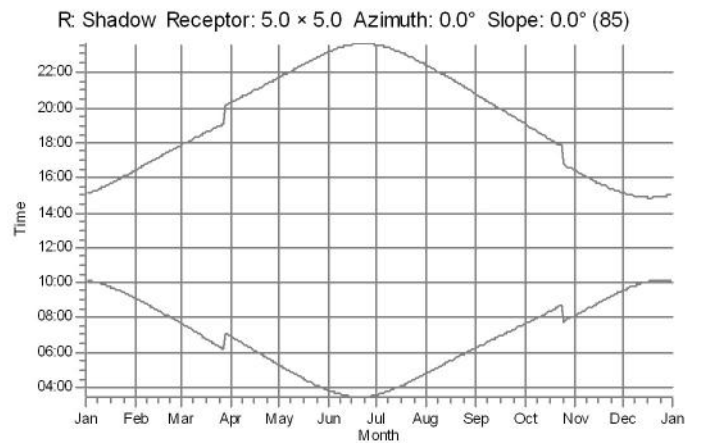
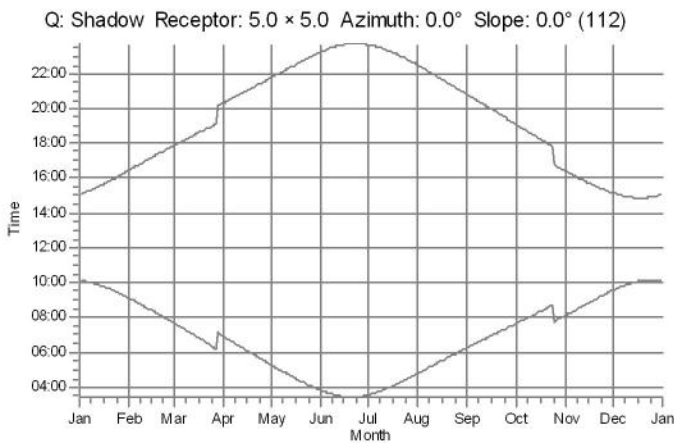
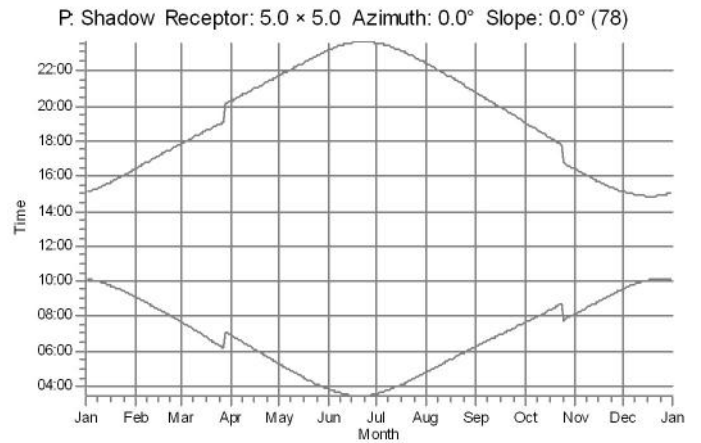
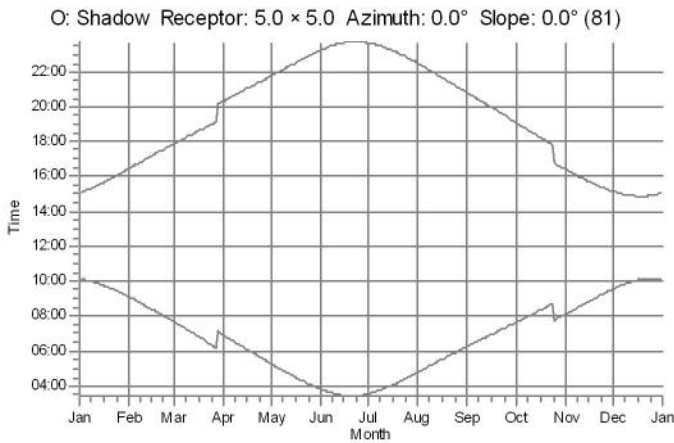
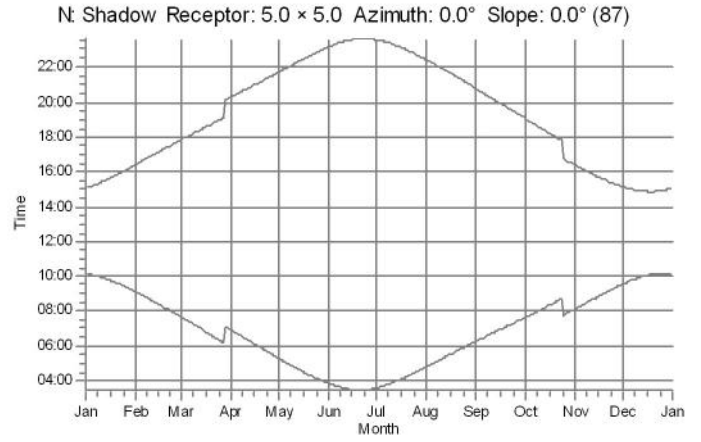
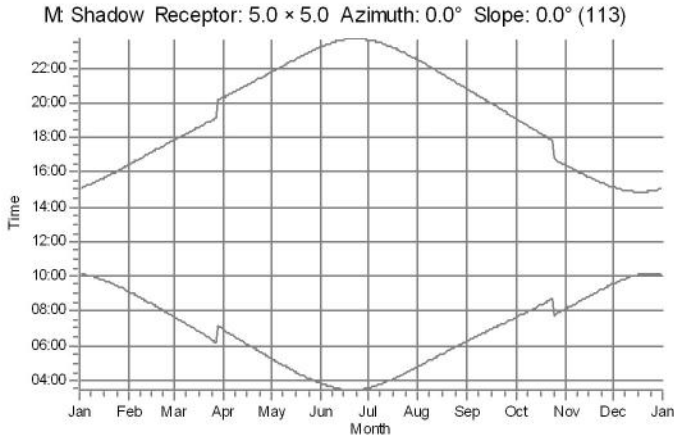
Calculation: VE1: Kattiharju+extension_with_forest



WTGs

SHADOW - Calendar, graphical

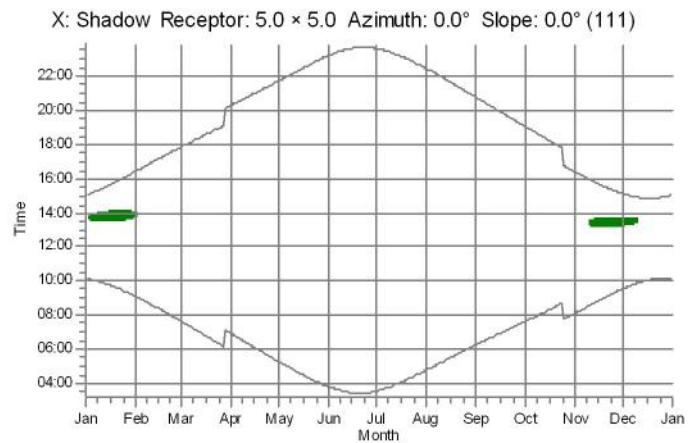
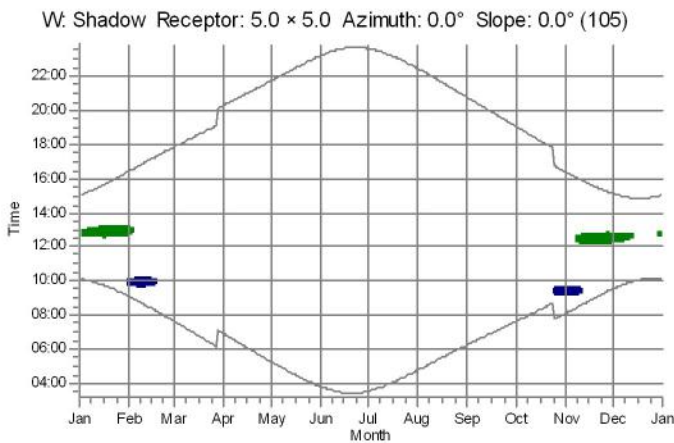
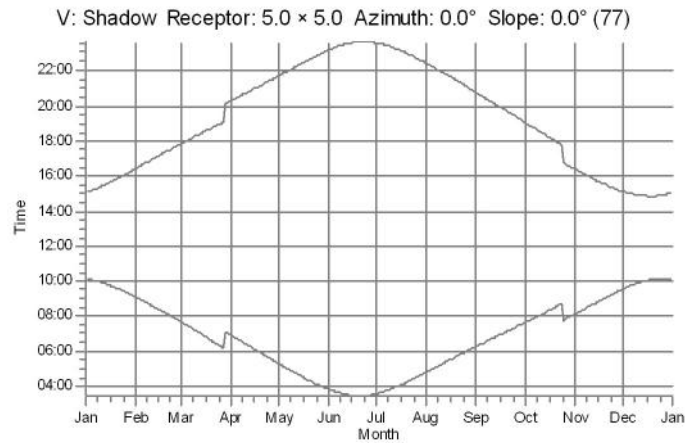
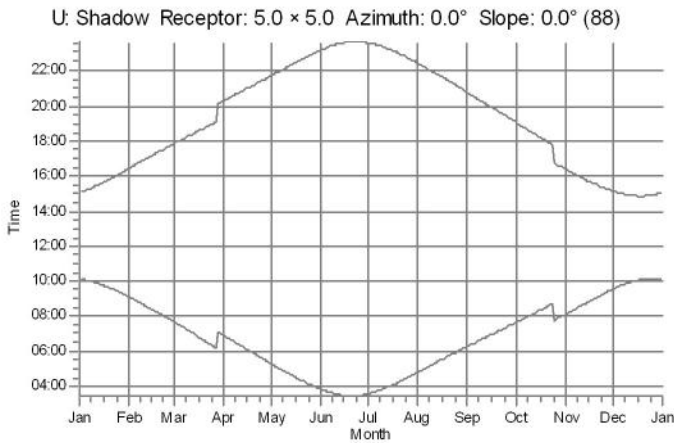
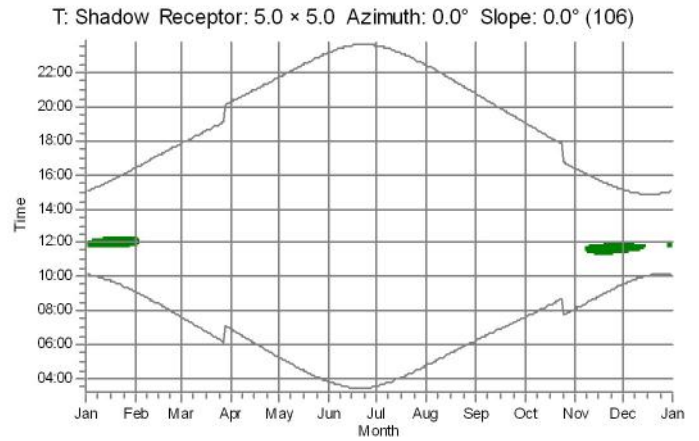
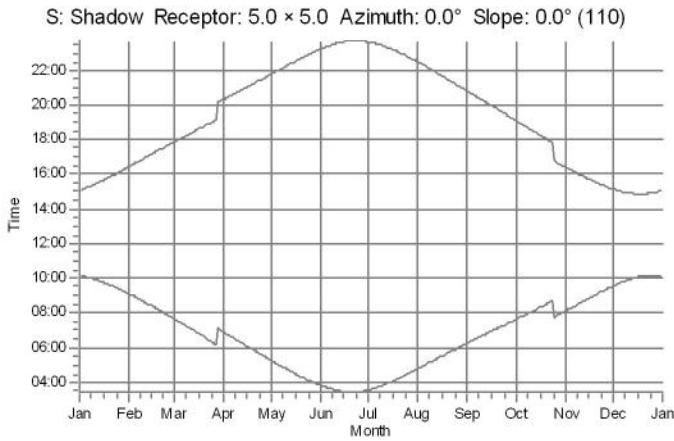
Calculation: VE1: Kattiharju+extension_with_forest



WTGs

SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_with_forest



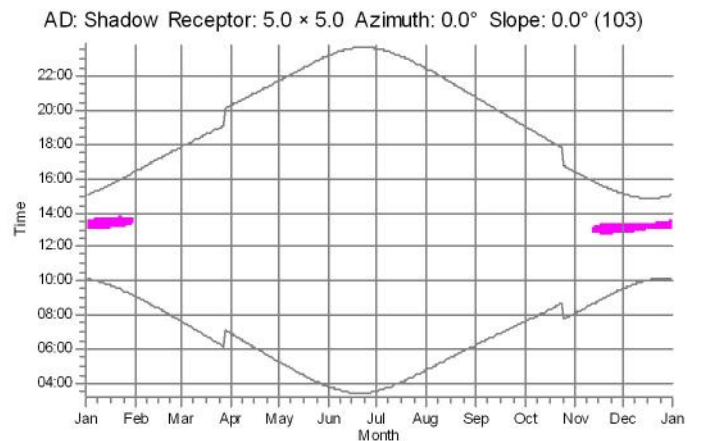
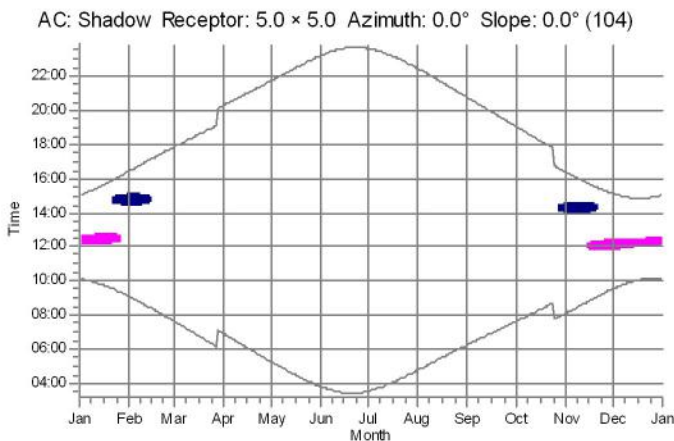
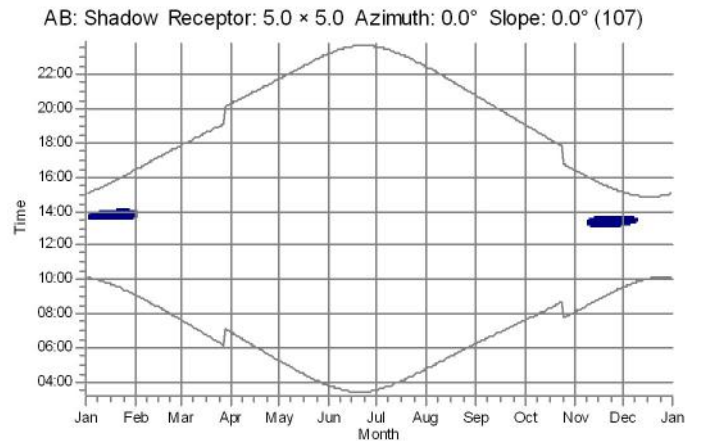
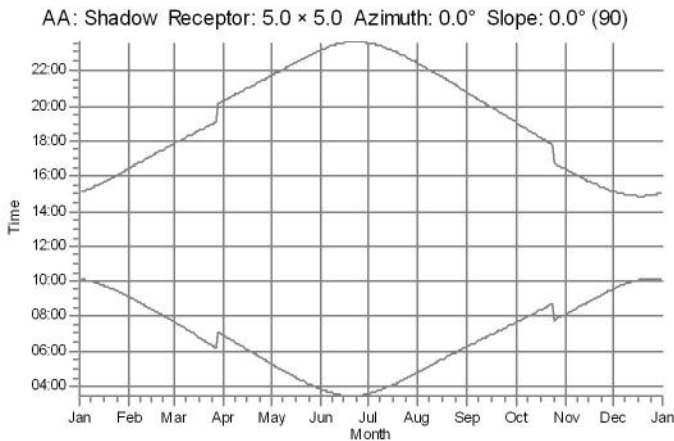
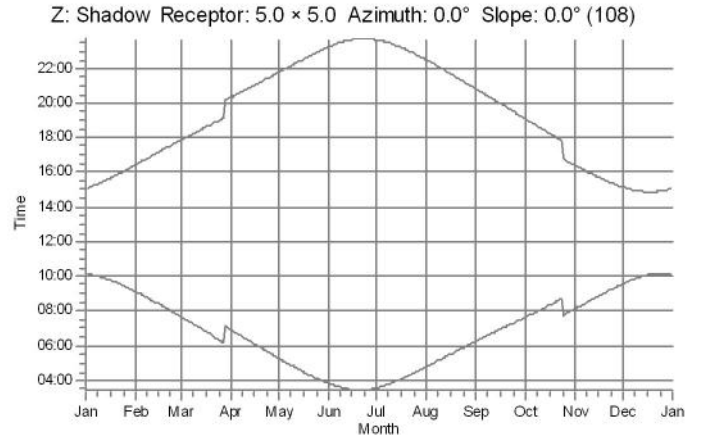
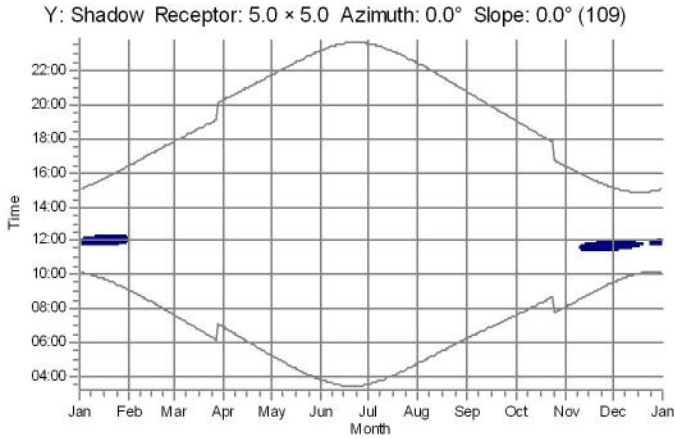
WTGs

■ Extension WTG 01: NORDEX Generic 180-169 6800 180.0 I-I hub: 169.0 m (TOT: 259.0 m) (93)

■ K05: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (5)

SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_with_forest



WTGs

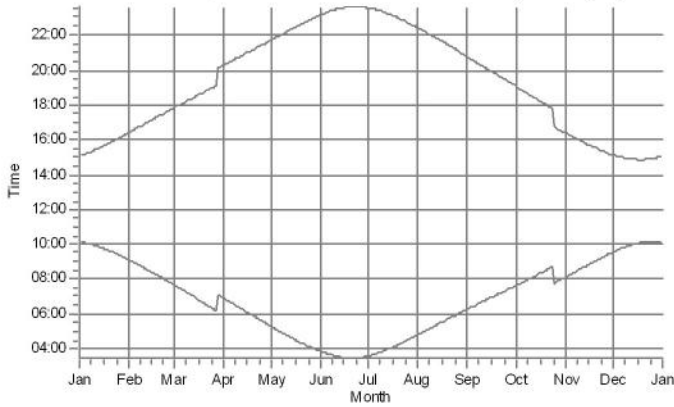
K03: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (3)

K05: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (5)

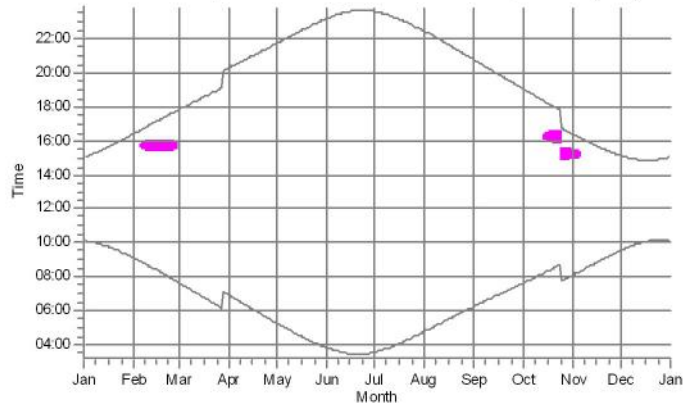
SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_with_forest

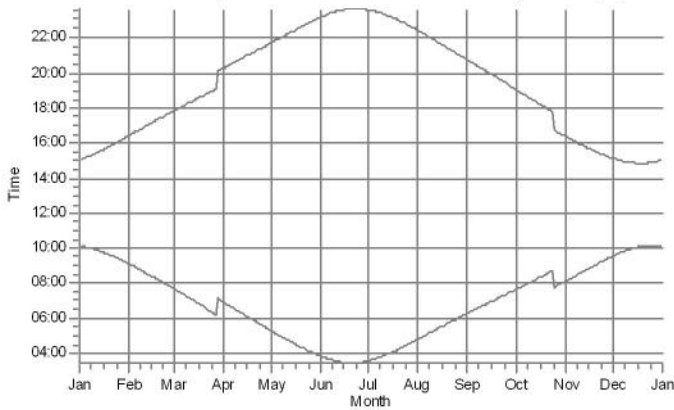
AE: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (89)



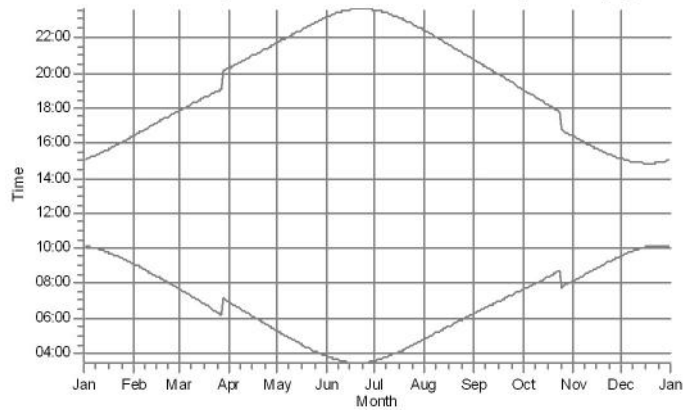
AF: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (101)



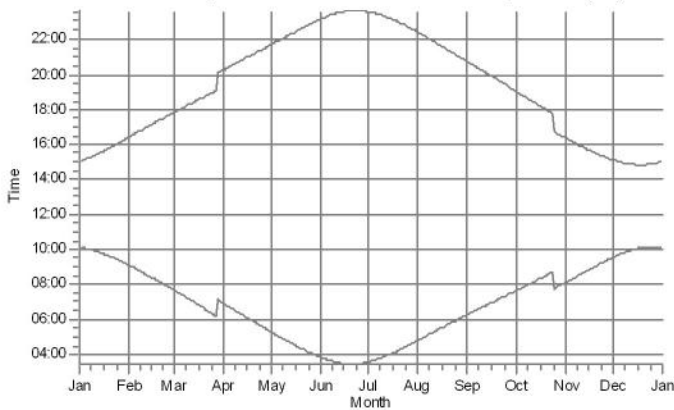
AG: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (99)



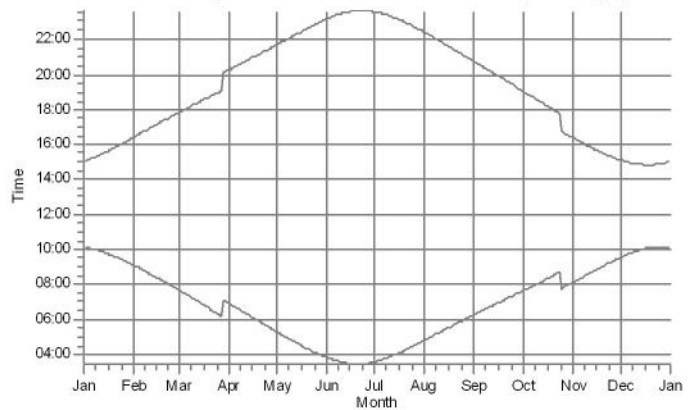
AH: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (98)



AI: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (80)



AJ: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (79)



WTGs

K03: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (3)

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

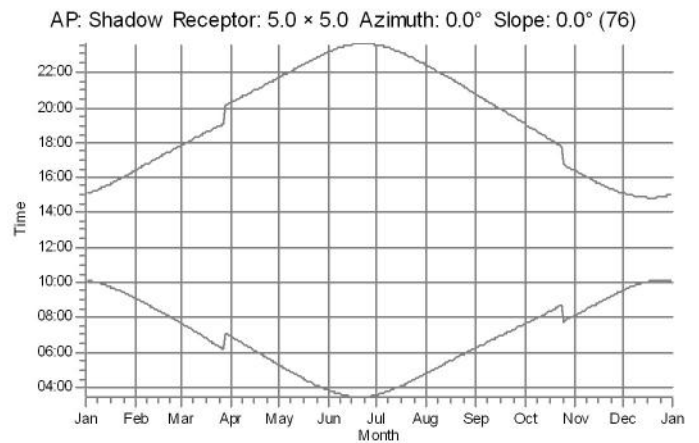
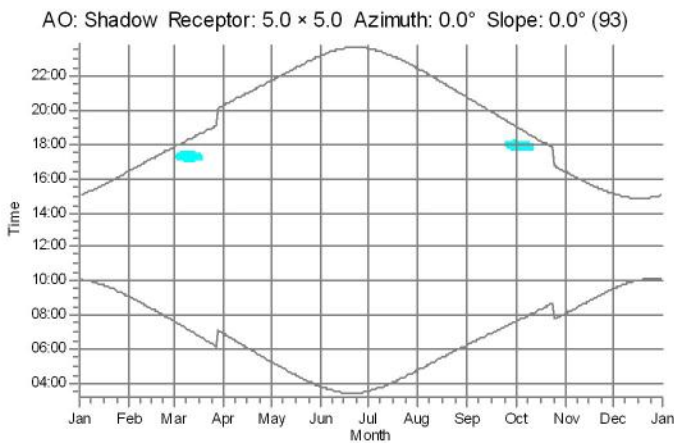
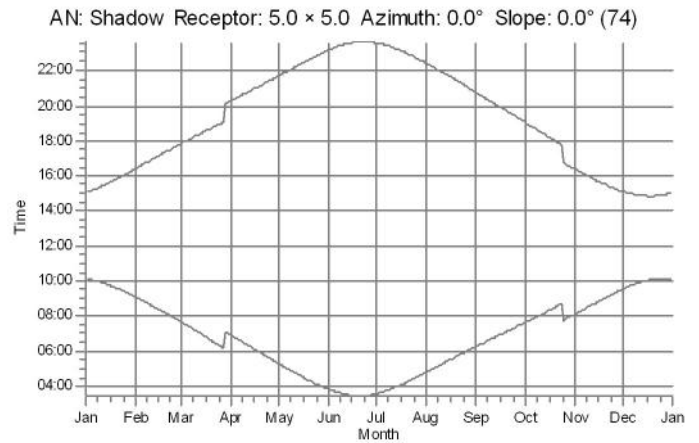
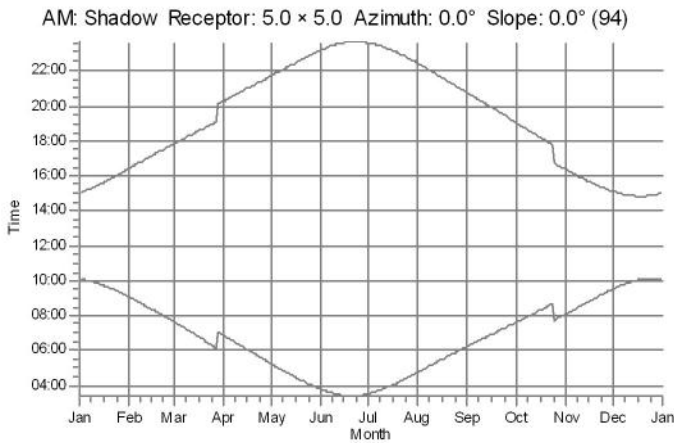
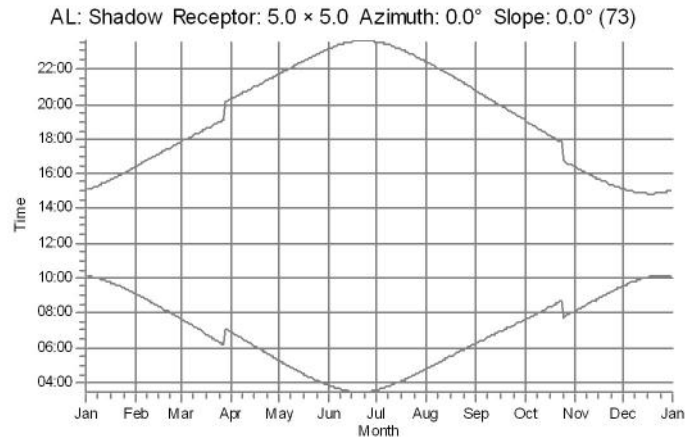
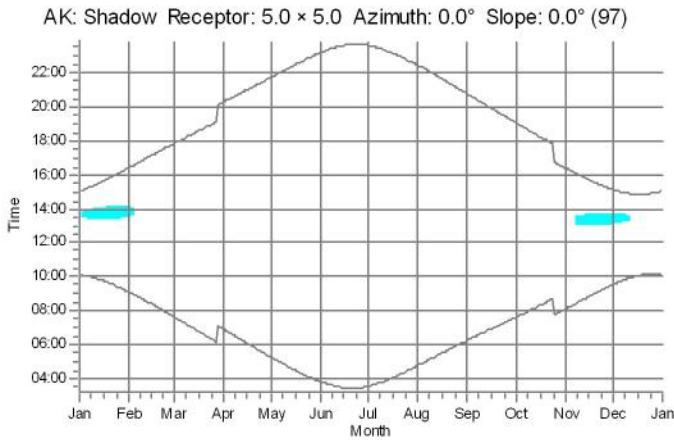
Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:


2024-05-27 15:15/4.0.531

SHADOW - Calendar, graphical

Calculation: VE1: Kattiharju+extension_with_forest



WTGs

 K11: NORDEX N163/6.X 6800 163.0 IOI hub: 150.5 m (TOT: 232.0 m) (11)

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: Extension WTG 01 - NORDEX Generic 180-169 6800 180.0 !-I hub: 169.0 m (TOT: 259.0 m) (93)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:07 12:42-12:53/11 15:04 11:50-12:01/11	09:06 12:49-13:07/18 16:26 11:59-12:12/13	07:40 17:50	06:55 20:18	05:16 21:44	03:49 23:12
2	10:06 12:42-12:54/12 15:05 11:50-12:02/12	09:03 12:52-13:05/13 16:29 12:04-12:09/5	07:36 17:53	06:52 20:21	05:13 21:47	03:46 23:14
3	10:05 13:42-13:45/3 11:50-12:04/14 15:07 12:41-12:55/14	09:00 12:55-13:01/6 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17
4	10:04 13:40-13:48/8 11:49-12:05/16 15:09 12:41-12:57/16	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:43 23:19
5	10:03 13:39-13:49/10 11:49-12:05/16 15:11 12:41-12:57/16	08:55 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21
6	10:02 13:39-13:51/12 11:49-12:07/18 15:13 12:41-12:59/18	08:52 16:41	07:23 18:05	06:39 20:32	05:00 21:59	03:39 23:23
7	10:01 13:39-13:52/13 11:49-12:08/19 15:15 12:41-13:00/19	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25
8	09:59 13:38-13:53/15 11:48-12:09/21 15:18 12:40-13:01/21	08:46 16:47	07:16 18:11	06:32 20:38	04:54 22:05	03:36 23:27
9	09:58 13:38-13:54/16 11:48-12:10/22 15:20 12:40-13:02/22	08:43 16:50	07:13 18:13	06:28 20:41	04:51 22:08	03:34 23:29
10	09:56 13:37-13:55/18 11:48-12:11/23 15:22 12:40-13:03/23	08:40 16:53	07:10 18:16	06:25 20:43	04:48 22:11	03:33 23:31
11	09:55 13:37-13:56/19 11:48-12:12/24 15:25 12:40-13:04/24	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32
12	09:53 13:37-13:57/20 11:48-12:12/24 15:27 12:40-13:05/25	08:34 17:00	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34
13	09:51 13:37-13:58/21 11:48-12:13/25 15:30 12:40-13:06/26	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35
14	09:49 13:37-13:59/22 11:48-12:14/26 15:33 12:40-13:07/27	08:28 17:06	06:56 18:28	06:12 20:55	04:35 22:23	03:28 23:36
15	09:47 13:38-14:00/22 11:48-12:15/27 15:35 12:40-13:07/27	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:26	03:28 23:37
16	09:45 13:37-14:00/23 11:48-12:15/27 15:38 12:39-13:07/28	08:21 17:12	06:50 18:33	06:05 21:01	04:30 22:29	03:27 23:38
17	09:43 13:37-14:01/24 11:48-12:16/28 15:41 12:40-13:08/28	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:32	03:26 23:39
18	09:41 13:38-14:01/23 11:48-12:16/28 15:44 12:40-13:09/29	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:35	03:26 23:40
19	09:39 13:38-14:02/24 11:49-12:17/28 15:46 12:40-13:10/30	08:12 17:21	06:40 18:42	05:55 21:09	04:21 22:37	03:26 23:40
20	09:37 13:38-14:02/24 11:48-12:17/29 15:49 12:40-13:09/29	08:09 17:24	06:36 18:45	05:52 21:12	04:18 22:40	03:25 23:41
21	09:34 13:38-14:02/24 11:49-12:17/28 15:52 12:40-13:10/30	08:06 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:25 23:41
22	09:32 13:39-14:03/24 11:50-12:18/28 15:55 12:41-13:11/30	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41
23	09:30 13:39-14:02/23 11:49-12:17/28 15:58 12:41-13:10/29	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:42
24	09:27 13:40-14:03/23 11:50-12:18/28 16:01 12:42-13:11/29	07:56 17:36	06:23 18:56	05:38 21:24	04:08 22:51	03:26 23:41
25	09:25 13:41-14:03/22 11:51-12:18/27 16:04 12:42-13:11/29	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:27 23:41
26	09:22 13:41-14:02/21 11:51-12:17/26 16:07 12:42-13:10/28	07:49 17:42	06:16 19:01	05:32 21:30	04:03 22:57	03:27 23:41
27	09:19 13:42-14:02/20 11:52-12:17/25 16:10 12:43-13:10/27	07:46 17:45	06:12 19:04	05:29 21:33	04:00 23:00	03:28 23:40
28	09:17 13:44-14:02/18 11:54-12:17/23 16:13 12:45-13:11/26	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:40
29	09:14 13:45-14:00/15 11:54-12:16/22 16:16 12:45-13:09/24	07:41 17:46	06:06 19:06	05:22 21:38	03:55 23:05	03:30 23:39
30	09:11 13:47-13:59/12 11:56-12:16/20 16:19 12:46-13:09/23	07:38 17:49	06:02 19:07	05:19 21:41	03:53 23:07	03:31 23:38
31	09:09 13:51-13:55/4 11:57-12:14/17 16:23 12:47-13:08/21	07:35 17:52	06:59 19:15	05:16 21:44	03:51 23:10	03:32 23:39
Potential sun hours	185	243	364	446	557	601
Sum of minutes with flicker	1974	55	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:15/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: Extension WTG 01 - NORDEX Generic 180-169 6800 180.0 !-I hub: 169.0 m (TOT: 259.0 m) (93)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December						
1	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:25		09:33	13:20-13:39/19	11:30-11:54/24			
2	03:34 23:36	04:50 22:24	06:18 20:43	07:40 19:02	08:08 16:21		09:35	13:21-13:39/18	11:31-11:54/23			
3	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18		09:37	13:21-13:38/17	11:31-11:53/22			
4	03:37 23:34	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:15		09:40	13:22-13:38/16	11:33-11:53/20			
5	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:13		09:42	13:24-13:38/14	11:34-11:53/19			
6	03:41 23:31	05:02 22:12	06:29 20:30	07:51 18:48	08:20 16:10		09:44	13:24-13:37/13	11:34-11:53/19			
7	03:43 23:29	05:05 22:09	06:32 20:26	07:53 18:45	08:23 16:07		09:47	13:26-13:36/10	11:36-11:53/17			
8	03:45 23:27	05:07 22:05	06:35 20:23	07:56 18:42	08:26 16:04	12:25-12:32/7	09:49	13:27-13:35/8	11:36-11:52/16			
9	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	12:22-12:36/14	09:51	13:30-13:34/4	11:38-11:52/14			
10	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	11:34-11:40/6	09:53	12:31-12:44/13	14:55	11:39-11:52/13		
11	03:51 23:22	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	13:22-13:27/5	09:54	12:33-12:43/10	14:55	11:40-11:51/11		
12	03:53 23:19	05:19 21:53	06:45 20:10	08:07 18:28	08:38 15:52	13:19-13:31/12	09:56	12:34-12:42/8	14:53	11:41-11:50/6		
13	03:56 23:17	05:22 21:50	06:48 20:06	08:10 18:25	08:41 15:50	13:17-13:32/15	09:58	12:36-12:41/5	14:53	11:44-11:50/6		
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	13:16-13:33/17	09:59	11:47-11:49/2	14:53			
15	04:00 23:13	05:28 21:43	06:54 19:59	08:16 18:19	08:47 15:44	13:15-13:35/20	10:01		14:52			
16	04:03 23:11	05:30 21:40	06:56 19:56	08:19 18:15	08:50 15:42	13:14-13:35/21	10:02		14:52			
17	04:06 23:08	05:33 21:37	06:59 19:53	08:21 18:12	08:53 15:39	13:14-13:36/22	10:03		14:52			
18	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:37	13:14-13:37/23	10:04		14:51			
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	13:14-13:37/23	10:05		14:52			
20	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:32	13:14-13:38/24	10:06		14:52			
21	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	13:14-13:38/24	10:07		14:52			
22	04:19 22:55	05:48 21:20	07:12 19:36	08:36 17:56	09:08 15:27	13:14-13:38/24	10:07		14:52			
23	04:22 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	13:14-13:38/24	10:08		14:53			
24	04:24 22:50	05:53 21:14	07:18 19:29	08:42 17:49	09:14 15:22	13:15-13:39/24	10:08		14:54			
25	04:27 22:47	05:56 21:10	07:21 19:25	07:44 16:46	09:16 15:20	13:15-13:39/24	10:09		14:54			
26	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	13:16-13:39/23	10:09		14:55			
27	04:33 22:42	06:02 21:04	07:26 19:19	07:50 16:40	09:22 15:16	13:17-13:39/22	10:09		14:56			
28	04:36 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:25 15:14	13:18-13:39/21	10:09		14:57			
29	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	13:18-13:38/20	10:08		14:59			
30	04:41 22:33	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	13:19-13:39/20	10:08	12:45-12:48/3	15:00	11:52-11:58/6		
31	04:44 22:30	06:13 20:50		08:02 16:28		12:21-12:46/25	10:07	12:44-12:51/7	15:02	11:51-11:59/8		
Potential sun hours	591	501	391	308	208		154					
Sum of minutes with flicker	0	0	0	0	1525		568					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: Extension WTG 02 - NORDEX Generic 180-169 6800 180.0 !-I hub: 169.0 m (TOT: 259.0 m) (92) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:07	09:06	07:40	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:26	17:50	20:18	21:44	21:12	23:37	22:27	20:47	19:05	16:25	15:08
2	10:06	09:03	07:36	06:52	05:13	03:47	03:34	04:50	06:18	07:40	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:24	21:50	23:17	23:35	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:30	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:37	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:13	15:02
6	10:02	08:52	07:23	06:39	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:12	20:30	18:48	16:10	15:00
7	10:00	08:49	07:20	06:35	04:57	03:37	03:43	05:05	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:07	06:35	07:56	08:26	09:49
	15:18	16:47	18:11	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:58	08:43	07:13	06:28	04:51	03:34	03:47	05:10	06:37	07:59	08:29	09:51
	15:20	16:50	18:13	20:41	22:08	23:29	23:25	22:02	20:20	18:38	16:01	14:57
10	09:56	08:40	07:10	06:25	04:48	03:33	03:49	05:13	06:40	08:02	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:56
11	09:54	08:37	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:53	08:34	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	17:00	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:54
13	09:51	08:31	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:58
	15:30	17:03	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:12	04:36	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:01	05:28	06:53	08:16	08:47	10:01
	15:35	17:09	18:30	20:58	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:50	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:01	22:29	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:32	23:39	23:08	21:37	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:40	23:06	21:33	19:49	18:09	15:37	14:52
19	09:39	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:47	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:09	06:36	05:52	04:18	03:26	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:32	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:48	07:12	08:36	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:39	09:11	10:08
	15:58	17:33	18:53	21:21	22:49	23:41	22:53	21:17	19:32	17:53	15:24	14:53
24	09:27	07:56	06:23	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:14	10:08
	16:01	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:53	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:39	18:58	21:27	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:03	03:27	04:30	05:59	07:23	07:47	09:19	10:09
	16:07	17:42	19:01	21:30	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:29	04:00	03:28	04:33	06:02	07:26	07:50	09:22	10:09
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:19	16:40	15:16	14:56
28	09:17	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:29	07:53	09:25	10:08
	16:13	17:47	19:07	21:35	23:02	23:40	22:39	21:00	19:15	16:37	15:14	14:58
29	09:14		07:06	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:10	21:38	23:05	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:09		06:59		03:51		04:44	06:13		08:02		10:07
	16:23		20:15		23:10		22:30	20:50		16:28		15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K01 - NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (1)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:16	03:48	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:25	17:50	20:18	21:44	21:12	23:37	22:27	20:46	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:28	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:35	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:16	23:35	22:21	20:40	18:58	16:18	15:04
4	10:04	08:57	07:29	06:45	05:06	03:42	03:37	04:56	06:23	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:51	16:12	15:01
6	10:01	08:51	07:23	06:38	05:00	03:39	03:41	05:01	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:20	06:35	04:57	03:37	03:42	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:07	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:06	14:59
8	09:59	08:45	07:16	06:32	04:53	03:35	03:44	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:41	16:04	14:57
9	09:57	08:42	07:13	06:28	04:50	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:39	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:36	07:06	06:21	04:44	03:31	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:31	15:55	14:54
12	09:53	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:54
13	09:51	08:30	06:59	06:15	04:38	03:29	03:55	05:22	06:48	08:10	08:41	09:57
	15:30	17:02	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:32	17:05	18:27	20:55	22:23	23:36	23:15	21:46	20:02	18:22	15:47	14:52
15	09:47	08:24	06:53	06:08	04:32	03:27	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:08	18:30	20:57	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:29	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:41	14:52
17	09:43	08:18	06:46	06:01	04:27	03:26	04:05	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:51
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:43	17:18	18:39	21:06	22:34	23:40	23:05	21:33	19:49	18:09	15:36	14:51
19	09:39	08:12	06:39	05:55	04:21	03:25	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:41	21:09	22:37	23:40	23:03	21:30	19:45	18:05	15:34	14:51
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:26	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:15	03:25	04:16	05:44	07:09	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:25	04:19	05:47	07:12	08:35	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:21	05:50	07:15	08:38	09:11	10:08
	15:58	17:32	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:07	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:35	18:55	21:23	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:53
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:15	14:56
28	09:16	07:43	06:09	05:25	03:57	03:29	04:35	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:13	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:30	15:10	15:00
31	09:08		06:59		03:51		04:44	06:12		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:01
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:15/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K02 - NORDEX N163/6.X 6800 163.0 IO! hub: 149.5 m (TOT: 231.0 m) (2) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

|January |February |March |April |May |June |July |August |September|October |November|December

1	10:06	09:06	07:39	06:55	05:16	03:48	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:25	17:50	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:35	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:16	23:35	22:21	20:40	18:58	16:18	15:04
4	10:04	08:57	07:30	06:45	05:06	03:42	03:37	04:56	06:23	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:12	15:01
6	10:02	08:51	07:23	06:38	05:00	03:39	03:41	05:01	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:20	06:35	04:57	03:37	03:42	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:29	22:08	20:26	18:45	16:06	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:44	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:41	16:04	14:57
9	09:57	08:43	07:13	06:28	04:50	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:29	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:40	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:37	07:06	06:22	04:44	03:31	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:54
12	09:53	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:54
13	09:51	08:30	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:58
	15:30	17:02	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:05	18:27	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:52
15	09:47	08:24	06:53	06:08	04:32	03:27	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:09	18:30	20:57	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:01	04:27	03:26	04:05	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:51
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:40	23:05	21:33	19:49	18:09	15:36	14:51
19	09:39	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:51
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:15	03:25	04:16	05:45	07:10	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:25	04:19	05:47	07:12	08:36	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:21	05:50	07:15	08:38	09:11	10:08
	15:58	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:07	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:36	18:55	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:53
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:17	07:43	06:09	05:25	03:57	03:29	04:35	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:30	15:10	15:00
31	09:08		06:59		03:51		04:44	06:12		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:02
Potential sun hours	185	243	364	446	557	601	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K03 - NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (3)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

Table with 13 columns: N, NNE, ENE, E, ESE, SSE, S, SSW, WSW, W, WNW, NNW, Sum. Values range from 459 to 8,527.

Main shadow calculation table with columns for months (January to December) and rows for each day (1 to 31). Includes 'Potential sun hours' and 'Sum of minutes with flicker' at the bottom.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K04 - NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (4)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

|January |February |March |April |May |June |July |August |September|October |November|December

1	10:06 15:04	09:06 16:26	07:39 17:50	06:55 20:18	05:16 21:44	03:49 23:12	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 16:24	09:32 15:08
2	10:06 15:05	09:03 16:29	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:02	08:08 16:21	09:35 15:06
3	10:05 15:07	09:00 16:32	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17	03:36 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:05
4	10:04 15:09	08:57 16:35	07:30 17:59	06:45 20:26	05:06 21:53	03:42 23:19	03:37 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 16:15	09:40 15:03
5	10:03 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 16:12	09:42 15:01
6	10:02 15:13	08:52 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:02 22:12	06:29 20:30	07:50 18:48	08:20 16:10	09:44 15:00
7	10:00 15:15	08:49 16:44	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:29	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:07	09:46 14:59
8	09:59 15:18	08:46 16:47	07:16 18:10	06:32 20:38	04:54 22:05	03:36 23:27	03:45 23:27	05:07 22:05	06:35 20:23	07:56 18:42	08:26 16:04	09:49 14:58
9	09:58 15:20	08:43 16:50	07:13 18:13	06:28 20:40	04:51 22:08	03:34 23:29	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 16:01	09:51 14:56
10	09:56 15:22	08:40 16:53	07:10 18:16	06:25 20:43	04:47 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:37 16:56	07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 15:55	09:54 14:55
12	09:53 15:27	08:34 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	03:53 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	09:51 15:30	08:31 17:03	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:58 14:53
14	09:49 15:33	08:27 17:06	06:56 18:28	06:12 20:55	04:35 22:23	03:28 23:36	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 15:47	09:59 14:53
15	09:47 15:35	08:24 17:09	06:53 18:30	06:08 20:58	04:33 22:26	03:28 23:37	04:00 23:13	05:28 21:43	06:53 19:59	08:16 18:18	08:47 15:44	10:01 14:52
16	09:45 15:38	08:21 17:12	06:50 18:33	06:05 21:00	04:30 22:29	03:27 23:38	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 15:42	10:02 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:02 21:03	04:27 22:31	03:26 23:39	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:40	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 15:36	10:04 14:51
19	09:39 15:46	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 15:34	10:05 14:51
20	09:36 15:49	08:09 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:25 23:41	04:13 23:00	05:42 21:27	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:52
21	09:34 15:52	08:05 17:27	06:33 18:47	05:48 21:15	04:16 22:43	03:25 23:41	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 15:29	10:07 14:52
22	09:32 15:55	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:26 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:36 17:56	09:08 15:27	10:07 14:52
23	09:29 15:58	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:41	04:22 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 15:24	10:08 14:53
24	09:27 16:01	07:56 17:36	06:23 18:56	05:38 21:24	04:08 22:51	03:26 23:41	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	09:14 15:22	10:08 14:54
25	09:24 16:04	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:29	04:02 22:57	03:27 23:41	04:30 22:44	05:59 21:07	07:23 19:22	07:47 16:43	09:19 15:18	10:09 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:28 23:40	04:33 22:41	06:01 21:03	07:26 19:19	07:50 16:40	09:22 15:16	10:08 14:56
28	09:17 16:13	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:40	04:36 22:39	06:04 21:00	07:29 19:15	07:53 16:37	09:25 15:14	10:08 14:57
29	09:14 16:16		07:06 20:10	05:22 21:38	03:55 23:05	03:30 23:39	04:38 22:36	06:07 20:57	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38	04:41 22:33	06:10 20:53	07:34 19:08	07:59 16:31	09:30 15:10	10:08 15:00
31	09:09 16:22		06:59 20:15		03:51 23:10		04:44 22:30	06:13 20:50		08:02 16:28		10:07 15:02

Potential sun hours

Sum of minutes with flicker

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K05 - NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (5)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	January	February	March	April	May	June
1	10:07 11:49-12:03/14 15:04	09:06 14:32-15:01/29 09:50-10:00/10 16:25 13:46-13:55/9	07:39 17:50	06:55 20:18	05:16 21:44	03:48 23:12
2	10:06 11:49-12:04/15 15:05	09:03 14:32-15:00/28 16:29 09:49-10:02/13	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14
3	10:05 13:38-13:42/4 15:07 11:48-12:05/17	09:00 14:32-15:01/29 16:32 09:47-10:03/16	07:33 17:56	06:49 20:24	05:09 21:50	03:44 23:17
4	10:04 13:37-13:45/8 15:09 11:49-12:06/17	08:57 14:33-15:02/29 16:35 09:46-10:05/19	07:30 17:59	06:45 20:26	05:06 21:53	03:42 23:19
5	10:03 13:36-13:47/11 15:11 11:48-12:07/19	08:54 14:33-15:01/28 16:38 09:45-10:05/20	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21
6	10:02 13:36-13:49/13 15:13 11:49-12:08/19	08:52 14:33-15:01/28 16:41 09:45-10:06/21	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23
7	10:00 13:36-13:50/14 15:15 11:49-12:09/20	08:49 14:33-15:00/27 16:44 09:44-10:06/22	07:20 18:08	06:35 20:35	04:57 22:02	03:37 23:25
8	09:59 13:35-13:51/16 15:18 11:49-12:10/21	08:46 14:35-15:00/25 16:47 09:44-10:07/23	07:16 18:10	06:32 20:38	04:54 22:05	03:35 23:27
9	09:58 13:35-13:52/17 15:20 11:48-12:10/22	08:43 14:35-14:59/24 16:50 09:44-10:07/23	07:13 18:13	06:28 20:41	04:50 22:08	03:34 23:29
10	09:56 13:34-13:53/19 15:22 11:48-12:11/23	08:40 14:36-14:59/23 16:53 09:44-10:07/23	07:10 18:16	06:25 20:43	04:47 22:11	03:33 23:30
11	09:54 13:34-13:54/20 15:25 11:48-12:12/24	08:37 14:37-14:57/20 16:56 09:45-10:08/23	07:06 18:19	06:22 20:46	04:44 22:14	03:31 23:32
12	09:53 13:34-13:55/21 15:27 11:49-12:13/24	08:34 14:40-14:55/15 16:59 09:45-10:07/22	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:34
13	09:51 13:34-13:56/22 15:30 11:49-12:14/25	08:31 14:43-14:53/10 17:02 09:46-10:06/20	07:00 18:25	06:15 20:52	04:38 22:20	03:29 23:35
14	09:49 13:34-13:57/23 15:33 11:49-12:14/25	08:27 09:46-10:05/19 17:06	06:56 18:28	06:12 20:55	04:35 22:23	03:28 23:36
15	09:47 13:34-13:58/24 15:35 11:49-12:15/26	08:24 09:48-10:04/16 17:09	06:53 18:30	06:08 20:58	04:32 22:26	03:27 23:37
16	09:45 13:34-13:58/24 15:38 11:49-12:15/26	08:21 09:49-10:02/13 17:12	06:50 18:33	06:05 21:00	04:30 22:29	03:27 23:38
17	09:43 13:34-13:59/25 15:41 11:49-12:15/26	08:18 09:52-09:59/7 17:15	06:46 18:36	06:02 21:03	04:27 22:32	03:26 23:39
18	09:41 13:34-14:00/26 15:44 11:50-12:16/26	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:40
19	09:39 13:35-14:00/25 15:46 11:50-12:17/27	08:12 17:21	06:39 18:42	05:55 21:09	04:21 22:37	03:25 23:40
20	09:37 13:34-14:00/26 15:49 11:50-12:16/26	08:09 17:24	06:36 18:44	05:52 21:12	04:18 22:40	03:25 23:41
21	09:34 13:35-14:01/26 15:52 11:51-12:17/26	08:05 17:27	06:33 18:47	05:48 21:15	04:15 22:43	03:25 23:41
22	09:32 14:39-14:49/10 11:51-12:17/26 15:55 13:35-14:01/26	08:02 17:30	06:29 18:50	05:45 21:18	04:13 22:46	03:25 23:41
23	09:29 14:37-14:51/14 11:51-12:17/26 15:58 13:35-14:01/26	07:59 17:33	06:26 18:53	05:42 21:21	04:10 22:49	03:26 23:41
24	09:27 14:36-14:53/17 11:52-12:17/25 16:01 13:36-14:01/25	07:56 17:36	06:23 18:56	05:38 21:24	04:07 22:51	03:26 23:41
25	09:24 14:35-14:55/20 11:53-12:17/24 16:04 13:37-14:02/25	07:53 17:39	06:19 18:58	05:35 21:27	04:05 22:54	03:27 23:41
26	09:22 14:34-14:56/22 11:54-12:16/22 16:07 13:37-14:01/24	07:49 17:41	06:16 19:01	05:32 21:30	04:02 22:57	03:27 23:41
27	09:19 14:34-14:57/23 11:55-12:16/21 16:10 13:38-14:01/23	07:46 17:44	06:12 19:04	05:29 21:32	04:00 22:59	03:28 23:40
28	09:17 14:32-14:58/26 11:57-12:15/18 16:13 13:38-14:00/22	07:43 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:40
29	09:14 14:32-14:59/27 11:58-12:13/15 16:16 13:40-14:00/20	07:40 17:49	06:06 19:06	05:22 21:38	03:55 23:05	03:30 23:39
30	09:11 14:33-15:00/27 12:01-12:12/11 16:19 13:42-13:59/17	07:37 17:56	06:03 19:07	05:19 21:41	03:53 23:07	03:31 23:38
31	09:09 14:32-15:00/28 16:22 13:43-13:57/14	07:34 17:59	06:00 19:08	05:16 21:44	03:50 23:10	03:32 23:39
Potential sun hours	185	243	364	446	557	601
Sum of minutes with flicker	1456	634	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K05 - NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (5)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:33 23:37	04:47 22:27	06:15 20:47	07:37 19:05	08:05 14:06-14:28/22 16:24 09:14-09:37/23	09:32 13:16-13:37/21 15:08 11:31-11:54/23
2	03:34 23:36	04:50 22:24	06:18 20:43	07:39 19:02	08:08 14:04-14:29/25 16:21 09:14-09:37/23	09:35 13:18-13:37/19 15:06 11:32-11:54/22
3	03:35 23:35	04:53 22:21	06:21 20:40	07:42 18:58	08:11 14:04-14:30/26 16:15 09:14-09:37/23	09:37 13:18-13:36/18 15:04 11:32-11:54/22
4	03:37 23:33	04:56 22:18	06:24 20:37	07:45 18:55	08:14 14:03-14:30/27 16:15 09:15-09:37/22	09:40 13:19-13:36/17 15:03 11:33-11:54/21
5	03:39 23:32	04:59 22:15	06:26 20:33	07:48 18:52	08:17 14:03-14:31/28 16:12 09:14-09:36/22	09:42 13:21-13:35/14 15:01 11:34-11:54/20
6	03:41 23:31	05:01 22:12	06:29 20:30	07:50 18:48	08:20 14:03-14:32/29 16:09 09:16-09:36/20	09:44 13:21-13:34/13 15:00 11:34-11:54/20
7	03:42 23:29	05:04 22:08	06:32 20:26	07:53 18:45	08:23 14:02-14:31/29 16:07 09:16-09:34/18	09:47 13:23-13:34/11 14:59 11:36-11:54/18
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:42	08:26 14:03-14:32/29 16:04 09:17-09:34/17	09:49 13:24-13:33/9 14:57 11:36-11:53/17
9	03:47 23:25	05:10 22:02	06:37 20:20	07:59 18:38	08:29 14:02-14:31/29 16:01 09:19-09:33/14	09:51 13:27-13:32/5 14:56 11:38-11:54/16
10	03:49 23:23	05:13 21:59	06:40 20:16	08:02 18:35	08:32 14:03-14:31/28 09:21-09:30/9 15:58 13:17-13:26/9	09:53 11:38-11:53/15 14:55
11	03:51 23:21	05:16 21:56	06:43 20:13	08:04 18:32	08:35 14:04-14:32/28 11:36-11:38/2 15:55 13:15-13:29/14	09:54 11:39-11:53/14 14:54
12	03:53 23:19	05:19 21:53	06:45 20:09	08:07 18:28	08:38 14:03-14:31/28 11:31-11:43/12 15:52 13:12-13:30/18	09:56 11:40-11:53/13 14:54
13	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 14:04-14:31/27 11:30-11:45/15 15:50 13:12-13:31/19	09:58 11:42-11:53/11 14:53
14	03:58 23:15	05:25 21:46	06:51 20:03	08:13 18:22	08:44 14:05-14:30/25 11:29-11:47/18 15:47 13:11-13:33/22	09:59 11:43-11:53/10 14:52
15	04:00 23:13	05:27 21:43	06:53 19:59	08:16 18:18	08:47 14:06-14:30/24 11:28-11:48/20 15:44 13:11-13:34/23	10:01 11:44-11:52/8 14:52
16	04:03 23:10	05:30 21:40	06:56 19:56	08:18 18:15	08:50 14:07-14:29/22 11:27-11:49/22 15:42 13:10-13:34/24	10:02 11:45-11:52/7 14:52
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 14:08-14:28/20 11:26-11:50/24 15:39 13:10-13:35/25	10:03 11:46-11:51/5 14:51
18	04:08 23:06	05:36 21:33	07:02 19:49	08:24 18:09	08:56 14:10-14:27/17 11:26-11:51/25 15:36 13:10-13:35/25	10:04 11:48-11:51/3 14:51
19	04:11 23:03	05:39 21:30	07:04 19:46	08:27 18:05	08:59 14:12-14:26/14 11:26-11:51/25 15:34 13:10-13:36/26	10:05 14:51
20	04:13 23:01	05:42 21:27	07:07 19:42	08:30 18:02	09:02 14:14-14:24/10 11:26-11:52/26 15:31 13:10-13:36/26	10:06 14:52
21	04:16 22:58	05:45 21:23	07:10 19:39	08:33 17:59	09:05 13:10-13:36/26 15:29 11:27-11:53/26	10:07 14:52
22	04:19 22:55	05:47 21:20	07:12 19:35	08:36 17:56	09:08 13:10-13:36/26 15:27 11:26-11:52/26	10:07 14:52
23	04:21 22:53	05:50 21:17	07:15 19:32	08:39 17:53	09:11 13:11-13:37/26 15:24 11:26-11:53/27	10:08 14:53
24	04:24 22:50	05:53 21:13	07:18 19:29	08:41 17:49	09:14 13:11-13:37/26 15:22 11:27-11:53/26	10:08 14:53
25	04:27 22:47	05:56 21:10	07:20 19:25	07:44 09:21-09:30/9 16:46	09:16 13:12-13:37/25 15:20 11:27-11:54/27	10:08 11:52-11:54/2 14:54
26	04:30 22:44	05:59 21:07	07:23 19:22	07:47 09:19-09:32/13 16:43	09:19 13:13-13:37/24 15:18 11:28-11:54/26	10:09 11:51-11:56/5 14:55
27	04:33 22:41	06:01 21:03	07:26 19:19	07:50 09:17-09:34/17 16:40	09:22 13:14-13:37/23 15:16 11:28-11:54/26	10:09 11:50-11:57/7 14:56
28	04:36 22:39	06:04 21:00	07:29 19:15	07:53 09:15-09:34/19 16:37	09:25 13:13-13:36/23 15:14 11:28-11:54/26	10:08 11:50-11:58/8 14:57
29	04:38 22:36	06:07 20:57	07:31 19:12	07:56 14:12-14:23/11 16:34 09:15-09:36/21	09:27 13:14-13:36/22 15:12 11:29-11:54/25	10:08 11:50-11:59/9 14:59
30	04:41 22:33	06:10 20:53	07:34 19:08	07:59 14:09-14:25/16 16:31 09:14-09:36/22	09:30 13:15-13:37/22 15:10 11:30-11:54/24	10:08 11:50-12:01/11 15:00
31	04:44 22:30	06:13 20:50		08:02 14:07-14:27/20 16:27 09:14-09:37/23		10:07 11:50-12:02/12 15:02
Potential sun hours	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	171	1600	446

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K06 - NORDEX N163/6.X 6800 163.0 IO! hub: 148.5 m (TOT: 230.0 m) (6)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:25	17:50	20:18	21:44	21:12	23:37	22:27	20:46	19:05	16:24	15:08
2	10:05	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:16	23:34	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:29	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:52	16:12	15:01
6	10:01	08:51	07:23	06:38	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:20	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:30	22:08	20:26	18:45	16:07	14:59
8	09:59	08:45	07:16	06:32	04:54	03:36	03:45	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:41	16:04	14:58
9	09:57	08:42	07:13	06:28	04:50	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:39	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:36	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:52	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:54
13	09:51	08:30	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:57
	15:30	17:02	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:27	20:55	22:23	23:36	23:15	21:46	20:02	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:32	03:28	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:09	18:30	20:57	22:25	23:37	23:12	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:01	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:36	14:51
19	09:38	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:41	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:40	23:00	21:26	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:06
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:35	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:38	09:10	10:08
	15:58	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:36	18:55	21:23	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:56	23:40	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:16	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:07
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:08		06:59		03:51		04:44	06:13		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:15/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K07 - NORDEX N163/6.X 6800 163.0 IO! hub: 149.5 m (TOT: 231.0 m) (7) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

|January |February |March |April |May |June |July |August |September|October |November|December

Table with 12 columns (months) and 31 rows (days). Each cell contains a time range (e.g., 10:06 - 09:06) representing shadow periods. The last row shows 'Potential sun hours' and 'Sum of minutes with flicker' for each month.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker



Project:

Kattiharju

Licensed user:

Norconsult AS

Postboks 8984

NO-7439 Trondheim

(+47) 480 50 480

Hanna Sabelström / hanna.sabelstrom@norconsult.com

Calculated:

2024-05-27 15:15/4.0.531

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K08 - NORDEX N163/6.X 6800 163.0 IO! hub: 149.5 m (TOT: 231.0 m) (8)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:26	17:50	20:18	21:44	21:44	23:12	22:27	20:47	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:24	21:50	23:16	23:35	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:30	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:12	15:01
6	10:02	08:51	07:23	06:38	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:20	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:30	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:43	07:13	06:28	04:51	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:20	18:38	16:01	14:56
10	09:56	08:40	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:37	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:53	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:54
13	09:51	08:30	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:57
	15:30	17:02	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:12	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:27	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:00	05:28	06:53	08:15	08:47	10:00
	15:35	17:09	18:30	20:58	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:01	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:40	23:05	21:33	19:49	18:09	15:36	14:51
19	09:39	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:09	06:36	05:52	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:36	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:38	09:11	10:08
	15:58	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:24	14:53
24	09:27	07:56	06:22	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:39	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:29	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:17	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:57
29	09:14		07:06	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:08		06:59		03:51		04:44	06:13		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:02
Potential sun hours	185	243	364	446	556	601	591	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K09 - NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (9)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06	09:06	07:39	06:55	05:16	03:49	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:26	17:50	20:18	21:44	23:12	23:37	22:27	20:47	19:05	16:24	15:08
2	10:06	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:02	16:21	15:06
3	10:05	09:00	07:33	06:49	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:24	21:50	23:17	23:35	22:21	20:40	18:58	16:18	15:05
4	10:04	08:57	07:30	06:45	05:06	03:43	03:37	04:56	06:24	07:45	08:14	09:40
	15:09	16:35	17:59	20:26	21:53	23:19	23:33	22:18	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:48	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:15	20:33	18:52	16:12	15:01
6	10:02	08:51	07:23	06:38	05:00	03:39	03:41	05:02	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:10	15:00
7	10:00	08:49	07:20	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:08	20:35	22:02	23:25	23:30	22:08	20:26	18:45	16:07	14:59
8	09:59	08:46	07:16	06:32	04:54	03:36	03:45	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:38	22:05	23:27	23:27	22:05	20:23	18:42	16:04	14:58
9	09:57	08:43	07:13	06:28	04:51	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:29	23:25	22:02	20:20	18:38	16:01	14:56
10	09:56	08:40	07:10	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:37	07:06	06:22	04:44	03:32	03:51	05:16	06:43	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:32	15:55	14:55
12	09:53	08:34	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:53	20:09	18:28	15:52	14:54
13	09:51	08:30	07:00	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:58
	15:30	17:03	18:25	20:52	22:20	23:35	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:12	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:06	18:28	20:55	22:23	23:36	23:15	21:46	20:03	18:22	15:47	14:53
15	09:47	08:24	06:53	06:08	04:33	03:28	04:00	05:28	06:53	08:16	08:47	10:01
	15:35	17:09	18:30	20:58	22:26	23:37	23:13	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:50	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:29	23:38	23:10	21:40	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:02	04:27	03:26	04:06	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:52
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:02	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:40	23:05	21:33	19:49	18:09	15:36	14:51
19	09:39	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:42	21:09	22:37	23:40	23:03	21:30	19:46	18:05	15:34	14:52
20	09:36	08:09	06:36	05:52	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:41	23:00	21:27	19:42	18:02	15:31	14:52
21	09:34	08:05	06:33	05:48	04:16	03:25	04:16	05:45	07:10	08:33	09:05	10:07
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:36	09:08	10:07
	15:55	17:30	18:50	21:18	22:46	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:22	05:50	07:15	08:38	09:11	10:08
	15:58	17:33	18:53	21:21	22:48	23:41	22:52	21:17	19:32	17:53	15:24	14:53
24	09:27	07:56	06:22	05:38	04:08	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:36	18:56	21:24	22:51	23:41	22:50	21:13	19:29	17:49	15:22	14:54
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:39	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:57	23:41	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:29	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:17	07:43	06:09	05:25	03:58	03:29	04:36	06:04	07:29	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:40	22:38	21:00	19:15	16:37	15:14	14:57
29	09:14		07:06	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:10	21:38	23:04	23:39	22:36	20:57	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:08
	16:19		20:12	21:41	23:07	23:38	22:33	20:53	19:08	16:31	15:10	15:00
31	09:09		06:59		03:51		04:44	06:13		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:28		15:02
Potential sun hours	185	243	364	446	556	601	591	501	391	308	208	154
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K10 - NORDEX N163/6.X 6800 163.0 !OI! hub: 150.5 m (TOT: 232.0 m) (10)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

[January | February | March | April | May | June | July | August | September | October | November | December

Table with 12 columns for months and 31 rows for days. Each cell contains a time range (hh:mm) representing shadow periods. Summary row at the bottom shows potential sun hours and minutes with flicker for each month.

Potential sun hours | 185 | 243 | 364 | 446 | 556 | 601 | 591 | 501 | 391 | 308 | 208 | 155 | 0

Sum of minutes with flicker 0 0 0 0 0 0 0 0 0 0 0 0 0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K11 - NORDEX N163/6.X 6800 163.0 !OI hub: 150.5 m (TOT: 232.0 m) (11)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June
1	10:06 15:03	09:05 13:40-13:58/18 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:12
2	10:05 13:37-13:41/4 15:05	09:03 13:42-13:57/15 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:46 23:14
3	10:04 13:36-13:44/8 15:07	09:00 13:45-13:55/10 16:31	07:33 17:15-17:21/6 17:56	06:48 20:23	05:09 21:50	03:44 23:16
4	10:04 13:34-13:45/11 15:09	08:57 16:35	07:29 17:12-17:23/11 17:59	06:45 20:26	05:06 21:53	03:42 23:18
5	10:02 13:34-13:48/14 15:11	08:54 16:38	07:26 17:10-17:27/17 18:02	06:42 20:29	05:03 21:56	03:40 23:21
6	10:01 13:34-13:49/15 15:13	08:51 16:41	07:23 17:09-17:29/20 18:04	06:38 20:32	05:00 21:59	03:39 23:23
7	10:00 13:33-13:50/17 15:15	08:48 16:44	07:19 17:08-17:30/22 18:07	06:35 20:35	04:56 22:02	03:37 23:25
8	09:59 13:32-13:51/19 15:17	08:45 16:47	07:16 17:07-17:30/23 18:10	06:31 20:37	04:53 22:05	03:35 23:26
9	09:57 13:32-13:52/20 15:20	08:42 16:50	07:13 17:07-17:31/24 18:13	06:28 20:40	04:50 22:08	03:34 23:28
10	09:56 13:32-13:53/21 15:22	08:39 16:53	07:09 17:07-17:31/24 18:16	06:25 20:43	04:47 22:11	03:33 23:30
11	09:54 13:32-13:54/22 15:25	08:36 16:56	07:06 17:06-17:30/24 18:19	06:21 20:46	04:44 22:14	03:31 23:31
12	09:52 13:31-13:55/24 15:27	08:33 16:59	07:03 17:07-17:30/23 18:22	06:18 20:49	04:41 22:16	03:30 23:33
13	09:51 13:31-13:56/25 15:30	08:30 17:02	06:59 17:07-17:29/22 18:24	06:15 20:52	04:38 22:19	03:29 23:34
14	09:49 13:31-13:57/26 15:32	08:27 17:05	06:56 17:08-17:28/20 18:27	06:11 20:54	04:35 22:22	03:28 23:36
15	09:47 13:32-13:58/26 15:35	08:24 17:08	06:53 17:08-17:26/18 18:30	06:08 20:57	04:32 22:25	03:27 23:37
16	09:45 13:32-13:59/27 15:38	08:21 17:11	06:49 17:10-17:24/14 18:33	06:05 21:00	04:29 22:28	03:27 23:38
17	09:43 13:32-13:59/27 15:41	08:18 17:14	06:46 17:12-17:21/9 18:36	06:01 21:03	04:27 22:31	03:26 23:39
18	09:41 13:31-13:59/28 15:43	08:15 17:17	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39
19	09:38 13:32-14:00/28 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:25 23:40
20	09:36 13:32-14:01/29 15:49	08:08 17:23	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:40
21	09:34 13:32-14:01/29 15:52	08:05 17:26	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41
22	09:31 13:32-14:01/29 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:25 23:41
23	09:29 13:33-14:02/29 15:58	07:59 17:32	06:26 18:53	05:41 21:20	04:10 22:48	03:26 23:41
24	09:27 13:34-14:02/28 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41
25	09:24 13:33-14:02/29 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41
26	09:22 13:34-14:02/28 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	03:27 23:40
27	09:19 13:34-14:01/27 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40
28	09:16 13:35-14:01/26 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:02	03:29 23:39
29	09:14 13:37-14:01/24 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38
30	09:11 13:37-14:00/23 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38
31	09:08 13:39-14:00/21 16:22		06:59 20:15		03:51 23:09	
Potential sun hours	185	243	364	446	556	600
Sum of minutes with flicker	684	43	277	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K11 - NORDEX N163/6.X 6800 163.0 !OI hub: 150.5 m (TOT: 232.0 m) (11)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.97	2.54	4.68	6.30	8.61	9.20	8.65	6.68	4.67	2.58	1.03	0.55

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
655	459	397	401	441	806	1,020	1,265	1,030	811	627	615	8,527

	July	August	September	October	November	December
1	03:32 23:37	04:47 22:26	06:15 20:46	07:36 19:05	17:45-18:08/23 08:05 16:24	09:32 15:08
2	03:34 23:36	04:50 22:23	06:18 20:43	07:39 19:01	17:45-18:08/23 08:08 16:21	09:35 15:06
3	03:35 23:34	04:53 22:20	06:21 20:40	07:42 18:58	17:44-18:08/24 08:11 16:18	09:37 15:04
4	03:37 23:33	04:56 22:17	06:23 20:36	07:45 18:55	17:44-18:08/24 08:14 16:15	09:39 15:03
5	03:39 23:32	04:58 22:14	06:26 20:33	07:47 18:51	17:44-18:08/24 08:17 16:12	09:42 15:01
6	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	17:44-18:07/23 08:20 16:09	09:44 15:00
7	03:42 23:28	05:04 22:08	06:32 20:26	07:53 18:45	17:45-18:06/21 08:23 16:06	09:46 14:59
8	03:44 23:27	05:07 22:05	06:34 20:23	07:56 18:41	17:44-18:03/19 08:26 16:03	13:15-13:25/10 09:48 14:57
9	03:46 23:25	05:10 22:02	06:37 20:19	07:58 18:38	17:46-18:00/14 08:29 16:01	13:12-13:28/16 09:50 14:56
10	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	17:47-17:56/9 08:32 15:58	13:11-13:30/19 09:52 14:55
11	03:51 23:21	05:16 21:55	06:42 20:13	08:04 18:31	17:50-17:53/3 08:35 15:55	13:09-13:31/22 09:54 14:54
12	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:07 15:52	13:09-13:32/23 09:56 14:54
13	03:55 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:10 15:49	13:08-13:33/25 09:57 14:53
14	03:58 23:15	05:24 21:46	06:50 20:02	08:12 18:21	08:12 15:47	13:07-13:33/26 09:59 14:52
15	04:00 23:12	05:27 21:43	06:53 19:59	08:15 18:18	08:15 15:44	13:07-13:34/27 10:00 14:52
16	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:18 15:41	13:07-13:35/28 10:02 14:52
17	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:21 15:39	13:07-13:36/29 10:03 14:51
18	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:24 15:36	13:07-13:35/28 10:04 14:51
19	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:27 15:34	13:07-13:36/29 10:05 14:51
20	04:13 23:00	05:42 21:26	07:07 19:42	08:30 18:02	08:30 15:31	13:07-13:36/29 10:06 14:51
21	04:16 22:57	05:44 21:23	07:09 19:39	08:32 17:59	08:32 15:29	13:08-13:37/29 10:06 14:52
22	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	08:35 15:26	13:08-13:37/29 10:07 14:52
23	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	08:38 15:24	13:09-13:37/28 10:07 14:53
24	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	08:41 15:22	13:08-13:36/28 10:08 14:53
25	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	07:44 15:20	13:09-13:37/28 10:08 14:54
26	04:30 22:44	05:58 21:06	07:23 19:22	17:57-18:02/5 07:47 16:43	07:47 15:18	13:10-13:37/27 10:08 14:55
27	04:33 22:41	06:01 21:03	07:26 19:18	17:52-18:05/13 07:50 16:40	07:50 15:15	13:11-13:37/26 10:08 14:56
28	04:35 22:38	06:04 21:00	07:28 19:15	17:50-18:07/17 07:53 16:37	07:53 15:13	13:12-13:37/25 10:08 14:57
29	04:38 22:35	06:07 20:56	07:31 19:11	17:48-18:08/20 07:56 16:33	07:56 15:11	13:13-13:37/24 10:08 14:59
30	04:41 22:32	06:10 20:53	07:34 19:08	17:47-18:09/22 07:59 16:30	07:59 15:10	13:13-13:36/23 10:07 15:00
31	04:44 22:29	06:12 20:50			08:02 16:27	
Potential sun hours	590	501	391	308	208	155
Sum of minutes with flicker	0	0	77	207	578	151

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K12 - NORDEX N163/6.X 6800 163.0 !OI! hub: 150.5 m (TOT: 232.0 m) (12)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December	
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:15 21:44	03:48 23:11	03:33 23:36	04:47 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08	
2	10:05 15:05	09:03 16:28	07:36 17:53	06:52 20:20	05:12 21:47	03:46 23:14	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:34 15:06	
3	10:04 15:07	09:00 16:32	07:33 17:56	06:48 20:23	05:09 21:50	03:44 23:16	03:36 23:34	04:53 22:20	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:04	
4	10:03 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:18	03:37 23:33	04:56 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03	
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:20	03:39 23:31	04:58 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:42 15:01	
6	10:01 15:13	08:51 16:41	07:23 18:04	06:38 20:32	05:00 21:59	03:39 23:22	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00	
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:35	04:57 22:02	03:37 23:24	03:43 23:28	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59	
8	09:59 15:18	08:45 16:47	07:16 18:10	06:31 20:37	04:53 22:05	03:36 23:26	03:45 23:27	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:03	09:48 14:57	
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56	
10	09:56 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55	
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:13	03:31 23:31	03:51 23:21	05:16 21:55	06:42 20:12	08:04 18:31	08:35 15:55	09:54 14:54	
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:16	03:30 23:33	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54	
13	09:50 15:30	08:30 17:02	06:59 18:24	06:15 20:52	04:38 22:19	03:29 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:49	09:57 14:53	
14	09:49 15:32	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:35	03:58 23:14	05:24 21:46	06:50 20:02	08:12 18:21	08:44 15:47	09:59 14:52	
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:27 23:37	04:00 23:12	05:27 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52	
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:29 22:28	03:27 23:38	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:50 15:41	10:01 14:52	
17	09:43 15:41	08:18 17:14	06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:38	04:05 23:07	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:51	
18	09:40 15:43	08:15 17:17	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:04 14:51	
19	09:38 15:46	08:11 17:20	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 15:34	10:05 14:51	
20	09:36 15:49	08:08 17:23	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:40	04:13 23:00	05:42 21:26	07:07 19:42	08:29 18:02	09:02 15:31	10:05 14:52	
21	09:34 15:52	08:05 17:26	06:32 18:47	05:48 21:15	04:15 22:42	03:25 23:41	04:16 22:57	05:44 21:23	07:09 19:39	08:32 17:59	09:05 15:29	10:06 14:52	
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:26 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:07 15:27	10:07 14:52	
23	09:29 15:58	07:59 17:32	06:26 18:52	05:41 21:20	04:10 22:48	03:26 23:41	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53	
24	09:26 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:08 14:53	
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54	
26	09:21 16:07	07:49 17:41	06:15 19:01	05:32 21:29	04:02 22:56	03:27 23:40	04:30 22:44	05:58 21:06	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:55	
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:33 22:41	06:01 21:03	07:26 19:18	07:50 16:40	09:21 15:15	10:08 14:56	
28	09:16 16:13	07:42 17:47	06:09 19:06	05:25 21:35	03:57 23:02	03:29 23:39	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:13	10:08 14:57	
29	09:14 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:38 22:35	06:07 20:56	07:31 19:11	07:56 16:33	09:27 15:12	10:08 14:59	
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:37	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00	
31	09:08 16:22		06:59 20:15		03:51 23:09		04:44 22:29		06:12 20:50		08:02 16:27		10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155	
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0	

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K13 - NORDEX N163/6.X 6800 163.0 !OI! hub: 150.5 m (TOT: 232.0 m) (13)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

	January	February	March	April	May	June	July	August	September	October	November	December
1	10:06 15:04	09:05 16:25	07:39 17:50	06:55 20:18	05:16 21:44	03:49 21:12	03:33 23:37	04:47 22:26	06:15 20:46	07:36 19:05	08:05 16:24	09:32 15:08
2	10:05 15:05	09:03 16:28	07:36 17:53	06:52 20:21	05:12 21:47	03:46 23:14	03:34 23:35	04:50 22:23	06:18 20:43	07:39 19:01	08:08 16:21	09:35 15:06
3	10:04 15:07	09:00 16:32	07:33 17:56	06:48 20:23	05:09 21:50	03:44 23:16	03:36 23:34	04:53 22:20	06:21 20:40	07:42 18:58	08:11 16:18	09:37 15:04
4	10:04 15:09	08:57 16:35	07:29 17:59	06:45 20:26	05:06 21:53	03:42 23:18	03:37 23:33	04:56 22:17	06:23 20:36	07:45 18:55	08:14 16:15	09:39 15:03
5	10:02 15:11	08:54 16:38	07:26 18:02	06:42 20:29	05:03 21:56	03:41 23:21	03:39 23:32	04:59 22:14	06:26 20:33	07:47 18:51	08:17 16:12	09:42 15:01
6	10:01 15:13	08:51 16:41	07:23 18:05	06:38 20:32	05:00 21:59	03:39 23:23	03:41 23:30	05:01 22:11	06:29 20:29	07:50 18:48	08:20 16:09	09:44 15:00
7	10:00 15:15	08:48 16:44	07:19 18:07	06:35 20:35	04:57 22:02	03:37 23:25	03:43 23:48	05:04 22:08	06:32 20:26	07:53 18:45	08:23 16:06	09:46 14:59
8	09:59 15:18	08:45 16:47	07:16 18:10	06:32 20:37	04:53 22:05	03:36 23:26	03:45 23:27	05:07 22:05	06:34 20:23	07:56 18:41	08:26 16:04	09:48 14:58
9	09:57 15:20	08:42 16:50	07:13 18:13	06:28 20:40	04:50 22:08	03:34 23:28	03:47 23:25	05:10 22:02	06:37 20:19	07:58 18:38	08:29 16:01	09:50 14:56
10	09:56 15:22	08:39 16:53	07:09 18:16	06:25 20:43	04:47 22:11	03:33 23:30	03:49 23:23	05:13 21:59	06:40 20:16	08:01 18:35	08:32 15:58	09:52 14:55
11	09:54 15:25	08:36 16:56	07:06 18:19	06:21 20:46	04:44 22:14	03:31 23:31	03:51 23:21	05:16 21:56	06:42 20:13	08:04 18:31	08:35 15:55	09:54 14:55
12	09:52 15:27	08:33 16:59	07:03 18:22	06:18 20:49	04:41 22:17	03:30 23:33	03:53 23:19	05:19 21:52	06:45 20:09	08:07 18:28	08:38 15:52	09:56 14:54
13	09:51 15:30	08:30 17:02	06:59 18:25	06:15 20:52	04:38 22:19	03:29 23:34	03:56 23:17	05:22 21:49	06:48 20:06	08:10 18:25	08:41 15:50	09:57 14:53
14	09:49 15:33	08:27 17:05	06:56 18:27	06:11 20:54	04:35 22:22	03:28 23:36	03:58 23:15	05:25 21:46	06:51 20:02	08:12 18:22	08:44 15:47	09:59 14:52
15	09:47 15:35	08:24 17:08	06:53 18:30	06:08 20:57	04:32 22:25	03:28 23:37	04:00 23:12	05:27 21:43	06:53 19:59	08:15 18:18	08:47 15:44	10:00 14:52
16	09:45 15:38	08:21 17:11	06:49 18:33	06:05 21:00	04:30 22:28	03:27 23:38	04:03 23:10	05:30 21:39	06:56 19:56	08:18 18:15	08:50 15:41	10:01 14:52
17	09:43 15:41	08:18 17:15	06:46 18:36	06:01 21:03	04:27 22:31	03:26 23:39	04:05 23:08	05:33 21:36	06:59 19:52	08:21 18:12	08:53 15:39	10:03 14:52
18	09:41 15:44	08:15 17:18	06:43 18:39	05:58 21:06	04:24 22:34	03:26 23:39	04:08 23:05	05:36 21:33	07:01 19:49	08:24 18:08	08:56 15:36	10:04 14:51
19	09:38 15:46	08:11 17:21	06:39 18:41	05:55 21:09	04:21 22:37	03:26 23:40	04:11 23:03	05:39 21:30	07:04 19:45	08:27 18:05	08:59 15:34	10:05 14:51
20	09:36 15:49	08:08 17:24	06:36 18:44	05:51 21:12	04:18 22:40	03:25 23:40	04:13 23:00	05:42 21:26	07:07 19:42	08:30 18:02	09:02 15:31	10:06 14:52
21	09:34 15:52	08:05 17:27	06:32 18:47	05:48 21:15	04:15 22:43	03:25 23:41	04:16 22:57	05:44 21:23	07:09 19:39	08:32 17:59	09:05 15:29	10:06 14:52
22	09:31 15:55	08:02 17:29	06:29 18:50	05:45 21:17	04:13 22:45	03:26 23:41	04:19 22:55	05:47 21:20	07:12 19:35	08:35 17:56	09:07 15:27	10:07 14:52
23	09:29 15:58	07:59 17:32	06:26 18:53	05:41 21:20	04:10 22:48	03:26 23:41	04:21 22:52	05:50 21:16	07:15 19:32	08:38 17:52	09:10 15:24	10:07 14:53
24	09:27 16:01	07:55 17:35	06:22 18:55	05:38 21:23	04:07 22:51	03:26 23:41	04:24 22:49	05:53 21:13	07:17 19:28	08:41 17:49	09:13 15:22	10:08 14:54
25	09:24 16:04	07:52 17:38	06:19 18:58	05:35 21:26	04:05 22:54	03:27 23:41	04:27 22:47	05:56 21:10	07:20 19:25	07:44 16:46	09:16 15:20	10:08 14:54
26	09:22 16:07	07:49 17:41	06:16 19:01	05:32 21:29	04:02 22:56	03:27 23:40	04:30 22:44	05:59 21:06	07:23 19:22	07:47 16:43	09:19 15:18	10:08 14:55
27	09:19 16:10	07:46 17:44	06:12 19:04	05:28 21:32	04:00 22:59	03:28 23:40	04:33 22:41	06:01 21:03	07:26 19:18	07:50 16:40	09:22 15:16	10:08 14:56
28	09:16 16:13	07:42 17:47	06:09 19:07	05:25 21:35	03:58 23:02	03:29 23:39	04:35 22:38	06:04 21:00	07:28 19:15	07:53 16:37	09:24 15:14	10:08 14:57
29	09:14 16:16		07:05 20:09	05:22 21:38	03:55 23:04	03:30 23:38	04:38 22:35	06:07 20:56	07:31 19:12	07:56 16:34	09:27 15:12	10:08 14:59
30	09:11 16:19		07:02 20:12	05:19 21:41	03:53 23:07	03:31 23:38	04:41 22:32	06:10 20:53	07:34 19:08	07:59 16:30	09:29 15:10	10:07 15:00
31	09:08 16:22		06:59 20:15		03:51 23:09		04:44 22:29	06:12 20:50		08:02 16:27		10:07 15:02
Potential sun hours	185	243	364	446	556	600	590	501	391	308	208	155
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: VE1: Kattiharju+extension_with_forest WTG: K14 - NORDEX N163/6.X 6800 163.0 !OI hub: 150.5 m (TOT: 232.0 m) (14)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.97 2.54 4.68 6.30 8.61 9.20 8.65 6.68 4.67 2.58 1.03 0.55

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
655 459 397 401 441 806 1,020 1,265 1,030 811 627 615 8,527

|January |February |March |April |May |June |July |August |September|October |November|December

1	10:06	09:06	07:39	06:55	05:16	03:48	03:33	04:47	06:15	07:37	08:05	09:32
	15:04	16:25	17:50	20:18	21:44	21:44	23:12	22:27	20:46	19:05	16:24	15:08
2	10:05	09:03	07:36	06:52	05:12	03:46	03:34	04:50	06:18	07:39	08:08	09:35
	15:05	16:29	17:53	20:21	21:47	23:14	23:36	22:24	20:43	19:01	16:21	15:06
3	10:05	09:00	07:33	06:48	05:09	03:44	03:36	04:53	06:21	07:42	08:11	09:37
	15:07	16:32	17:56	20:23	21:50	23:16	23:34	22:21	20:40	18:58	16:18	15:04
4	10:04	08:57	07:29	06:45	05:06	03:42	03:37	04:56	06:23	07:45	08:14	09:39
	15:09	16:35	17:59	20:26	21:53	23:18	23:33	22:17	20:36	18:55	16:15	15:03
5	10:03	08:54	07:26	06:42	05:03	03:41	03:39	04:59	06:26	07:47	08:17	09:42
	15:11	16:38	18:02	20:29	21:56	23:21	23:32	22:14	20:33	18:51	16:12	15:01
6	10:01	08:51	07:23	06:38	05:00	03:39	03:41	05:01	06:29	07:50	08:20	09:44
	15:13	16:41	18:05	20:32	21:59	23:23	23:30	22:11	20:30	18:48	16:09	15:00
7	10:00	08:48	07:19	06:35	04:57	03:37	03:43	05:04	06:32	07:53	08:23	09:46
	15:15	16:44	18:07	20:35	22:02	23:25	23:28	22:08	20:26	18:45	16:06	14:59
8	09:59	08:45	07:16	06:32	04:53	03:36	03:45	05:07	06:34	07:56	08:26	09:48
	15:18	16:47	18:10	20:37	22:05	23:27	23:27	22:05	20:23	18:41	16:04	14:58
9	09:57	08:42	07:13	06:28	04:50	03:34	03:47	05:10	06:37	07:59	08:29	09:50
	15:20	16:50	18:13	20:40	22:08	23:28	23:25	22:02	20:19	18:38	16:01	14:56
10	09:56	08:39	07:09	06:25	04:47	03:33	03:49	05:13	06:40	08:01	08:32	09:52
	15:22	16:53	18:16	20:43	22:11	23:30	23:23	21:59	20:16	18:35	15:58	14:55
11	09:54	08:36	07:06	06:21	04:44	03:31	03:51	05:16	06:42	08:04	08:35	09:54
	15:25	16:56	18:19	20:46	22:14	23:32	23:21	21:56	20:13	18:31	15:55	14:54
12	09:52	08:33	07:03	06:18	04:41	03:30	03:53	05:19	06:45	08:07	08:38	09:56
	15:27	16:59	18:22	20:49	22:17	23:33	23:19	21:52	20:09	18:28	15:52	14:54
13	09:51	08:30	06:59	06:15	04:38	03:29	03:56	05:22	06:48	08:10	08:41	09:57
	15:30	17:02	18:25	20:52	22:20	23:34	23:17	21:49	20:06	18:25	15:50	14:53
14	09:49	08:27	06:56	06:11	04:35	03:28	03:58	05:25	06:51	08:13	08:44	09:59
	15:33	17:05	18:27	20:55	22:22	23:36	23:15	21:46	20:02	18:22	15:47	14:52
15	09:47	08:24	06:53	06:08	04:32	03:28	04:00	05:27	06:53	08:15	08:47	10:00
	15:35	17:08	18:30	20:57	22:25	23:37	23:12	21:43	19:59	18:18	15:44	14:52
16	09:45	08:21	06:49	06:05	04:30	03:27	04:03	05:30	06:56	08:18	08:50	10:02
	15:38	17:12	18:33	21:00	22:28	23:38	23:10	21:39	19:56	18:15	15:42	14:52
17	09:43	08:18	06:46	06:01	04:27	03:26	04:05	05:33	06:59	08:21	08:53	10:03
	15:41	17:15	18:36	21:03	22:31	23:39	23:08	21:36	19:52	18:12	15:39	14:51
18	09:41	08:15	06:43	05:58	04:24	03:26	04:08	05:36	07:01	08:24	08:56	10:04
	15:44	17:18	18:39	21:06	22:34	23:39	23:05	21:33	19:49	18:09	15:36	14:51
19	09:38	08:12	06:39	05:55	04:21	03:26	04:11	05:39	07:04	08:27	08:59	10:05
	15:46	17:21	18:41	21:09	22:37	23:40	23:03	21:30	19:45	18:05	15:34	14:51
20	09:36	08:08	06:36	05:51	04:18	03:25	04:13	05:42	07:07	08:30	09:02	10:06
	15:49	17:24	18:44	21:12	22:40	23:40	23:00	21:26	19:42	18:02	15:31	14:52
21	09:34	08:05	06:32	05:48	04:15	03:25	04:16	05:44	07:09	08:33	09:05	10:06
	15:52	17:27	18:47	21:15	22:43	23:41	22:58	21:23	19:39	17:59	15:29	14:52
22	09:32	08:02	06:29	05:45	04:13	03:26	04:19	05:47	07:12	08:35	09:08	10:07
	15:55	17:30	18:50	21:18	22:45	23:41	22:55	21:20	19:35	17:56	15:27	14:52
23	09:29	07:59	06:26	05:42	04:10	03:26	04:21	05:50	07:15	08:38	09:10	10:07
	15:58	17:32	18:53	21:20	22:48	23:41	22:52	21:16	19:32	17:52	15:24	14:53
24	09:27	07:56	06:22	05:38	04:07	03:26	04:24	05:53	07:18	08:41	09:13	10:08
	16:01	17:35	18:55	21:23	22:51	23:41	22:50	21:13	19:28	17:49	15:22	14:54
25	09:24	07:52	06:19	05:35	04:05	03:27	04:27	05:56	07:20	07:44	09:16	10:08
	16:04	17:38	18:58	21:26	22:54	23:41	22:47	21:10	19:25	16:46	15:20	14:54
26	09:22	07:49	06:16	05:32	04:02	03:27	04:30	05:59	07:23	07:47	09:19	10:08
	16:07	17:41	19:01	21:29	22:56	23:40	22:44	21:07	19:22	16:43	15:18	14:55
27	09:19	07:46	06:12	05:28	04:00	03:28	04:33	06:01	07:26	07:50	09:22	10:08
	16:10	17:44	19:04	21:32	22:59	23:40	22:41	21:03	19:18	16:40	15:16	14:56
28	09:16	07:43	06:09	05:25	03:58	03:29	04:35	06:04	07:28	07:53	09:24	10:08
	16:13	17:47	19:07	21:35	23:02	23:39	22:38	21:00	19:15	16:37	15:14	14:57
29	09:14		07:05	05:22	03:55	03:30	04:38	06:07	07:31	07:56	09:27	10:08
	16:16		20:09	21:38	23:04	23:39	22:35	20:56	19:12	16:34	15:12	14:59
30	09:11		07:02	05:19	03:53	03:31	04:41	06:10	07:34	07:59	09:30	10:07
	16:19		20:12	21:41	23:07	23:38	22:32	20:53	19:08	16:30	15:10	15:00
31	09:08		06:59		03:51		04:44	06:12		08:02		10:07
	16:22		20:15		23:09		22:30	20:50		16:27		15:02

Potential sun hours

Sum of minutes with flicker 185 243 364 446 556 600 590 501 391 308 208 155 0

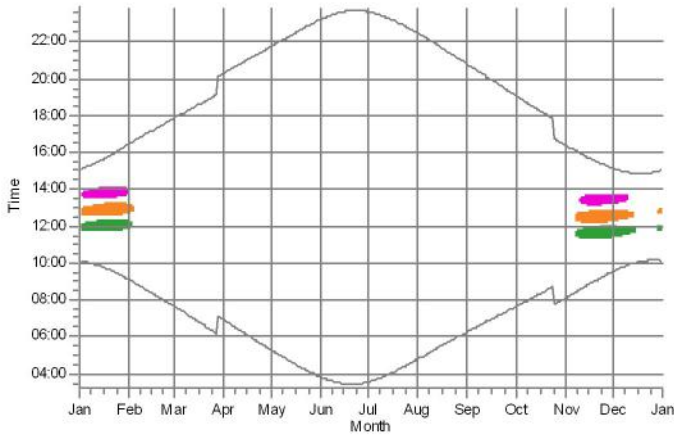
Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

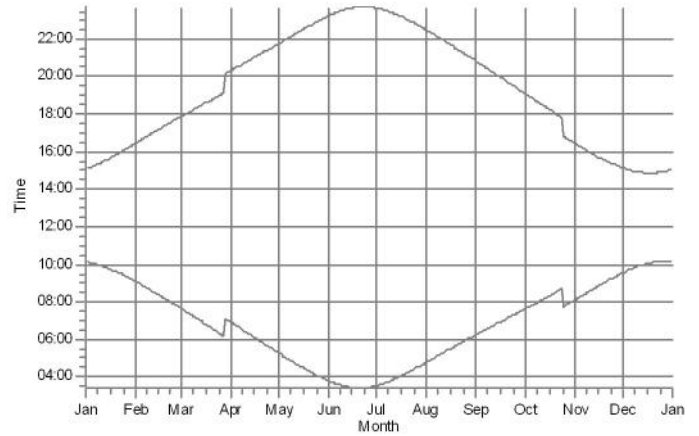
SHADOW - Calendar per WTG, graphical

Calculation: VE1: Kattiharju+extension_with_forest

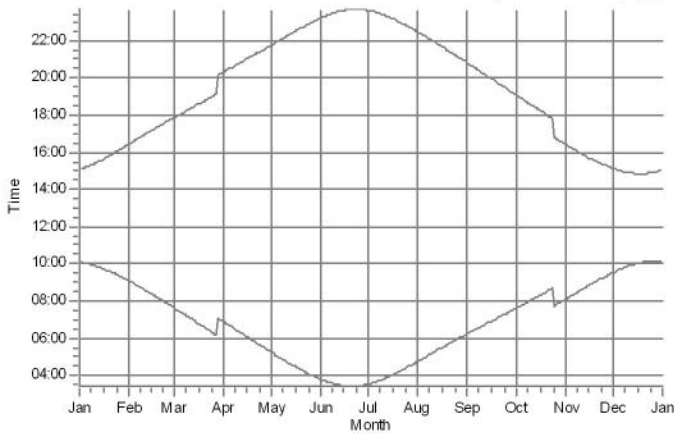
Extension WTG 01: NORDEX Generic 180-169 6800 180.0 !-hub: 169.0 m



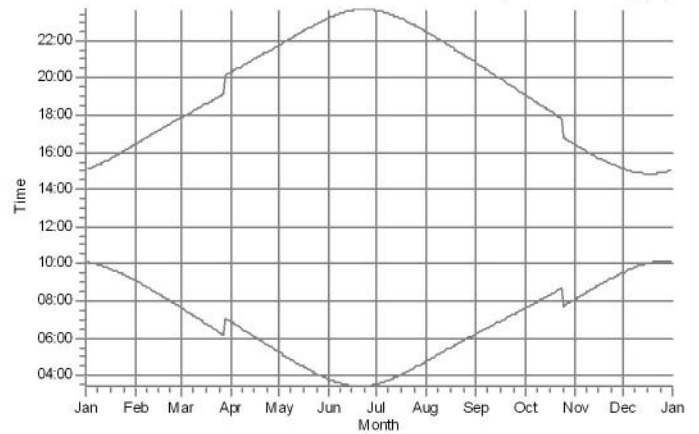
Extension WTG 02: NORDEX Generic 180-169 6800 180.0 !-hub: 169.0 m



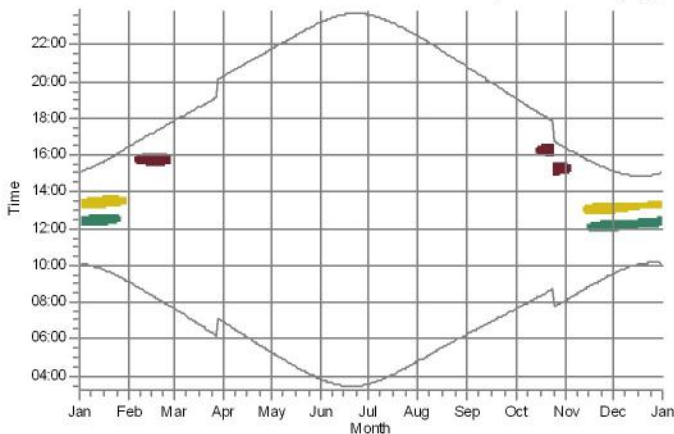
K01: NORDEX N163/6.X 6800 163.0 !O!hub: 150.5 m (TOT: 232.0 m) (1)



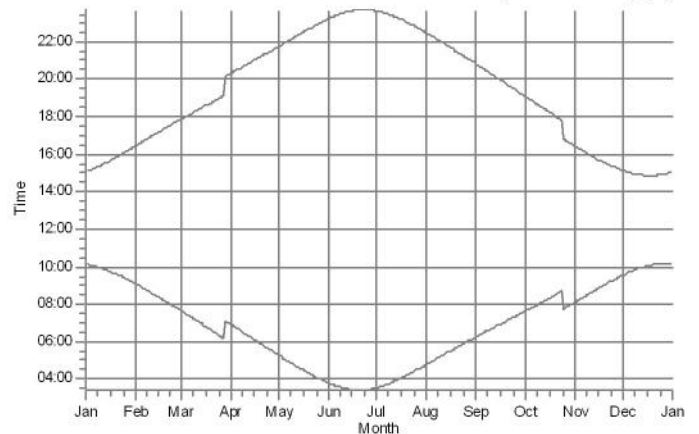
K02: NORDEX N163/6.X 6800 163.0 !O!hub: 149.5 m (TOT: 231.0 m) (2)



K03: NORDEX N163/6.X 6800 163.0 !O!hub: 150.5 m (TOT: 232.0 m) (3)



K04: NORDEX N163/6.X 6800 163.0 !O!hub: 150.5 m (TOT: 232.0 m) (4)



Shadow receptors

T: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (106)
 W: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (105)

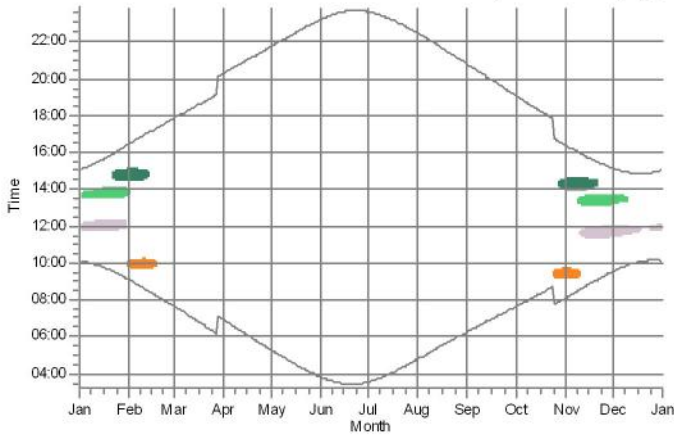
X: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (111)
 AC: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (104)

AD: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (103)
 AF: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (101)

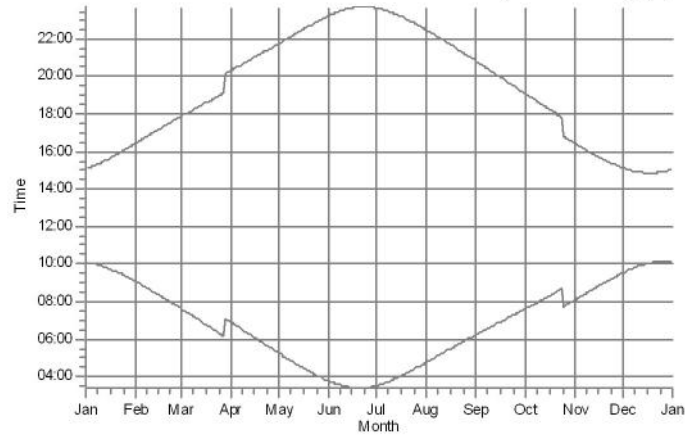
SHADOW - Calendar per WTG, graphical

Calculation: VE1: Kattiharju+extension_with_forest

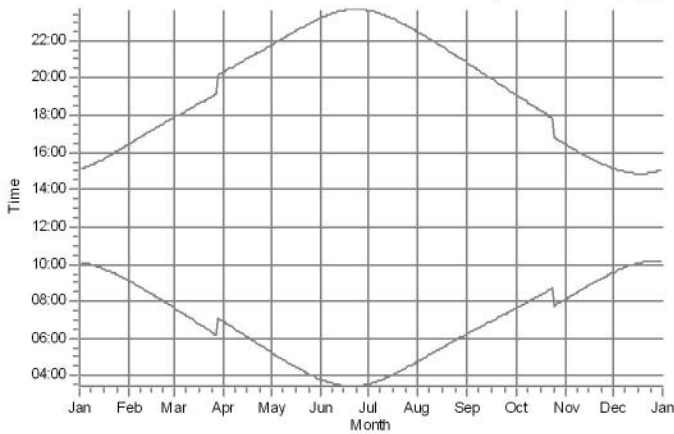
K05: NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (5)



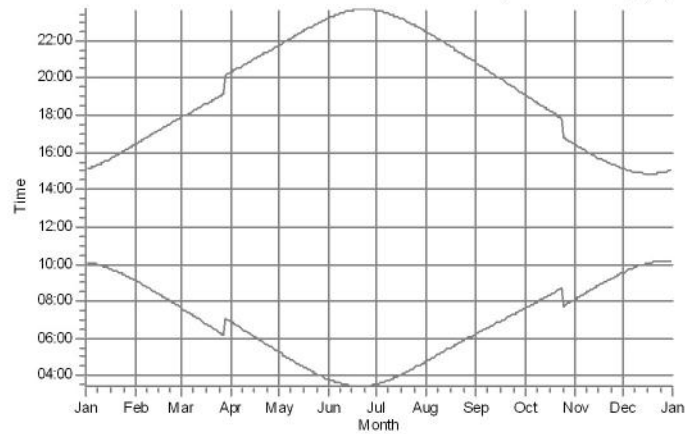
K06: NORDEX N163/6.X 6800 163.0 IO! hub: 148.5 m (TOT: 230.0 m) (6)



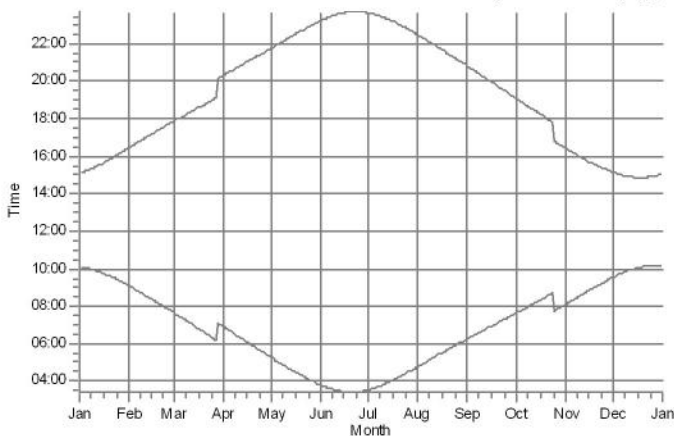
K07: NORDEX N163/6.X 6800 163.0 IO! hub: 149.5 m (TOT: 231.0 m) (7)



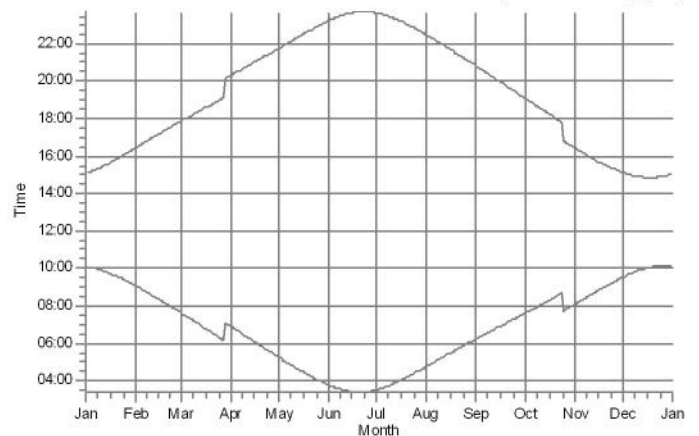
K08: NORDEX N163/6.X 6800 163.0 IO! hub: 149.5 m (TOT: 231.0 m) (8)



K09: NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (9)



K10: NORDEX N163/6.X 6800 163.0 IO! hub: 150.5 m (TOT: 232.0 m) (10)



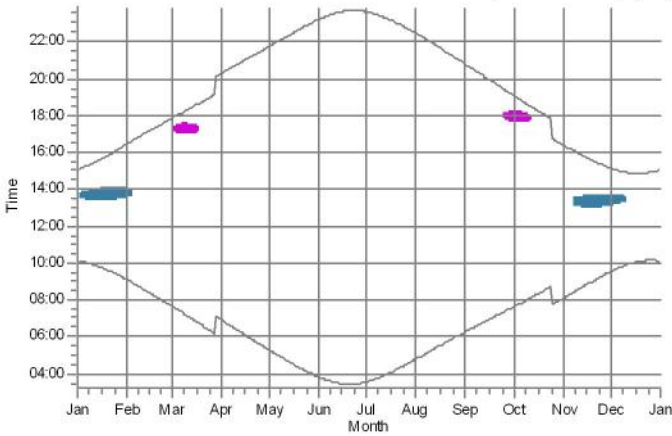
Shadow receptors

- W: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (105)
- Y: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (109)
- AB: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (107)
- AC: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (104)

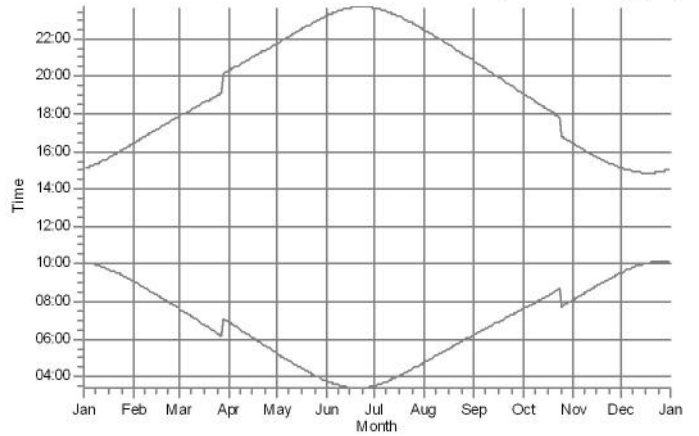
SHADOW - Calendar per WTG, graphical

Calculation: VE1: Kattiharju+extension_with_forest

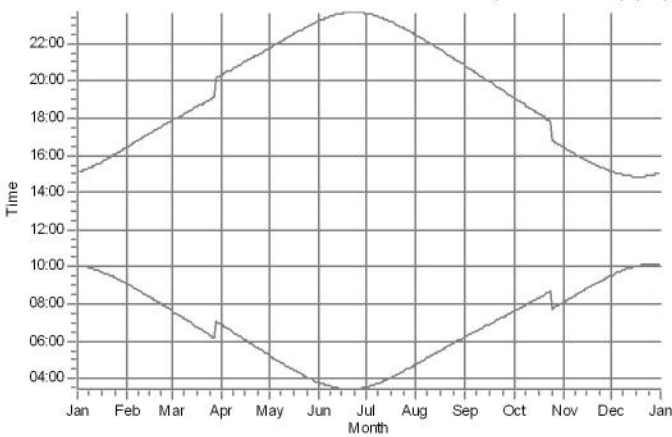
K11: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (11)



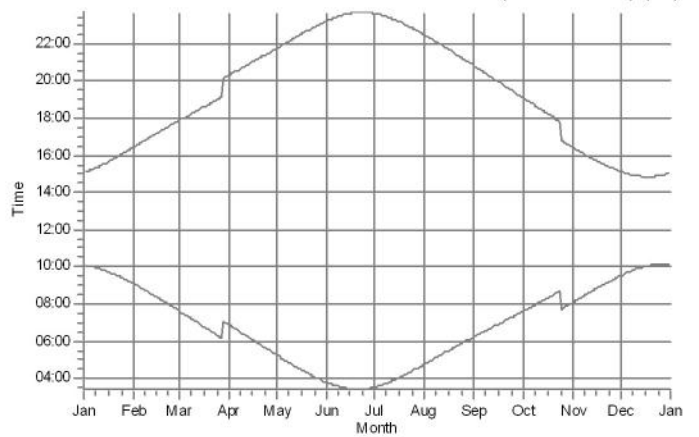
K12: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (12)



K13: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (13)



K14: NORDEX N163/6.X 6800 163.0 !O! hub: 150.5 m (TOT: 232.0 m) (14)



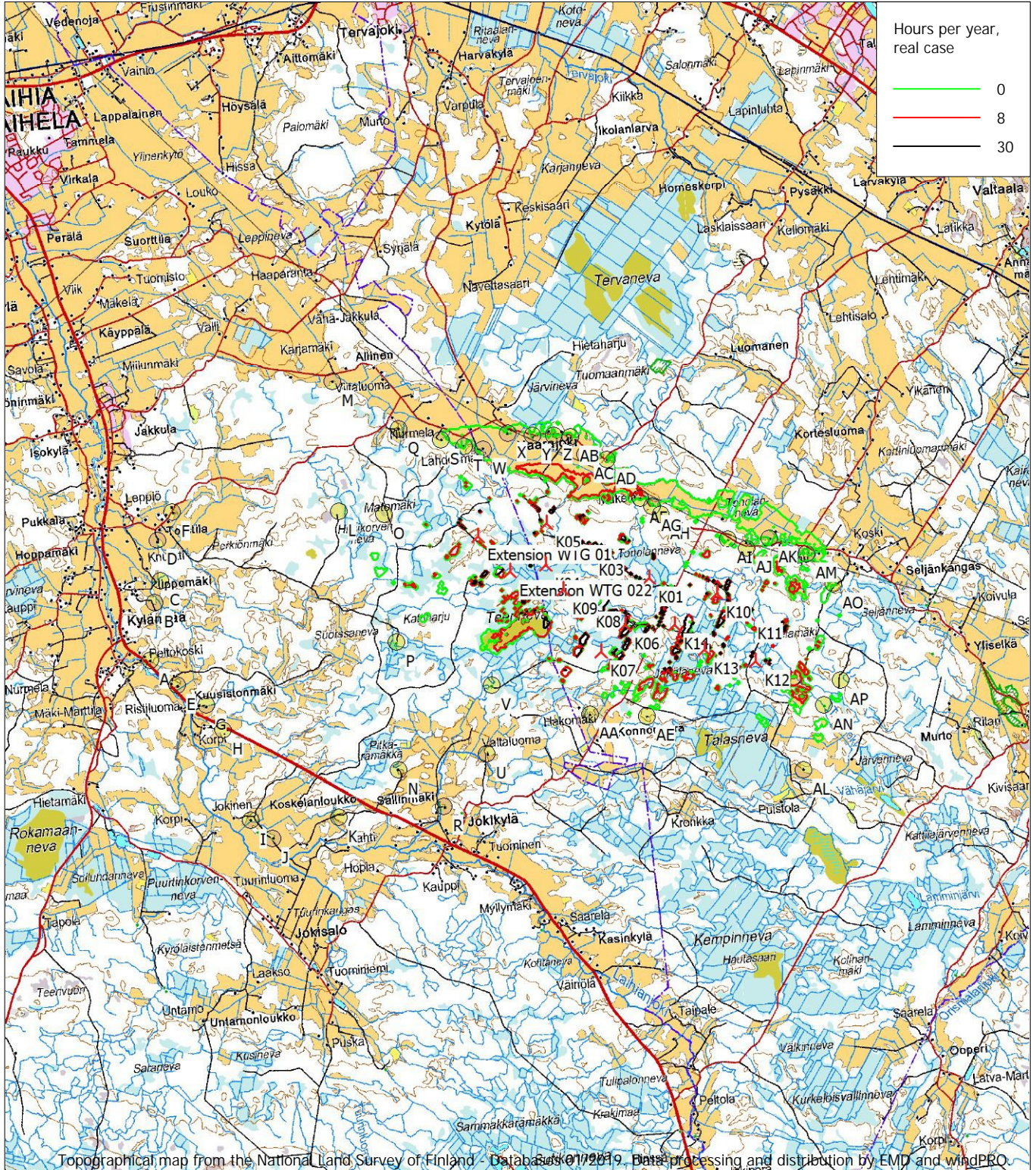
Shadow receptors

AK: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (97)

AO: Shadow Receptor: 5.0 x 5.0 Azimuth: 0.0° Slope: 0.0° (93)

SHADOW - Map

Calculation: VE1: Kattiharju+extension_with_forest



Map: Finnish Topographic Map, Print scale 1:100,000, Map center Finish TM ETRS-TM35FIN-ETRS89 East: 256,348 North: 6,984,253

New WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_ONLINEDATA_0.wpo (1)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 2.0 m