

SHADOW - Main Result

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

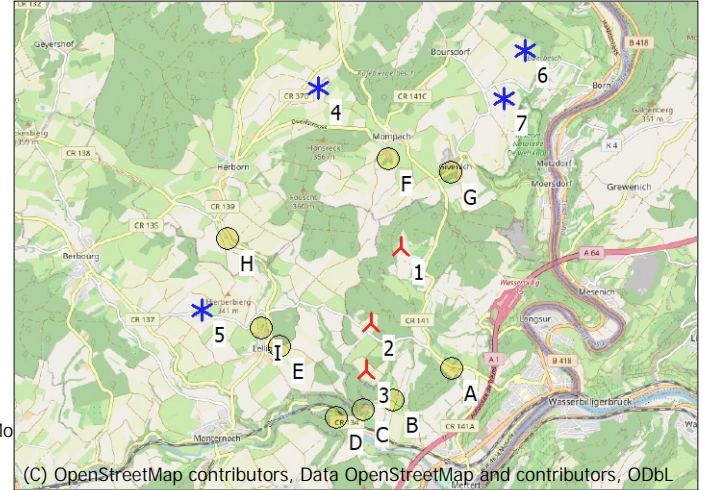
Sunshine probability S (Average daily sunshine hours) [TRIER]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,29 2,62 3,51 5,39 6,60 6,56 7,20 6,77 4,98 2,92 1,63 1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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: Project Wizard Elevation Data Grid (Luxembourgish Elevation Model)
Receptor grid resolution: 1,0 m

All coordinates are in
Luxemburgian TM-LUREF (LU)



Scale 1:125 000
New WTG
Shadow receptor
Existing WTG

WTGs

	X	Y	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]
			[m]									
1	101 520	89 035	282,2	ENERCON E-160 EP5 E3 5560 160.0 IO! hub: 166,... Yes	ENERCON	E-160 EP5 E3-5 560		5 560	160,0	166,6	1 781	9,6
2	101 027	87 795	298,9	ENERCON E-160 EP5 E3 R1 5560 160.0 IO! hub: 1... Yes	ENERCON	E-160 EP5 E3 R1-5 560		5 560	160,0	166,6	1 781	9,6
3	100 951	87 011	279,2	ENERCON E-160 EP5 E3 5560 160.0 IO! hub: 166,... Yes	ENERCON	E-160 EP5 E3-5 560		5 560	160,0	166,6	1 781	9,6
4	100 138	91 672	395,6	ENERCON E-115 EP3 E3 4200 115.7 IO! hub: 149,... Yes	ENERCON	E-115 EP3 E3-4 200		4 200	115,7	149,0	1 618	12,9
5	98 216	87 997	319,2	ENERCON E-138 EP3 E3 4260 138.3 IO! hub: 160,... Yes	ENERCON	E-138 EP3 E3-4 260		4 260	138,3	160,0	1 686	11,1
6	103 561	92 322	355,4	ENERCON E-138 EP3 E3 4260 138.3 IO! hub: 160,... Yes	ENERCON	E-138 EP3 E3-4 260		4 260	138,3	160,0	1 686	11,1
7	103 220	91 517	349,3	ENERCON E-138 EP3 E3 4260 138.3 IO! hub: 160,... Yes	ENERCON	E-138 EP3 E3-4 260		4 260	138,3	160,0	1 686	11,1

Shadow receptor-Input

No.	Name	X	Y	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	Mertert, Schaefferreder 1	102 376	87 042	241,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
B	Mertert, Bei den dräi Eechen 1	101 411	86 525	192,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
C	Mertert, Scheidberg 1	100 916	86 361	224,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
D	Mertert, Fielsmillen 1	100 463	86 221	159,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
E	Lellig, Op de Scheedbielg (limite)	99 521	87 399	282,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
F	Mompach, An der Uecht 11	101 307	90 508	309,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G	Givenich, Maison 6	102 349	90 291	309,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
H	Herbon, Hierber Milen 3	98 645	89 180	282,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
I	Lellig An der Hiel 11	99 217	87 695	275,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

No.	Name	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	Mertert, Schaefferreder 1	23:06	74	0:26	9:12	
B	Mertert, Bei den dräi Eechen 1	0:00	0	0:00	0:00	
C	Mertert, Scheidberg 1	0:00	0	0:00	0:00	
D	Mertert, Fielsmillen 1	0:00	0	0:00	0:00	
E	Lellig, Op de Scheedbielg (limite)	47:21	143	0:25	18:58	
F	Mompach, An der Uecht 11	0:00	0	0:00	0:00	
G	Givenich, Maison 6	0:00	0	0:00	0:00	
H	Herbon, Hierber Milen 3	0:00	0	0:00	0:00	
I	Lellig An der Hiel 11	30:13	77	0:32	13:21	

SHADOW - Main Result

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	ENERCON E-160 EP5 E3 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (1)	0:00	0:00
2	ENERCON E-160 EP5 E3 R1 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (2)	24:01	10:15
3	ENERCON E-160 EP5 E3 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (4)	21:40	7:18
4	ENERCON E-115 EP3 E3 4200 115.7 !O! hub: 149,0 m (TOT: 206,9 m) (3)	0:00	0:00
5	ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (26)	54:59	23:57
6	ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (27)	0:00	0:00
7	ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (28)	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.

WP Mertert

Societe Electrique de l'Our S.A.

LU-2010 Luxembourg

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Calculated:

18.04.2025 10:09/4.0.531

Shadow receptor: A - Mertert, Schaeffereder 1
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.29	2.62	3.51	5.39	6.60	6.56	7.20	6.77	4.98	2.92	1.63	1.15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

		January	February	March		April		May		June		July		August		September		October		November	December	
1	08:32	08:09	07:20		07:14		19:02 (3)	06:13	05:32		05:30		20:39 (2)	06:04		06:49		19:04 (3)	07:33	07:22	08:09	
	16:44	17:28	18:16		20:05	24	19:26 (3)	20:51	21:33		21:46	20	20:59 (2)	21:17		20:20	12	19:16 (3)	19:15	17:14	16:37	
2	08:32	08:07	07:17		07:11		19:01 (3)	06:12	05:32		20:39 (2)	05:31	20:38 (2)	06:05		06:50		19:02 (3)	07:35	07:24	08:10	
	16:45	17:30	18:17		20:06	25	19:26 (3)	20:53	21:34	7	20:46 (2)	21:46	19	20:59 (2)	21:16		20:18	16	19:18 (3)	19:13	17:12	16:37
3	08:32	08:06	07:15		07:09		19:01 (3)	06:10	05:31		20:38 (2)	05:32	20:38 (2)	06:06		06:52		18:59 (3)	07:36	07:25	08:12	
	16:46	17:32	18:19		20:08	25	19:26 (3)	20:54	21:35	10	20:48 (2)	21:45	18	20:58 (2)	21:14		20:16	20	19:19 (3)	19:11	17:10	16:36
4	08:32	08:04	07:13		07:07		19:00 (3)	06:08	05:30		20:37 (2)	05:32	20:41 (2)	06:08		06:53		18:59 (3)	07:38	07:27	08:13	
	16:47	17:33	18:21		20:10	26	19:26 (3)	20:56	21:36	12	20:49 (2)	21:45	17	20:58 (2)	21:13		20:14	21	19:20 (3)	19:09	17:09	16:36
5	08:32	08:03	07:11		07:05		19:00 (3)	06:07	05:30		20:36 (2)	05:33	20:40 (2)	06:09		06:54		18:57 (3)	07:39	07:29	08:14	
	16:48	17:35	18:22		20:11	26	19:26 (3)	20:57	21:37	14	20:50 (2)	21:45	17	20:57 (2)	21:11		20:12	23	19:20 (3)	19:07	17:07	16:35
6	08:31	08:01	07:09		07:03		19:01 (3)	06:05	05:29		20:35 (2)	05:34	20:41 (2)	06:11		06:56		18:56 (3)	07:41	07:30	08:15	
	16:49	17:37	18:24		20:13	24	19:25 (3)	20:59	21:38	16	20:51 (2)	21:44	16	20:57 (2)	21:10		20:10	24	19:20 (3)	19:04	17:06	16:35
7	08:31	08:00	07:07		07:01		19:00 (3)	06:03	05:29		20:35 (2)	05:35	20:42 (2)	06:12		06:57		18:55 (3)	07:42	07:32	08:17	
	16:51	17:39	18:25		20:14	23	19:23 (3)	21:00	21:38	17	20:52 (2)	21:44	15	20:57 (2)	21:08		20:07	26	19:21 (3)	19:02	17:04	16:35
8	08:31	07:58	07:05		06:59		19:01 (3)	06:02	05:28		20:36 (2)	05:36	20:44 (2)	06:13		06:59		18:55 (3)	07:44	07:34	08:18	
	16:52	17:40	18:27		20:16	21	19:22 (3)	21:02	21:39	17	20:53 (2)	21:43	13	20:57 (2)	21:06		20:05	25	19:20 (3)	19:00	17:02	16:34
9	08:30	07:57	07:03		06:57		19:01 (3)	06:00	05:28		20:35 (2)	05:36	20:45 (2)	06:15		07:00		18:55 (3)	07:45	07:35	08:19	
	16:53	17:42	18:29		20:17	20	19:21 (3)	21:03	21:40	18	20:53 (2)	21:42	11	20:56 (2)	21:05		20:03	25	19:20 (3)	18:59	17:01	16:34
10	08:30	07:55	07:01		06:55		19:03 (3)	05:58	05:27		20:35 (2)	05:37	20:46 (2)	06:16		07:02		18:54 (3)	07:47	07:37	08:20	
	16:54	17:44	18:30		20:19	16	19:19 (3)	21:05	21:41	19	20:54 (2)	21:42	9	20:55 (2)	21:03		20:01	25	19:19 (3)	18:56	16:59	16:34
11	08:29	07:53	06:59		06:52		19:05 (3)	05:57	05:27		20:35 (2)	05:38	20:48 (2)	06:18		07:03		18:54 (3)	07:48	07:39	08:21	
	16:56	17:45	18:32		20:20	12	19:17 (3)	21:06	21:41	19	20:54 (2)	21:41	4	20:52 (2)	21:01		19:59	24	19:18 (3)	18:54	16:58	16:34
12	08:29	07:51	06:57		06:50		19:09 (3)	05:55	05:27		20:35 (2)	05:39		06:19		07:05		18:54 (3)	07:50	07:40	08:22	
	16:57	17:47	18:33		20:22	4	19:13 (3)	21:07	21:42	20	20:55 (2)	21:40		20:59		19:57	24	19:18 (3)	18:52	16:57	16:34	
13	08:28	07:50	06:55		06:48		05:54	05:27	05:27		20:34 (2)	05:40		06:21		07:06		18:54 (3)	07:51	07:42	08:23	
	16:58	17:49	18:35		20:23		21:09	21:43	21	20:55 (2)	21:40		20:58		19:54	22	19:16 (3)	18:50	16:55	16:34		
14	08:28	07:48	06:52		06:46		05:52	05:26	05:26		20:34 (2)	05:41		06:22		07:08		18:56 (3)	07:53	07:43	08:24	
	17:00	17:50	18:39		20:25		21:10	21:43	21	20:55 (2)	21:39		20:56		19:52	19	19:15 (3)	18:48	16:54	16:34		
15	08:27	07:46	06:50		06:44		05:51	05:26	05:26		20:34 (2)	05:42		06:24		07:09		18:57 (3)	07:55	07:45	08:25	
	17:01	17:52	18:38		20:27		21:12	21:44	22	20:56 (2)	21:38		20:54		19:50	16	19:13 (3)	18:46	16:53	16:34		
16	08:26	07:44	06:48		06:42		05:50	05:26	05:26		20:35 (2)	05:43		06:25		07:11		18:59 (3)	07:56	07:47	08:25	
	17:03	17:54	18:40		20:28		21:13	21:44	21	20:56 (2)	21:37		20:52		19:48	12	19:11 (3)	18:44	16:51	16:34		
17	08:25	07:43	06:46		06:40		05:48	05:26	05:26		20:35 (2)	05:45		06:26		07:12		18:57 (3)	07:58	07:48	08:26	
	17:04	17:56	18:41		20:30		21:14	21:45	21	20:56 (2)	21:36		20:50		19:46		18:42	16:50	16:34			
18	08:25	07:41	06:44		06:38		05:47	05:26	05:26		20:35 (2)	05:46		06:28		07:14		18:59 (3)	07:59	07:50	08:27	
	17:06	17:57	18:43		20:31		21:16	21:45	21	20:56 (2)	21:35		20:48		19:43		18:40	16:49	16:35			
19	08:24	07:39	06:42		06:36		05:46	05:26	05:26		20:35 (2)	05:47		06:29		07:15		18:01 (3)	07:57	08:01	08:28	
	17:07	17:59	18:45		20:33		21:17	21:45	22	20:57 (2)	21:34		20:46		19:41		18:38	16:48	16:45	16:35		
20	08:23	07:37	06:40		06:34		05:44	05:26	05:26		20:36 (2)	05:48		06:31		07:17		18:03 (3)	07:53	08:28		
	17:09	18:01	18:46		20:34		21:19	21:46	22	20:58 (2)	21:33		20:44		19:39		18:36	16:47	16:35			
21	08:22	07:35	06:37		06:32		05:43	05:26	05:26		20:36 (2)	05:49		06:32		07:18		18:04 (3)	07:54	08:29		
	17:10	18:02	18:48		20:36		21:20	21:46	22	20:58 (2)	21:32		20:42		19:37		18:34	16:46	16:36			
22	08:21	07:33	06:35		06:30		05:42	05:27	05:27		20:36 (2)	05:50		06:34		07:20		18:06 (3)	07:56	08:29		
	17:12	18:04	18:49		20:37		21:21	21:46	22	20:58 (2)	21:31		20:40		19:35		18:32	16:45	16:36			
23	08:20	07:31	06:33		06:29		05:41	05:27	05:27		20:36 (2)	05:52		06:35		07:21		18:07 (3)	07:58	08:30		
	17:13	18:06	18:51		20:38		21:22	21:46	22	20:58 (2)	21:30		20:39		19:33		18:30	16:44	16:37			
24	08:19	07:29	06:31		06:26		05:40	05:27	05:27		20:37 (2)	05:53		06:37		07:23		18:09 (3)	07:59	08:30		
	17:15	18:07	18:52		20:40		21:24	21:46	21	20:58 (2)	21:28		20:37		19:30		18:28	16:43	16:37			
25	08:18	07:27	06:29		06:24		05:39	05:27	05:27		20:37 (2)	05:54		06:38		07:24		17:11 (3)	08:01	08:31		
	17:17	18:09	18:54		20:42		21:25	21:46	21	20:58 (2)	21:27		20:35		19:28		17:26	16:42	16:38			
26	08:16	07:26	06:27		06:23		05:38	05:28	05:28		20:37 (2)	05:55		06:40		07:25		17:12 (3)	08:02	08:31		
	17:18	18:11	18:56		20:44		21:26	21:47	21	20:58 (2)	21:26		20:32		19:26		17:24	16:41	16:39			
27	08:15	07:24	06:24		06:21		05:37	05:28	05:28		20:38 (2)	05:57		06:41		07:27		17:14 (3)	08:03	08:31		
	17:20	18:12	18:57	11	18:21 (3)	06:45	21:27	21:46	21	20:59 (2)	21:25		20:30		19:24		17:23	16:40	16:39			
28	08:14	07:22	06:22		06:18	08 (3)	05:36	05:29	05:29		20:37 (2)	05:58		06:43		07:28		17:16 (3)	08:05	08:32		
	17:22	18:14		15	18:23 (3)	06:47	21:28	21:46	21	20:58 (2)	21:23		20:28		19:22		17:21	16:39	16:40			
29	08:13	07:20	06:20		06:14		05:35	05:29	05:29		20:38 (2)	05:59		06:44		07:30		17:07 (3)	08:06	08:32		
	17:23		20:00	19	19:25 (3)	06:48	21:30	21:46	21	20:59 (2)	21:22		20:26		19:19		17:19	16:39	16:41			
30	08:11		07:18		19:03 (3)	06:15	05:34	05:30		20:38 (2)	06:01		06:46		07:32		17:19	16:38	16:42			
	17:25		20:02	22	19:25 (3)	20:50	21:31	21:46	20	20:58 (2)	21:20		20:24		19:17		17:17 (3)	16:38	16:42			
31	08:10		07:16		19:02 (3)		05:33				06:02		06:47		19:08 (3)		17:15		16:43			
	17:27		20:03	23	19:25 (3)		21:32				21:19		20:22	5	19:13 (3)							
Potential sun hours	268	282	368		412		476		487		491		447		379		334		274	255		
Total, worst case			90		246				552		159		5									
Sun reduction			0.30		0.39				0.40		0.45		0.47									
Oper. time red.			1.00		1.00				1.00		1.00		1.00									
Wind dir. red.			1.00		1.00				1.00		1.00		1.00									
Total reduction																						

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)

SHADOW - Calendar

Shadow receptor: B - Mertert, Bei den dräi Eechen 1
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:14 20:51	05:32 21:33	05:30 21:46	06:04 21:18	06:49 20:20	07:33 19:15	07:22 17:14	08:09 16:37
2	08:32 16:45	08:07 17:30	07:18 18:17	07:12 20:06	06:12 20:53	05:32 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:35 19:13	07:24 17:12	08:10 16:37
3	08:32 16:46	08:06 17:32	07:16 18:19	07:09 20:08	06:10 20:54	05:31 21:35	05:32 21:45	06:06 21:14	06:52 20:16	07:36 19:11	07:25 17:10	08:12 16:36
4	08:32 16:47	08:04 17:33	07:13 18:21	07:07 20:10	06:08 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	07:27 17:09	08:13 16:36
5	08:32 16:48	08:03 17:35	07:11 18:22	07:05 20:11	06:07 20:57	05:30 21:37	05:33 21:45	06:09 21:11	06:55 20:12	07:39 19:07	07:29 17:07	08:14 16:36
6	08:31 16:49	08:01 17:37	07:09 18:24	07:03 20:13	06:05 20:59	05:29 21:38	05:34 21:44	06:11 21:10	06:56 20:10	07:41 19:05	07:30 17:06	08:15 16:35
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Potential sun hours	268	282	368	412	476	487	491	447	379	335	274	255
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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Shadow receptor: C - Mertert, Scheidberg 1
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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Potential sun hours	268	282	368	412	476	487	491	447	379	335	274	255
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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Shadow receptor: D - Mertert, Fielsmillen 1
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:14 20:51	05:33 21:33	05:31 21:46	06:04 21:18	06:49 20:20	07:33 19:15	07:22 17:14	08:09 16:38
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28	08:14 17:22	07:22 18:14	06:22 18:59	06:19 20:47	05:36 21:28	05:29 21:46	05:58 21:23	06:43 20:29	07:29 19:22	07:16 17:21	08:05 16:40	08:32 16:40
29	08:13 17:23		07:20 20:00	06:17 20:48	05:35 21:30	05:29 21:46	06:00 21:22	06:44 20:26	07:30 19:20	07:17 17:19	08:06 16:39	08:32 16:41
30	08:11 17:25		07:18 20:02	06:15 20:50	05:34 21:31	05:30 21:46	06:01 21:20	06:46 20:24	07:32 19:17	07:19 17:17	08:08 16:38	08:32 16:42
31	08:10 17:27		07:16 20:03		05:33 21:32		06:02 21:19	06:47 20:22		07:21 17:16		08:32 16:43
Potential sun hours	268	282	368	412	476	487	491	447	379	335	274	255
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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Shadow receptor: E - Lellig, Op de Scheedbiert (limite)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	08:32 16:44	08:09 17:28	07:20 18:16	07:43 (3) 07:57 (3)	07:14 20:05	06:14 20:51
2	08:32 16:45	08:07 17:30	07:18 18:17	07:41 (3) 07:59 (3)	07:12 20:07	06:12 20:53
3	08:32 16:46	08:06 17:32	07:16 18:19	07:40 (3) 08:00 (3)	07:10 20:08	06:10 20:54
4	08:32 16:47	08:04 17:34	07:14 18:21	07:39 (3) 08:01 (3)	07:07 20:10	06:08 20:56
5	08:32 16:48	08:03 17:35	07:12 18:22	07:38 (3) 08:01 (3)	07:05 20:11	06:07 20:57
6	08:31 16:50	08:01 17:37	07:09 18:24	07:37 (3) 08:02 (3)	07:03 20:13	06:05 20:59
7	08:31 16:51	08:00 17:39	07:07 18:26	07:36 (3) 08:01 (3)	07:01 20:14	06:03 21:00
8	08:31 16:52	07:58 17:40	07:05 18:27	07:36 (3) 08:01 (3)	06:59 20:16	06:02 21:02
9	08:30 16:53	07:57 17:42	07:03 18:29	07:36 (3) 08:00 (3)	06:57 20:17	06:00 21:03
10	08:30 16:54	07:55 17:44	07:01 18:30	07:36 (3) 08:00 (3)	06:55 20:19	05:59 21:05
11	08:30 16:56	07:53 17:46	06:59 18:32	07:37 (3) 07:59 (3)	06:53 20:21	05:57 21:06
12	08:29 16:57	07:52 17:47	06:57 18:34	07:37 (3) 07:58 (3)	06:51 20:22	05:56 21:08
13	08:28 16:59	07:50 17:49	06:55 18:35	07:39 (3) 07:57 (3)	06:48 20:24	05:54 21:09
14	08:28 17:00	07:48 17:51	06:53 18:37	07:39 (3) 07:54 (3)	06:46 20:25	05:53 21:11
15	08:27 17:01	07:46 17:52	06:50 18:38	07:42 (3) 07:51 (3)	06:44 20:27	05:51 21:12
16	08:26 17:03	07:45 17:54	06:48 18:40	06:42 20:28	05:50 21:13	20:26 (5) 21:13
17	08:26 17:04	07:43 17:56	06:46 18:42	06:40 20:30	05:48 21:15	20:22 (5) 20:32 (5)
18	08:25 17:06	07:41 17:57	06:44 18:43	06:38 20:31	05:47 21:16	20:21 (5) 20:34 (5)
19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	05:46 21:17	20:20 (5) 20:35 (5)
20	08:23 17:09	07:37 18:01	06:40 18:46	06:34 20:34	05:45 21:19	20:19 (5) 20:36 (5)
21	08:22 17:10	07:35 18:02	06:38 18:48	06:32 20:36	07:00 (2) 07:11 (2)	20:18 (5) 20:37 (5)
22	08:21 17:12	07:33 18:04	06:35 18:49	06:30 20:38	05:42 06:58 (2)	20:18 (5) 20:38 (5)
23	08:20 17:14	07:32 18:06	06:33 18:51	06:28 20:39	05:41 07:14 (2)	20:17 (5) 20:38 (5)
24	08:19 17:15	07:30 18:08	06:31 18:53	06:27 20:41	05:40 07:15 (2)	20:17 (5) 20:39 (5)
25	08:18 17:17	07:28 18:09	06:29 18:54	06:25 20:42	05:39 07:15 (2)	20:17 (5) 20:39 (5)
26	08:17 17:18	07:26 18:11	06:27 18:56	06:23 20:44	05:38 07:15 (2)	20:17 (5) 20:39 (5)
27	08:15 17:20	07:24 18:12	06:25 18:57	06:21 20:45	05:37 07:16 (2)	20:16 (5) 20:40 (5)
28	08:14 17:22	07:22 18:14	06:22 18:59	06:19 20:47	05:36 07:16 (2)	20:16 (5) 20:40 (5)
29	08:13 17:23		07:20 20:00	06:17 20:48	05:35 07:16 (2)	20:16 (5) 20:40 (5)
30	08:12 17:25		07:18 20:02	06:15 20:50	05:34 07:15 (2)	20:15 (5) 20:41 (5)
31	08:10 17:27		07:16 20:03		05:33 21:32	20:17 (5) 20:40 (5)
Potential sun hours	268	282	368	412	476	487
Total, worst case		8	305	204	455	623
Sun reduction		0,26	0,30	0,39	0,43	0,40
Oper. time red.		1,00	1,00	1,00	1,00	1,00
Wind dir. red.		1,00	1,00	1,00	1,00	1,00
Total reduction		0,26	0,30	0,39	0,43	0,40
Total, real		2	90	80	196	252

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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Shadow receptor: E - Lellig, Op de Scheedbiereg (limite)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July			August			September			October			November			December		
1	05:31		20:24 (5)	06:04			06:49			07:33		08:17 (3)	07:22			08:09		
	21:46	21	20:45 (5)	21:18			20:20			19:15	19	08:36 (3)	17:14			16:38		
2	05:31		20:25 (5)	06:05			06:50			07:35		08:16 (3)	07:24			08:11		
	21:46	21	20:46 (5)	21:16			20:18			19:13	22	08:38 (3)	17:12			16:37		
3	05:32		20:24 (5)	06:06			06:52			07:36		08:14 (3)	07:26			08:12		
	21:46	22	20:46 (5)	21:15			20:16			19:11	23	08:37 (3)	17:11			16:36		
4	05:32		20:24 (5)	06:08			07:09 (2)	06:53		07:38		08:14 (3)	07:27			08:13		
	21:45	22	20:46 (5)	21:13	8	07:17 (2)	20:14			19:09	24	08:38 (3)	17:09			16:36		
5	05:33		20:25 (5)	06:09			07:07 (2)	06:55		07:39		08:13 (3)	07:29			08:14		
	21:45	22	20:47 (5)	21:11	12	07:19 (2)	20:12			19:07	24	08:37 (3)	17:07			16:36		
6	05:34		20:24 (5)	06:11			07:04 (2)	06:56		07:41		08:13 (3)	07:30			08:16		
	21:44	23	20:47 (5)	21:10	16	07:20 (2)	20:10			19:05	25	08:38 (3)	17:06			16:35		
7	05:35		20:24 (5)	06:12			07:04 (2)	06:58		07:42		08:12 (3)	07:32			08:17		
	21:44	23	20:47 (5)	21:08	18	07:22 (2)	20:08			19:02	25	08:37 (3)	17:04			16:35		
8	05:36		20:24 (5)	06:14			07:02 (2)	06:59		07:44		08:13 (3)	07:34			08:18		
	21:43	24	20:48 (5)	21:06	20	07:22 (2)	20:05			19:00	24	08:37 (3)	17:03			16:35		
9	05:37		20:25 (5)	06:15			07:01 (2)	07:01		07:45		08:13 (3)	07:35			08:19		
	21:43	23	20:48 (5)	21:05	22	07:23 (2)	20:03			18:58	23	08:36 (3)	17:01			16:34		
10	05:37		20:25 (5)	06:16			07:01 (2)	07:02		07:47		08:13 (3)	07:37			08:20		
	21:42	23	20:48 (5)	21:03	23	07:24 (2)	20:01			18:56	21	08:34 (3)	17:00			16:34		
11	05:38		20:25 (5)	06:18			07:00 (2)	07:03		07:49		08:14 (3)	07:39			08:21		
	21:41	24	20:49 (5)	21:01	24	07:24 (2)	19:59			18:54	19	08:33 (3)	16:58			16:34		
12	05:39		20:25 (5)	06:19			07:00 (2)	07:05		07:50		08:15 (3)	07:40			08:22		
	21:41	24	20:49 (5)	20:59	24	07:24 (2)	19:57			18:52	16	08:31 (3)	16:57			16:34		
13	05:40		20:25 (5)	06:21			07:00 (2)	07:06		07:52		08:17 (3)	07:42			08:23		
	21:40	24	20:49 (5)	20:58	24	07:24 (2)	19:55			18:50	12	08:29 (3)	16:55			16:34		
14	05:41		20:25 (5)	06:22			06:59 (2)	07:08		07:53			07:44			08:24		
	21:39	24	20:49 (5)	20:56	24	07:23 (2)	19:52			18:48			16:54			16:34		
15	05:42		20:26 (5)	06:24			07:00 (2)	07:09		07:55			07:45			08:25		
	21:38	23	20:49 (5)	20:54	24	07:24 (2)	19:50			18:46			16:53			16:34		
16	05:44		20:26 (5)	06:25			06:59 (2)	07:11		07:56			07:47			08:26		
	21:37	23	20:49 (5)	20:52	24	07:23 (2)	19:48			18:44			16:52			16:34		
17	05:45		20:26 (5)	06:27			06:59 (2)	07:12		07:58			07:48			08:26		
	21:36	23	20:49 (5)	20:50	23	07:22 (2)	19:46			18:42			16:50			16:35		
18	05:46		20:26 (5)	06:28			07:00 (2)	07:14		08:00			07:50			08:27		
	21:35	23	20:49 (5)	20:48	22	07:22 (2)	19:44			18:40			16:49			16:35		
19	05:47		20:26 (5)	06:30			07:00 (2)	07:15		08:01			07:52			08:28		
	21:34	23	20:49 (5)	20:47	20	07:20 (2)	19:41			18:38			16:48			16:35		
20	05:48		20:27 (5)	06:31			07:02 (2)	07:17		08:03			07:53			08:28		
	21:33	21	20:48 (5)	20:45	18	07:20 (2)	19:39			18:36			16:47			16:36		
21	05:49		20:27 (5)	06:33			07:03 (2)	07:18		08:04			07:55			08:29		
	21:32	21	20:48 (5)	20:43	15	07:18 (2)	19:37			18:34			16:46			16:36		
22	05:51		20:28 (5)	06:34			07:04 (2)	07:20		08:06			07:56			08:30		
	21:31	19	20:47 (5)	20:41	11	07:15 (2)	19:35			18:32			16:45			16:36		
23	05:52		20:28 (5)	06:35			07:21			08:08			07:58			08:30		
	21:30	18	20:46 (5)	20:39			19:33			18:30			16:44			16:37		
24	05:53		20:30 (5)	06:37			07:23			08:09			07:59			08:30		
	21:29	16	20:46 (5)	20:37			19:31			18:28			16:43			16:38		
25	05:54		20:31 (5)	06:38			07:24			07:11			08:01			08:31		
	21:27	14	20:45 (5)	20:35			19:28			17:26			16:42			16:38		
26	05:56		20:32 (5)	06:40			07:26			07:12			08:02			08:31		
	21:26	11	20:43 (5)	20:33			19:26			17:25			16:41			16:39		
27	05:57		20:34 (5)	06:41			07:27			07:14			08:04			08:31		
	21:25	7	20:41 (5)	20:31			19:24			17:23			16:40			16:40		
28	05:58			06:43			07:29		08:25 (3)	07:16			08:05			08:32		
	21:23			20:29			19:22	5	08:30 (3)	17:21			16:40			16:40		
29	06:00			06:44			07:30		08:21 (3)	07:17			08:06			08:32		
	21:22			20:27			19:20	13	08:34 (3)	17:19			16:39			16:41		
30	06:01			06:46			07:32		08:18 (3)	07:19			08:08			08:32		
	21:21			20:24			19:17	17	08:35 (3)	17:17			16:38			16:42		
31	06:02			06:47						07:21						08:32		
	21:19			20:22						17:16						16:43		
Potential sun hours	491			448			379			335			274			255		
Total, worst case		562			372		35		277									
Sun reduction		0,45			0,47		0,39		0,27									
Oper. time red.		1,00			1,00		1,00		1,00									
Wind dir. red.		1,00			1,00		1,00		1,00									
Total reduction		0,45			0,47		0,39		0,27									
Total, real		255			174		14		75									

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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

SHADOW - Calendar

Shadow receptor: F - Mompach, An der Uecht 11
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:13 20:51	05:32 21:33	05:30 21:46	06:03 21:18	06:49 20:20	07:33 19:15	07:22 17:14	08:09 16:37
2	08:32 16:45	08:07 17:30	07:18 18:17	07:12 20:07	06:12 20:53	05:32 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:35 19:13	07:24 17:12	08:11 16:37
3	08:32 16:46	08:06 17:32	07:16 18:19	07:09 20:08	06:10 20:54	05:31 21:35	05:32 21:46	06:06 21:15	06:52 20:16	07:36 19:11	07:26 17:10	08:12 16:36
4	08:32 16:47	08:04 17:33	07:13 18:21	07:07 20:10	06:08 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	07:27 17:09	08:13 16:36
5	08:32 16:48	08:03 17:35	07:11 18:22	07:05 20:11	06:07 20:57	05:30 21:37	05:33 21:45	06:09 21:11	06:54 20:12	07:39 19:07	07:29 17:07	08:14 16:35
6	08:32 16:49	08:01 17:37	07:09 18:24	07:03 20:13	06:05 20:59	05:29 21:38	05:34 21:44	06:11 21:10	06:56 20:10	07:41 19:04	07:30 17:05	08:16 16:35
7	08:31 16:50	08:00 17:38	07:07 18:25	07:01 20:14	06:03 21:00	05:29 21:39	05:35 21:44	06:12 21:08	06:57 20:07	07:42 19:02	07:32 17:04	08:17 16:35
8	08:31 16:52	07:58 17:40	07:05 18:27	06:59 20:16	06:02 21:02	05:28 21:39	05:35 21:43	06:13 21:06	06:59 20:05	07:44 19:00	07:34 17:02	08:18 16:34
9	08:30 16:53	07:57 17:42	07:03 18:29	06:57 20:17	06:00 21:03	05:28 21:40	05:36 21:43	06:15 21:05	07:00 20:03	07:45 18:58	07:35 17:01	08:19 16:34
10	08:30 16:54	07:55 17:44	07:01 18:30	06:55 20:19	05:58 21:05	05:27 21:41	05:37 21:42	06:16 21:03	07:02 20:01	07:47 18:56	07:37 16:59	08:20 16:34
11	08:30 16:56	07:53 17:45	06:59 18:32	06:52 20:20	05:57 21:06	05:27 21:42	05:38 21:41	06:18 21:01	07:03 19:59	07:48 18:54	07:39 16:58	08:21 16:34
12	08:29 16:57	07:52 17:47	06:57 18:34	06:50 20:22	05:55 21:08	05:27 21:42	05:39 21:41	06:19 20:59	07:05 19:57	07:50 18:52	07:40 16:57	08:22 16:34
13	08:28 16:58	07:50 17:49	06:55 18:35	06:48 20:24	05:54 21:09	05:27 21:43	05:40 21:40	06:21 20:58	07:06 19:54	07:52 18:50	07:42 16:55	08:23 16:34
14	08:28 17:00	07:48 17:50	06:52 18:37	06:46 20:25	05:52 21:11	05:26 21:43	05:41 21:39	06:22 20:56	07:08 19:52	07:53 18:48	07:44 16:54	08:24 16:34
15	08:27 17:01	07:46 17:52	06:50 18:38	06:44 20:27	05:51 21:12	05:26 21:44	05:42 21:38	06:24 20:54	07:09 19:50	07:55 18:46	07:45 16:53	08:25 16:34
16	08:26 17:03	07:45 17:54	06:48 18:40	06:42 20:28	05:50 21:13	05:26 21:44	05:43 21:37	06:25 20:52	07:11 19:48	07:56 18:44	07:47 16:51	08:26 16:34
17	08:26 17:04	07:43 17:56	06:46 18:41	06:40 20:30	05:48 21:15	05:26 21:45	05:44 21:36	06:26 20:50	07:12 19:46	07:58 18:42	07:48 16:50	08:26 16:34
18	08:25 17:06	07:41 17:57	06:44 18:43	06:38 20:31	05:47 21:16	05:26 21:45	05:46 21:35	06:28 20:48	07:14 19:44	07:59 18:40	07:50 16:49	08:27 16:35
19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	05:46 21:17	05:26 21:46	05:47 21:34	06:29 20:46	07:15 19:41	08:01 18:38	07:52 16:48	08:28 16:35
20	08:23 17:09	07:37 18:01	06:40 18:46	06:34 20:34	05:44 21:19	05:26 21:46	05:48 21:33	06:31 20:45	07:17 19:39	08:03 18:36	07:53 16:47	08:28 16:35
21	08:22 17:10	07:35 18:02	06:37 18:48	06:32 20:36	05:43 21:20	05:26 21:46	05:49 21:32	06:32 20:43	07:18 19:37	08:04 18:34	07:55 16:46	08:29 16:36
22	08:21 17:12	07:33 18:04	06:35 18:49	06:30 20:37	05:42 21:21	05:27 21:46	05:50 21:31	06:34 20:41	07:20 19:35	08:06 18:32	07:56 16:45	08:30 16:36
23	08:20 17:13	07:31 18:06	06:33 18:51	06:28 20:39	05:41 21:23	05:27 21:47	05:52 21:30	06:35 20:39	07:21 19:33	08:07 18:30	07:58 16:44	08:30 16:37
24	08:19 17:15	07:30 18:07	06:31 18:52	06:26 20:41	05:40 21:24	05:27 21:47	05:53 21:29	06:37 20:37	07:23 19:30	08:09 18:28	07:59 16:43	08:30 16:37
25	08:18 17:17	07:28 18:09	06:29 18:54	06:24 20:42	05:39 21:25	05:27 21:47	05:54 21:27	06:38 20:35	07:24 19:28	07:11 17:26	08:01 16:42	08:31 16:38
26	08:17 17:18	07:26 18:11	06:27 18:56	06:23 20:44	05:38 21:26	05:28 21:47	05:55 21:26	06:40 20:33	07:26 19:26	07:12 17:24	08:02 16:41	08:31 16:39
27	08:15 17:20	07:24 18:12	06:24 18:57	06:21 20:45	05:37 21:27	05:28 21:47	05:57 21:25	06:41 20:31	07:27 19:24	07:14 17:23	08:04 16:40	08:31 16:39
28	08:14 17:22	07:22 18:14	06:22 18:59	06:19 20:47	05:36 21:29	05:29 21:47	05:58 21:23	06:43 20:29	07:29 19:22	07:16 17:21	08:05 16:39	08:32 16:40
29	08:13 17:23		07:20 20:00	06:17 20:48	05:35 21:30	05:29 21:47	05:59 21:22	06:44 20:26	07:30 19:20	07:17 17:19	08:06 16:39	08:32 16:41
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Potential sun hours	268	282	368	412	476	487	491	448	379	335	274	254
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	Minutes with flicker		

SHADOW - Calendar

Shadow receptor: G - Givenich, Maison 6
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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2	08:32 16:45	08:07 17:30	07:18 18:17	07:11 20:06	06:12 20:53	05:32 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:35 19:13	07:24 17:12	08:10 16:37
3	08:32 16:46	08:06 17:32	07:15 18:19	07:09 20:08	06:10 20:54	05:31 21:35	05:32 21:45	06:06 21:15	06:51 20:16	07:36 19:11	07:25 17:10	08:12 16:36
4	08:32 16:47	08:04 17:33	07:13 18:21	07:07 20:10	06:08 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	07:27 17:09	08:13 16:36
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6	08:31 16:49	08:01 17:37	07:09 18:24	07:03 20:13	06:05 20:59	05:29 21:38	05:34 21:44	06:10 21:10	06:56 20:10	07:41 19:04	07:30 17:05	08:15 16:35
7	08:31 16:50	08:00 17:38	07:07 18:25	07:01 20:14	06:03 21:00	05:29 21:38	05:35 21:44	06:12 21:08	06:57 20:07	07:42 19:02	07:32 17:04	08:17 16:35
8	08:31 16:52	07:58 17:40	07:05 18:27	06:59 20:16	06:02 21:02	05:28 21:39	05:35 21:43	06:13 21:06	06:59 20:05	07:44 19:00	07:34 17:02	08:18 16:34
9	08:30 16:53	07:57 17:42	07:03 18:29	06:57 20:17	06:00 21:03	05:28 21:40	05:36 21:43	06:15 21:05	07:00 20:03	07:45 18:58	07:35 17:01	08:19 16:34
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SHADOW - Calendar

Shadow receptor: H - Herbon, Hierber Milen 3
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]
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SHADOW - Calendar

Shadow receptor: I - Lellig An der Hiel 11
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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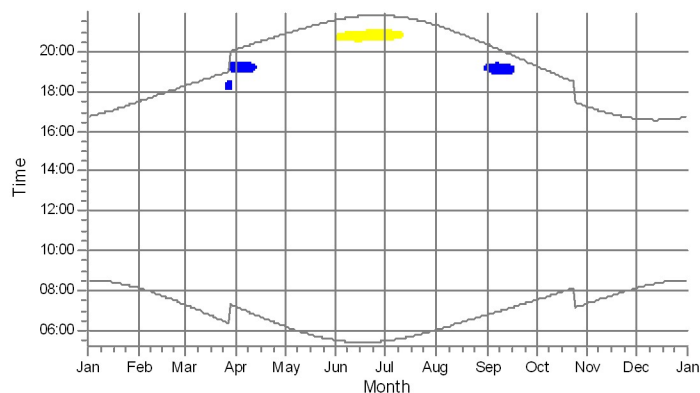
	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:14 20:51	05:33 21:33	19:44 (5) 21:46	05:31 21:18	06:04 21:15	19:49 (5) 20:20	07:33 19:15	07:22 17:14
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3	08:32 16:46	08:06 17:32	07:16 18:19	07:10 20:08	06:10 20:54	19:50 (5) 21:35	05:31 21:46	05:32 21:15	19:59 (5) 20:03	19:49 (5) 20:17	07:36 19:11	07:26 17:11
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6	08:32 16:50	08:01 17:37	07:09 18:24	07:03 20:14	06:05 21:00	19:43 (5) 21:39	05:29 21:44	05:34 21:10	19:56 (5) 20:08	19:52 (5) 20:14	07:41 19:05	07:31 17:06
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11	08:30 16:56	07:53 17:46	06:59 18:32	06:53 20:21	05:57 21:06	19:39 (5) 21:42	05:27 21:41	06:18 21:01	19:53 (5) 20:13	07:03 19:59	07:49 18:54	07:39 16:58
12	08:29 16:57	07:52 17:47	06:57 18:34	06:51 20:22	05:56 21:08	19:38 (5) 21:42	05:27 21:41	06:19 21:00	19:53 (5) 20:14	07:05 19:57	07:50 18:52	07:40 16:57
13	08:28 16:59	07:50 17:49	06:55 18:35	06:48 20:24	05:54 21:09	19:38 (5) 21:43	05:27 21:40	06:21 21:00	19:52 (5) 20:15	07:06 19:55	07:52 18:50	07:42 16:55
14	08:28 17:00	07:48 17:51	06:53 18:37	06:46 20:25	05:53 21:11	19:38 (5) 21:43	05:27 21:39	06:22 21:05	19:52 (5) 20:16	07:08 19:51	07:53 18:46	07:44 16:54
15	08:27 17:01	07:46 17:52	06:50 18:38	06:44 20:27	05:51 21:12	19:38 (5) 21:44	05:26 21:38	06:24 21:05	19:51 (5) 20:16	07:09 19:50	07:55 18:46	07:45 16:53
16	08:26 17:03	07:45 17:54	06:48 18:40	06:42 20:28	05:50 21:13	19:37 (5) 21:44	05:26 21:37	06:25 21:05	19:51 (5) 20:17	07:11 19:48	07:56 18:44	07:47 16:52
17	08:26 17:04	07:43 17:56	06:46 18:42	06:40 20:30	05:48 21:15	19:37 (5) 21:45	05:26 21:36	06:27 21:05	19:50 (5) 20:17	07:12 19:46	07:58 18:42	07:48 16:50
18	08:25 17:06	07:41 17:57	06:44 18:43	06:38 20:31	05:47 21:16	19:38 (5) 21:45	05:26 21:35	06:28 21:04	19:50 (5) 20:18	07:14 19:44	08:00 18:40	07:50 16:49
19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	05:46 21:17	19:38 (5) 21:46	05:26 21:34	06:30 21:04	19:49 (5) 20:18	07:15 19:41	08:01 18:38	07:52 16:48
20	08:23 17:09	07:37 18:01	06:40 18:46	06:34 20:34	05:45 21:19	19:38 (5) 21:46	05:26 21:33	06:31 21:04	19:49 (5) 20:18	07:17 19:39	08:03 18:36	07:53 16:47
21	08:22 17:10	07:35 18:02	06:38 18:48	06:32 20:36	05:43 21:20	19:39 (5) 21:46	05:27 21:32	06:33 21:04	19:49 (5) 20:19	07:18 19:37	08:04 18:34	07:55 16:46
22	08:21 17:12	07:33 18:04	06:35 18:49	06:30 20:38	05:42 21:21	19:39 (5) 21:46	05:27 21:31	06:34 21:04	19:48 (5) 20:19	07:20 19:35	08:06 18:32	07:56 16:45
23	08:20 17:14	07:32 18:06	06:33 18:51	06:28 20:39	05:41 21:23	19:39 (5) 21:47	05:27 21:30	06:35 21:04	19:48 (5) 20:19	07:21 19:33	08:08 18:30	07:58 16:44
24	08:19 17:15	07:30 18:08	06:31 18:53	06:27 20:41	05:40 21:24	19:40 (5) 21:47	05:27 21:29	06:37 21:04	19:49 (5) 20:20	07:23 19:31	08:09 18:28	07:59 16:43
25	08:18 17:17	07:28 18:09	06:29 18:54	06:25 20:42	05:39 21:25	19:40 (5) 21:47	05:28 21:27	06:38 21:04	19:48 (5) 20:20	07:24 19:28	08:11 17:26	08:01 16:42
26	08:17 17:18	07:26 18:11	06:27 18:56	06:23 20:44	05:38 21:26	19:41 (5) 21:47	05:28 21:26	06:40 21:04	19:48 (5) 20:20	07:26 19:26	08:12 17:25	08:02 16:41
27	08:15 17:20	07:24 18:13	06:25 18:57	06:21 20:45	05:37 21:27	19:41 (5) 21:47	05:28 21:25	06:41 21:04	19:48 (5) 20:19	07:27 19:24	08:14 17:23	08:04 16:40
28	08:14 17:22	07:22 18:14	06:22 18:59	06:19 20:47	05:36 21:29	19:41 (5) 21:47	05:29 21:23	06:43 21:04	19:48 (5) 20:20	07:29 19:22	08:05 17:21	08:32 16:40
29	08:13 17:23	07:23 18:20	06:22 19:00	06:17 20:48	05:35 21:30	19:42 (5) 21:47	05:29 21:22	06:44 21:04	19:48 (5) 20:20	07:30 19:20	08:06 17:19	08:32 16:39
30	08:12 17:25	07:18 18:25	06:15 19:05	05:34 21:31	05:30 21:46	19:43 (5) 21:46	05:30 21:21	06:46 21:04	19:48 (5) 20:19	07:32 19:17	08:08 17:17	08:32 16:42
31	08:10 17:27	07:16 18:30	06:16 19:06	05:33 21:32	05:33 22:06	19:44 (5) 21:46	05:33 21:19	06:47 21:04	19:48 (5) 20:19	07:21 17:16	08:32 16:43	08:32 16:43
Potential sun hours	268	282	368	412	476	487	491	448	379	335	274	255
Total, worst case					772	129	696	216				
Sun reduction					0,43	0,40	0,45	0,47				
Oper. time red.					1,00	1,00	1,00	1,00				
Wind dir. red.					1,00	1,00	1,00	1,00				
Total reduction					0,43	0,40	0,45	0,47				
Total, real					332	52	316	101				

Table layout: For each day in each month the following matrix apply

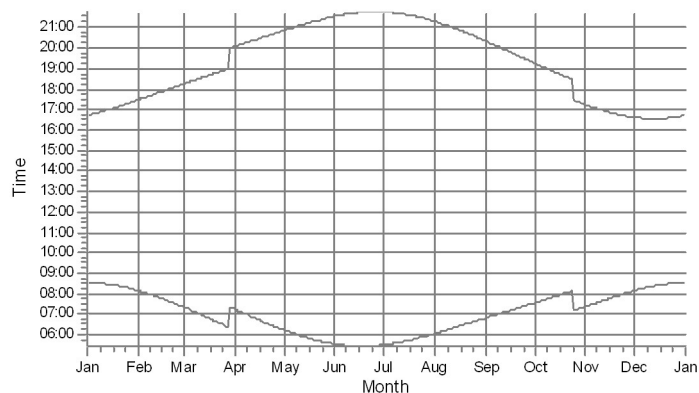
Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

SHADOW - Calendar, graphical

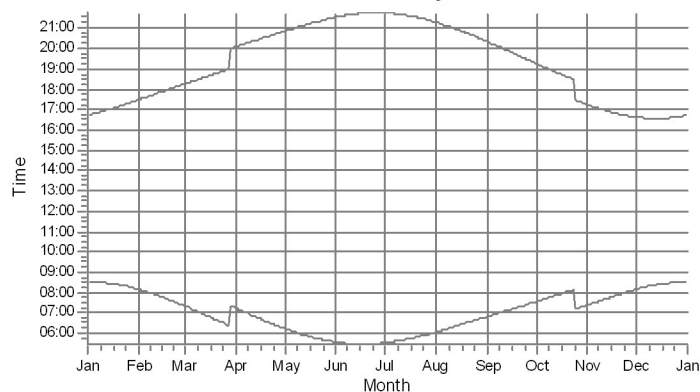
A: Mertert, Schaefferreder 1



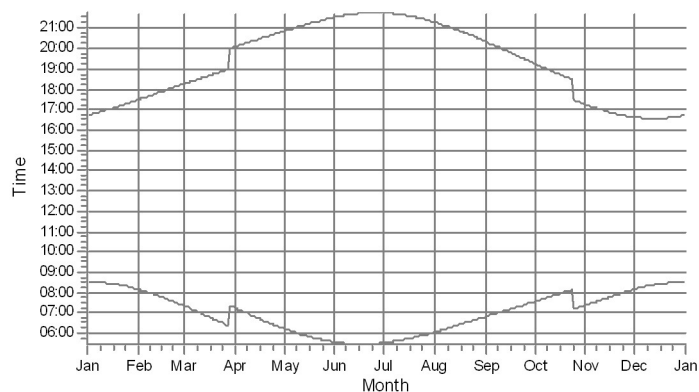
B: Mertert, Bei den dräi Eechen 1



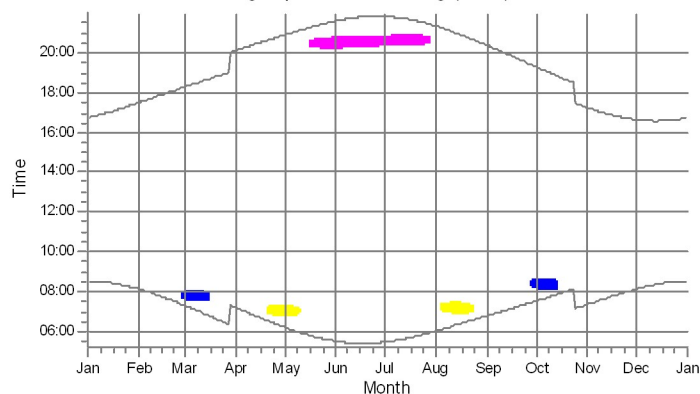
C: Mertert, Scheidberg 1



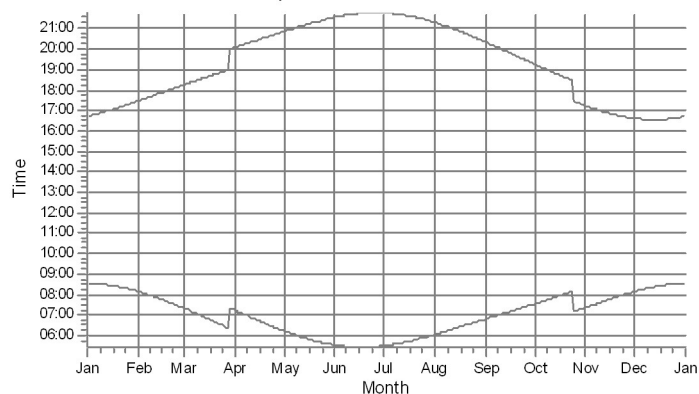
D: Mertert, Fielsmillen 1



E: Lellig, Op de Scheedberg (limite)



F: Mompach, An der Uecht 11

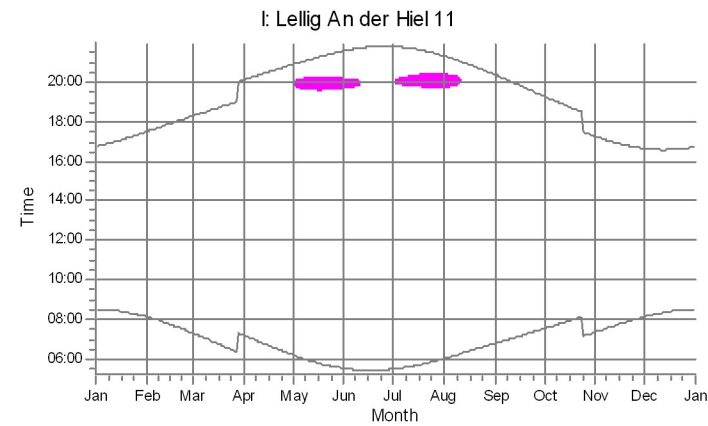
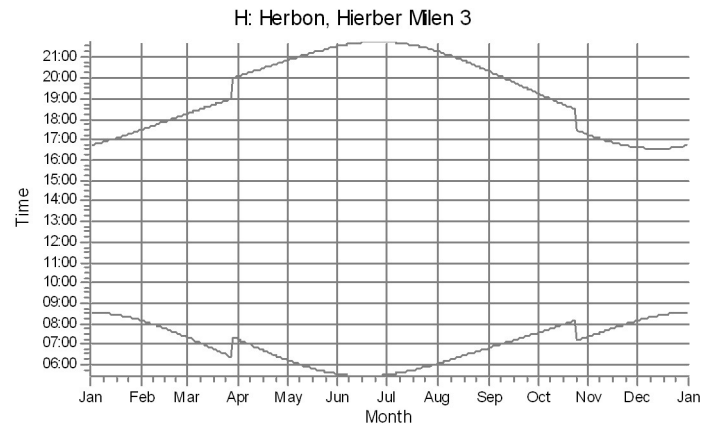
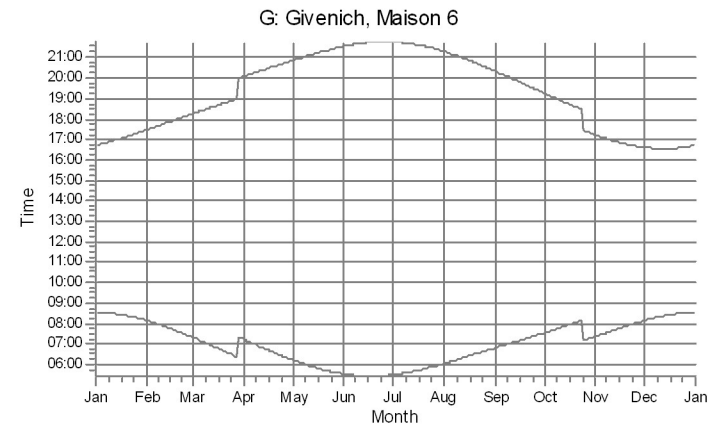


WTGs

2: ENERCON E-160 EP5 E3 R1 5560 160.0 IO! hub: 166,6 m (TOT: 246,6 m) (2)
3: ENERCON E-160 EP5 E3 5560 160.0 IO! hub: 166,6 m (TOT: 246,6 m) (4)

5: ENERCON E-138 EP3 E3 4260 138.3 IO! hub: 160,0 m (TOT: 229,1 m) (26)

SHADOW - Calendar, graphical



WTGs

5: ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (26)

SHADOW - Calendar per WTG

WTG: 1 - ENERCON E-160 EP5 E3 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (1)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,29 2,62 3,51 5,39 6,60 6,56 7,20 6,77 4,98 2,92 1,63 1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44 08:32	08:09 17:28 08:07	07:20 18:16 07:18	07:14 20:05 07:12	06:13 20:51 06:12	05:32 21:33 05:32	05:30 21:46 05:31	06:04 21:18 06:05	06:49 20:20 06:50	07:33 19:15 07:35	07:22 17:14 07:24	08:09 16:37 08:10
2	16:45 08:32 16:46	17:30 08:06 17:32	18:17 07:16 18:19	20:06 07:09 20:08	20:53 06:10 20:54	21:34 05:31 21:35	21:46 05:32 21:45	21:16 06:06 21:15	20:18 06:52 20:16	19:13 07:36 19:11	17:12 07:25 17:10	16:37 08:12 16:36
3	08:32 16:46 08:32	08:06 17:32 08:01	07:16 18:19 07:09	07:09 20:08 07:03	06:10 20:54 06:08	05:31 21:35 05:30	05:32 21:45 05:32	06:06 21:15 06:08	06:52 20:16 06:53	07:36 19:11 07:38	07:25 17:10 07:27	08:12 16:36 08:13
4	16:47 08:31 16:49	17:33 08:01 17:37	18:21 07:09 18:24	20:10 07:03 20:13	20:56 06:05 20:59	21:36 05:29 21:38	21:45 05:34 21:44	21:13 06:11 21:10	20:14 06:56 20:10	19:09 07:41 19:04	17:09 07:30 17:06	16:36 08:15 16:35
5	08:32 16:48 08:31	08:03 17:35 08:00	07:11 18:22 07:07	07:05 20:11 07:01	06:07 20:57 06:03	05:30 21:37 05:29	05:33 21:45 05:35	06:09 21:11 06:12	06:55 20:12 06:57	07:39 19:07 07:42	07:29 17:07 07:32	08:14 16:35 08:17
6	16:49 08:31 16:51	17:37 08:00 17:39	18:24 07:07 18:25	20:13 07:01 20:14	20:59 06:03 21:00	21:38 05:29 21:38	21:44 05:35 21:44	21:08 06:12 21:08	20:07 06:57 20:07	19:02 07:42 19:02	17:04 07:32 17:04	16:35 08:17 16:35
7	08:31 16:51 08:31	08:00 17:39 07:58	07:07 18:25 07:05	07:01 20:14 06:59	06:03 21:00 06:02	05:29 21:38 05:28	05:35 21:44 05:35	06:12 21:08 06:13	06:57 20:07 06:59	07:42 19:02 07:44	07:32 17:04 07:34	08:17 16:35 08:18
8	16:52 08:30 16:53	17:40 07:57 17:42	18:27 07:03 18:29	20:16 06:57 20:17	21:02 06:00 21:03	21:39 05:28 21:40	21:43 05:36 21:43	21:06 06:15 21:05	20:05 07:00 20:03	19:00 07:45 18:58	17:02 07:35 17:01	16:34 08:19 16:34
9	08:30 16:53 08:30	07:57 17:42 07:55	07:03 18:29 07:01	06:57 20:17 06:55	06:00 21:03 05:58	05:28 21:40 05:27	05:36 21:43 05:37	06:15 21:05 06:16	07:00 20:03 07:02	07:45 18:58 07:47	07:35 17:01 07:37	08:19 16:34 08:20
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11	08:29 16:56 08:29	07:53 17:45 07:52	06:59 18:32 06:57	06:52 20:20 06:50	05:57 21:06 05:55	05:27 21:41 05:27	05:38 21:41 05:39	06:18 21:01 06:19	07:03 19:59 07:05	07:48 18:54 07:50	07:39 16:58 07:40	08:21 16:34 08:22
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13	08:28 16:58 08:28	07:50 17:49 07:48	06:55 18:35 06:52	06:48 20:24 06:46	05:54 21:09 05:52	05:27 21:43 05:26	05:40 21:40 05:41	06:21 20:58 06:22	07:06 19:54 07:08	07:52 18:50 07:53	07:42 16:55 07:43	08:23 16:34 08:24
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31	08:10 17:27 08:10	07:16 20:03 07:16	07:16 20:03 07:16	06:17 20:48 06:15	05:35 21:30 05:33	05:29 21:46 05:29	05:59 21:22 06:02	06:44 20:26 06:47	07:30 19:20 07:31	07:17 17:19 07:21	08:06 16:39 08:07	08:32 16:41 08:32
Potential sun hours	268	282	368	412	476	487	491	448	379	335	274	254
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

WTG: 2 - ENERCON E-160 EP5 E3 R1 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (2)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,29 2,62 3,51 5,39 6,60 6,56 7,20 6,77 4,98 2,92 1,63 1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:14 20:51	06:52-07:16/24 20:51	05:32 21:33	05:30 21:46	06:04 21:18	06:49 20:20	07:33 19:15	07:22 17:14
2	08:32 16:45	08:07 17:30	07:18 18:17	07:12 20:07	06:12 20:53	06:52-07:15/23 20:53	05:32 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:35 19:13	07:24 17:12
3	08:32 16:46	08:06 17:32	07:16 18:19	07:09 20:08	06:10 20:54	06:52-07:14/22 20:54	05:31 21:35	05:32 21:45	06:06 21:15	06:52 20:16	07:36 19:11	07:25 17:10
4	08:32 16:47	08:04 17:33	07:13 18:21	07:07 20:10	06:08 20:56	06:53-07:14/21 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	07:27 17:09
5	08:32 16:48	08:03 17:35	07:11 18:22	07:05 20:11	06:07 20:57	06:53-07:12/19 20:57	05:30 21:37	05:33 21:45	06:09 21:11	06:55 20:12	07:39 19:07	07:29 17:07
6	08:31 16:49	08:01 17:37	07:09 18:24	07:03 20:13	06:05 20:59	06:55-07:12/17 20:59	05:29 21:38	05:34 21:44	06:11 21:10	06:56 20:10	07:41 19:05	07:30 17:06
7	08:31 16:51	08:00 17:39	07:07 18:26	07:01 20:14	06:03 21:00	06:55-07:10/15 21:00	05:29 21:38	05:35 21:44	06:12 21:08	06:57 20:07	07:42 19:02	07:32 17:04
8	08:31 16:52	07:58 17:40	07:05 18:27	06:59 20:16	06:02 21:02	06:57-07:07/10 21:02	05:28 21:39	05:36 21:43	06:13 21:06	06:59 20:05	07:44 19:00	07:34 17:02
9	08:30 16:53	07:57 17:42	07:03 18:29	06:57 20:17	06:00 21:03	07:01-07:04/3 21:03	05:28 21:40	05:36 21:43	06:15 21:05	07:01-07:23/22 21:05	07:45 18:58	07:35 17:01
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12	08:29 16:57	07:52 17:47	06:57 18:34	06:50 20:22	05:55 21:08	05:27 21:42	05:27 21:41	05:39 21:41	06:19 20:59	07:00-07:24/24 20:59	07:50 18:52	07:40 16:57
13	08:28 16:58	07:50 17:49	06:55 18:35	06:48 20:24	05:54 21:09	05:27 21:43	05:27 21:43	05:40 21:40	06:21 20:58	07:00-07:24/24 20:58	07:52 18:50	07:42 16:55
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17	08:25 17:04	07:43 17:56	06:46 18:42	06:40 20:30	05:48 21:15	05:26 21:45	05:26 21:36	05:45 21:36	06:27 20:50	06:59-07:22/22 20:50	07:58 18:42	07:48 16:50
18	08:25 17:06	07:41 17:57	06:44 18:43	06:38 20:31	05:47 21:16	05:26 21:45	05:26 21:35	05:46 21:35	06:28 20:48	07:00-07:22/22 20:48	07:59 18:40	07:50 16:49
19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	05:46 21:17	05:26 21:45	05:26 21:34	05:47 21:34	06:29 20:46	07:00-07:20/20 20:46	08:01 18:38	07:51 16:48
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21	08:22 17:10	07:35 18:02	06:37 18:48	06:32 20:36	05:43 21:20	05:26 21:46	05:26 21:32	05:49 21:32	06:32 20:43	07:03-07:18/15 20:43	08:04 18:34	07:55 16:46
22	08:21 17:12	07:33 18:04	06:35 18:49	06:30 20:37	05:42 21:21	05:27 21:46	05:27 21:31	05:50 21:31	06:34 20:41	07:04-07:15/11 20:41	08:06 18:32	07:56 16:45
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Potential sun hours	268	282	368	412	476	487	491	448	379	335	274	255
Sum of minutes with flicker	0	0	0	204	154	552	159	372	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

WTG: 3 - ENERCON E-160 EP5 E3 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (4)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,29 2,62 3,51 5,39 6,60 6,56 7,20 6,77 4,98 2,92 1,63 1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December		
1	08:32 16:44	08:09 17:28	07:20 18:16	07:43-07:57/14 20:05	07:14 20:05	19:02-19:26/24 20:51	05:33 21:33	05:30 21:46	06:04 21:18	06:49 20:20	07:33 19:15	08:17-08:36/19 17:14	07:22 16:37	08:09 16:37
2	08:32 16:45	08:07 17:30	07:18 18:17	07:41-07:59/18 20:07	07:12 20:07	19:01-19:26/25 20:53	05:32 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:35 19:13	08:16-08:38/22 17:12	07:24 16:37	08:10 16:37
3	08:32 16:46	08:06 17:32	07:16 18:19	07:40-08:00/20 20:08	07:09 20:08	19:01-19:26/25 20:54	05:31 21:35	05:32 21:45	06:06 21:14	06:52 20:16	07:36 19:11	08:14-08:37/23 17:10	07:25 16:36	08:12 16:36
4	08:32 16:47	08:04 17:33	07:13 18:21	07:39-08:01/22 20:10	07:07 20:10	19:00-19:26/26 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	08:14-08:38/24 17:09	07:27 16:36	08:13 16:36
5	08:32 16:48	08:03 17:35	07:11 18:22	07:38-08:01/23 20:11	07:05 20:11	19:00-19:26/26 20:57	05:30 21:37	05:33 21:45	06:09 21:11	06:55 20:12	07:39 19:07	08:13-08:37/24 17:07	07:29 16:36	08:14 16:36
6	08:31 16:49	08:01 17:37	07:09 18:24	07:37-08:02/25 20:13	07:03 20:13	19:01-19:25/24 20:59	05:29 21:38	05:34 21:44	06:11 21:10	06:56 20:10	07:41 19:05	08:13-08:38/25 17:06	07:30 16:35	08:15 16:35
7	08:31 16:51	08:00 17:39	07:07 18:26	07:36-08:01/25 20:14	07:01 21:00	19:00-19:23/23 21:38	05:29 21:38	05:35 21:44	06:12 21:08	06:57 20:07	07:42 19:02	08:12-08:37/25 17:04	07:32 16:35	08:17 16:35
8	08:31 16:52	07:58 17:40	07:05 18:27	07:36-08:01/25 20:16	07:05 20:16	19:01-19:22/21 21:02	05:28 21:39	05:36 21:43	06:14 21:06	06:59 20:05	07:44 19:00	08:13-08:37/24 17:03	07:34 16:35	08:18 16:35
9	08:30 16:53	07:57 17:42	07:03 18:29	07:36-08:00/24 20:17	06:57 20:17	19:01-19:21/20 21:03	05:28 21:40	05:36 21:43	06:15 21:05	07:00 20:03	07:45 18:58	08:13-08:36/23 17:01	07:35 16:34	08:19 16:34
10	08:30 16:54	07:55 17:44	07:01 18:30	07:36-08:00/24 20:19	06:55 20:19	19:03-19:19/16 21:05	05:28 21:41	05:37 21:42	06:16 21:03	07:02 20:01	07:47 18:56	08:13-08:34/21 17:00	07:37 16:34	08:20 16:34
11	08:29 16:56	07:53 17:45	06:59 18:32	07:37-07:59/22 20:20	06:53 20:20	19:05-19:17/12 21:06	05:27 21:41	05:38 21:41	06:18 21:01	07:03 19:59	07:48 18:54	08:14-08:33/19 17:58	07:39 16:58	08:21 16:34
12	08:29 16:57	07:52 17:47	06:57 18:34	07:37-07:58/21 20:22	06:50 20:22	19:09-19:13/4 21:06	05:27 21:42	05:39 21:41	06:19 20:59	07:05 19:57	07:50 18:52	08:15-08:31/16 17:52	07:40 16:57	08:22 16:34
13	08:28 16:58	07:50 17:49	06:55 18:35	07:39-07:57/18 20:24	06:48 20:24	05:54 21:09	05:27 21:43	05:40 21:40	06:21 20:58	07:06 19:54	07:52 18:50	08:17-08:29/12 17:53	07:42 16:55	08:23 16:34
14	08:28 17:00	07:48 17:51	06:53 18:37	07:39-07:54/15 20:25	06:46 20:25	05:53 21:10	05:27 21:43	05:41 21:39	06:22 20:56	07:08 19:52	07:53 18:48	08:16-19:15/19 17:48	07:43 16:54	08:24 16:34
15	08:27 17:01	07:46 17:52	06:50 18:38	07:42-07:51/9 20:27	06:44 20:27	05:51 21:12	05:26 21:44	05:42 21:38	06:24 19:50	07:09 18:50	07:55 17:48	08:17-19:13/16 17:48	07:45 16:53	08:25 16:34
16	08:26 17:03	07:45 17:54	06:48 18:40	06:42 20:28	06:42 20:28	05:50 21:13	05:26 21:44	05:43 21:37	06:25 20:52	07:11 19:48	07:56 18:44	18:59-19:11/12 17:48	07:47 16:51	08:25 16:34
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19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	06:36 20:33	05:46 21:17	05:26 21:45	05:47 21:34	06:30 20:46	07:15 19:41	08:01 18:38	08:01 17:48	07:51 16:48	08:28 16:35
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23	08:20 17:14	07:31 18:06	06:33 18:51	06:28 20:39	06:28 20:39	05:41 21:22	05:27 21:46	05:35 21:30	06:35 20:39	07:21 19:33	08:07 18:30	08:07 17:48	07:58 16:44	08:30 16:37
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29	08:13 17:23	07:22 07:46-07:54/8 18:14	06:22 18:08-18:23/15 18:59	06:19 20:47 20:47	06:19 20:47 20:47	05:36 21:28 21:28	05:29 21:46 21:46	05:58 21:33 21:23	06:44 20:28	07:30 08:21-08:34/13 19:20	07:17 18:20 17:19	08:06 08:32 17:19	08:06 08:32 16:39	08:32 16:41 16:41
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Potential sun hours	268	282	368	412	476	487	491	447	379	369	335	277	274	255
Sum of minutes with flicker	0	8	395	246	0	0	0	5	369	277	0	0	0	0

SHADOW - Calendar per WTG

WTG: 4 - ENERCON E-115 EP3 E3 4200 115.7 !O! hub: 149,0 m (TOT: 206,9 m) (3)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,29 2,62 3,51 5,39 6,60 6,56 7,20 6,77 4,98 2,92 1,63 1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44 16:45	08:09 17:28 17:30	07:20 18:16 18:17	07:14 20:05 20:07	06:13 20:51 20:53	05:32 21:33 21:34	05:30 21:46 21:46	06:04 21:18 21:16	06:49 20:20 20:18	07:33 19:15 19:13	07:22 17:14 17:12	08:09 16:37 16:37
2	08:32 16:46 16:45	08:07 17:32 17:30	07:18 18:19 18:17	07:12 20:08 20:07	06:12 20:54 20:53	05:32 21:35 21:34	05:31 21:46 21:46	06:05 21:15 21:16	06:50 20:16 20:18	07:35 19:11 19:13	07:24 17:10 17:12	08:11 16:36 16:37
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25	08:18 17:17 17:17	07:28 18:09 18:09	06:29 18:54 18:54	06:25 20:42 20:42	05:39 21:25 21:25	05:27 21:47 21:47	05:54 21:27 21:27	06:38 20:35 20:35	07:24 19:28 19:28	07:11 17:26 17:26	08:01 16:42 16:42	08:31 16:38 16:38
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27	08:15 17:20 17:20	07:24 18:12 18:12	06:25 18:57 18:57	06:21 20:45 20:45	05:37 21:28 21:28	05:28 21:47 21:47	05:57 21:25 21:25	06:41 20:31 20:31	07:27 19:24 19:24	07:14 17:23 17:23	08:04 16:40 16:40	08:32 16:39 16:39
28	08:14 17:22 17:22	07:22 18:14 18:14	06:22 18:59 18:59	06:19 20:47 20:47	05:36 21:29 21:29	05:29 21:47 21:47	05:58 21:23 21:23	06:43 20:29 20:29	07:29 19:22 19:22	07:16 17:21 17:21	08:05 16:39 16:39	08:32 16:40 16:40
29	08:13 17:23 17:23		07:20 20:00 20:00	06:17 20:48 20:48	05:35 21:30 21:30	05:29 21:47 21:47	05:59 21:22 21:22	06:44 20:27 20:27	07:30 19:20 19:20	07:17 17:19 17:19	08:07 16:39 16:39	08:32 16:41 16:41
30	08:12 17:25 17:25		07:18 20:02 20:02	06:15 20:50 20:50	05:34 21:31 21:31	05:30 21:46 21:46	06:01 21:21 21:21	06:46 20:24 20:24	07:32 19:17 19:17	07:19 17:17 17:17	08:08 16:38 16:38	08:32 16:42 16:42
31	08:10 17:27 17:27		07:16 20:03 20:03		05:33 21:32 21:32		06:02 21:19 21:19	06:47 20:22 20:22		07:21 17:15 17:15		08:32 16:43 16:43
Potential sun hours	268	282	368	412	476	487	492	448	379	335	274	254
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

WTG: 5 - ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (26)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:29	07:20 18:16	07:14 20:05	06:14 20:51	05:33 19:44-20:05/21 21:33 20:17-20:40/23	05:31 20:24-20:45/21 21:46 20:24-20:46/22	06:04 19:49-20:19/30 21:18 20:20 19:15	06:49 20:20	07:33 19:15	07:22 17:14	08:09 16:38
2	08:32 16:45	08:07 17:30	07:18 18:18	07:12 20:07	06:12 20:53	05:32 19:46-20:05/19 21:34 20:17-20:41/24	05:31 20:25-20:46/21 21:46 20:24-20:46/22	06:05 19:49-20:18/29 21:16 20:16	06:50 20:18	07:35 19:13	07:24 17:12	08:11 16:37
3	08:32 16:46	08:06 17:32	07:16 18:19	07:10 20:08	06:10 19:50-19:57/7 20:54 20:54	05:31 19:46-20:04/18 21:35 20:17-20:41/24	05:32 19:59-20:03/4 21:46 20:24-20:46/22	06:07 19:49-20:17/28 21:15 20:16	06:52 20:16	07:36 19:11	07:26 17:11	08:12 16:37
4	08:32 16:47	08:05 17:34	07:14 18:21	07:07 20:10	06:08 19:47-20:01/14 20:56 20:56	05:31 19:47-20:03/16 21:36 20:17-20:40/23	05:33 19:58-20:06/8 21:45 20:24-20:46/22	06:08 19:51-20:17/26 21:13 20:14	06:53 20:14	07:38 19:09	07:27 17:09	08:13 16:36
5	08:32 16:48	08:03 17:35	07:12 18:22	07:05 20:11	06:07 19:44-20:03/19 20:57 20:57	05:30 19:48-20:03/15 21:37 20:18-20:41/23	05:33 19:57-20:07/10 21:45 20:25-20:47/22	06:09 19:51-20:16/25 21:12 20:12	06:55 20:12	07:39 19:07	07:29 17:07	08:14 16:36
6	08:32 16:50	08:02 17:37	07:10 18:24	07:03 20:13	06:05 19:43-20:05/22 20:59 20:59	05:29 19:49-20:02/13 21:38 20:18-20:40/22	05:34 19:56-20:08/12 21:44 20:24-20:47/23	06:11 19:52-20:14/22 21:10 20:10	06:56 20:10	07:41 19:05	07:31 17:06	08:16 16:35
7	08:31 16:51	08:00 17:39	07:07 18:26	07:01 20:14	06:03 19:42-20:05/23 21:00 21:00	05:29 19:50-20:02/12 21:39 20:18-20:41/23	05:35 19:55-20:09/14 21:44 20:24-20:47/23	06:12 19:53-20:14/21 21:08 20:08	06:58 20:08	07:42 19:03	07:32 17:04	08:17 16:35
8	08:31 16:52	07:58 17:40	07:05 18:27	06:59 20:16	06:02 19:41-20:07/26 21:02 21:02	05:28 19:52-20:01/9 21:39 20:19-20:41/22	05:36 19:54-20:10/16 21:43 20:24-20:48/24	06:14 19:54-20:12/18 21:07 20:05	06:59 20:05	07:44 19:00	07:34 17:03	08:18 16:35
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27	08:15 17:20	07:24 18:13	06:25 18:57	06:21 20:45	05:37 19:41-20:08/27 21:28 20:16-20:40/24	05:28 20:24-20:44/20 21:47 21:47	05:57 19:48-20:19/31 21:25 20:34-20:41/7	06:41 20:01 20:31 20:31	07:27 19:24	07:14 17:23	08:04 17:40	08:32 16:40
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Potential sun hours	268	282	368	412	476	487	491	448	379	335	274	255
Sum of minutes with flicker	0	0	0	0	1073	752	1258	216	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

WTG: 6 - ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (27)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,29	2,62	3,51	5,39	6,60	6,56	7,20	6,77	4,98	2,92	1,63	1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:13 20:51	05:32 21:33	05:30 21:46	06:03 21:18	06:48 20:20	07:33 19:15	07:22 17:14	08:09 16:37
2	08:32 16:45	08:07 17:30	07:17 18:17	07:11 20:06	06:12 20:53	05:31 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:34 19:13	07:24 17:12	08:10 16:37
3	08:32 16:46	08:06 17:31	07:15 18:19	07:09 20:08	06:10 20:54	05:31 21:35	05:31 21:46	06:06 21:15	06:51 20:16	07:36 19:11	07:25 17:10	08:12 16:36
4	08:32 16:47	08:04 17:33	07:13 18:20	07:07 20:10	06:08 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	07:27 17:09	08:13 16:36
5	08:32 16:48	08:03 17:35	07:11 18:22	07:05 20:11	06:06 20:57	05:29 21:37	05:33 21:45	06:09 21:11	06:54 20:12	07:39 19:06	07:29 17:07	08:14 16:35
6	08:31 16:49	08:01 17:37	07:09 18:24	07:03 20:13	06:05 20:59	05:29 21:38	05:34 21:44	06:10 21:10	06:56 20:10	07:41 19:04	07:30 17:05	08:15 16:35
7	08:31 16:50	08:00 17:38	07:07 18:25	07:01 20:14	06:03 21:00	05:28 21:39	05:34 21:44	06:12 21:08	06:57 20:07	07:42 19:02	07:32 17:04	08:17 16:34
8	08:31 16:52	07:58 17:40	07:05 18:27	06:59 20:16	06:01 21:02	05:28 21:39	05:35 21:43	06:13 21:06	06:59 20:05	07:44 19:00	07:34 17:02	08:18 16:34
9	08:30 16:53	07:57 17:42	07:03 18:29	06:57 20:17	06:00 21:03	05:28 21:40	05:36 21:43	06:15 21:05	07:00 20:03	07:45 18:58	07:35 17:01	08:19 16:34
10	08:30 16:54	07:55 17:43	07:01 18:30	06:54 20:19	05:58 21:05	05:27 21:41	05:37 21:42	06:16 21:03	07:02 20:01	07:47 18:56	07:37 16:59	08:20 16:34
11	08:29 16:55	07:53 17:45	06:59 18:32	06:52 20:20	05:57 21:06	05:27 21:42	05:38 21:41	06:18 21:01	07:03 19:59	07:48 18:54	07:39 16:58	08:21 16:34
12	08:29 16:57	07:52 17:47	06:57 18:33	06:50 20:22	05:55 21:08	05:27 21:42	05:39 21:41	06:19 20:59	07:05 19:57	07:50 18:52	07:40 16:56	08:22 16:34
13	08:28 16:58	07:50 17:49	06:55 18:35	06:48 20:23	05:54 21:09	05:26 21:43	05:40 21:40	06:20 20:58	07:06 19:54	07:51 18:50	07:42 16:55	08:23 16:34
14	08:28 17:00	07:48 17:50	06:52 18:37	06:46 20:25	05:52 21:10	05:26 21:43	05:41 21:39	06:22 20:56	07:08 19:52	07:53 18:48	07:43 16:54	08:24 16:34
15	08:27 17:01	07:46 17:52	06:50 18:38	06:44 20:27	05:51 21:12	05:26 21:44	05:42 21:38	06:23 20:54	07:09 19:50	07:55 18:46	07:45 16:52	08:25 16:34
16	08:26 17:02	07:45 17:54	06:48 18:40	06:42 20:28	05:49 21:13	05:26 21:44	05:43 21:37	06:25 20:52	07:11 19:48	07:56 18:44	07:47 16:51	08:26 16:34
17	08:25 17:04	07:43 17:55	06:46 18:41	06:40 20:30	05:48 21:15	05:26 21:45	05:44 21:36	06:26 20:50	07:12 19:46	07:58 18:42	07:48 16:50	08:26 16:34
18	08:25 17:05	07:41 17:57	06:44 18:43	06:38 20:31	05:47 21:16	05:26 21:45	05:45 21:35	06:28 20:48	07:14 19:43	07:59 18:40	07:50 16:49	08:27 16:34
19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	05:45 21:17	05:26 21:46	05:47 21:34	06:29 20:46	07:15 19:41	08:01 18:38	07:51 16:48	08:28 16:35
20	08:23 17:08	07:37 18:00	06:39 18:46	06:34 20:34	05:44 21:19	05:26 21:46	05:48 21:33	06:31 20:44	07:16 19:39	08:03 18:36	07:53 16:46	08:28 16:35
21	08:22 17:10	07:35 18:02	06:37 18:48	06:32 20:36	05:43 21:20	05:26 21:46	05:49 21:32	06:32 20:42	07:18 19:37	08:04 18:34	07:55 16:45	08:29 16:36
22	08:21 17:12	07:33 18:04	06:35 18:49	06:30 20:37	05:42 21:21	05:26 21:46	05:50 21:31	06:34 20:41	07:19 19:35	08:06 18:32	07:56 16:44	08:29 16:36
23	08:20 17:13	07:31 18:06	06:33 18:51	06:28 20:39	05:41 21:23	05:27 21:46	05:51 21:30	06:35 20:39	07:21 19:32	08:07 18:30	07:58 16:43	08:30 16:37
24	08:19 17:15	07:29 18:07	06:31 18:52	06:26 20:40	05:40 21:24	05:27 21:47	05:53 21:29	06:37 20:37	07:22 19:30	08:09 18:28	07:59 16:42	08:30 16:37
25	08:18 17:16	07:27 18:09	06:29 18:54	06:24 20:42	05:38 21:25	05:27 21:47	05:54 21:27	06:38 20:35	07:24 19:28	07:11 17:26	08:01 16:42	08:31 16:38
26	08:16 17:18	07:26 18:11	06:26 18:55	06:22 20:44	05:37 21:26	05:28 21:47	05:55 21:26	06:40 20:33	07:25 19:26	07:12 17:24	08:02 16:41	08:31 16:38
27	08:15 17:20	07:24 18:12	06:24 18:57	06:21 20:45	05:36 21:27	05:28 21:47	05:57 21:25	06:41 20:30	07:27 19:24	07:14 17:22	08:04 16:40	08:31 16:39
28	08:14 17:21	07:22 18:14	06:22 18:59	06:19 20:47	05:36 21:29	05:28 21:47	05:58 21:23	06:43 20:28	07:28 19:22	07:16 17:21	08:05 16:39	08:32 16:40
29	08:13 17:23		07:20 20:00	06:17 20:48	05:35 21:30	05:29 21:46	05:59 21:22	06:44 20:26	07:30 19:19	07:17 17:19	08:06 16:38	08:32 16:41
30	08:11 17:25		07:18 20:02	06:15 20:50	05:34 21:31	05:29 21:46	06:01 21:21	06:45 20:24	07:31 19:17	07:19 17:17	08:08 16:38	08:32 16:42
31	08:10 17:26		07:16 20:03		05:33 21:32		06:02 21:19	06:47 20:22		07:20 17:15		08:32 16:42
Potential sun hours	268	282	368	412	476	487	492	448	379	335	274	254
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

WTG: 7 - ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (28)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [TRIER]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,29 2,62 3,51 5,39 6,60 6,56 7,20 6,77 4,98 2,92 1,63 1,15

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

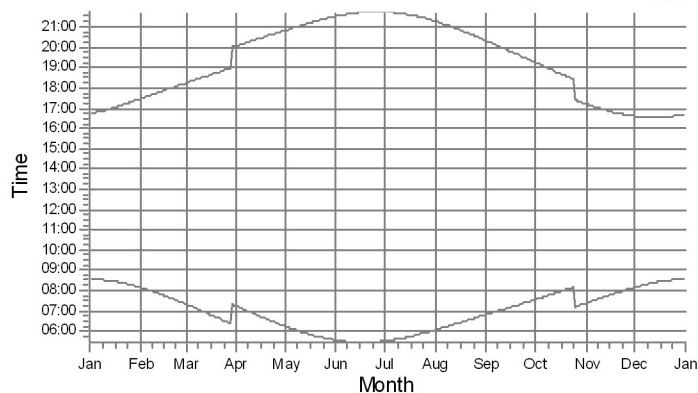
	January	February	March	April	May	June	July	August	September	October	November	December
1	08:32 16:44	08:09 17:28	07:20 18:16	07:14 20:05	06:13 20:51	05:32 21:33	05:30 21:46	06:03 21:18	06:48 20:20	07:33 19:15	07:22 17:14	08:09 16:37
2	08:32 16:45	08:07 17:30	07:17 18:17	07:11 20:06	06:12 20:53	05:31 21:34	05:31 21:46	06:05 21:16	06:50 20:18	07:35 19:13	07:24 17:12	08:10 16:37
3	08:32 16:46	08:06 17:32	07:15 18:19	07:09 20:08	06:10 20:54	05:31 21:35	05:31 21:45	06:06 21:14	06:51 20:16	07:36 19:11	07:25 17:10	08:12 16:36
4	08:32 16:47	08:04 17:33	07:13 18:20	07:07 20:10	06:08 20:56	05:30 21:36	05:32 21:45	06:08 21:13	06:53 20:14	07:38 19:09	07:27 17:09	08:13 16:36
5	08:32 16:48	08:03 17:35	07:11 18:22	07:05 20:11	06:06 20:57	05:30 21:37	05:33 21:45	06:09 21:11	06:54 20:12	07:39 19:07	07:29 17:07	08:14 16:35
6	08:31 16:49	08:01 17:37	07:09 18:24	07:03 20:13	06:05 20:59	05:29 21:38	05:34 21:44	06:10 21:10	06:56 20:10	07:41 19:04	07:30 17:05	08:15 16:35
7	08:31 16:50	08:00 17:38	07:07 18:25	07:01 20:14	06:03 21:00	05:28 21:38	05:34 21:44	06:12 21:08	06:57 20:07	07:42 19:02	07:32 17:04	08:17 16:35
8	08:31 16:52	07:58 17:40	07:05 18:27	06:59 20:16	06:01 21:02	05:28 21:39	05:35 21:43	06:13 21:06	06:59 20:05	07:44 19:00	07:34 17:02	08:18 16:34
9	08:30 16:53	07:57 17:42	07:03 18:29	06:57 20:17	06:00 21:03	05:28 21:40	05:36 21:43	06:15 21:05	07:00 20:03	07:45 18:58	07:35 17:01	08:19 16:34
10	08:30 16:54	07:55 17:44	07:01 18:30	06:54 20:19	05:58 21:05	05:27 21:41	05:37 21:42	06:16 21:03	07:02 20:01	07:47 18:56	07:37 16:59	08:20 16:34
11	08:29 16:55	07:53 17:45	06:59 18:32	06:52 20:20	05:57 21:06	05:27 21:42	05:38 21:41	06:18 21:01	07:03 19:59	07:48 18:54	07:39 16:58	08:21 16:34
12	08:29 16:57	07:52 17:47	06:57 18:33	06:50 20:22	05:55 21:08	05:27 21:42	05:39 21:41	06:19 20:59	07:05 19:57	07:50 18:52	07:40 16:56	08:22 16:34
13	08:28 16:58	07:50 17:49	06:55 18:35	06:48 20:23	05:54 21:09	05:26 21:43	05:40 21:40	06:20 20:58	07:06 19:54	07:51 18:50	07:42 16:55	08:23 16:34
14	08:28 17:00	07:48 17:50	06:52 18:37	06:46 20:25	05:52 21:10	05:26 21:43	05:41 21:39	06:22 20:56	07:08 19:52	07:53 18:48	07:43 16:54	08:24 16:34
15	08:27 17:01	07:46 17:52	06:50 18:38	06:44 20:27	05:51 21:12	05:26 21:44	05:42 21:38	06:23 20:54	07:09 19:50	07:55 18:46	07:45 16:52	08:25 16:34
16	08:26 17:02	07:45 17:54	06:48 18:40	06:42 20:28	05:49 21:13	05:26 21:44	05:43 21:37	06:25 20:52	07:11 19:48	07:56 18:44	07:47 16:51	08:26 16:34
17	08:25 17:04	07:43 17:55	06:46 18:41	06:40 20:30	05:48 21:15	05:26 21:45	05:44 21:36	06:26 20:50	07:12 19:46	07:58 18:42	07:48 16:50	08:26 16:34
18	08:25 17:05	07:41 17:57	06:44 18:43	06:38 20:31	05:47 21:16	05:26 21:45	05:45 21:35	06:28 20:48	07:14 19:43	07:59 18:40	07:50 16:49	08:27 16:35
19	08:24 17:07	07:39 17:59	06:42 18:45	06:36 20:33	05:46 21:17	05:26 21:46	05:47 21:34	06:29 20:46	07:15 19:41	08:01 18:38	07:51 16:48	08:28 16:35
20	08:23 17:09	07:37 18:01	06:39 18:46	06:34 20:34	05:44 21:19	05:26 21:46	05:48 21:33	06:31 20:44	07:17 19:39	08:03 18:36	07:53 16:47	08:28 16:35
21	08:22 17:10	07:35 18:02	06:37 18:48	06:32 20:36	05:43 21:20	05:26 21:46	05:49 21:32	06:32 20:43	07:18 19:37	08:04 18:34	07:55 16:45	08:29 16:36
22	08:21 17:12	07:33 18:04	06:35 18:49	06:30 20:37	05:42 21:21	05:26 21:46	05:50 21:31	06:34 20:41	07:19 19:35	08:06 18:32	07:56 16:44	08:29 16:36
23	08:20 17:13	07:31 18:06	06:33 18:51	06:28 20:39	05:41 21:23	05:27 21:46	05:51 21:30	06:35 20:39	07:21 19:33	08:07 18:30	07:58 16:43	08:30 16:37
24	08:19 17:15	07:29 18:07	06:31 18:52	06:26 20:40	05:40 21:24	05:27 21:47	05:53 21:29	06:37 20:37	07:22 19:30	08:09 18:28	07:59 16:43	08:30 16:37
25	08:18 17:16	07:27 18:09	06:29 18:54	06:24 20:42	05:39 21:25	05:27 21:47	05:54 21:27	06:38 20:35	07:24 19:28	07:11 17:26	08:01 16:42	08:31 16:38
26	08:16 17:18	07:26 18:11	06:27 18:56	06:22 20:44	05:37 21:26	05:28 21:47	05:55 21:26	06:40 20:33	07:25 19:26	07:12 17:24	08:02 16:41	08:31 16:38
27	08:15 17:20	07:24 18:12	06:24 18:57	06:21 20:45	05:37 21:27	05:28 21:47	05:57 21:25	06:41 20:30	07:27 19:24	07:14 17:22	08:04 16:40	08:31 16:39
28	08:14 17:21	07:22 18:14	06:22 18:59	06:19 20:47	05:36 21:29	05:28 21:47	05:58 21:23	06:43 20:28	07:28 19:22	07:16 17:21	08:05 16:39	08:32 16:40
29	08:13 17:23		07:20 20:00	06:17 20:48	05:35 21:30	05:29 21:46	05:59 21:22	06:44 20:26	07:30 19:19	07:17 17:19	08:06 16:38	08:32 16:41
30	08:11 17:25		07:18 20:02	06:15 20:50	05:34 21:31	05:30 21:46	06:01 21:20	06:46 20:24	07:31 19:17	07:19 17:17	08:08 16:38	08:32 16:42
31	08:10 17:26		07:16 20:03		05:33 21:32		06:02 21:19	06:47 20:22		07:20 17:15		08:32 16:43
Potential sun hours	268	282	368	412	476	487	492	448	379	335	274	254
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

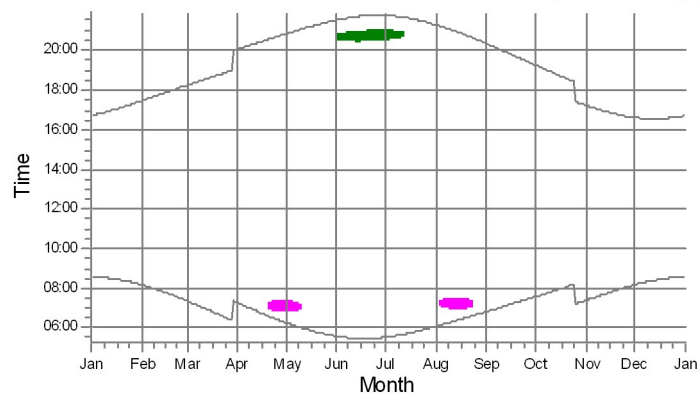
Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG, graphical

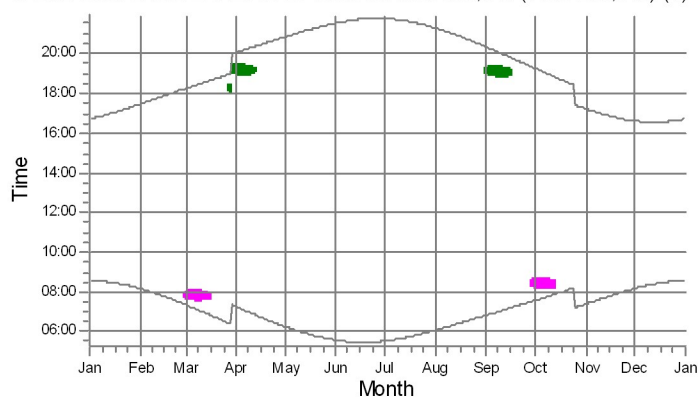
1: ENERCON E-160 EP5 E3 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (1)



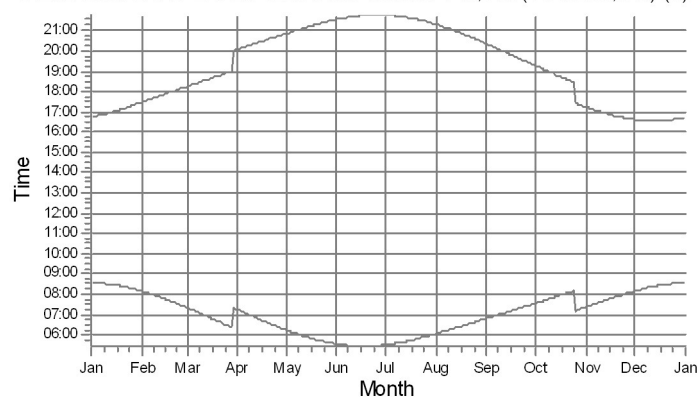
2: ENERCON E-160 EP5 E3 R1 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (2)



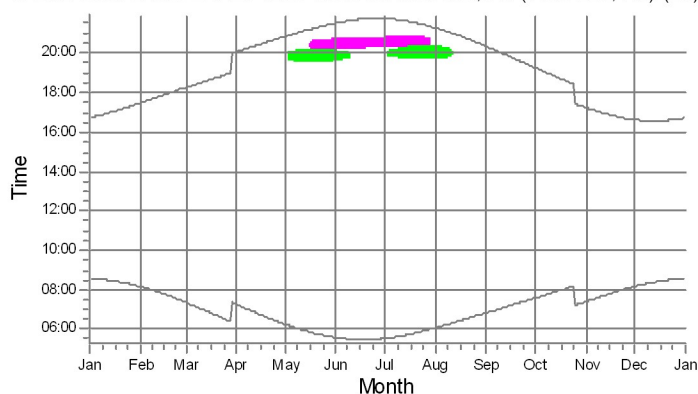
3: ENERCON E-160 EP5 E3 5560 160.0 !O! hub: 166,6 m (TOT: 246,6 m) (4)



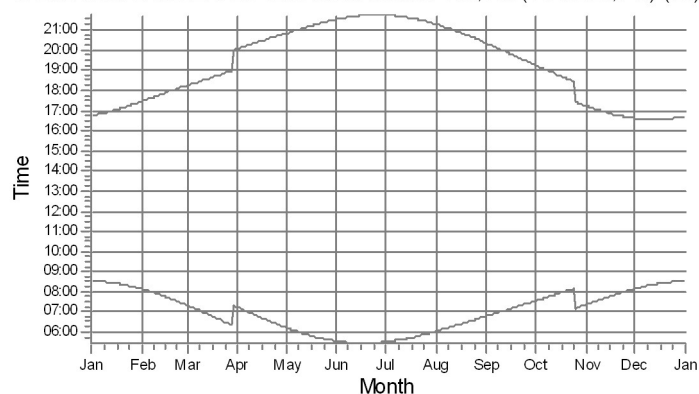
4: ENERCON E-115 EP3 E3 4200 115.7 !O! hub: 149,0 m (TOT: 206,9 m) (3)



5: ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (26)



6: ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (27)



Shadow receptors



A: Mertert, Schaefferreder 1



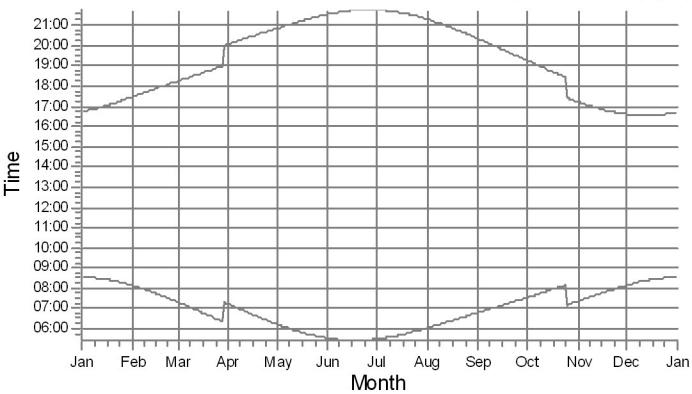
E: Lellig, Op de Scheedbiere (limite)



I: Lellig An der Hiel 11

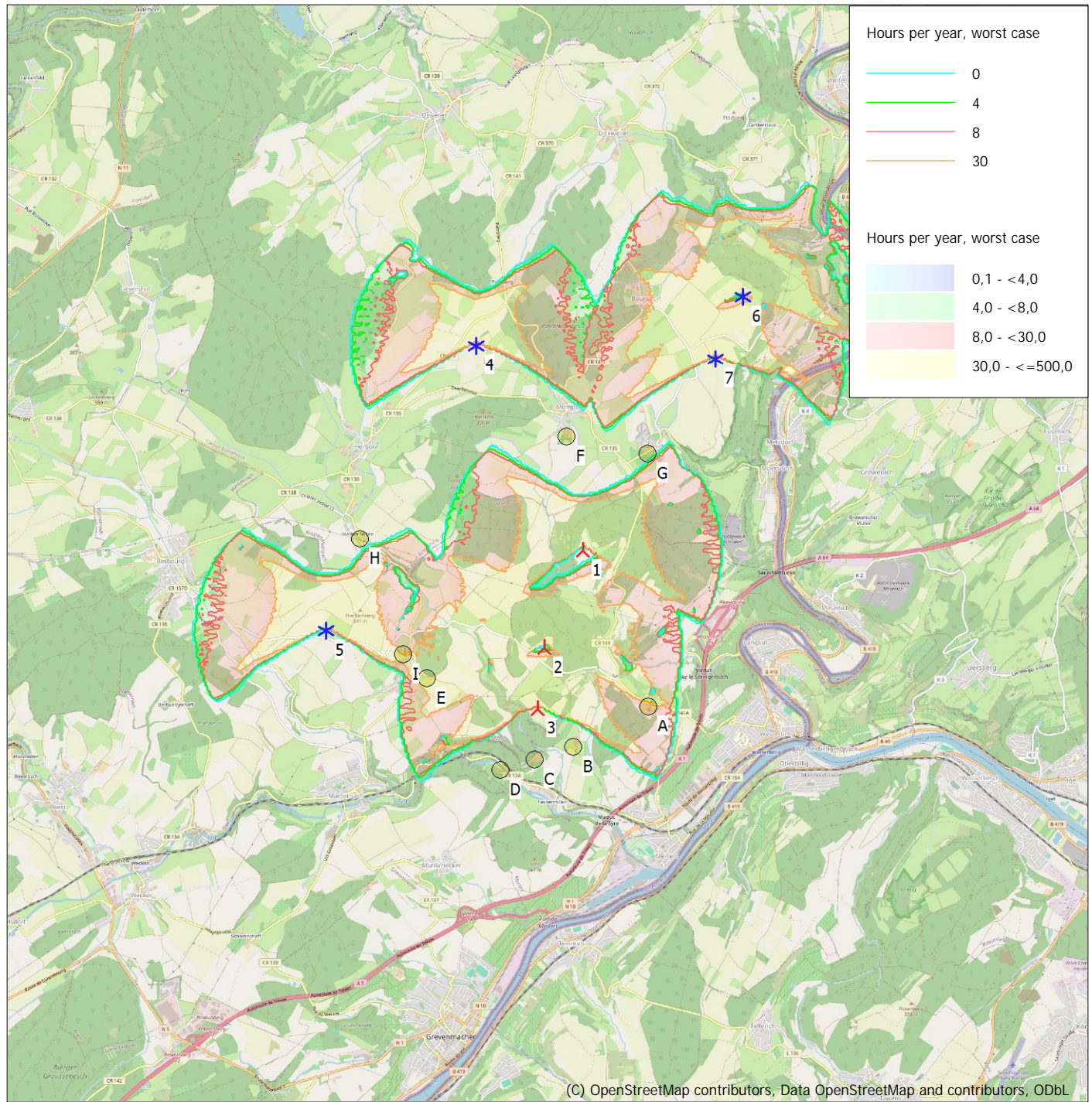
SHADOW - Calendar per WTG, graphical

7: ENERCON E-138 EP3 E3 4260 138.3 !O! hub: 160,0 m (TOT: 229,1 m) (28)



Shadow receptors

SHADOW - Map



0 1 2 3 4 km

Map: EMD OpenStreetMap, Print scale 1:75 000, Map center Luxemburgian TM-LUREF (LU) East: 101 280 North: 89 250

New WTG Existing WTG Shadow receptor

Flicker map level: Project Wizard Elevation Data Grid (Luxembourgish Elevation Model - 5m)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m