

SHADOW - Calendar per WTG

WTG: 1 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (1)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 08:14-08:30/16 14:14-14:40/26 15:45 08:47-09:11/24	07:16 16:31	06:26 15:58-16:16/18 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 08:15-08:31/16 14:13-14:40/27 15:46 08:48-09:12/24	07:15 16:33	06:24 16:00-16:14/14 17:21	06:16 19:12	05:15 20:00	04:33 20:43
3	07:41 08:14-08:31/17 14:14-14:40/26 15:47 08:48-09:11/23	07:13 16:34	06:22 16:04-16:10/6 17:23	06:14 19:14	05:13 20:02	04:32 20:44
4	07:41 08:14-08:32/18 14:15-14:41/26 15:48 08:49-09:12/23	07:12 16:36	06:20 17:25	06:12 19:16	05:11 20:03	04:32 20:45
5	07:40 08:15-08:33/18 14:16-14:42/26 15:50 08:50-09:12/22	07:10 16:38	06:17 17:27	06:09 19:17	05:09 20:05	04:31 20:46
6	07:40 08:15-08:33/18 14:16-14:41/25 15:51 08:50-09:12/22	07:09 16:40	06:15 17:28	06:07 19:19	05:07 20:06	04:30 20:47
7	07:40 08:15-08:34/19 14:17-14:42/25 15:52 08:51-09:12/21	07:07 16:41	06:13 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:39 08:15-08:34/19 14:17-14:42/25 15:53 08:52-09:12/20	07:06 16:43	06:11 17:32	06:03 19:22	05:04 20:10	04:29 20:48
9	07:39 08:16-08:36/20 14:18-14:43/25 15:55 08:53-09:12/19	07:04 16:45	06:09 17:33	06:01 19:24	05:02 20:11	04:29 20:49
10	07:39 08:16-08:36/20 14:18-14:43/25 15:56 08:54-09:11/17	07:02 16:47	06:07 17:35	05:59 19:25	05:01 20:13	04:28 20:50
11	07:38 08:16-08:36/20 14:19-14:42/23 15:57 08:55-09:11/16	07:00 16:48	06:05 17:37	05:56 19:27	04:59 20:14	04:28 20:51
12	07:37 08:17-08:37/20 14:19-14:42/23 15:59 08:57-09:11/14	06:59 16:50	06:02 17:38	05:54 19:28	04:58 20:16	04:28 20:51
13	07:37 08:17-08:37/20 14:21-14:43/22 16:00 08:59-09:09/10	06:57 16:52	06:00 17:40	05:52 19:30	04:56 20:17	04:28 20:52
14	07:36 08:17-08:37/20 14:22-14:42/20 16:01 09:01-09:08/7	06:55 16:04-16:13/9 16:54	05:58 17:41	05:50 19:32	04:55 20:19	04:27 20:53
15	07:35 08:18-08:38/20 16:03 14:23-14:42/19	06:53 16:01-16:16/15 16:55	05:56 17:43	05:48 19:33	04:53 20:20	04:27 20:53
16	07:35 08:18-08:38/20 16:04 14:24-14:42/18	06:51 15:59-16:17/18 16:57	05:54 17:45	05:46 19:35	04:52 20:21	04:27 20:54
17	07:34 08:19-08:38/19 16:06 14:25-14:41/16	06:50 15:58-16:19/21 16:59	05:51 17:46	05:44 19:36	04:50 20:23	04:27 20:54
18	07:33 08:20-08:38/18 16:08 14:27-14:40/13	06:48 15:57-16:20/23 17:01	05:49 17:48	05:42 19:38	04:49 20:24	04:27 20:54
19	07:32 08:20-08:38/18 16:09 14:29-14:38/9	06:46 15:56-16:20/24 17:02	05:47 17:50	05:40 19:40	04:48 20:26	04:27 20:55
20	07:31 08:21-08:37/16 16:11	06:44 15:56-16:21/25 17:04	05:45 17:51	05:38 19:41	04:46 20:27	04:27 20:55
21	07:30 08:23-08:37/14 16:12	06:42 15:55-16:21/26 17:06	05:43 17:53	05:36 19:43	04:45 20:28	04:27 20:55
22	07:29 08:24-08:36/12 16:14	06:40 15:55-16:21/26 17:08	05:40 17:55	05:34 19:44	04:44 20:30	04:28 20:56
23	07:28 08:26-08:34/8 16:16	06:38 15:55-16:21/26 17:09	05:38 17:56	05:32 19:46	04:43 20:31	04:28 20:56
24	07:27 16:17	06:36 15:55-16:21/26 17:11	05:36 17:58	05:30 19:48	04:41 20:32	04:28 20:56
25	07:26 16:19	06:34 15:55-16:20/25 17:13	05:34 17:59	05:28 19:49	04:40 20:34	04:28 20:56
26	07:24 16:21	06:32 15:56-16:20/24 17:15	05:31 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 15:57-16:19/22 17:16	05:29 18:03	05:24 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 15:58-16:18/20 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26	 	06:25 19:06	05:20 19:55	04:36 20:38	04:30 20:56
30	07:19 16:27	 	06:23 19:07	05:18 19:57	04:35 20:40	04:31 20:55
31	07:18 16:29	 	06:20 19:09	 	04:35 20:41	
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	1087	330	38	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: 1 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (1)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 19:27	06:38 18:20	06:29 16:17	07:18 07:58-08:18/20 14:01-14:24/23 15:39 08:37-08:53/16
2	04:32 20:55	05:07 20:24	05:54 19:24	06:40 18:18	06:31 16:15	07:19 07:59-08:19/20 14:02-14:26/24 15:39 08:37-08:54/17
3	04:33 20:55	05:09 20:22	05:55 19:22	06:42 18:16	06:33 16:13	07:20 07:59-08:19/20 14:01-14:26/25 15:38 08:37-08:55/18
4	04:33 20:54	05:10 20:21	05:57 19:20	06:43 18:13	06:34 16:12	07:22 08:00-08:20/20 14:01-14:26/25 15:37 08:36-08:56/20
5	04:34 20:54	05:11 20:19	05:58 19:18	06:45 18:11	06:36 16:10	07:23 08:00-08:19/19 14:02-14:27/25 15:37 08:37-08:57/20
6	04:35 20:53	05:13 20:18	06:00 19:16	06:46 18:09	06:38 16:08	07:24 08:01-08:19/18 14:02-14:28/26 15:37 08:36-08:58/22
7	04:36 20:53	05:14 20:16	06:02 19:14	06:48 18:07	06:39 16:07	07:25 08:01-08:19/18 14:02-14:28/26 15:36 08:36-08:58/22
8	04:37 20:52	05:16 20:14	06:03 19:11	06:49 18:05	06:41 16:05	07:26 08:02-08:20/18 14:03-14:29/26 15:36 08:37-09:00/23
9	04:38 20:52	05:17 20:12	06:05 19:09	06:51 18:03	06:43 16:04	07:28 08:03-08:20/17 14:03-14:29/26 15:36 08:37-09:00/23
10	04:38 20:51	05:19 20:11	06:06 19:07	06:53 18:00	06:44 16:02	07:29 08:04-08:20/16 14:03-14:30/27 15:36 08:37-09:01/24
11	04:39 20:50	05:20 20:09	06:08 19:05	06:54 16:36-16:46/10 17:58	06:46 16:01	07:30 08:04-08:20/16 14:04-14:30/26 15:35 08:37-09:01/24
12	04:40 20:49	05:22 20:07	06:09 19:03	06:56 16:33-16:49/16 17:56	06:48 15:59	07:31 08:05-08:21/16 14:04-14:31/27 15:35 08:38-09:02/24
13	04:41 20:49	05:23 20:05	06:11 19:00	06:58 16:31-16:49/18 17:54	06:50 15:58	07:32 08:06-08:21/15 14:05-14:31/26 15:35 08:38-09:02/24
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 16:29-16:51/22 17:52	06:51 15:56	07:33 08:06-08:21/15 14:05-14:32/27 15:35 08:38-09:03/25
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 16:28-16:52/24 17:50	06:53 15:55	07:34 08:07-08:21/14 14:06-14:32/26 15:35 08:39-09:04/25
16	04:45 20:46	05:28 19:59	06:15 18:54	07:02 16:27-16:51/24 17:48	06:55 15:54	07:34 08:08-08:22/14 14:05-14:32/27 15:36 08:40-09:04/24
17	04:46 20:45	05:29 19:57	06:17 18:51	07:04 16:26-16:52/26 17:46	06:56 15:52	07:35 08:08-08:21/13 14:06-14:33/27 15:36 08:39-09:04/25
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 16:26-16:52/26 17:44	06:58 15:51	07:36 08:09-08:22/13 14:07-14:34/27 15:36 08:40-09:05/25
19	04:48 20:43	05:32 19:54	06:20 18:47	07:07 16:26-16:52/26 17:42	06:59 08:01-08:09/8 15:50	07:37 08:10-08:23/13 14:08-14:35/27 15:36 08:41-09:06/25
20	04:49 20:42	05:34 19:52	06:21 18:45	07:09 16:25-16:51/26 17:40	07:01 07:59-08:11/12 15:49	07:37 08:10-08:22/12 14:08-14:35/27 15:37 08:41-09:06/25
21	04:51 20:41	05:36 19:50	06:23 18:42	07:11 16:26-16:51/25 17:38	07:03 07:58-08:12/14 15:48	07:38 08:11-08:23/12 14:08-14:36/28 15:37 08:41-09:07/26
22	04:52 20:39	05:37 19:48	06:24 18:40	07:12 16:26-16:51/25 17:36	07:04 07:58-08:13/15 15:47	07:38 08:11-08:23/12 14:08-14:36/28 15:38 08:41-09:07/26
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 16:27-16:50/23 17:34	07:06 07:57-08:15/18 15:46 14:07-14:15/8	07:39 08:12-08:24/12 14:09-14:37/28 15:38 08:42-09:08/26
24	04:55 20:37	05:40 19:43	06:28 18:36	07:16 16:27-16:49/22 17:32	07:07 07:57-08:15/18 15:45 14:04-14:17/13	07:39 08:12-08:24/12 14:10-14:37/27 15:39 08:43-09:08/25
25	04:56 20:36	05:42 19:41	06:29 18:33	06:17 15:28-15:48/20 16:30	07:09 07:57-08:16/19 15:44 14:03-14:19/16	07:40 08:12-08:25/13 14:10-14:37/27 15:39 08:43-09:08/25
26	04:57 20:34	05:43 19:39	06:31 18:31	06:19 15:29-15:46/17 16:28	07:10 07:57-08:17/20 15:43 14:03-14:21/18	07:40 08:13-08:26/13 14:10-14:37/27 15:40 08:44-09:09/25
27	04:59 20:33	05:45 19:37	06:32 18:29	06:21 15:31-15:45/14 16:26	07:12 07:57-08:17/20 15:42 14:02-14:21/19	07:40 08:13-08:27/14 14:11-14:38/27 15:41 08:44-09:09/25
28	05:00 20:32	05:46 19:35	06:34 18:27	06:22 15:35-15:41/6 16:24	07:13 07:57-08:17/20 14:02-14:22/20 15:41 08:41-08:47/6	07:41 08:13-08:27/14 14:12-14:38/26 15:41 08:45-09:09/24
29	05:01 20:30	05:48 19:33	06:35 18:24	06:24 16:22	07:15 07:57-08:17/20 14:01-14:23/22 15:40 08:39-08:49/10	07:41 08:13-08:28/15 14:12-14:38/26 15:42 08:45-09:10/25
30	05:03 20:29	05:49 19:31	06:37 18:22	06:26 16:20	07:16 07:58-08:18/20 14:01-14:24/23 15:40 08:38-08:52/14	07:41 08:14-08:28/14 14:12-14:39/27 15:43 08:46-09:10/24
31	05:04 20:27	05:51 19:29		06:27 16:19		07:41 08:14-08:29/15 14:13-14:39/26 15:44 08:46-09:11/25
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	0	0	370	373	2017

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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (2)**Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

January		February		March	April	May		June	July	August	September	October	November	December
1	07:41 14:20-14:28/8	07:16	06:26	06:18		05:16 05:45-05:57/12	04:34	04:31	05:06		05:52	06:38	06:29	07:18
	15:45	16:31	17:20	19:11		19:59	20:42	20:55	20:26		19:27	18:20	16:17	15:39
2	07:41 14:20-14:27/7	07:15	06:24	06:16		05:15 05:45-05:56/11	04:33	04:32	05:07		05:54	06:40	06:31	07:19
	15:46	16:33	17:21	19:12		20:00	20:43	20:55	20:24		19:24	18:18	16:15	15:39
3	07:41 14:22-14:26/4	07:13	06:22	06:14		05:13 05:45-05:55/10	04:32	04:33	05:09		05:55	06:42	06:33	07:20
	15:47	16:34	17:23	19:14		20:02	20:44	20:55	20:22		19:22	18:16	16:13	15:38
4	07:41	07:12	06:19	06:12		05:11 05:46-05:55/9	04:32	04:33	05:10		05:57	06:43	06:34	07:22
	15:49	16:36	17:25	19:15		20:03	20:45	20:54	20:21		19:20	18:13	16:12	15:37
5	07:40	07:10	06:17	06:09		05:09 05:47-05:53/6	04:31	04:34	05:11		05:58	06:45	06:36	07:23
	15:50	16:38	17:27	19:17		20:05	20:46	20:54	20:19		19:18	18:11	16:10	15:37
6	07:40	07:09	06:15	06:07		05:07	04:30	04:35	05:13		06:00	06:46	06:38	07:24
	15:51	16:40	17:28	19:19		20:06	20:47	20:53	20:18		19:16	18:09	16:08	15:37
7	07:40	07:07	06:13	06:05		05:06	04:30	04:36	05:14		06:02	06:48	06:39	07:25
	15:52	16:41	17:30	19:20		20:08	20:48	20:53	20:16		19:14	18:07	16:07	15:36
8	07:39	07:06	06:11	06:03		05:04	04:29	04:37	05:16	05:56-06:03/7	06:03	06:49	06:41	07:26
	15:53	16:43	17:32	19:22		20:10	20:48	20:52	20:14		19:11	18:05	16:05	15:36
9	07:39	07:04	06:09	06:01		05:02	04:29	04:38	05:17	05:54-06:04/10	06:05	06:51	06:43	07:28 14:12-14:15/3
	15:55	16:45	17:33	19:24		20:11	20:49	20:52	20:12		19:09	18:03	16:04	15:36
10	07:39	07:02	06:07	05:59		05:01	04:29	04:38	05:19	05:54-06:05/11	06:06	06:53	06:44	07:29 14:10-14:17/7
	15:56	16:47	17:35	19:25		20:13	20:50	20:51	20:11		19:07	18:00	16:02	15:36
11	07:38	07:00	06:05	05:56		04:59	04:28	04:39	05:20	05:53-06:05/12	06:08	06:54	06:46	07:30 14:10-14:18/8
	15:57	16:48	17:37	19:27		20:14	20:51	20:50	20:09		19:05	17:58	16:01	15:35
12	07:37	06:59	06:02	05:54		04:58	04:28	04:40	05:22	05:53-06:06/13	06:09	06:56	06:48	07:31 14:09-14:19/10
	15:59	16:50	17:38	19:28		20:16	20:51	20:49	20:07		19:02	17:56	15:59	15:35
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	16:00	16:52	17:40	19:30		20:17	20:52	20:49	20:05		19:00	17:54	15:58	15:35
14	07:36	06:55	05:58	05:50		04:55	04:27	04:43	05:25	05:54-06:05/11	06:12	06:59	06:51	07:33 14:10-14:21/11
	16:02	16:54	17:41	19:32		20:18	20:52	20:48	20:03		18:58	17:52	15:56	15:35
15	07:35	06:53	05:56	05:48		04:53	04:27	04:44	05:26	05:54-06:06/10	06:14	07:01	06:53	07:33 14:10-14:22/12
	16:03	16:55	17:43	19:33		20:20	20:53	20:47	20:01		18:56	17:50	15:55	15:35
16	07:35	06:51	05:54	05:46		04:52	04:27	04:45	05:28	05:54-06:02/8	06:15	07:02	06:54	07:34 14:09-14:22/13
	16:04	16:57	17:45	19:35		20:21	20:54	20:46	19:59		18:54	17:48	15:54	15:36
17	07:34	06:50	05:51	05:44		04:50	04:27	04:46	05:29		06:17	07:04	06:56	07:35 14:10-14:23/13
	16:06	16:59	17:46	19:36		20:23	20:54	20:45	19:57		18:51	17:46	15:52	15:36
18	07:33	06:48	05:49	05:42		04:49	04:27	04:47	05:31		06:18	07:06	06:58	07:36 14:10-14:24/14
	16:08	17:01	17:48	19:38		20:24	20:54	20:44	19:56		18:49	17:44	15:51	15:36
19	07:32	06:46	05:47	05:40		04:48	04:27	04:48	05:32		06:20	07:07	06:59	07:37 14:11-14:25/14
	16:09	17:02	17:50	19:40		20:26	20:55	20:43	19:54		18:47	17:42	15:50	15:36
20	07:31	06:44	05:45	05:38		04:46	04:27	04:50	05:34		06:21	07:09	07:01	07:37 14:11-14:25/14
	16:11	17:04	17:51	19:41		20:27	20:55	20:42	19:52		18:45	17:40	15:49	15:37
21	07:30	06:42	05:43	05:36		04:45	04:27	04:51	05:36		06:23	07:11	07:03	07:38 14:12-14:26/14
	16:12	17:06	17:53	19:43		20:28	20:55	20:41	19:50		18:42	17:38	15:48	15:37
22	07:29	06:40	05:40	05:34		04:44	04:28	04:52	05:37		06:24	07:12	07:04	07:38 14:12-14:26/14
	16:14	17:08	17:55	19:44		20:30	20:56	20:39	19:48		18:40	17:36	15:47	15:38
23	07:28	06:38	05:38	05:32		04:43	04:28	04:53	05:39		06:26	07:14	07:06	07:39 14:13-14:27/14
	16:16	17:09	17:56	19:46		20:31	20:56	20:38	19:46		18:38	17:34	15:46	15:38
24	07:27	06:36	05:36	05:30		04:41	04:28	04:55	05:40		06:28	07:16	07:07	07:39 14:13-14:27/14
	16:17	17:11	17:58	19:48		20:32	20:56	20:37	19:43		18:36	17:32	15:45	15:39
25	07:26	06:34	05:34	05:28		04:40	04:28	04:56	05:42		06:29	06:17	07:09	07:40 14:13-14:27/14
	16:19	17:13	17:59	19:49		20:34	20:56	20:36	19:41		18:33	16:30	15:44	15:39
26	07:24	06:32	05:31	05:26 05:50-05:53/3		04:39	04:29	04:57	05:43		06:31	06:19	07:10	07:40 14:13-14:27/14
	16:21	17:15	18:01	19:51		20:35	20:56	20:34	19:39		18:31	16:28	15:43	15:40
27	07:23	06:30	05:29	05:24 05:47-05:55/8		04:38	04:29	04:59	05:45		06:32	06:21	07:12	07:40 14:15-14:28/13
	16:22	17:16	18:03	19:52		20:36	20:56	20:33	19:37		18:29	16:26	15:42	15:41
28	07:22	06:28	05:27	05:22 05:46-05:56/10		04:37	04:30	05:00	05:46		06:34	06:22	07:13	07:41 14:15-14:28/13
	16:24	17:18	18:04	19:54		20:37	20:56	20:32	19:35		18:27	16:24	15:41	15:41
29	07:21		06:25 05:20 05:45-05:56/11		04:36		04:30	05:01	05:48		06:35	06:24	07:15	07:41 14:16-14:28/12
	16:26		19:06	19:55		20:38	20:56	20:30	19:33		18:24	16:22	15:40	15:42
30	07:19		06:23 05:18 05:45-05:57/12		04:35		04:31	05:03	05:49		06:37	06:26	07:16	07:41 14:17-14:28/11
	16:27		19:07	19:57		20:40	20:55	20:29	19:31		18:22	16:20	15:40	15:43
31	07:18		06:20			04:35		05:04	05:51			06:27		07:41 14:18-14:28/10
	16:29		19:09			20:41		20:27	19:29			16:19		15:44
Potential sun hours	265	281	367	413	479	491	491	495	450	380	334	271	251	273
Sum of minutes with flicker	19	0	0	44	48	0	0	94	0	0	0	0	0	273

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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (3)****Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:16 16:31	06:26 17:20	06:18 19:11	06:46-06:57/11 19:59	05:16 20:42
2	07:41 15:46	07:15 16:33	06:24 17:21	06:16 19:12	06:40-06:48/8 20:00	05:15 20:43
3	07:41 15:47	07:13 16:34	06:22 17:23	06:14 19:14	06:37-06:49/12 20:02	05:13 20:44
4	07:41 15:49	07:12 16:36	06:20 17:25	06:12 19:16	06:36-06:50/14 20:03	05:11 20:45
5	07:40 15:50	07:10 16:38	06:17 17:27	06:09 19:17	06:34-06:49/15 20:05	05:09 20:46
6	07:40 15:51	07:09 16:40	06:15 17:28	06:07 19:19	06:34-06:49/15 20:06	05:08 20:47
7	07:40 15:52	07:07 16:41	06:13 17:30	06:05 19:20	06:34-06:49/15 20:08	05:06 20:48
8	07:39 15:53	07:06 16:43	06:11 17:32	06:03 19:22	06:34-06:49/15 20:10	05:04 20:48
9	07:39 15:55	07:04 16:45	06:09 17:33	06:01 19:24	06:34-06:48/14 20:11	05:02 20:49
10	07:39 15:56	07:02 16:47	06:07 17:35	05:59 19:25	06:35-06:46/11 20:13	19:39-19:44/5 20:50
11	07:38 15:57	07:00 16:48	06:05 17:37	05:56 19:27	06:37-06:44/7 20:14	19:38-19:46/8 20:51
12	07:37 15:59	06:59 16:50	06:02 17:38	05:54 19:28	04:58 20:16	19:37-19:46/9 20:51
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 19:30	04:56 20:17	19:37-19:48/11 20:52
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 19:32	04:55 20:18	19:37-19:50/13 20:52
15	07:35 16:03	06:53 16:56	05:56 17:43	05:48 19:33	04:53 20:20	19:36-19:51/15 20:53
16	07:35 16:05	06:51 16:57	05:54 17:45	05:46 19:35	04:52 20:21	19:36-19:51/15 20:54
17	07:34 16:06	06:50 16:59	05:51 17:46	05:44 19:36	04:50 20:23	19:36-19:51/15 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 19:38	04:49 20:24	19:35-19:50/15 20:54
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 19:40	04:48 20:26	05:13-05:14/1 19:36-19:50/14
20	07:31 16:11	06:44 17:04	05:45 17:51	05:38 19:41	04:46 20:27	05:12-05:16/4 19:37-19:50/13
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 19:43	04:45 20:28	05:11-05:17/6 19:37-19:50/13
22	07:29 16:14	06:40 17:08	05:40 17:55	05:34 19:44	04:44 20:30	05:10-05:17/7 19:38-19:49/11
23	07:28 16:16	06:38 17:09	05:38 17:56	05:32 19:46	04:43 20:31	05:09-05:18/9 19:39-19:49/10
24	07:27 16:17	06:36 17:11	05:36 17:58	05:30 19:48	04:42 20:32	05:08-05:18/10 19:40-19:48/8
25	07:26 16:19	06:34 17:13	05:34 17:59	05:28 19:49	04:40 20:34	05:07-05:19/12 19:43-19:46/3
26	07:24 16:21	06:32 17:15	05:31 18:01	05:26 19:51	04:39 20:35	05:07-05:19/12 20:56
27	07:23 16:22	06:30 17:16	05:29 18:03	05:24 19:52	04:38 20:36	05:07-05:19/12 20:56
28	07:22 16:24	06:28 17:18	05:27 18:04	05:22 19:54	04:37 20:37	05:07-05:18/11 20:56
29	07:21 16:26		06:25 19:06	05:20 19:55	04:36 20:38	05:07-05:18/11 20:56
30	07:19 16:27		06:23 19:07	05:18 19:57	04:35 20:40	05:08-05:19/11 20:55
31	07:18 16:29		06:20 19:09		04:35 20:41	05:09-05:18/9 20:55
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	0	0	52	146	293	20

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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (3)****Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 19:48-19:56/8 20:26	05:52 06:36-06:43/7 19:27	06:38 18:20	06:29 16:17	07:18 15:39
2	04:32 20:55	05:07 19:49-19:56/7 20:24	05:54 06:33-06:44/11 19:24	06:40 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 19:51-19:54/3 20:22	05:55 06:32-06:46/14 19:22	06:42 18:16	06:33 16:13	07:20 15:38
4	04:33 20:54	05:10 20:21	05:57 06:31-06:46/15 19:20	06:43 18:13	06:34 16:12	07:22 15:37
5	04:34 20:54	05:11 20:19	05:58 06:31-06:46/15 19:18	06:45 18:11	06:36 16:10	07:23 15:37
6	04:35 20:53	05:13 20:18	06:00 06:30-06:45/15 19:16	06:46 18:09	06:38 16:08	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 06:29-06:44/15 19:14	06:48 18:07	06:39 16:07	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 06:30-06:44/14 19:11	06:50 18:05	06:41 16:05	07:26 15:36
9	04:38 05:19-05:23/4 20:52	05:17 20:12	06:05 06:30-06:42/12 19:09	06:51 18:03	06:43 16:04	07:28 15:36
10	04:39 05:18-05:24/6 20:51	05:19 20:11	06:06 06:32-06:40/8 19:07	06:53 18:00	06:44 16:02	07:29 15:36
11	04:39 05:18-05:25/7 20:50	05:20 20:09	06:08 06:39-06:49/10 19:05	06:54 17:58	06:46 16:01	07:30 15:35
12	04:40 05:17-05:26/9 20:49	05:22 20:07	06:09 06:38-06:50/12 19:03	06:56 17:56	06:48 15:59	07:31 15:35
13	04:42 05:17-05:27/10 20:49	05:23 20:05	06:11 06:37-06:49/12 19:00	06:58 17:54	06:50 15:58	07:32 15:35
14	04:43 05:17-05:27/10 20:48	05:25 20:03	06:12 06:37-06:49/12 18:58	06:59 17:52	06:51 15:56	07:33 15:35
15	04:44 05:17-05:28/11 20:47	05:26 20:01	06:14 06:38-06:48/10 18:56	07:01 17:50	06:53 15:55	07:33 15:35
16	04:45 05:16-05:28/12 20:46	05:28 19:59	06:15 06:40-06:47/7 18:54	07:02 17:48	06:54 15:54	07:34 15:36
17	04:46 05:16-05:28/12 20:45	05:29 19:57	06:17 06:41-06:44/3 18:51	07:04 17:46	06:56 15:53	07:35 15:36
18	04:47 05:16-05:28/12 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 15:51	07:36 15:36
19	04:48 05:17-05:28/11 20:43 19:51-19:56/5	05:33 19:54	06:20 18:47	07:07 17:42	06:59 15:50	07:37 15:36
20	04:50 05:18-05:28/10 20:42 19:49-19:58/9	05:34 19:52	06:21 18:45	07:09 17:40	07:01 15:49	07:37 15:37
21	04:51 05:19-05:27/8 20:41 19:48-19:59/11	05:36 19:50	06:23 18:42	07:11 17:38	07:03 15:48	07:38 15:37
22	04:52 05:21-05:28/7 20:39 19:47-19:59/12	05:37 19:48	06:24 18:40	07:12 17:36	07:04 15:47	07:38 15:38
23	04:53 05:22-05:27/5 20:38 19:47-20:01/14	05:39 19:46	06:26 18:38	07:14 17:34	07:06 15:46	07:39 15:38
24	04:55 05:23-05:25/2 20:37 19:47-20:01/14	05:40 19:43	06:28 18:36	07:16 17:32	07:07 15:45	07:39 15:39
25	04:56 19:46-20:01/15 20:36	05:42 19:41	06:29 18:33	06:17 16:30	07:09 15:44	07:40 15:39
26	04:57 19:46-20:01/15 20:34	05:43 19:39	06:31 18:31	06:19 16:28	07:10 15:43	07:40 15:40
27	04:59 19:47-20:02/15 20:33	05:45 19:37	06:32 18:29	06:21 16:26	07:12 15:42	07:40 15:41
28	05:00 19:46-20:01/15 20:32	05:46 19:35	06:34 18:27	06:22 16:24	07:13 15:41	07:41 15:41
29	05:01 19:46-20:00/14 20:30	05:48 19:33	06:35 18:25	06:24 16:22	07:15 15:41	07:41 15:42
30	05:03 19:47-20:00/13 20:29	05:49 19:31	06:37 18:22	06:26 16:21	07:16 15:40	07:41 15:43
31	05:04 19:47-19:58/11 20:27	05:51 19:29		06:27 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	299	18	200	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: 4 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (4)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:16 16:31	06:26 06:51-07:02/11 17:20	06:18 19:11	05:16 06:14-06:31/17 19:59	04:34 20:42
2	07:41 15:46	07:15 16:33	06:24 06:51-07:00/9 17:21	06:16 06:42-06:49/7 19:12	05:15 06:15-06:29/14 20:00	04:33 20:43
3	07:41 15:47	07:13 16:34	06:22 06:53-06:58/5 17:23	06:14 06:40-06:52/12 19:14	05:13 06:17-06:26/9 20:02	04:32 20:44
4	07:41 15:49	07:12 16:36	06:20 17:25	06:12 06:38-06:53/15 19:16	05:11 20:03	04:32 20:45
5	07:40 15:50	07:10 16:38	06:17 17:27	06:09 06:36-06:53/17 19:17	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 16:40	06:15 17:28	06:07 06:35-06:53/18 19:19	05:08 20:06	04:30 20:47
7	07:40 15:52	07:07 16:41	06:13 17:30	06:05 06:35-06:53/18 19:20	05:06 20:08	04:30 20:48
8	07:39 15:53	07:06 16:43	06:11 17:32	06:03 06:35-06:53/18 19:22	05:04 20:10	04:29 20:48
9	07:39 15:55	07:04 16:45	06:09 17:33	06:01 06:35-06:52/17 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 16:47	06:07 17:35	05:59 06:35-06:52/17 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:00 16:48	06:05 17:37	05:57 06:36-06:51/15 19:27	04:59 20:14	04:28 20:51
12	07:37 15:59	06:59 16:50	06:02 17:38	05:54 06:37-06:49/12 19:28	04:58 20:16	04:28 20:51
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 06:38-06:46/8 19:30	04:56 20:17	04:28 20:52
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 19:32	04:55 20:19	04:27 20:53
15	07:35 16:03	06:53 16:56	05:56 17:43	05:48 06:24-06:27/3 19:33	04:53 20:20	04:27 20:53
16	07:35 16:05	06:51 16:57	05:54 17:45	05:46 06:19-06:31/12 19:35	04:52 20:21	04:27 20:54
17	07:34 16:06	06:50 16:59	05:51 17:46	05:44 06:17-06:33/16 19:36	04:50 20:23	04:27 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 06:15-06:34/19 19:38	04:49 20:24	04:27 20:54
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 06:14-06:35/21 19:40	04:48 20:26	04:27 20:55
20	07:31 16:11	06:44 17:04	05:45 17:51	05:38 06:13-06:36/23 19:41	04:46 20:27	04:27 20:55
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 06:12-06:36/24 19:43	04:45 20:28	04:27 20:55
22	07:29 16:14	06:40 17:08	05:40 17:55	05:34 06:11-06:36/25 19:44	04:44 20:30	04:28 20:56
23	07:28 16:16	06:38 17:09	05:38 17:56	05:32 06:11-06:36/25 19:46	04:43 20:31	04:28 20:56
24	07:27 16:17	06:36 06:59-07:01/2 17:11	05:36 17:58	05:30 06:11-06:37/26 19:48	04:42 20:32	04:28 20:56
25	07:26 16:19	06:34 06:57-07:02/5 17:13	05:34 17:59	05:28 06:11-06:36/25 19:49	04:40 20:34	04:28 20:56
26	07:24 16:21	06:32 06:55-07:03/8 17:15	05:31 18:01	05:26 06:11-06:36/25 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 06:53-07:03/10 17:16	05:29 18:03	05:24 06:11-06:35/24 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 06:51-07:03/12 17:18	05:27 18:04	05:22 06:11-06:34/23 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26		06:25 19:06	05:20 06:12-06:33/21 19:55	04:36 20:38	04:30 20:56
30	07:19 16:27		06:23 19:07	05:18 06:13-06:33/20 19:57	04:36 20:40	04:31 20:55
31	07:18 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	0	37	25	506	40	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: 4 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (4)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 19:27	06:35-06:50/15 18:20	06:29 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:33-06:50/17 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:55 19:22	06:33-06:50/17 18:16	06:33 16:13	07:20 15:38
4	04:33 20:54	05:10 20:21	05:57 19:20	06:32-06:50/18 18:13	06:43 16:12	07:22 15:38
5	04:34 20:54	05:11 20:19	05:59 19:18	06:32-06:50/18 18:11	06:45 16:10	07:23 15:37
6	04:35 20:53	05:13 20:18	06:00 19:16	06:31-06:49/18 18:09	06:46 16:08	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 19:14	06:32-06:49/17 18:07	06:48 16:07	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 19:11	06:32-06:47/15 18:05	06:41 16:05	07:26 15:36
9	04:38 20:52	05:17 20:12	06:05 19:09	06:33-06:45/12 18:03	06:43 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:35-06:43/8 18:00	06:53 16:02	07:29 15:36
11	04:40 20:50	05:20 20:09	06:08 19:05	07:26-07:33/7 17:58	06:46 16:01	07:30 15:35
12	04:41 20:49	05:22 20:07	06:09 19:03	07:25-07:35/10 17:56	06:48 15:59	07:31 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	07:24-07:36/12 17:54	06:50 15:58	07:32 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	07:24-07:35/11 17:52	06:51 15:56	07:33 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:26-07:35/9 17:50	06:53 15:55	07:34 15:35
16	04:45 20:46	05:28 19:59	06:15 18:54	07:28-07:35/7 17:48	06:55 15:54	07:34 15:36
17	04:46 20:45	05:29 19:58	06:17 18:51	07:29-07:33/4 17:46	06:56 15:53	07:35 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:31-07:32/1 17:44	06:58 15:51	07:36 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:07 17:42	06:59 15:50	07:37 15:36
20	04:50 20:42	05:34 19:52	06:21 18:45	07:09 17:40	07:01 15:49	07:37 15:37
21	04:51 20:41	05:36 19:50	06:23 18:42	07:11 17:38	07:03 15:48	07:38 15:37
22	04:52 20:39	05:37 19:48	06:24 18:40	07:12 17:36	07:04 15:47	07:38 15:38
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 17:34	07:06 15:46	07:39 15:38
24	04:55 20:37	05:40 19:44	06:28 18:36	07:16 17:32	07:07 15:45	07:39 15:39
25	04:56 20:36	05:42 19:41	06:29 18:33	06:17 16:30	07:09 15:44	07:40 15:39
26	04:57 20:34	05:43 19:39	06:31 18:31	06:19 16:28	07:10 15:43	07:40 15:40
27	04:59 20:33	05:45 19:37	06:32 18:29	06:21 16:26	07:12 15:42	07:40 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	06:22 16:24	07:13 15:41	07:41 15:42
29	05:01 20:30	05:48 19:33	06:35 18:25	06:24 16:22	07:15 15:41	07:41 15:42
30	05:03 20:29	05:49 19:31	06:37 18:22	06:26 16:21	07:16 15:40	07:41 15:43
31	05:04 20:27	05:51 19:29	06:36-06:48/12 18:22	06:28 16:19	07:18 15:40	07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	398	155	61	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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (5)****Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 14:43-15:00/17 15:45	07:16 16:31	06:26 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 14:43-14:59/16 15:46	07:15 16:33	06:24 17:21	06:16 19:12	05:15 20:00	04:33 20:43
3	07:41 14:43-15:00/17 15:47	07:13 16:34	06:22 17:23	06:14 19:14	05:13 20:02	04:32 20:44
4	07:41 14:44-15:01/17 15:49	07:12 15:56-16:03/7 16:36	06:20 17:25	06:12 19:16	05:11 20:03	04:32 20:45
5	07:40 14:45-15:02/17 15:50	07:10 15:54-16:04/10 16:38	06:17 17:27	06:09 19:17	05:09 20:05	04:31 20:46
6	07:40 14:45-15:01/16 15:51	07:09 15:52-16:06/14 16:40	06:15 17:28	06:07 19:19	05:07 20:06	04:30 20:47
7	07:40 14:46-15:02/16 15:52	07:07 15:52-16:07/15 16:41	06:13 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:39 14:46-15:02/16 15:53	07:06 15:52-16:08/16 16:43	06:11 17:32	06:03 19:22	05:04 20:10	04:29 05:03-05:08/5 20:48
9	07:39 14:47-15:03/16 15:55	07:04 15:51-16:08/17 16:45	06:09 17:33	06:01 19:24	05:02 20:11	04:29 05:03-05:09/6 20:49
10	07:39 14:47-15:03/16 15:56	07:02 15:51-16:08/17 16:47	06:07 17:35	05:59 19:25	05:01 20:13	04:29 05:03-05:10/7 20:50
11	07:38 14:48-15:02/14 15:57	07:00 15:51-16:07/16 16:48	06:05 17:37	05:56 19:27	04:59 05:26-05:32/6 20:14	04:28 05:03-05:11/8 20:51
12	07:37 14:48-15:02/14 15:59	06:59 15:52-16:08/16 16:50	06:02 17:38	05:54 19:28	04:58 05:24-05:33/9 20:16	04:28 05:02-05:11/9 20:51
13	07:37 14:50-15:03/13 16:00	06:57 15:53-16:07/14 16:52	06:00 17:40	05:52 19:30	04:56 05:24-05:34/10 20:17	04:28 05:02-05:12/10 20:52
14	07:36 14:51-15:02/11 16:02	06:55 15:54-16:06/12 16:54	05:58 17:42	05:50 19:32	04:55 05:24-05:35/11 20:19	04:27 05:02-05:12/10 20:53
15	07:35 14:53-15:01/8 16:03	06:53 15:56-16:04/8 16:56	05:56 17:43	05:48 19:33	04:53 05:23-05:35/12 20:20	04:27 05:02-05:13/11 20:53
16	07:35 14:55-15:00/5 16:04	06:51 16:57	05:54 17:45	05:46 19:35	04:52 05:23-05:35/12 20:21	04:27 05:02-05:13/11 20:54
17	07:34 16:06	06:50 16:59	05:51 17:46	05:44 19:36	04:50 05:23-05:36/13 20:23	04:27 05:02-05:14/12 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 19:38	04:49 05:23-05:36/13 20:24	04:27 05:02-05:14/12 20:54
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 19:40	04:48 05:23-05:35/12 20:26	04:27 05:02-05:14/12 20:55
20	07:31 16:11	06:44 17:04	05:45 17:51	05:38 19:41	04:46 05:24-05:35/11 20:27	04:27 05:02-05:14/12 20:55
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 19:43	04:45 05:25-05:34/9 20:28	04:27 05:03-05:15/12 20:55
22	07:29 16:14	06:40 17:08	05:40 17:55	05:34 19:44	04:44 05:26-05:33/7 20:30	04:28 05:03-05:15/12 20:56
23	07:28 16:16	06:38 17:09	05:38 17:56	05:32 19:46	04:43 05:27-05:32/5 20:31	04:28 05:03-05:15/12 20:56
24	07:27 16:17	06:36 17:11	05:36 17:58	05:30 19:48	04:42 20:32	04:28 05:03-05:15/12 20:56
25	07:26 16:19	06:34 17:13	05:34 17:59	05:28 19:49	04:40 20:34	04:28 05:04-05:16/12 20:56
26	07:24 16:21	06:32 17:15	05:31 18:01	05:26 19:51	04:39 20:35	04:29 05:04-05:15/11 20:56
27	07:23 16:22	06:30 17:16	05:29 18:03	05:24 19:52	04:38 20:36	04:29 05:05-05:16/11 20:56
28	07:22 16:24	06:28 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 05:05-05:16/11 20:56
29	07:21 16:26		06:25 19:06	05:20 19:55	04:36 20:38	04:30 05:06-05:16/10 20:56
30	07:19 16:27		06:23 19:07	05:18 19:57	04:35 20:40	04:31 05:06-05:15/9 20:55
31	07:18 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	229	162	0	0	130	237

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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (5)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 05:07-05:16/9 20:55	05:06 05:35-05:43/8 20:26	05:52 19:27	06:38 18:20	06:29 15:21-15:37/16 16:17	07:18 14:30-14:44/14 15:39
2	04:32 05:07-05:15/8 20:55	05:07 05:38-05:42/4 20:24	05:54 19:24	06:40 18:18	06:31 15:21-15:37/16 16:15	07:19 14:30-14:46/16 15:39
3	04:33 05:08-05:15/7 20:55	05:09 20:23	05:55 19:22	06:42 18:16	06:33 15:21-15:37/16 16:13	07:20 14:30-14:46/16 15:38
4	04:33 05:09-05:14/5 20:54	05:10 20:21	05:57 19:20	06:43 18:13	06:34 15:21-15:36/15 16:12	07:22 14:30-14:46/16 15:37
5	04:34 05:10-05:12/2 20:54	05:11 20:19	05:58 19:18	06:45 18:11	06:36 15:22-15:35/13 16:10	07:23 14:31-14:47/16 15:37
6	04:35 20:53	05:13 20:18	06:00 19:16	06:46 18:09	06:38 15:24-15:34/10 16:08	07:24 14:31-14:47/16 15:37
7	04:36 20:53	05:14 20:16	06:02 19:14	06:48 18:07	06:39 15:26-15:32/6 16:07	07:25 14:31-14:48/17 15:36
8	04:37 20:52	05:16 20:14	06:03 19:11	06:50 18:05	06:41 16:05	07:26 14:32-14:49/17 15:36
9	04:38 20:52	05:17 20:12	06:05 19:09	06:51 18:03	06:43 16:04	07:28 14:32-14:49/17 15:36
10	04:38 20:51	05:19 20:11	06:06 19:07	06:53 18:00	06:44 16:02	07:29 14:33-14:49/16 15:36
11	04:39 20:50	05:20 20:09	06:08 19:05	06:54 17:58	06:46 16:01	07:30 14:33-14:50/17 15:35
12	04:40 20:49	05:22 20:07	06:09 19:03	06:56 17:56	06:48 15:59	07:31 14:33-14:50/17 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	06:50 15:58	07:32 14:34-14:51/17 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 15:56	07:33 14:35-14:51/16 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:50	06:53 15:55	07:34 14:35-14:52/17 15:35
16	04:45 20:46	05:28 19:59	06:15 18:54	07:02 17:48	06:55 15:54	07:34 14:35-14:51/16 15:36
17	04:46 20:45	05:29 19:58	06:17 18:51	07:04 17:46	06:56 15:53	07:35 14:36-14:52/16 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 15:51	07:36 14:36-14:53/17 15:36
19	04:48 20:43	05:32 19:54	06:20 18:47	07:07 17:42	06:59 15:50	07:37 14:37-14:53/16 15:36
20	04:50 05:38-05:40/2 20:42	05:34 19:52	06:21 18:45	07:09 17:40	07:01 15:49	07:37 14:37-14:53/16 15:37
21	04:51 05:36-05:42/6 20:41	05:36 19:50	06:23 18:42	07:11 17:38	07:03 15:48	07:38 14:38-14:54/16 15:37
22	04:52 05:36-05:44/8 20:39	05:37 19:48	06:24 18:40	07:12 17:36	07:04 15:47	07:38 14:38-14:54/16 15:38
23	04:53 05:35-05:45/10 20:38	05:39 19:46	06:26 18:38	07:14 17:34	07:06 15:46	07:39 14:39-14:55/16 15:38
24	04:55 05:34-05:45/11 20:37	05:40 19:43	06:28 18:36	07:16 17:32	07:07 15:45	07:39 14:39-14:55/16 15:39
25	04:56 05:33-05:45/12 20:36	05:42 19:41	06:29 18:33	06:17 16:30	07:09 15:44	07:40 14:39-14:55/16 15:39
26	04:57 05:34-05:46/12 20:34	05:43 19:39	06:31 18:31	06:19 16:28	07:10 15:43	07:40 14:40-14:56/16 15:40
27	04:59 05:33-05:46/13 20:33	05:45 19:37	06:32 18:29	06:21 16:26	07:12 15:42	07:40 14:41-14:57/16 15:41
28	05:00 05:33-05:46/13 20:32	05:46 19:35	06:34 18:27	06:22 16:24	07:13 15:41	07:41 14:41-14:57/16 15:41
29	05:01 05:33-05:45/12 20:30	05:48 19:33	06:35 18:25	06:24 16:22	07:15 15:40	07:41 14:41-14:58/17 15:42
30	05:03 05:34-05:46/12 20:29	05:49 19:31	06:37 18:22	06:26 16:21	07:16 15:40	07:41 14:42-14:58/16 15:43
31	05:04 05:35-05:45/10 20:27	05:51 19:29		06:27 16:19		07:41 14:42-14:59/17 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	152	12	0	72	143	504

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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (6)****Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:16 15:53-16:01/8 16:31	06:26 16:35-16:43/8 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 15:46	07:15 15:53-16:04/11 16:33	06:24 17:21	06:16 19:12	05:15 20:00	04:33 20:43
3	07:41 15:47	07:13 15:52-16:04/12 16:34	06:22 17:23	06:14 19:14	05:13 20:02	04:32 20:44
4	07:41 15:49	07:12 15:52-16:05/13 16:36	06:20 17:25	06:12 19:16	05:11 20:03	04:32 20:45
5	07:40 15:50	07:10 15:52-16:05/13 16:38	06:17 17:27	06:09 19:17	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 15:52-16:05/13 16:40	06:15 17:28	06:07 19:19	05:08 20:06	04:30 20:47
7	07:40 15:52	07:07 15:53-16:05/12 16:41	06:13 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:40 15:11-15:15/4 15:53	07:06 15:54-16:04/10 16:43	06:11 17:32	06:03 19:22	05:04 20:10	04:29 20:48
9	07:39 15:11-15:18/7 15:55	07:04 15:55-16:03/8 16:45	06:09 17:33	06:01 19:24	05:02 20:11	04:29 20:49
10	07:39 15:10-15:19/9 15:56	07:02 16:47	06:07 17:35	05:59 06:24-06:31/7 19:25	05:01 20:13	04:29 20:50
11	07:38 15:09-15:20/11 15:57	07:00 16:48	06:05 17:37	05:56 06:22-06:33/11 19:27	04:59 20:14	04:28 20:51
12	07:38 15:09-15:22/13 15:59	06:59 16:50	06:02 17:38	05:54 06:21-06:33/12 19:28	04:58 20:16	04:28 20:51
13	07:37 15:09-15:22/13 16:00	06:57 16:52	06:00 06:22-06:24/2 17:40	05:52 06:19-06:32/13 19:30	04:56 20:17	04:28 20:52
14	07:36 15:09-15:23/14 16:02	06:55 16:54	05:58 06:20-06:25/5 17:42	05:50 06:19-06:32/13 19:32	04:55 20:19	04:27 20:53
15	07:35 15:09-15:24/15 16:03	06:53 16:56	05:56 06:18-06:26/8 17:43	05:48 06:19-06:32/13 19:33	04:53 20:20	04:27 20:53
16	07:35 15:09-15:24/15 16:05	06:51 16:57	05:54 06:16-06:27/11 17:45	05:46 06:19-06:31/12 19:35	04:52 20:21	04:27 20:54
17	07:34 15:09-15:25/16 16:06	06:50 16:59	05:51 06:14-06:25/11 17:46	05:44 06:20-06:30/10 19:36	04:50 20:23	04:27 20:54
18	07:33 15:09-15:25/16 16:08	06:48 17:01	05:49 06:15-06:25/10 17:48	05:42 06:21-06:28/7 19:38	04:49 20:24	04:27 20:54
19	07:32 15:09-15:26/17 16:09	06:46 17:03	05:47 06:16-06:23/7 17:50	05:40 19:40	04:48 20:26	04:27 20:55
20	07:31 15:10-15:26/16 16:11	06:44 17:04	05:45 17:51	05:38 19:41	04:46 20:27	04:27 20:55
21	07:30 15:11-15:26/15 16:12	06:42 17:06	05:43 17:53	05:36 19:43	04:45 20:28	04:27 20:55
22	07:29 15:11-15:26/15 16:14	06:40 16:38-16:42/4 17:08	05:40 17:55	05:34 19:44	04:44 20:30	04:28 20:56
23	07:28 15:11-15:25/14 16:16	06:38 16:36-16:44/8 17:09	05:38 17:56	05:32 19:46	04:43 20:31	04:28 20:56
24	07:27 15:13-15:25/12 16:17	06:36 16:35-16:45/10 17:11	05:36 17:58	05:30 19:48	04:42 20:32	04:28 20:56
25	07:26 15:14-15:25/11 16:19	06:34 16:34-16:46/12 17:13	05:34 17:59	05:28 19:49	04:40 20:34	04:28 20:56
26	07:24 15:15-15:23/8 16:21	06:32 16:34-16:46/12 17:15	05:31 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 16:34-16:46/12 17:16	05:29 18:03	05:24 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 16:35-16:45/10 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26		06:25 19:06	05:20 19:56	04:36 20:38	04:30 20:56
30	07:19 16:27		06:23 19:08	05:18 19:57	04:35 20:40	04:31 20:56
31	07:18 15:55-16:00/5 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	246	168	62	98	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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (6)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 06:21-06:31/10 19:27	06:38 18:20	06:29 15:27-15:30/3 16:17	07:18 14:51-15:02/11 15:39
2	04:32 20:55	05:07 20:24	05:54 06:22-06:29/7 19:25	06:40 18:18	06:31 15:25-15:33/8 16:15	07:19 14:53-15:02/9 15:39
3	04:33 20:55	05:09 20:23	05:55 19:22	06:42 18:16	06:33 15:23-15:34/11 16:13	07:20 14:54-15:01/7 15:38
4	04:33 20:54	05:10 20:21	05:57 19:20	06:43 18:13	06:34 15:22-15:34/12 16:12	07:22 14:55-14:59/4 15:37
5	04:34 20:54	05:11 20:19	05:59 19:18	06:45 18:11	06:36 15:22-15:35/13 16:10	07:23 15:37
6	04:35 20:53	05:13 20:18	06:00 19:16	06:46 18:09	06:38 15:22-15:35/13 16:08	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 19:14	06:48 18:07	06:39 15:22-15:35/13 16:07	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 19:11	06:50 18:05	06:41 15:23-15:35/12 16:05	07:26 15:36
9	04:38 20:52	05:17 20:12	06:05 19:09	06:51 18:03	06:43 15:24-15:34/10 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:53 18:00	06:45 15:25-15:33/8 16:02	07:29 15:36
11	04:39 20:50	05:20 20:09	06:08 19:05	06:54 17:58	06:46 15:26-15:31/5 16:01	07:30 15:35
12	04:40 20:50	05:22 20:07	06:09 19:03	06:56 17:11-17:16/5 17:56	06:48 15:59	07:31 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:08-17:17/9 17:54	06:50 15:58	07:32 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:07-17:18/11 17:52	06:51 15:56	07:33 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:06-17:18/12 17:50	06:53 15:55	07:34 15:35
16	04:45 20:46	05:28 19:59	06:15 18:54	07:02 17:05-17:18/13 17:48	06:55 14:48-14:56/8 15:54	07:34 15:36
17	04:46 20:45	05:29 19:58	06:17 18:51	07:04 17:06-17:17/11 17:46	06:56 14:47-14:58/11 15:53	07:35 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:06-17:16/10 17:44	06:58 14:47-14:59/12 15:51	07:36 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:07 17:08-17:14/6 17:42	06:59 14:46-15:00/14 15:50	07:37 15:36
20	04:50 20:42	05:34 19:52	06:21 18:45	07:09 17:40	07:01 14:45-15:00/15 15:49	07:37 15:37
21	04:51 20:41	05:36 19:50	06:23 18:42	07:11 17:38	07:03 14:46-15:01/15 15:48	07:38 15:37
22	04:52 20:40	05:37 19:48	06:24 18:40	07:12 17:36	07:04 14:46-15:02/16 15:47	07:38 15:38
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 17:34	07:06 14:46-15:03/17 15:46	07:39 15:38
24	04:55 20:37	05:40 19:44	06:28 07:00-07:06/6 18:36	07:16 17:32	07:07 14:46-15:02/16 15:45	07:39 15:39
25	04:56 20:36	05:42 06:25-06:32/7 19:41	06:29 06:59-07:08/9 18:33	06:17 16:30	07:09 14:47-15:03/16 15:44	07:40 15:39
26	04:57 20:34	05:43 06:23-06:33/10 19:39	06:31 06:57-07:08/11 18:31	06:19 16:28	07:10 14:48-15:03/15 15:43	07:40 15:40
27	04:59 20:33	05:45 06:21-06:33/12 19:37	06:32 06:57-07:08/11 18:29	06:21 16:26	07:12 14:48-15:03/15 15:42	07:40 15:41
28	05:00 20:32	05:46 06:21-06:34/13 19:35	06:34 06:58-07:07/9 18:27	06:22 16:24	07:13 14:49-15:03/14 15:41	07:41 15:41
29	05:01 20:30	05:48 06:20-06:33/13 19:33	06:35 07:00-07:07/7 18:25	06:24 16:22	07:15 14:49-15:03/14 15:41	07:41 15:42
30	05:03 20:29	05:49 06:20-06:33/13 19:31	06:37 07:01-07:04/3 18:22	06:26 16:21	07:16 14:50-15:03/13 15:40	07:41 15:43
31	05:04 20:27	05:51 06:20-06:32/12 19:29		06:28 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	80	73	77	319	31

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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (7)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 12:05-12:16/11 15:45	07:16 15:16-15:39/23 16:31	06:26 17:20	06:18 19:11	05:16 05:47-05:55/8 19:59	04:34 20:42
2	07:41 12:07-12:16/9 15:46	07:15 15:17-15:40/23 16:33	06:24 17:21	06:16 19:12	05:15 05:49-05:53/4 20:00	04:33 20:43
3	07:41 15:47	07:13 15:16-15:40/24 16:34 15:55-16:03/8	06:22 17:23	06:14 19:14	05:13 20:02	04:32 20:44
4	07:41 15:49	07:12 15:17-15:41/24 16:36 15:55-16:05/10	06:20 17:25	06:12 19:16	05:11 20:03	04:32 20:45
5	07:40 15:50	07:10 15:17-15:40/23 16:38 15:54-16:06/12	06:17 17:27	06:09 19:17	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 15:17-15:40/23 16:40 15:53-16:06/13	06:15 17:28	06:07 19:19	05:07 20:06	04:30 20:47
7	07:40 15:52	07:07 15:19-15:40/21 16:41 15:54-16:07/13	06:13 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 15:19-15:39/20 16:43 15:54-16:07/13	06:11 17:32	06:03 19:22	05:04 20:10	04:29 20:48
9	07:39 15:55	07:04 15:20-15:38/18 16:45 15:54-16:07/13	06:09 17:33	06:01 19:24	05:02 20:11	04:29 20:49
10	07:39 15:56	07:02 15:21-15:37/16 16:47 15:54-16:06/12	06:07 17:35	05:59 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:00 15:23-15:35/12 16:48 15:55-16:05/10	06:05 17:03-17:09/6 17:37	05:56 19:27	04:59 20:14	04:28 20:51
12	07:37 15:59	06:59 15:28-15:32/4 16:50 15:58-16:04/6	06:02 16:59-17:10/11 17:38	05:54 19:28	04:58 20:16	04:28 20:51
13	07:37 16:00	06:57 16:52	06:00 16:58-17:11/13 17:40	05:52 19:30	04:56 20:17	04:28 20:52
14	07:36 16:02	06:55 16:12-16:21/9 16:54	05:58 16:57-17:12/15 17:42	05:50 19:32	04:55 20:19	04:27 20:53
15	07:35 16:03	06:53 16:11-16:23/12 16:56	05:56 16:57-17:12/15 17:43	05:48 19:33	04:53 20:20	04:27 20:53
16	07:35 16:04	06:51 16:09-16:24/15 16:57	05:54 16:57-17:12/15 17:45	05:46 19:35	04:52 20:21	04:27 20:54
17	07:34 16:06	06:50 16:09-16:25/16 16:59	05:51 16:56-17:11/15 17:46	05:44 19:36	04:50 20:23	04:27 20:54
18	07:33 16:08	06:48 16:08-16:25/17 17:01	05:49 16:57-17:10/13 17:48	05:42 19:38	04:49 20:24	04:27 20:54
19	07:32 16:09	06:46 16:08-16:25/17 17:03	05:47 16:58-17:09/11 17:50	05:40 19:40	04:48 20:26	04:27 20:55
20	07:31 16:11	06:44 16:08-16:25/17 17:04	05:45 17:00-17:07/7 17:51	05:38 19:41	04:46 20:27	04:27 20:55
21	07:30 16:12	06:42 16:08-16:24/16 17:06	05:43 17:53	05:36 19:43	04:45 20:28	04:27 20:55
22	07:29 16:14	06:40 16:09-16:24/15 17:08	05:40 17:55	05:34 19:44	04:44 20:30	04:28 20:56
23	07:28 16:16	06:38 16:10-16:23/13 17:09	05:38 17:56	05:32 19:46	04:43 20:31	04:28 20:56
24	07:27 15:23-15:29/6 16:17	06:36 16:12-16:21/9 17:11	05:36 17:58	05:30 05:53-05:55/2 19:48	04:42 20:32	04:28 20:56
25	07:26 15:21-15:32/11 16:19	06:34 17:13	05:34 17:59	05:28 05:51-05:57/6 19:49	04:40 20:34	04:28 20:56
26	07:24 15:19-15:34/15 16:21	06:32 17:15	05:31 18:01	05:26 05:49-05:57/8 19:51	04:39 20:35	04:29 20:56
27	07:23 15:19-15:36/17 16:22	06:30 17:16	05:29 18:03	05:24 05:47-05:57/10 19:52	04:38 20:36	04:29 20:56
28	07:22 15:18-15:37/19 16:24	06:28 17:18	05:27 18:04	05:22 05:46-05:57/11 19:54	04:37 20:37	04:30 20:56
29	07:21 15:17-15:38/21 16:26		06:25 19:06	05:20 05:46-05:57/11 19:56	04:36 20:38	04:30 20:56
30	07:19 15:17-15:39/22 16:27		06:23 19:07	05:18 05:47-05:57/10 19:57	04:35 20:40	04:31 20:56
31	07:18 15:17-15:39/22 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	153	497	121	58	12	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 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (7)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 19:27	06:38 17:39-17:51/12 18:20	06:29 14:51-15:07/16 16:17 15:24-15:36/12	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:40 17:39-17:48/9 18:18	06:31 14:49-15:08/19 16:15 15:23-15:36/13	07:19 15:39
3	04:33 20:55	05:09 20:23	05:55 19:22	06:42 18:16	06:33 14:49-15:09/20 16:13 15:23-15:37/14	07:20 15:38
4	04:33 20:54	05:10 20:21	05:57 19:20	06:43 18:13	06:34 14:48-15:10/22 16:12 15:22-15:36/14	07:22 15:37
5	04:34 20:54	05:11 20:19	05:58 19:18	06:45 18:11	06:36 14:47-15:10/23 16:10 15:23-15:36/13	07:23 15:37
6	04:35 20:53	05:13 20:18	06:00 19:16	06:46 18:09	06:38 14:47-15:10/23 16:08 15:24-15:36/12	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 19:14	06:48 18:07	06:39 14:47-15:10/23 16:07 15:25-15:35/10	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 19:11	06:50 18:05	06:41 14:47-15:11/24 16:05 15:26-15:34/8	07:26 15:36
9	04:38 20:52	05:17 20:12	06:05 19:09	06:51 18:03	06:43 14:47-15:11/24 16:04	07:28 15:36
10	04:38 20:51	05:19 20:11	06:06 19:07	06:53 18:00	06:45 14:48-15:11/23 16:02	07:29 15:36
11	04:39 20:50	05:20 20:09	06:08 19:05	06:54 17:58	06:46 14:47-15:10/23 16:01	11:56-12:04/8 07:30 11:55-12:06/11 15:35
12	04:40 20:50	05:22 20:07	06:09 19:03	06:56 17:56	06:48 14:48-15:10/22 15:59	07:31 11:54-12:08/14 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	06:50 14:49-15:09/20 15:58	07:32 11:54-12:09/15 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 14:50-15:09/19 15:56	07:33 11:54-12:10/16 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:50	06:53 14:52-15:08/16 15:55	07:34 11:54-12:12/18 15:35
16	04:45 20:46	05:28 19:59	06:15 18:54	07:02 17:48	06:55 14:52-15:07/15 15:54	07:34 11:54-12:13/19 15:36
17	04:46 20:45	05:29 19:58	06:17 18:51	07:04 17:46	06:56 14:54-15:05/11 15:53	07:35 11:53-12:13/20 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 14:57-15:03/6 15:51	07:36 11:54-12:14/20 15:36
19	04:48 20:43	05:32 19:54	06:20 18:47	07:07 17:42	06:59 14:58-15:04/13 15:50	07:37 11:54-12:15/21 15:36
20	04:50 20:42	05:34 19:52	06:21 18:45	07:09 17:40	07:01 14:59-15:05/15 15:49	07:37 11:54-12:15/21 15:37
21	04:51 20:41	05:36 19:50	06:23 18:42	07:11 17:38	07:03 14:58-15:04/17 15:48	07:38 11:55-12:16/21 15:37
22	04:52 20:40	05:37 19:48	06:24 18:40	07:12 17:36	07:04 14:59-15:05/17 15:47	07:38 11:55-12:16/21 15:38
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 17:34	07:06 14:59-15:06/18 15:46	07:39 11:56-12:17/21 15:38
24	04:55 20:37	05:40 19:44	06:28 18:36	07:16 17:32	07:07 14:59-15:07/16 15:45	07:39 11:56-12:17/21 15:39
25	04:56 20:36	05:42 19:41	06:29 18:33	07:17 16:30	07:09 14:59-15:08/16 15:44	07:40 11:57-12:17/20 15:39
26	04:57 20:34	05:43 19:39	06:31 18:31	07:19 16:28	07:10 14:59-15:09/14 15:43	07:40 11:58-12:18/20 15:40
27	04:59 20:33	05:45 19:37	06:32 18:29	07:21 16:26	07:12 14:59-15:10/12 15:42	07:40 11:59-12:18/19 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	07:22 16:24	07:13 14:59-15:11/8 15:41	07:41 11:59-12:18/19 15:41
29	05:01 20:30	05:48 19:33	06:35 18:25	07:24 16:22	07:15 14:59-15:12/7 15:40	07:41 12:00-12:18/18 15:42
30	05:03 20:29	05:49 19:31	06:37 18:22	07:26 16:21	07:16 14:59-15:13/7 15:40	07:41 12:01-12:17/16 15:43
31	05:04 20:27	05:51 19:29		07:28 16:19	07:18 14:59-15:14/13 15:40	07:41 12:03-12:17/14 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	69	106	221	445	393

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: 8 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (8)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 14:24-14:40/16 15:45	07:16 16:31	06:26 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 14:25-14:41/16 15:46	07:15 16:33	06:24 17:22	06:16 19:12	05:15 20:00	04:33 20:43
3	07:41 14:25-14:40/15 15:47	07:14 16:34	06:22 17:23	06:14 19:14	05:13 20:02	04:32 20:44
4	07:41 14:26-14:40/14 15:49	07:12 16:36	06:20 17:25	06:12 19:16	05:11 05:50-05:58/8 20:03	04:32 20:45
5	07:40 14:28-14:40/12 15:50	07:10 16:38	06:17 17:27	06:09 19:17	05:09 05:47-05:59/12 20:05	04:31 20:46
6	07:40 14:28-14:40/12 15:51	07:09 16:40	06:15 17:28	06:07 19:19	05:08 05:46-06:01/15 20:07	04:30 20:47
7	07:40 14:30-14:40/10 15:52	07:07 16:41	06:13 17:30	06:05 19:20	05:06 05:45-06:02/17 20:08	04:30 20:48
8	07:40 14:31-14:38/7 15:53	07:06 16:43	06:11 17:32	06:03 19:22	05:04 05:43-06:02/19 20:10	04:29 20:48
9	07:39 14:35-14:37/2 15:55	07:04 16:45	06:09 17:33	06:01 19:24	05:03 05:43-06:03/20 20:11	04:29 20:49
10	07:39 15:56	07:02 16:14-16:19/5 16:47	06:07 17:35	05:59 19:25	05:01 05:42-06:03/21 20:13	04:29 20:50
11	07:38 15:57	07:01 16:13-16:21/8 16:49	06:05 17:37	05:57 19:27	04:59 05:42-06:04/22 20:14	04:28 20:51
12	07:38 15:59	06:59 16:13-16:23/10 16:50	06:02 17:38	05:54 19:28	04:58 05:42-06:03/21 20:16	04:28 20:51
13	07:37 15:21-15:22/1 16:00	06:57 16:13-16:25/12 16:52	06:00 17:40	05:52 19:30	04:56 05:42-06:04/22 20:17	04:28 20:52
14	07:36 15:18-15:26/8 16:02	06:55 16:13-16:24/11 16:54	05:58 17:42	05:50 19:32	04:55 05:42-06:04/22 20:19	04:27 20:53
15	07:36 15:17-15:27/10 16:03	06:53 16:13-16:24/11 16:56	05:56 17:43	05:48 19:33	04:53 05:42-06:03/21 20:20	04:27 20:53
16	07:35 15:17-15:28/11 16:05	06:52 16:14-16:23/9 16:57	05:54 17:45	05:46 19:35	04:52 05:42-06:03/21 20:21	04:27 20:54
17	07:34 15:16-15:30/14 16:06	06:50 16:15-16:21/6 16:59	05:51 06:16-06:23/7 17:46	05:44 19:36	04:50 05:43-06:03/20 20:23	04:27 20:54
18	07:33 15:16-15:31/15 16:08	06:48 17:01	05:49 06:14-06:25/11 17:48	05:42 19:38	04:49 05:44-06:03/19 20:24	04:27 20:54
19	07:32 15:16-15:32/16 16:09	06:46 17:03	05:47 06:09-06:27/18 17:50	05:40 19:40	04:48 05:43-06:02/19 20:26	04:27 20:55
20	07:31 15:16-15:32/16 16:11	06:44 17:04	05:45 06:07-06:27/20 17:51	05:38 19:41	04:46 05:44-06:01/17 20:27	04:27 20:55
21	07:30 15:16-15:33/17 16:12	06:42 17:06	05:43 06:05-06:28/23 17:53	05:36 19:43	04:45 05:45-06:01/16 20:28	04:27 20:55
22	07:29 15:16-15:34/18 16:14	06:40 17:08	05:40 06:02-06:27/25 17:55	05:34 19:44	04:44 05:46-06:00/14 20:30	04:28 20:56
23	07:28 15:16-15:33/17 16:16	06:38 17:10	05:38 06:00-06:26/26 17:56	05:32 19:46	04:43 05:47-05:59/12 20:31	04:28 20:56
24	07:27 15:16-15:34/18 16:17	06:36 17:11	05:36 05:58-06:26/28 17:58	05:30 19:48	04:42 05:49-05:57/8 20:32	04:28 20:56
25	07:26 15:17-15:34/17 16:19	06:34 17:13	05:34 05:58-06:25/27 17:59	05:28 19:49	04:40 05:52-05:54/2 20:34	04:28 20:56
26	07:25 15:17-15:34/17 16:21	06:32 17:15	05:32 05:57-06:22/25 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 15:18-15:34/16 16:22	06:30 17:16	05:29 05:58-06:06/8 18:03	05:24 19:52	04:38 20:36	04:29 20:56
28	07:22 15:19-15:34/15 16:24	06:28 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 15:20-15:32/12 16:26		06:25 19:06	05:20 19:56	04:36 20:38	04:30 20:56
30	07:19 15:22-15:32/10 16:27		06:23 19:08	05:18 19:57	04:36 20:40	04:31 20:56
31	07:18 15:25-15:29/4 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	356	72	231	0	368	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: 8 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (8)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 05:52-06:14/22 20:26	05:52 19:27	06:38 18:20	06:29 15:44-15:48/4 16:17	07:18 15:39
2	04:32 20:55	05:07 05:53-06:14/21 20:24	05:54 19:25	06:40 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 05:53-06:13/20 20:23	05:55 19:22	06:42 18:16	06:33 16:14	07:20 15:38
4	04:33 20:54	05:10 05:54-06:13/19 20:21	05:57 19:20	06:43 18:14	06:34 16:12	07:22 14:17-14:23/6 15:38
5	04:34 20:54	05:12 05:54-06:12/18 20:19	05:59 19:18	06:45 18:11	06:36 16:10	07:23 14:15-14:25/10 15:37
6	04:35 20:53	05:13 05:54-06:11/17 20:18	06:00 19:16	06:46 18:09	06:38 16:09	07:24 14:14-14:26/12 15:37
7	04:36 20:53	05:14 05:56-06:10/14 20:16	06:02 19:14	06:48 18:07	06:39 16:07	07:25 14:14-14:26/12 15:36
8	04:37 20:52	05:16 05:57-06:08/11 20:14	06:03 19:11	06:50 18:05	06:41 16:05	07:27 14:14-14:28/14 15:36
9	04:38 20:52	05:17 06:00-06:06/6 20:12	06:05 19:09	06:51 18:03	06:43 16:04	07:28 14:14-14:29/15 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:53 18:01	06:45 16:02	07:29 14:14-14:30/16 15:36
11	04:40 20:50	05:20 20:09	06:08 19:05	06:54 17:58	06:46 14:55-15:00/5 16:01	07:30 14:14-14:30/16 15:35
12	04:41 20:50	05:22 20:07	06:09 19:03	06:56 17:56	06:48 14:53-15:03/10 15:59	07:31 14:14-14:31/17 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	06:50 14:52-15:04/12 15:58	07:32 14:15-14:32/17 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 14:51-15:06/15 15:56	07:33 14:15-14:32/17 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:50	06:53 14:51-15:07/16 15:55	07:34 14:15-14:33/18 15:35
16	04:45 20:46	05:28 19:59	06:15 06:48-06:55/7 18:54 06:57-07:08/11	07:02 17:48	06:55 14:50-15:07/17 15:54	07:34 14:16-14:34/18 15:36
17	04:46 20:45	05:30 19:58	06:17 06:46-07:10/24 18:51	07:04 17:46	06:56 14:50-15:07/17 15:53	07:35 14:15-14:34/19 15:36
18	04:47 20:44	05:31 19:56	06:18 06:45-07:12/27 18:49	07:06 17:44	06:58 14:50-15:08/18 15:51	07:36 14:16-14:34/18 15:36
19	04:48 06:00-06:06/6 20:43	05:33 19:54	06:20 06:44-07:12/28 18:47	07:07 17:42	06:59 14:51-15:08/17 15:50	07:37 14:17-14:35/18 15:36
20	04:50 05:58-06:08/10 20:42	05:34 19:52	06:21 06:46-07:13/27 18:45	07:09 17:40	07:01 14:51-15:09/18 15:49	07:37 14:17-14:35/18 15:37
21	04:51 05:56-06:09/13 20:41	05:36 19:50	06:23 06:47-07:12/25 18:42	07:11 17:38	07:03 14:51-15:08/17 15:48	07:38 14:18-14:36/18 15:37
22	04:52 05:56-06:11/15 20:40	05:37 19:48	06:25 06:49-07:12/23 18:40	07:12 17:36	07:04 14:52-15:08/16 15:47	07:38 14:18-14:36/18 15:38
23	04:53 05:55-06:12/17 20:38	05:39 19:46	06:26 06:51-07:11/20 18:38	07:14 17:34	07:06 14:53-15:09/16 15:46	07:39 14:19-14:37/18 15:38
24	04:55 05:54-06:12/18 20:37	05:40 19:44	06:28 06:52-07:10/18 18:36	07:16 17:32	07:07 14:53-15:08/15 15:45	07:39 14:19-14:37/18 15:39
25	04:56 05:54-06:12/18 20:36	05:42 19:41	06:29 06:55-07:09/14 18:33	06:17 15:44-15:51/7 16:30	07:09 14:54-15:08/14 15:44	07:40 14:19-14:37/18 15:39
26	04:57 05:54-06:14/20 20:34	05:43 19:39	06:31 06:58-07:07/9 18:31	06:19 15:43-15:53/10 16:28	07:10 14:56-15:08/12 15:43	07:40 14:20-14:38/18 15:40
27	04:59 05:53-06:14/21 20:33	05:45 19:37	06:32 18:29	06:21 15:42-15:54/12 16:26	07:12 14:56-15:06/10 15:42	07:40 14:21-14:39/18 15:41
28	05:00 05:53-06:14/21 20:32	05:46 19:35	06:34 18:27	06:22 15:42-15:54/12 16:24	07:13 14:58-15:06/8 15:41	07:41 14:21-14:39/18 15:42
29	05:01 05:52-06:14/22 20:30	05:48 19:33	06:35 18:25	06:24 15:42-15:54/12 16:22	07:15 15:01-15:03/2 15:41	07:41 14:22-14:39/17 15:42
30	05:03 05:53-06:15/22 20:29	05:49 19:31	06:37 18:22	06:26 15:42-15:52/10 16:21	07:16 15:40	07:41 14:22-14:39/17 15:43
31	05:04 05:52-06:14/22 20:27	05:51 19:29		06:28 15:43-15:50/7 16:19		07:41 14:23-14:40/17 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	225	148	233	70	259	456

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: 9 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (9)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June	
1	07:41	13:43-14:17/34	07:16	15:18-15:38/20	06:26	16:26-16:41/15	06:18		05:16		04:34	05:14-05:29/15
	15:45		16:31		17:20		19:11		19:59		20:42	
2	07:41	13:43-14:18/35	07:15	15:16-15:39/23	06:24	16:27-16:40/13	06:16		05:15		04:33	05:15-05:29/14
	15:46		16:33		17:21	16:52-16:56/4	19:12		20:00		20:43	
3	07:41	13:43-14:17/34	07:14	15:15-15:39/24	06:22	16:28-16:39/11	06:14		05:13		04:32	05:15-05:29/14
	15:47		16:34		17:23	16:50-16:58/8	19:14		20:02		20:44	
4	07:41	13:44-14:18/34	07:12	15:16-15:41/25	06:20	16:30-16:37/7	06:12		05:11		04:32	05:15-05:28/13
	15:49		16:36		17:25	16:48-16:59/11	19:16		20:03		20:45	
5	07:40	13:44-14:19/35	07:10	15:15-15:41/26	06:17	16:48-17:00/12	06:09		05:09		04:31	05:16-05:29/13
	15:50		16:38		17:27		19:17		20:05		20:46	
6	07:40	13:44-14:19/35	07:09	15:14-15:41/27	06:15	16:48-17:00/12	06:07		05:08		04:30	05:16-05:28/12
	15:51		16:40		17:28		19:19		20:07		20:47	
7	07:40	13:45-14:20/35	07:07	15:15-15:42/27	06:13	16:47-16:59/12	06:05	06:27-06:30/3	05:06		04:30	05:17-05:28/11
	15:52		16:41		17:30		19:20		20:08		20:48	
8	07:40	13:45-14:20/35	07:06	15:14-15:42/28	06:11	16:48-16:58/10	06:03	06:25-06:32/7	05:04		04:29	05:18-05:29/11
	15:53		16:43		17:32		19:22		20:10		20:48	
9	07:39	13:46-14:21/35	07:04	15:14-15:42/28	06:09	16:49-16:56/7	06:01	06:23-06:33/10	05:02		04:29	05:18-05:28/10
	15:55		16:45		17:33		19:24		20:11		20:49	
10	07:39	13:46-14:21/35	07:02	15:14-15:42/28	06:07		05:59	06:21-06:34/13	05:01		04:29	05:19-05:28/9
	15:56		16:47		17:35		19:25		20:13		20:50	
11	07:38	13:46-14:21/35	07:00	15:14-15:42/28	06:05		05:57	06:21-06:34/13	04:59		04:28	05:20-05:28/8
	15:57		16:48		17:37		19:27		20:14		20:51	
12	07:38	13:47-14:22/35	06:59	15:16-15:42/26	06:02		05:54	06:20-06:34/14	04:58		04:28	05:20-05:26/6
	15:59		16:50		17:38		19:28		20:16		20:51	
13	07:37	13:48-14:22/34	06:57	15:16-15:42/26	06:00		05:52	06:19-06:32/13	04:56		04:28	05:21-05:26/5
	16:00		16:52		17:40		19:30		20:17		20:52	
14	07:36	13:48-14:22/34	06:55	15:17-15:41/24	05:58		05:50	06:20-06:31/11	04:55		04:27	05:22-05:26/4
	16:02		16:54		17:42		19:32		20:19		20:53	
15	07:35	13:48-14:22/34	06:53	15:18-15:40/22	05:56		05:48	06:21-06:30/9	04:53		04:27	05:23-05:25/2
	16:03		16:56		17:43		19:33		20:20		20:53	
16	07:35	13:49-14:22/33	06:52	15:19-15:38/19	05:54		05:46	06:23-06:27/4	04:52		04:27	
	16:05		16:57		17:45		19:35		20:21		20:54	
17	07:34	13:50-14:22/32	06:50	15:21-15:37/16	05:51		05:44		04:50		04:27	
	16:06		16:59		17:46		19:36		20:23		20:54	
18	07:33	13:50-14:22/32	06:48	15:23-15:34/11	05:49		05:42		04:49		04:27	
	16:08		17:01		17:48		19:38		20:24		20:54	
19	07:32	13:51-14:22/31	06:46		05:47	17:24-17:25/1	05:40		04:48		04:27	
	16:09		17:03		17:50		19:40		20:26		20:55	
20	07:31	13:52-14:22/30	06:44		05:45	17:21-17:27/6	05:38		04:46	05:17-05:24/7	04:27	
	16:11		17:04		17:51		19:41		20:27		20:55	
21	07:30	13:53-14:22/29	06:42		05:43	17:19-17:28/9	05:36		04:45	05:16-05:25/9	04:27	
	16:12		17:06		17:53		19:43		20:28		20:55	
22	07:29	13:55-14:22/27	06:40		05:40	17:19-17:30/11	05:34		04:44	05:15-05:26/11	04:28	
	16:14		17:08		17:55		19:44		20:30		20:56	
23	07:28	13:55-14:20/25	06:38	16:31-16:39/8	05:38	17:18-17:30/12	05:32		04:43	05:14-05:27/13	04:28	
	16:16		17:09		17:56		19:46		20:31		20:56	
24	07:27	13:57-14:20/23	06:36	16:29-16:41/12	05:36	17:19-17:29/10	05:30		04:42	05:14-05:28/14	04:28	
	16:17		17:11		17:58		19:48		20:32		20:56	
25	07:26	13:59-14:19/20	06:34	16:28-16:42/14	05:34	17:19-17:27/8	05:28		04:40	05:14-05:28/14	04:28	
	16:19		17:13		17:59		19:49		20:34		20:56	
26	07:25	14:00-14:17/17	06:32	16:27-16:42/15	05:32	17:22-17:24/2	05:26		04:39	05:14-05:28/14	04:29	
	16:21		17:15		18:01		19:51		20:35		20:56	
27	07:23	14:03-14:16/13	06:30	16:27-16:43/16	05:29		05:24		04:38	05:13-05:29/16	04:29	
	16:22		17:16		18:03		19:52		20:36		20:56	
28	07:22	14:09-14:12/3	06:28	16:27-16:42/15	05:27		05:22		04:37	05:13-05:29/16	04:30	05:25-05:29/4
	16:24		17:18		18:04		19:54		20:37		20:56	
29	07:21	15:22-15:31/9			06:25		05:20		04:36	05:13-05:29/16	04:30	05:25-05:30/5
	16:26				19:06		19:56		20:38		20:56	
30	07:19	15:20-15:34/14			06:23		05:18		04:35	05:14-05:29/15	04:31	05:24-05:30/6
	16:27				19:08		19:57		20:40		20:56	
31	07:18	15:18-15:36/18			06:20				04:35	05:14-05:29/15		
	16:29				19:09				20:41			
Potential sun hours	265		280		367		413		479		491	
Sum of minutes with flicker	875		508		181		97		160		162	

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: 9 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (9)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 05:24-05:32/8 20:55	05:06 20:26	05:52 06:19-06:33/14 19:27	06:38 18:20	06:29 14:44-15:12/28 16:17	07:18 13:28-14:03/35 15:39
2	04:32 05:23-05:32/9 20:55	05:07 20:24	05:54 06:19-06:32/13 19:25	06:40 18:18	06:31 14:44-15:12/28 16:15	07:19 13:29-14:04/35 15:39
3	04:33 05:23-05:33/10 20:55	05:09 20:23	05:55 06:21-06:31/10 19:22	06:42 18:16	06:33 14:44-15:12/28 16:13	07:20 13:29-14:04/35 15:38
4	04:33 05:23-05:34/11 20:54	05:10 20:21	05:57 06:22-06:29/7 19:20	06:43 17:29-17:33/4 18:14	06:34 14:44-15:12/28 16:12	07:22 13:30-14:05/35 15:37
5	04:34 05:23-05:33/10 20:54	05:11 20:19	05:59 06:24-06:28/4 19:18	06:45 17:25-17:34/9 18:11	06:36 14:44-15:11/27 16:10	07:23 13:30-14:05/35 15:37
6	04:35 05:23-05:34/11 20:53	05:13 20:18	06:00 19:16	06:46 17:24-17:35/11 18:09	06:38 14:45-15:11/26 16:08	07:24 13:30-14:05/35 15:37
7	04:36 05:23-05:35/12 20:53	05:14 20:16	06:02 19:14	06:48 17:23-17:35/12 18:07	06:39 14:45-15:10/25 16:07	07:25 13:30-14:05/35 15:36
8	04:37 05:23-05:36/13 20:52	05:16 20:14	06:03 19:11	06:50 17:23-17:35/12 18:05	06:41 14:46-15:10/24 16:05	07:27 13:32-14:06/34 15:36
9	04:38 05:23-05:36/13 20:52	05:17 20:12	06:05 19:09	06:51 17:07-17:10/3 18:03	06:43 14:47-15:09/22 16:04	07:28 13:32-14:07/35 15:36
10	04:39 05:23-05:37/14 20:51	05:19 20:11	06:06 19:07	06:53 17:03-17:12/9 18:00	06:45 14:49-15:09/20 16:02	07:29 13:32-14:07/35 15:36
11	04:39 05:23-05:37/14 20:50	05:20 20:09	06:08 19:05	06:54 17:01-17:14/13 17:58	06:46 14:49-15:07/18 16:01	07:30 13:33-14:07/34 15:35
12	04:40 05:23-05:38/15 20:50	05:22 20:07	06:09 19:03	06:56 17:00-17:15/15 17:56	06:48 14:51-15:05/14 15:59	07:31 13:33-14:07/34 15:35
13	04:42 05:23-05:38/15 20:49	05:23 20:05	06:11 19:00	06:58 16:59-17:14/15 17:54	06:50 14:54-15:03/9 15:58	07:32 13:34-14:08/34 15:35
14	04:43 05:23-05:38/15 20:48	05:25 20:03	06:12 18:58	06:59 16:59-17:15/16 17:52	06:51 13:40-13:44/4 15:56	07:33 13:34-14:08/34 15:35
15	04:44 05:23-05:38/15 20:47	05:26 20:01	06:14 18:56	07:01 16:59-17:15/16 17:50	06:53 13:36-13:49/13 15:55	07:34 13:35-14:09/34 15:35
16	04:45 05:23-05:38/15 20:46	05:28 19:59	06:15 18:54	07:02 17:00-17:14/14 17:48	06:55 13:33-13:50/17 15:54	07:34 13:36-14:09/33 15:36
17	04:46 05:23-05:38/15 20:45	05:29 19:58	06:17 18:51	07:04 16:59-17:13/14 17:46	06:56 13:32-13:52/20 15:53	07:35 13:35-14:09/34 15:36
18	04:47 05:23-05:38/15 20:44	05:31 19:56	06:18 18:08-18:15/7 18:49	07:06 17:01-17:11/10 17:44	06:58 13:31-13:54/23 15:51	07:36 13:36-14:10/34 15:36
19	04:48 05:23-05:37/14 20:43	05:33 19:54	06:20 18:06-18:15/9 18:47	07:07 17:03-17:09/6 17:42	06:59 13:30-13:55/25 15:50	07:37 13:37-14:10/33 15:36
20	04:50 05:24-05:37/13 20:42	05:34 19:52	06:21 18:05-18:16/11 18:45	07:09 17:40	07:01 13:30-13:57/27 15:49	07:37 13:37-14:10/33 15:37
21	04:51 05:24-05:36/12 20:41	05:36 19:50	06:23 18:04-18:15/11 18:42	07:11 17:38	07:03 13:28-13:57/29 15:48	07:38 13:38-14:11/33 15:37
22	04:52 05:26-05:36/10 20:40	05:37 19:48	06:24 18:04-18:14/10 18:40	07:12 17:36	07:04 13:28-13:58/30 15:47	07:38 13:38-14:11/33 15:38
23	04:53 05:27-05:35/8 20:38	05:39 19:46	06:26 18:04-18:11/7 18:38	07:14 17:34	07:06 13:28-13:59/31 15:46	07:39 13:39-14:12/33 15:38
24	04:55 05:28-05:33/5 20:37	05:40 19:44	06:28 18:06-18:09/3 18:36	07:16 15:53-16:05/12 17:32	07:07 13:27-13:59/32 15:45	07:39 13:39-14:12/33 15:39
25	04:56 20:36	05:42 19:41	06:29 18:33	06:17 14:50-15:07/17 16:30	07:09 13:28-14:00/32 15:44	07:40 13:39-14:13/34 15:39
26	04:57 20:34	05:43 19:39	06:31 18:31	06:19 14:48-15:08/20 16:28	07:10 13:28-14:01/33 15:43	07:40 13:40-14:14/34 15:40
27	04:59 20:33	05:45 06:25-06:29/4 19:37	06:32 18:29	06:21 14:47-15:09/22 16:26	07:12 13:28-14:01/33 15:42	07:40 13:41-14:14/33 15:41
28	05:00 20:32	05:46 06:23-06:32/9 19:35	06:34 18:27	06:22 14:46-15:10/24 16:24	07:13 13:28-14:02/34 15:41	07:41 13:41-14:15/34 15:41
29	05:01 20:30	05:48 06:21-06:32/11 19:33	06:35 18:25	06:24 14:46-15:11/25 16:22	07:15 13:28-14:02/34 15:41	07:41 13:41-14:15/34 15:42
30	05:03 20:29	05:49 06:20-06:33/13 19:31	06:37 18:22	06:26 14:44-15:11/27 16:21	07:16 13:28-14:03/35 15:40	07:41 13:42-14:16/34 15:43
31	05:04 20:27	05:51 06:19-06:33/14 19:29		06:28 14:44-15:11/27 16:19		07:41 13:42-14:16/34 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	292	51	106	382	749	1055

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: 10 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (10)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:16 16:31	06:26 16:22-16:41/19 17:20	06:18 19:11	05:16 05:56-06:13/17 19:59	04:34 20:42
2	07:41 15:46	07:15 16:33	06:24 16:22-16:41/19 17:22	06:16 19:12	05:15 05:57-06:12/15 20:00	04:33 20:43
3	07:41 15:47	07:14 16:34	06:22 16:23-16:41/18 17:23	06:14 19:14	05:13 05:57-06:10/13 20:02	04:32 20:44
4	07:41 15:49	07:12 16:36	06:20 16:23-16:40/17 17:25	06:12 19:16	05:11 05:59-06:09/10 20:03	04:32 20:45
5	07:41 15:50	07:10 16:38	06:17 16:24-16:39/15 17:27	06:09 19:17	05:09 06:02-06:06/4 20:05	04:31 20:46
6	07:40 15:51	07:09 16:40	06:15 16:26-16:37/11 17:28	06:07 19:19	05:08 20:07	04:30 20:47
7	07:40 15:52	07:07 16:41	06:13 16:28-16:33/5 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 15:54-16:01/7 16:43	06:11 16:54-17:05/11 17:32	06:03 19:22	05:04 20:10	04:29 20:48
9	07:39 15:55	07:04 15:51-16:04/13 16:45	06:09 16:53-17:05/12 17:33	06:01 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 15:49-16:05/16 16:47	06:07 16:54-17:05/11 17:35	05:59 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 15:48-16:06/18 16:49	06:05 16:55-17:04/9 17:37	05:57 19:27	04:59 20:14	04:28 20:51
12	07:38 15:59	06:59 15:48-16:08/20 16:50	06:02 16:55-17:01/6 17:38	05:54 19:28	04:58 20:16	04:28 20:51
13	07:37 16:00	06:57 15:47-16:09/22 16:52	06:00 17:40	05:52 19:30	04:56 20:17	04:28 20:52
14	07:36 16:02	06:55 15:47-16:09/22 16:54	05:58 17:42	05:50 06:12-06:17/5 19:32	04:55 20:19	04:27 20:53
15	07:36 16:03	06:53 15:46-16:09/23 16:56	05:56 17:43	05:48 06:10-06:18/8 19:33	04:53 20:20	04:27 20:53
16	07:35 16:05	06:52 15:46-16:09/23 16:57	05:54 17:45	05:46 06:08-06:19/11 19:35	04:52 20:21	04:27 20:54
17	07:34 16:06	06:50 15:46-16:09/23 16:59	05:51 17:46	05:44 06:07-06:19/12 19:36	04:50 20:23	04:27 20:54
18	07:33 16:08	06:48 15:46-16:09/23 17:01	05:49 17:48	05:42 06:07-06:19/12 19:38	04:49 20:24	04:27 20:55
19	07:32 16:09	06:46 15:47-16:08/21 17:03	05:47 17:50	05:40 06:04-06:13/9 19:40	04:48 20:26	04:27 20:55
20	07:31 16:11	06:44 15:47-16:08/21 17:04	05:45 17:51	05:38 06:02-06:15/13 19:41	04:46 20:27	04:27 20:55
21	07:30 16:12	06:42 15:48-16:07/19 17:06	05:43 17:53	05:36 06:01-06:09/8 19:43	04:45 20:28	04:27 20:55
22	07:29 16:14	06:40 15:49-16:05/16 17:08	05:40 17:55	05:34 06:00-06:12/12 19:44	04:44 20:30	04:28 20:56
23	07:28 16:16	06:38 15:51-16:03/12 17:10	05:38 17:56	05:32 05:59-06:13/14 19:46	04:43 20:31	04:28 20:56
24	07:27 16:17	06:36 15:55-16:00/5 17:11	05:36 17:58	05:30 05:59-06:15/16 19:48	04:42 20:32	04:28 20:56
25	07:26 16:19	06:34 16:26-16:40/14 17:13	05:34 17:59	05:28 05:57-06:15/18 19:49	04:40 20:34	04:28 20:56
26	07:25 16:21	06:32 16:25-16:41/16 17:15	05:32 18:01	05:26 05:57-06:15/18 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 16:24-16:42/18 17:16	05:29 18:03	05:24 05:56-06:14/18 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 16:24-16:42/18 17:18	05:27 18:04	05:22 05:56-06:14/18 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26		06:25 19:06	05:20 05:55-06:14/19 19:56	04:36 20:39	04:30 20:56
30	07:19 16:27		06:23 19:08	05:18 05:56-06:14/18 19:57	04:35 20:40	04:31 20:56
31	07:18 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	0	382	174	248	59	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: 10 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (10)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 19:27	06:39 18:20	17:37-17:39/2 16:17	06:29 15:19-15:35/16 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:40 18:18	17:33-17:41/8 16:15	06:31 15:21-15:33/12 15:39
3	04:33 20:55	05:09 20:23	05:55 19:22	06:42 18:16	17:32-17:43/11 16:14	06:33 15:25-15:30/5 15:38
4	04:33 20:54	05:10 20:21	05:57 19:20	06:43 18:14	17:31-17:43/12 16:12	06:34 16:12 15:38
5	04:34 20:54	05:11 20:19	05:59 19:18	06:45 18:11	17:30-17:42/12 16:10	06:36 16:10 15:37
6	04:35 20:53	05:13 20:18	06:00 19:16	06:46 18:09	17:31-17:42/11 16:09	06:38 16:09 15:37
7	04:36 20:53	05:14 20:16	06:02 19:14	06:48 18:07	17:02-17:11/9 16:07	06:39 16:07 15:36
8	04:37 20:52	05:16 20:14	06:03 19:11	06:50 18:05	17:00-17:13/13 16:05	06:41 16:05 15:36
9	04:38 20:52	05:17 20:12	06:05 19:09	06:51 18:03	16:59-17:15/16 16:04	06:43 16:04 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:53 18:01	16:57-17:14/17 16:02	06:45 16:02 15:36
11	04:40 20:50	05:20 20:09	06:08 19:05	06:54 17:58	16:57-17:15/18 16:01	06:46 16:01 15:35
12	04:41 20:50	05:22 20:07	06:09 19:03	06:56 17:56	16:57-17:15/18 15:59	06:48 15:59 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	16:56-17:14/18 15:58	06:50 15:58 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:52	16:56-17:14/18 15:56	06:51 15:56 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:50	16:57-17:14/17 15:55	06:53 15:55 15:35
16	04:45 20:46	05:28 20:00	06:15 18:54	07:03 17:48	16:58-17:13/15 15:54	06:55 15:54 15:36
17	04:46 20:45	05:30 19:58	06:17 18:51	07:04 17:46	16:58-17:11/13 15:53	06:56 15:53 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:44	16:25-16:33/8 15:51	06:58 15:51 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:07 17:42	16:22-16:36/14 15:50	06:59 15:50 15:36
20	04:50 20:42	05:34 19:52	06:21 18:45	07:09 17:40	16:19-16:36/17 15:49	07:01 15:49 15:37
21	04:51 20:41	05:36 19:50	06:23 18:42	07:11 17:38	16:18-16:37/19 15:48	07:03 15:48 15:37
22	04:52 20:40	05:37 19:48	06:25 18:40	07:12 17:36	16:17-16:38/21 15:47	07:04 15:47 15:38
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 17:34	16:17-16:39/22 15:46	07:06 15:46 15:38
24	04:55 20:37	05:40 19:44	06:28 18:36	07:16 17:32	16:17-16:40/23 15:45	07:07 15:45 15:39
25	04:56 20:36	05:42 19:42	06:29 18:33	06:17 16:30	15:15-15:39/24 15:44	07:09 15:44 15:39
26	04:57 20:34	05:43 19:39	06:31 18:31	06:19 16:28	15:16-15:39/23 15:43	07:10 15:43 15:40
27	04:59 20:33	05:45 19:37	06:32 18:29	06:21 16:26	15:16-15:39/23 15:42	07:12 15:42 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	06:22 16:24	15:16-15:39/23 15:41	07:13 15:41 15:42
29	05:01 20:30	05:48 19:33	06:35 18:25	06:24 16:22	15:17-15:38/21 15:41	07:15 15:41 15:42
30	05:03 20:29	05:49 19:31	06:37 18:22	06:26 16:21	15:17-15:37/20 15:40	07:16 15:40 15:43
31	05:04 20:27	05:51 19:29		06:28 16:19	15:18-15:36/18	07:18 15:44 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	315	0	527	33	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: 11 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (11)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 16:31	06:26 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 15:46	07:15 16:33	06:24 17:21	06:16 18:44-18:47/3 19:12	05:15 20:00	04:33 20:43
3	07:41 15:47	07:14 16:34	06:22 17:23	06:14 18:43-18:49/6 19:14	05:13 20:02	04:32 20:44
4	07:41 15:49	07:12 16:36	06:20 17:25	06:12 18:41-18:50/9 19:16	05:11 20:03	04:32 20:45
5	07:41 15:50	07:10 16:38	06:17 17:27	06:09 18:37-18:38/1 19:17 18:40-18:52/12	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 16:40	06:15 17:28	06:07 18:31-18:44/13 19:19 18:44-18:52/8	05:08 20:07	04:30 20:47
7	07:40 15:52	07:07 16:41	06:13 17:30	06:05 18:29-18:46/17 19:20 18:46-18:51/5	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 16:43	06:11 17:32	06:03 18:28-18:49/21 19:22 18:48-18:53/5	05:04 20:10	04:29 20:48
9	07:39 15:55	07:04 16:45	06:09 17:33	06:01 18:26-18:49/23 19:24 18:49-18:55/6	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 16:47	06:07 17:35	05:59 18:25-18:49/24 19:25 18:49-18:56/7	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 16:49	06:05 17:37	05:57 18:25-18:50/25 19:27 18:50-18:57/7	04:59 20:14	04:28 04:57-04:58/1 20:51
12	07:38 15:59	06:59 16:50	06:02 17:38	05:54 18:23-18:49/26 19:28 18:49-18:56/7	04:58 20:16	04:28 04:56-04:58/2 20:51
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 18:23-18:49/26 19:30 18:49-18:56/7	04:56 20:17	04:28 04:56-04:59/3 20:52
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 18:23-18:48/25 19:32 18:48-18:56/8	04:55 20:19	04:27 04:56-05:00/4 20:53
15	07:36 16:03	06:53 16:56	05:56 17:43	05:48 18:23-18:48/25 19:33 18:48-18:56/8	04:53 20:20	04:27 04:56-05:01/5 20:53
16	07:35 16:05	06:52 16:57	05:54 17:45	05:46 18:23-18:47/24 19:35 18:47-18:55/8	04:52 20:22	04:27 04:56-05:01/5 20:54
17	07:34 16:06	06:50 16:59	05:51 17:46	05:44 18:23-18:47/24 19:36 18:47-18:55/8	04:50 05:16-05:17/1 20:23	04:27 04:56-05:01/5 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 18:24-18:46/22 19:38 18:46-18:53/7	04:49 05:15-05:18/3 20:24	04:27 04:56-05:02/6 20:55
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 18:25-18:44/19 19:40 18:44-18:52/8	04:48 05:13-05:18/5 20:26	04:27 04:56-05:02/6 20:55
20	07:31 16:11	06:44 17:04	05:45 17:51	05:38 18:26-18:43/17 19:41 18:43-18:49/6	04:46 05:12-05:19/7 20:27	04:27 04:56-05:02/6 20:55
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 18:28-18:39/11 19:43	04:45 05:11-05:19/8 20:28	04:27 04:57-05:03/6 20:55
22	07:29 16:14	06:40 17:08	05:40 17:55	05:34 19:44	04:44 05:10-05:20/10 20:30	04:28 04:57-05:03/6 20:56
23	07:28 16:16	06:38 17:09	05:38 17:56	05:32 19:46	04:43 05:09-05:20/11 20:31	04:28 04:57-05:03/6 20:56
24	07:27 16:17	06:36 17:11	05:36 17:58	05:30 19:48	04:42 05:08-05:20/12 20:32	04:28 04:57-05:03/6 20:56
25	07:26 16:19	06:34 17:13	05:34 17:59	05:28 19:49	04:40 05:08-05:20/12 20:34	04:28 04:58-05:04/6 20:56
26	07:25 16:21	06:32 17:15	05:32 18:01	05:26 19:51	04:39 05:09-05:19/10 20:35	04:29 04:58-05:03/5 20:56
27	07:23 16:22	06:30 17:16	05:29 18:03	05:24 19:52	04:38 05:09-05:19/10 20:36	04:29 04:59-05:04/5 20:56
28	07:22 16:24	06:28 17:18	05:27 18:04	05:22 19:54	04:37 05:10-05:18/8 20:37	04:30 04:59-05:03/4 20:56
29	07:21 16:26		06:25 19:06	05:20 19:56	04:36 05:10-05:17/7 20:39	04:30 05:00-05:04/4 20:56
30	07:19 16:27		06:23 19:08	05:18 19:57	04:35 05:12-05:17/5 20:40	04:31 05:00-05:03/3 20:56
31	07:18 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	0	0	0	477	109	94

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: 11 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (11)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 05:01-05:03/2 20:55	05:06 20:26	05:52 18:24-18:49/25 19:27 18:49-18:56/7	06:39 18:20	06:29 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 18:23-18:47/24 19:25 18:47-18:54/7	06:40 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:55 18:24-18:47/23 19:22 18:47-18:53/6	06:42 18:16	06:33 16:13	07:20 15:38
4	04:33 20:54	05:10 20:21	05:57 18:25-18:46/21 19:20 18:45-18:50/5	06:43 18:14	06:34 16:12	07:22 15:37
5	04:34 20:54	05:11 20:19	05:59 18:26-18:44/18 19:18 18:44-18:47/3	06:45 18:11	06:36 16:10	07:23 15:37
6	04:35 20:53	05:13 20:18	06:00 18:27-18:41/14 19:16 18:41-18:48/7	06:46 18:09	06:38 16:08	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 18:31-18:34/3 19:14 18:36-18:47/11	06:48 18:07	06:39 16:07	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 18:36-18:45/9 19:11	06:50 18:05	06:41 16:05	07:27 15:36
9	04:38 20:52	05:17 20:12	06:05 18:36-18:43/7 19:09	06:51 18:03	06:43 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 18:37-18:41/4 19:07	06:53 18:01	06:45 16:02	07:29 15:36
11	04:39 20:50	05:20 20:09	06:08 19:05	06:54 17:58	06:46 16:01	07:30 15:35
12	04:40 20:50	05:22 20:07	06:09 19:03	06:56 17:56	06:48 15:59	07:31 15:35
13	04:42 05:22-05:25/3 20:49	05:23 20:05	06:11 19:00	06:58 17:54	06:50 15:58	07:32 15:35
14	04:43 05:20-05:26/6 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 15:56	07:33 15:35
15	04:44 05:19-05:27/8 20:47	05:26 20:01	06:14 18:56	07:01 17:50	06:53 15:55	07:34 15:35
16	04:45 05:19-05:28/9 20:46	05:28 20:00	06:15 18:54	07:03 17:48	06:55 15:54	07:34 15:36
17	04:46 05:18-05:29/11 20:45	05:29 19:58	06:17 18:51	07:04 17:46	06:56 15:53	07:35 15:36
18	04:47 05:18-05:29/11 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 15:51	07:36 15:36
19	04:48 05:18-05:29/11 20:43	05:33 19:54	06:20 18:47	07:07 17:42	07:00 15:50	07:37 15:36
20	04:50 05:18-05:29/11 20:42	05:34 19:52	06:21 18:45	07:09 17:40	07:01 15:49	07:37 15:37
21	04:51 05:19-05:29/10 20:41	05:36 18:37-18:41/4 19:50	06:23 18:42	07:11 17:38	07:03 15:48	07:38 15:37
22	04:52 05:21-05:30/9 20:40	05:37 18:32-18:44/12 19:48	06:25 18:40	07:12 17:36	07:04 15:47	07:38 15:38
23	04:53 05:22-05:30/8 20:38	05:39 18:31-18:48/17 19:46 18:48-18:54/6	06:26 18:38	07:14 17:34	07:06 15:46	07:39 15:38
24	04:55 05:23-05:29/6 20:37	05:40 18:29-18:48/19 19:44 18:48-18:56/8	06:28 18:36	07:16 17:32	07:07 15:45	07:39 15:39
25	04:56 05:24-05:29/5 20:36	05:42 18:27-18:48/21 19:42 18:48-18:56/8	06:29 18:33	06:17 16:30	07:09 15:44	07:40 15:39
26	04:57 05:26-05:29/3 20:34	05:43 18:26-18:50/24 19:39 18:50-18:57/7	06:31 18:31	06:19 16:28	07:10 15:43	07:40 15:40
27	04:59 20:33	05:45 18:25-18:49/24 19:37 18:49-18:57/8	06:32 18:29	06:21 16:26	07:12 15:42	07:40 15:41
28	05:00 20:32	05:46 18:25-18:50/25 19:35 18:50-18:58/8	06:34 18:27	06:22 16:24	07:13 15:41	07:41 15:41
29	05:01 20:30	05:48 18:24-18:49/25 19:33 18:49-18:57/8	06:35 18:25	06:24 16:22	07:15 15:41	07:41 15:42
30	05:03 20:29	05:49 18:24-18:50/26 19:31 18:50-18:57/7	06:37 18:22	06:26 16:21	07:16 15:40	07:41 15:43
31	05:04 20:27	05:51 18:23-18:49/26 19:29 18:49-18:56/7		06:28 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	113	290	193	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: 12 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (12)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 15:07-15:32/25 16:31	06:26 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 15:46	07:15 15:07-15:32/25 16:33	06:24 17:22	06:16 19:12	05:15 20:00	04:33 20:43
3	07:41 15:47	07:14 15:07-15:31/24 16:34	06:22 17:23	06:14 19:14	05:13 20:02	04:32 20:44
4	07:41 15:49	07:12 15:08-15:31/23 16:36	06:20 17:25	06:12 19:16	05:11 20:03	04:32 20:45
5	07:41 15:50	07:10 15:09-15:31/22 16:38	06:17 17:27	06:10 19:17	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 15:09-15:30/21 16:40	06:15 17:28	06:07 19:19	05:08 20:07	04:30 20:47
7	07:40 15:52	07:07 15:11-15:29/18 16:41	06:13 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 15:13-15:28/15 16:43	06:11 17:32	06:03 19:22	05:04 20:10	04:29 20:49
9	07:39 15:55	07:04 15:15-15:25/10 16:45	06:09 17:33	06:01 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 16:47	06:07 17:35	05:59 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 16:49	06:05 17:37	05:57 19:27	04:59 05:24-05:27/3 20:14	04:28 20:51
12	07:38 15:59	06:59 16:50	06:02 17:38	05:54 19:28	04:58 05:23-05:29/6 20:16	04:28 20:51
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 19:30	04:56 05:21-05:29/8 20:17	04:28 20:52
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 18:55-19:02/7 19:32 19:02-19:04/2	04:55 05:20-05:30/10 20:19	04:27 20:53
15	07:36 16:03	06:53 16:56	05:56 17:43	05:48 18:52-19:04/12 19:33 19:04-19:07/3	04:53 05:18-05:29/11 20:20	04:27 20:53
16	07:35 16:05	06:52 16:57	05:54 17:45	05:46 18:51-19:06/15 19:35 19:06-19:08/2	04:52 05:17-05:30/13 20:22	04:27 20:54
17	07:34 16:06	06:50 16:59	05:51 17:47	05:44 18:50-19:06/16 19:36 19:06-19:09/3	04:50 05:17-05:30/13 20:23	04:27 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 18:49-19:06/17 19:38 19:06-19:09/3	04:49 05:18-05:30/12 20:24	04:27 20:55
19	07:32 15:12-15:19/7 16:09	06:46 17:03	05:47 17:50	05:40 18:49-19:06/17 19:40 19:06-19:08/2	04:48 05:17-05:29/12 20:26	04:27 20:55
20	07:31 15:10-15:22/12 16:11	06:44 17:04	05:45 17:51	05:38 18:48-19:06/18 19:41 19:06-19:08/2	04:46 05:18-05:29/11 20:27	04:27 20:55
21	07:30 15:09-15:24/15 16:12	06:42 17:06	05:43 17:53	05:36 18:48-19:06/18 19:43 19:06-19:07/1	04:45 05:19-05:29/10 20:29	04:27 20:55
22	07:29 15:09-15:26/17 16:14	06:40 17:08	05:40 17:55	05:34 18:49-19:05/16 19:44 19:05-19:06/1	04:44 05:20-05:28/8 20:30	04:28 20:56
23	07:28 15:07-15:26/19 16:16	06:38 17:10	05:38 17:56	05:32 18:49-19:04/15 19:46	04:43 05:21-05:27/6 20:31	04:28 20:56
24	07:27 15:07-15:28/21 16:17	06:36 17:11	05:36 17:58	05:30 18:50-19:01/11 19:48	04:42 20:32	04:28 20:56
25	07:26 15:07-15:29/22 16:19	06:34 17:13	05:34 18:00	05:28 18:53-19:00/7 19:49	04:40 20:34	04:28 20:56
26	07:25 15:06-15:29/23 16:21	06:32 17:15	05:32 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 15:06-15:30/24 16:22	06:30 17:16	05:29 18:03	05:24 19:52	04:38 20:36	04:29 20:56
28	07:22 15:06-15:31/25 16:24	06:28 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 15:06-15:31/25 16:26		06:25 19:06	05:20 19:56	04:36 20:39	04:30 20:56
30	07:19 15:06-15:32/26 16:27		06:23 19:08	05:18 19:57	04:35 20:40	04:31 20:56
31	07:18 15:06-15:31/25 16:29		06:20 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	261	183	0	188	123	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: 12 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (12)****Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:33-05:38/5	05:52 19:27	06:39 18:20	06:29 16:17
2	04:32 20:55	05:07 20:24	05:35-05:36/1	05:54 19:25	06:40 18:18	14:44-14:55/11
3	04:33 20:55	05:09 20:23		05:55 19:22	06:42 18:16	14:42-14:58/16
4	04:33 20:54	05:10 20:21		05:57 19:20	06:43 18:14	14:41-14:59/18
5	04:34 20:54	05:12 20:19		05:59 19:18	06:45 18:11	14:39-14:59/20
6	04:35 20:53	05:13 20:18		06:00 19:16	06:46 18:09	14:38-15:00/22
7	04:36 20:53	05:14 20:16		06:02 19:14	06:48 18:07	14:38-15:01/23
8	04:37 20:52	05:16 20:14		06:03 19:11	06:50 18:05	14:38-15:02/24
9	04:38 20:52	05:17 20:12		06:05 19:09	06:51 18:03	14:38-15:03/25
10	04:39 20:51	05:19 20:11		06:06 19:07	06:53 18:01	14:38-15:03/25
11	04:39 20:50	05:20 20:09		06:08 19:05	06:54 17:58	14:37-15:02/25
12	04:41 20:50	05:22 20:07		06:09 19:03	06:56 17:56	14:37-15:03/26
13	04:42 20:49	05:23 20:05		06:11 19:00	06:58 17:54	14:38-15:03/25
14	04:43 20:48	05:25 20:03		06:12 18:58	06:59 17:52	14:38-15:03/25
15	04:44 20:47	05:26 20:01		06:14 18:56	07:01 17:50	14:39-15:03/24
16	04:45 20:46	05:28 20:00		06:15 18:54	07:03 17:48	14:40-15:03/23
17	04:46 20:45	05:30 19:58		06:17 18:51	07:04 17:46	14:40-15:02/22
18	04:47 20:44	05:31 19:56	18:58-19:06/8	06:18 18:49	07:06 17:44	14:41-15:02/21
19	04:48 20:43	05:33 19:54	18:57-19:08/11	06:20 18:47	07:07 17:42	14:42-15:01/19
20	04:50 20:42	05:34 19:52	18:55-19:10/15	06:21 18:45	07:09 17:40	14:44-15:01/17
21	04:51 20:41	05:36 19:50	18:54-19:11/17	06:23 18:42	07:11 17:38	14:44-14:59/15
22	04:52 20:40	05:37 19:48	18:53-19:10/17	06:25 18:40	07:12 17:36	14:46-14:58/12
23	04:53 20:38	05:39 19:46	18:53-19:11/18	06:26 18:38	07:14 17:34	14:49-14:56/7
24	04:55 20:37	05:40 19:44	18:52-19:10/18	06:28 18:36	07:16 17:32	14:49-14:56/7
25	04:56 20:36	05:42 19:42	18:52-19:09/17	06:29 18:34	07:17 17:30	14:49-14:56/7
26	04:57 20:34	05:43 19:39	18:53-19:09/16	06:31 18:31	07:19 17:28	14:49-14:56/7
27	04:59 20:33	05:45 19:37	18:53-19:07/14	06:32 18:29	07:21 17:26	14:49-14:56/7
28	05:00 20:32	05:46 19:35	18:54-19:06/12	06:34 18:27	07:23 17:24	14:49-14:56/7
29	05:01 20:30	05:48 19:33	18:56-19:02/6	06:35 18:25	07:24 17:22	14:49-14:56/7
30	05:03 20:29	05:49 19:31	19:03-19:04/1	06:37 18:22	07:26 17:21	14:49-14:56/7
31	05:04 20:27	05:51 19:29			07:28 17:19	14:49-14:56/7
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	118	193	0	0	445	36

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: 13 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (13)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 11:54-11:58/4 15:45	07:17 16:31	06:26 15:44-16:13/29 17:20	06:18 19:11	05:16 19:18-19:30/12 19:59	04:34 20:42
2	07:41 15:46	07:15 16:33	06:24 15:43-16:11/28 17:22	06:16 19:12	05:15 19:17-19:30/13 20:00	04:33 20:43
3	07:41 15:47	07:14 16:34	06:22 15:44-16:10/26 17:23	06:14 19:14	05:13 19:17-19:29/12 20:02	04:32 20:44
4	07:41 15:49	07:12 16:36	06:20 15:45-16:09/24 17:25	06:12 19:16	05:11 19:18-19:30/12 20:03	04:32 20:45
5	07:41 15:50	07:11 16:38	06:18 15:47-16:07/20 17:27	06:10 19:17	05:09 19:19-19:28/9 20:05	04:31 20:46
6	07:40 15:51	07:09 16:40	06:15 15:49-16:05/16 17:28	06:07 19:19	05:08 19:20-19:26/6 20:07	04:30 20:47
7	07:40 15:52	07:07 16:41	06:13 15:53-16:02/9 17:30	06:05 19:20	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 16:43	06:11 16:44-16:58/14 17:32	06:03 19:22	05:04 20:10	04:29 20:49
9	07:39 15:55	07:04 16:45	06:09 16:43-16:59/16 17:33	06:01 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 16:47	06:07 16:42-17:00/18 17:35	05:59 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 16:49	06:05 16:41-17:00/19 17:37	05:57 19:27	04:59 20:14	04:28 20:51
12	07:38 15:59	06:59 16:50	06:02 16:41-17:01/20 17:38	05:54 19:28	04:58 20:16	04:28 20:51
13	07:37 16:00	06:57 16:52	06:00 16:40-17:00/20 17:40	05:52 19:30	04:56 20:17	04:28 20:52
14	07:36 16:02	06:55 16:54	05:58 16:40-16:59/19 17:42	05:50 19:32	04:55 20:19	04:27 20:53
15	07:36 16:03	06:53 15:54-16:03/9 16:56	05:56 16:41-16:59/18 17:43	05:48 19:33	04:53 20:20	04:27 20:53
16	07:35 16:05	06:52 15:51-16:07/16 16:57	05:54 16:41-16:58/17 17:45	05:46 19:35	04:52 20:22	04:27 20:54
17	07:34 16:06	06:50 15:49-16:09/20 16:59	05:51 16:42-16:56/14 17:47	05:44 19:36	04:50 20:23	04:27 20:54
18	07:33 16:08	06:48 15:47-16:10/23 17:01	05:49 16:44-16:53/9 17:48	05:42 19:38	04:49 20:24	04:27 20:55
19	07:32 16:09	06:46 15:46-16:11/25 17:03	05:47 17:50	05:40 19:40	04:48 20:26	04:27 20:55
20	07:31 16:11	06:44 15:45-16:12/27 17:04	05:45 17:51	05:38 19:41	04:46 20:27	04:27 20:55
21	07:30 16:12	06:42 15:44-16:13/29 17:06	05:43 17:53	05:36 19:43	04:45 20:29	04:27 20:56
22	07:29 16:14	06:40 15:43-16:13/30 17:08	05:40 17:55	05:34 19:44	04:44 20:30	04:28 20:56
23	07:28 16:16	06:38 15:43-16:14/31 17:10	05:38 17:56	05:32 19:46	04:43 20:31	04:28 20:56
24	07:27 16:17	06:36 15:43-16:14/31 17:11	05:36 17:58	05:30 19:48	04:42 20:32	04:28 20:56
25	07:26 16:19	06:34 15:42-16:14/32 17:13	05:34 18:00	05:28 19:49	04:40 20:34	04:28 20:56
26	07:25 16:21	06:32 15:42-16:14/32 17:15	05:32 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 15:43-16:14/31 17:16	05:29 18:03	05:24 19:22-19:25/3 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 15:43-16:13/30 17:18	05:27 18:04	05:22 19:20-19:27/7 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26		06:25 19:06	05:20 19:19-19:28/9 19:56	04:36 20:39	04:30 20:56
30	07:19 16:27		06:23 19:08	05:18 19:19-19:30/11 19:57	04:35 20:40	04:31 20:56
31	07:18 16:29		06:21 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	4	366	346	30	64	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: 13 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (13)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 19:27	06:39 18:20	17:20-17:40/20 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:40 18:18	17:19-17:38/19 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:56 19:22	06:42 18:16	17:19-17:38/19 16:14	07:20 15:38
4	04:33 20:54	05:10 20:21	05:57 19:20	06:43 18:14	17:20-17:37/17 16:12	07:22 15:38
5	04:34 20:54	05:12 20:19	05:59 19:18	06:45 18:11	17:20-17:35/15 16:10	07:23 15:37
6	04:35 20:54	05:13 20:18	06:00 19:16	06:46 18:09	17:22-17:34/12 16:09	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 19:14	06:48 18:07	16:27-16:40/13 17:25-17:31/6	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 19:12	06:50 18:05	16:23-16:41/18 16:05	07:27 15:36
9	04:38 20:52	05:17 20:13	06:05 19:09	06:51 18:03	16:21-16:43/22 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:53 18:01	16:19-16:44/25 16:02	07:29 15:36
11	04:40 20:50	05:20 20:09	06:08 19:05	06:54 17:58	16:18-16:45/27 16:01	07:30 15:35
12	04:41 20:50	05:22 20:07	06:09 19:03	06:56 17:56	16:17-16:45/28 15:59	07:31 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	16:16-16:46/30 15:58	07:32 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:52	16:15-16:46/31 15:56	07:33 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:50	16:15-16:46/31 15:55	07:34 15:35
16	04:45 20:46	05:28 20:00	06:15 18:54	07:03 17:48	16:15-16:46/31 15:54	07:35 15:36
17	04:46 20:45	05:30 19:58	06:17 18:51	07:04 17:46	16:14-16:45/31 15:53	07:35 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:44	16:14-16:45/31 15:51	07:36 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:07 17:42	16:14-16:45/31 15:50	07:37 15:36
20	04:50 20:42	05:34 19:52	06:21 18:45	07:09 17:40	16:15-16:45/30 15:49	07:37 15:37
21	04:51 20:41	05:36 19:50	06:23 18:42	07:11 17:38	16:15-16:43/28 15:48	07:38 15:37
22	04:52 20:40	05:37 19:48	06:25 18:40	07:12 17:36	16:16-16:42/26 15:47	07:39 15:38
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 17:34	16:17-16:41/24 15:46	07:39 15:38
24	04:55 20:37	05:40 19:44	06:28 18:36	07:16 17:32	16:18-16:40/22 15:45	07:39 15:39
25	04:56 20:36	05:42 19:42	06:29 18:34	06:17 16:30	15:19-15:38/19 15:44	07:40 15:39
26	04:57 20:35	05:43 19:39	06:31 18:31	06:19 16:28	15:21-15:35/14 15:43	07:40 15:40
27	04:59 20:33	05:45 19:37	06:32 18:29	06:21 16:26	15:25-15:32/7 15:42	07:41 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	06:23 16:24	17:22-17:39/17 15:41	07:41 15:42
29	05:01 20:30	05:48 19:33	06:35 18:25	06:24 16:22	17:21-17:40/19 15:41	07:41 15:42
30	05:03 20:29	05:49 19:31	06:37 18:22	06:26 16:21	17:20-17:39/19 15:40	07:41 15:43
31	05:04 20:27	05:51 19:29		06:28 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	98	91	627	0	318

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: 14 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (14)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 16:00-16:02/2 16:31	06:26 17:20	06:18 06:41-06:56/15 19:11	05:16 19:59	04:34 20:42
2	07:41 15:46	07:15 15:57-16:04/7 16:33	06:24 17:22	06:16 06:39-07:06/27 19:12	05:15 20:00	04:33 20:43
3	07:41 15:47	07:14 15:56-16:05/9 16:34	06:22 17:23	06:14 06:38-07:09/31 19:14	05:13 20:02	04:32 20:44
4	07:41 15:49	07:12 15:56-16:08/12 16:36	06:20 17:25	06:12 06:38-07:10/32 19:16	05:11 20:03	04:32 20:45
5	07:41 15:50	07:10 15:55-16:09/14 16:38	06:17 17:27	06:10 06:36-07:10/34 19:17	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 15:54-16:10/16 16:40	06:15 17:28	06:07 06:36-07:11/35 19:19	05:08 20:07	04:30 20:47
7	07:40 15:52	07:07 15:55-16:10/15 16:41	06:13 17:30	06:05 06:36-07:12/36 19:20	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 15:55-16:10/15 16:43	06:11 17:32	06:03 06:37-07:12/35 19:22	05:04 20:10	04:29 20:48
9	07:39 15:55	07:04 15:55-16:10/15 16:45	06:09 17:33	06:01 06:38-07:13/35 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 15:56-16:09/13 16:47	06:07 17:35	05:59 06:39-07:13/34 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 15:57-16:07/10 16:49	06:05 17:37	05:57 06:39-07:13/34 19:27	04:59 20:14	04:28 20:51
12	07:38 15:59	06:59 16:00-16:06/6 16:50	06:02 06:25-06:27/2 17:38	05:54 06:39-07:12/33 19:28	04:58 20:16	04:28 20:51
13	07:37 16:00	06:57 16:23-16:27/4 16:54	06:00 06:22-06:28/6 17:40	05:52 06:38-07:11/33 19:30	04:56 20:17	04:28 20:52
14	07:36 16:02	06:55 16:23-16:27/4 16:54	05:58 06:20-06:29/9 17:42	05:50 06:39-07:10/31 19:32	04:55 20:19	04:27 20:53
15	07:36 16:03	06:53 16:22-16:29/7 16:56	05:56 06:18-06:29/11 17:43	05:48 06:40-07:09/29 19:33	04:53 20:20	04:27 20:53
16	07:35 16:05	06:52 16:21-16:31/10 16:57	05:54 06:16-06:29/13 17:45	05:46 06:42-07:08/26 19:35	04:52 20:22	04:27 20:54
17	07:34 16:06	06:50 16:21-16:32/11 16:59	05:51 06:14-06:28/14 17:47	05:44 06:43-07:07/24 19:36	04:50 20:23	04:27 20:54
18	07:33 16:08	06:48 16:20-16:34/14 17:01	05:49 06:11-06:26/15 17:48	05:42 06:44-07:06/22 19:38	04:49 20:24	04:27 20:55
19	07:32 16:09	06:46 16:21-16:33/12 17:03	05:47 06:09-06:17/8 17:50	05:40 06:45-07:04/19 19:40	04:48 20:26	04:27 20:55
20	07:31 16:11	06:44 16:21-16:32/11 17:04	05:45 06:07-06:17/10 17:51	05:38 06:46-07:02/16 19:41	04:46 20:27	04:27 20:55
21	07:30 16:12	06:42 16:22-16:31/9 17:06	05:43 06:06-06:17/11 17:53	05:36 06:49-06:58/9 19:43	04:45 20:28	04:27 20:55
22	07:29 16:14	06:40 16:25-16:29/4 17:08	05:40 06:06-06:14/8 17:55	05:34 19:44	04:44 20:30	04:28 20:56
23	07:28 16:16	06:38 16:21-16:33/12 17:10	05:38 06:08-06:12/4 17:56	05:32 19:46	04:43 20:31	04:28 20:56
24	07:27 16:17	06:36 16:21-16:32/11 17:11	05:36 17:58	05:30 19:48	04:42 20:32	04:28 20:56
25	07:26 16:19	06:34 16:22-16:31/9 17:13	05:34 18:00	05:28 19:49	04:40 20:34	04:28 20:56
26	07:25 16:21	06:32 16:25-16:29/4 17:15	05:32 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 16:22-16:31/9 17:16	05:29 18:03	05:24 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 16:22-16:31/9 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26		06:25 19:06	05:20 19:56	04:36 20:39	04:30 20:56
30	07:19 16:27		06:23 19:08	05:18 19:57	04:36 20:40	04:31 20:56
31	07:18 16:29		06:20 06:44-06:49/5 19:09		04:35 20:41	
Potential sun hours	265	281	367	413	479	491
Sum of minutes with flicker	0	216	123	590	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: 14 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (14)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 06:38-07:11/33 19:27	06:39 07:03-07:07/4 18:20	06:29 15:26-15:39/13 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 06:37-07:11/34 19:25	06:40 18:18	06:31 15:25-15:39/14 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:56 06:36-07:11/35 19:22	06:42 18:16	06:33 15:25-15:40/15 16:14	07:20 15:38
4	04:33 20:54	05:10 20:21	05:57 06:34-07:09/35 19:20	06:43 18:14	06:34 15:25-15:40/15 16:12	07:22 15:38
5	04:34 20:54	05:12 20:19	05:59 06:34-07:09/35 19:18	06:45 18:11	06:36 15:24-15:39/15 16:10	07:23 15:37
6	04:35 20:53	05:13 20:18	06:00 06:32-07:08/36 19:16	06:46 18:09	06:38 15:25-15:39/14 16:09	07:24 15:37
7	04:36 20:53	05:14 20:16	06:02 06:32-07:07/35 19:14	06:48 18:07	06:39 15:26-15:37/11 16:07	07:25 15:36
8	04:37 20:52	05:16 20:14	06:03 06:32-07:05/33 19:11	06:50 18:05	06:41 15:27-15:36/9 16:05	07:27 15:36
9	04:38 20:52	05:17 20:12	06:05 06:32-07:02/30 19:09	06:51 18:03	06:43 15:28-15:34/6 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 06:32-07:00/28 19:07	06:53 18:01	06:45 15:31-15:33/2 16:02	07:29 15:36
11	04:40 20:50	05:20 20:09	06:08 06:33-06:49/16 19:05	06:54 17:58	06:46 16:01	07:30 15:35
12	04:41 20:50	05:22 20:07	06:09 06:36-06:42/6 19:03	06:56 17:56	06:48 15:59	07:31 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	06:50 15:58	07:32 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 15:57	07:33 15:35
15	04:44 20:47	05:26 20:01	06:14 18:56	07:01 17:50	06:53 15:55	07:34 15:36
16	04:45 20:46	05:28 20:00	06:15 18:54	07:03 17:48	06:55 15:54	07:34 15:36
17	04:46 20:45	05:30 19:58	06:17 18:51	07:04 17:46	06:56 15:53	07:35 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 15:51	07:36 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:07 17:42	07:00 15:50	07:37 15:36
20	04:50 20:42	05:34 19:52	06:21 06:56-06:57/1 18:45	07:09 16:54-17:00/6 17:40	07:01 15:49	07:37 15:37
21	04:51 20:41	05:36 19:50	06:23 06:52-07:00/8 18:42	07:11 16:52-17:02/10 17:38	07:03 15:48	07:38 15:37
22	04:52 20:40	05:37 06:53-07:04/11 19:48	06:25 06:51-07:01/10 18:40	07:12 16:51-17:03/12 17:36	07:04 15:47	07:38 15:38
23	04:53 20:38	05:39 06:51-07:07/16 19:46	06:26 06:51-07:01/10 18:38	07:14 16:51-17:04/13 17:34	07:06 15:46	07:39 15:38
24	04:55 20:37	05:40 06:48-07:08/20 19:44	06:28 06:52-07:01/9 18:36	07:16 16:51-17:04/13 17:32	07:07 15:45	07:39 15:39
25	04:56 20:36	05:42 06:47-07:10/23 19:42	06:29 06:54-07:10/16 18:34	06:17 15:50-16:01/11 16:30	07:09 15:44	07:40 15:39
26	04:57 20:34	05:43 06:45-07:10/25 19:39	06:31 06:55-07:10/15 18:31	06:19 15:51-16:00/9 16:28	07:10 15:43	07:40 15:40
27	04:59 20:33	05:45 06:44-07:10/26 19:37	06:32 06:58-07:11/13 18:29	06:21 15:52-15:58/6 16:26	07:12 15:42	07:40 15:41
28	05:00 20:32	05:46 06:42-07:11/29 19:35	06:34 06:58-07:10/12 18:27	06:23 15:53-15:56/3 16:24	07:13 15:41	07:41 15:42
29	05:01 20:30	05:48 06:40-07:11/31 19:33	06:35 07:00-07:10/10 18:25	06:24 16:22	07:15 15:41	07:41 15:42
30	05:03 20:29	05:49 06:39-07:12/33 19:31	06:37 07:01-07:08/7 18:22	06:26 15:28-15:36/8 16:21	07:16 15:40	07:41 15:43
31	05:04 20:27	05:51 06:38-07:11/33 19:29		06:28 15:26-15:37/11 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	247	473	106	114	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: 15 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (15)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 16:31	06:26 06:49-06:56/7 17:20	06:18 06:43-06:59/16 19:11	05:16 19:59	04:34 05:30-05:56/26 20:42 05:56-05:59/3
2	07:41 15:13-15:14/1 15:46	07:15 16:33	06:24 06:50-06:53/3 17:22	06:16 06:42-07:00/18 19:12	05:15 20:00	04:33 05:30-05:57/27 20:43 05:57-06:00/3
3	07:41 15:12-15:14/2 15:48	07:14 16:34	06:22 17:23	06:14 06:42-07:00/18 19:14	05:13 20:02	04:32 05:29-05:58/29 20:44 05:58-05:59/1
4	07:41 15:12-15:15/3 15:49	07:12 16:36	06:20 06:42-06:46/4 17:25	06:12 06:42-07:00/18 19:16	05:11 20:04	04:32 05:29-05:58/29 20:45 05:58-05:59/1
5	07:41 15:13-15:17/4 15:50	07:11 16:38	06:18 06:40-06:47/7 17:27	06:10 06:42-06:59/17 19:17	05:09 20:05	04:31 05:29-05:59/30 20:46
6	07:40 15:12-15:18/6 15:51	07:09 16:40	06:15 06:38-06:48/10 17:28	06:07 06:42-06:57/15 19:19	05:08 20:07	04:30 05:28-05:59/31 20:47
7	07:40 15:13-15:20/7 15:52	07:07 16:42	06:13 06:36-06:48/12 17:30	06:05 06:42-06:56/14 19:20	05:06 20:08	04:30 05:28-05:59/31 20:48
8	07:40 15:12-15:20/8 15:53	07:06 16:43	06:11 06:34-06:48/14 17:32	06:03 06:44-06:54/10 19:22	05:04 20:10	04:29 05:28-06:00/32 20:49
9	07:39 15:13-15:22/9 15:55	07:04 16:45	06:09 06:33-06:46/13 17:33	06:01 06:46-06:51/5 19:24	05:03 20:11	04:29 05:28-06:00/32 20:49
10	07:39 15:13-15:23/10 15:56	07:02 16:47	06:07 06:34-06:45/11 17:35	05:59 19:25	05:01 20:13	04:29 05:28-06:01/33 20:50
11	07:38 15:13-15:25/12 15:57	07:01 16:49	06:05 06:36-06:44/8 17:37	05:57 19:27	04:59 20:14	04:28 05:28-06:02/34 20:51
12	07:38 15:14-15:27/13 15:59	06:59 16:50	06:02 17:38	05:54 19:29	04:58 05:41-05:48/7 20:16	04:28 05:27-06:01/34 20:51
13	07:37 15:15-15:28/13 16:00	06:57 16:52	06:00 17:40	05:52 19:30	04:56 05:38-05:51/13 20:17	04:28 05:27-06:02/35 20:52
14	07:36 15:15-15:28/13 16:02	06:55 16:54	05:58 17:42	05:50 19:32	04:55 05:37-05:53/16 20:19	04:28 05:28-06:02/34 20:53
15	07:36 15:16-15:28/12 16:03	06:53 16:56	05:56 17:43	05:48 19:33	04:53 05:35-05:53/18 20:20	04:27 05:28-06:03/35 20:53
16	07:35 15:16-15:27/11 16:05	06:52 16:57	05:54 17:45	05:46 19:35	04:52 05:34-05:55/21 20:22	04:27 05:28-06:03/35 20:54
17	07:34 15:17-15:27/10 16:06	06:50 16:59	05:52 17:47	05:44 19:37	04:50 05:33-05:56/23 20:23	04:27 05:28-06:03/35 20:54
18	07:33 15:19-15:27/8 16:08	06:48 17:01	05:49 17:48	05:42 19:38	04:49 05:33-05:57/24 20:24	04:27 05:28-06:03/35 20:55
19	07:32 15:20-15:26/6 16:09	06:46 17:03	05:47 17:50	05:40 19:40	04:48 05:32-05:56/24 20:26	04:27 05:28-06:04/36 20:55
20	07:31 16:11	06:44 17:04	05:45 17:51	05:38 19:41	04:46 05:31-05:57/26 20:27	04:27 05:28-06:04/36 20:55
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 19:43	04:45 05:31-05:58/27 20:29	04:27 05:29-06:05/36 20:56
22	07:29 16:14	06:40 17:08	05:40 17:55	05:34 19:45	04:44 05:31-05:58/27 20:30	04:28 05:29-06:05/36 20:56
23	07:28 16:16	06:38 17:10	05:38 17:56	05:32 19:46	04:43 05:31-05:58/27 20:31	04:28 05:29-06:05/36 20:56
24	07:27 16:17	06:36 17:11	05:36 17:58	05:30 19:48	04:42 05:31-05:59/28 20:32	04:28 05:29-06:05/36 20:56
25	07:26 16:19	06:34 17:13	05:34 18:00	05:28 19:49	04:41 05:31-05:59/28 20:34	04:29 05:30-06:05/35 20:56
26	07:25 16:21	06:32 06:55-06:58/3 17:15	05:32 18:01	05:26 19:51	04:39 05:31-05:45/14 20:35	04:29 05:30-06:05/35 20:56
27	07:23 16:22	06:30 06:53-06:58/5 17:16	05:29 18:03	05:24 19:52	04:38 05:31-05:49/18 20:36	04:29 05:31-06:06/35 20:56
28	07:22 16:24	06:28 06:51-06:57/6 17:18	05:27 18:04	05:22 19:54	04:37 05:31-05:51/20 20:37	04:30 05:31-06:05/34 20:56
29	07:21 16:26		06:25 06:50-06:56/6 19:06	05:20 19:56	04:36 05:31-05:52/21 20:39	04:30 05:32-06:06/34 20:56
30	07:19 16:28		06:23 06:47-06:58/11 19:08	05:18 19:57	04:36 05:32-05:54/22 20:40	04:31 05:31-06:05/34 20:56
31	07:18 16:29		06:21 06:44-06:58/14 19:09		04:35 05:31-05:55/24 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	148	14	120	131	477	1008

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: 15 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (15)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 05:32-06:06/34 20:55	05:06 05:53-05:56/3 20:26	05:52 19:27	06:39 18:20	06:29 16:17	07:18 14:55-15:07/12 15:39
2	04:32 05:32-06:05/33 20:55	05:07 20:24	05:54 19:25	06:40 07:16-07:21/5 18:18	06:31 16:15	07:19 14:56-15:07/11 15:39
3	04:33 05:33-06:05/32 20:55	05:09 20:23	05:56 06:44-06:49/5 19:22	06:42 07:13-07:23/10 18:16	06:33 16:14	07:20 14:56-15:06/10 15:38
4	04:33 05:34-06:06/32 20:54	05:10 20:21	05:57 06:41-06:51/10 19:20	06:43 07:12-07:24/12 18:14	06:34 16:12	07:22 14:58-15:06/8 15:38
5	04:34 05:33-06:05/32 20:54	05:12 20:19	05:59 06:39-06:53/14 19:18	06:45 07:10-07:24/14 18:11	06:36 16:10	07:23 14:58-15:05/7 15:37
6	04:35 05:34-06:05/31 20:54	05:13 20:18	06:00 06:38-06:53/15 19:16	06:46 07:11-07:24/13 18:09	06:38 16:09	07:24 14:58-15:04/6 15:37
7	04:36 05:35-06:06/31 20:53	05:15 20:16	06:02 06:37-06:54/17 19:14	06:48 07:13-07:24/11 18:07	06:40 16:07	07:25 14:59-15:03/4 15:36
8	04:37 05:36-06:06/30 20:52	05:16 20:14	06:03 06:36-06:54/18 19:12	06:50 07:14-07:22/8 18:05	06:41 16:05	07:27 15:00-15:04/4 15:36
9	04:38 05:37-06:05/28 20:52	05:18 20:13	06:05 06:36-06:54/18 19:09	06:51 07:16-07:22/6 18:03	06:43 16:04	07:28 15:01-15:03/2 15:36
10	04:39 05:37-06:05/28 20:51	05:19 20:11	06:06 06:36-06:53/17 19:07	06:53 07:18-07:20/2 18:01	06:45 16:02	07:29 15:02-15:03/1 15:36
11	04:40 05:38-06:05/27 20:50	05:20 20:09	06:08 06:36-06:53/17 19:05	06:54 17:58	06:46 16:01	07:30 15:36
12	04:41 05:39-06:04/25 20:50	05:22 20:07	06:09 06:36-06:51/15 19:03	06:56 07:22-07:28/6 17:56	06:48 15:59	07:31 15:35
13	04:42 05:40-06:03/23 20:49	05:24 20:05	06:11 06:37-06:49/12 19:00	06:58 07:23-07:30/7 17:54	06:50 15:58	07:32 15:35
14	04:43 05:40-06:02/22 20:48	05:25 20:03	06:12 06:39-06:46/7 18:58	06:59 07:24-07:30/6 17:52	06:51 15:57	07:33 15:35
15	04:44 05:40-06:01/21 20:47	05:27 20:01	06:14 18:56	07:01 07:26-07:30/4 17:50	06:53 15:55	07:34 15:36
16	04:45 05:40-05:59/19 20:46	05:28 20:00	06:15 18:54	07:03 07:28-07:30/2 17:48	06:55 15:54	07:35 15:36
17	04:46 05:40-05:57/17 20:45	05:30 19:58	06:17 18:51	07:04 17:46	06:56 15:53	07:35 15:36
18	04:47 05:40-06:08/28 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 15:51	07:36 15:36
19	04:48 05:40-06:08/28 20:43	05:33 19:54	06:20 18:47	07:08 17:42	07:00 15:50	07:37 15:36
20	04:50 05:40-06:08/28 20:42	05:34 19:52	06:22 18:45	07:09 17:40	07:01 15:49	07:37 15:37
21	04:51 05:40-06:08/28 20:41	05:36 19:50	06:23 18:43	07:11 17:38	07:03 15:48	07:38 15:37
22	04:52 05:42-06:08/26 20:40	05:37 19:48	06:25 18:40	07:12 17:36	07:04 15:47	07:39 15:38
23	04:53 05:42-06:08/26 20:38	05:39 19:46	06:26 18:38	07:14 17:34	07:06 14:57-15:03/6 15:46	07:39 15:38
24	04:55 05:42-06:07/25 20:37	05:40 19:44	06:28 18:36	07:16 17:32	07:07 14:56-15:04/8 15:45	07:39 15:39
25	04:56 05:42-06:07/25 20:36	05:42 19:42	06:29 18:34	06:18 16:30	07:09 14:55-15:05/10 15:44	07:40 15:39
26	04:57 05:44-06:07/23 20:35	05:43 19:40	06:31 18:31	06:19 16:28	07:11 14:55-15:07/12 15:43	07:40 15:40
27	04:59 05:44-06:06/22 20:33	05:45 19:37	06:32 18:29	06:21 16:26	07:12 14:55-15:07/12 15:42	07:40 15:41
28	05:00 05:45-06:05/20 20:32	05:46 19:35	06:34 18:27	06:23 16:24	07:13 14:55-15:08/13 15:41	07:41 15:42
29	05:02 05:46-06:03/17 20:30	05:48 19:33	06:35 18:25	06:24 16:22	07:15 14:55-15:08/13 15:41	07:41 15:42
30	05:03 05:48-06:02/14 20:29	05:49 19:31	06:37 18:22	06:26 16:21	07:16 14:55-15:08/13 15:40	07:41 15:43
31	05:04 05:49-06:00/11 20:27	05:51 19:29	 	06:28 16:19	 	07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	834	3	165	106	87	65

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: 16 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (16)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 16:31	06:26 17:20	06:18 19:11	06:40-06:43/3 19:59	04:34 20:42
2	07:41 15:46	07:15 16:33	06:24 17:22	06:16 19:12	06:38-06:45/7 20:00	04:33 20:43
3	07:41 15:47	07:14 16:34	06:22 17:23	06:14 19:14	06:36-06:46/10 20:02	04:32 20:44
4	07:41 15:49	07:12 16:36	06:20 17:25	06:12 19:16	06:34-06:47/13 20:04	04:32 20:45
5	07:41 15:50	07:11 16:38	06:18 17:27	06:10 19:17	06:34-06:47/13 20:05	04:31 20:46
6	07:40 15:51	07:09 16:40	06:15 17:28	06:07 19:19	06:33-06:45/12 20:07	04:30 20:47
7	07:40 15:52	07:07 16:41	06:13 17:30	06:05 19:20	06:33-06:45/12 20:08	04:30 20:48
8	07:40 15:53	07:06 16:43	06:11 17:32	06:03 19:22	06:34-06:43/9 20:10	04:29 20:49
9	07:39 15:55	07:04 16:45	06:09 17:33	06:01 19:24	06:36-06:41/5 20:11	04:29 20:49
10	07:39 15:56	07:02 16:47	06:07 17:35	05:59 19:25	05:01 05:36-05:51/15 20:13	04:29 20:50
11	07:38 15:57	07:01 16:49	06:05 17:37	05:57 19:27	04:59 05:37-05:51/14 20:14	04:28 20:51
12	07:38 15:59	06:59 16:50	06:02 17:38	05:54 19:29	04:58 05:38-05:51/13 20:16	04:28 20:51
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 19:30	04:56 05:38-05:49/11 20:17	04:28 20:52
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 19:32	04:55 05:39-05:49/10 20:19	04:27 20:53
15	07:36 16:03	06:53 16:56	05:56 17:43	05:48 19:33	04:53 05:41-05:46/5 20:20	04:27 20:53
16	07:35 16:05	06:52 16:57	05:54 17:45	05:46 19:35	04:52 20:22	04:27 20:54
17	07:34 16:06	06:50 16:59	05:52 17:47	05:44 19:37	04:50 20:23	04:27 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 19:38	04:49 20:24	04:27 20:55
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 19:40	04:48 20:26	04:27 20:55
20	07:31 16:11	06:44 17:04	05:45 17:51	05:38 19:41	04:46 20:27	04:27 20:55
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 19:43	04:45 20:29	04:27 20:56
22	07:29 16:14	06:40 17:08	05:40 17:55	05:34 19:45	04:44 20:30	04:28 20:56
23	07:28 16:16	06:38 17:10	05:38 17:56	05:32 19:46	04:43 20:31	04:28 20:56
24	07:27 16:17	06:36 17:11	05:36 17:58	05:30 19:48	04:42 20:32	04:28 20:56
25	07:26 16:19	06:34 17:13	05:34 18:00	05:28 19:49	04:40 20:34	04:28 20:56
26	07:25 16:21	06:32 17:15	05:32 18:01	05:26 19:51	04:39 20:35	04:29 20:56
27	07:23 16:22	06:30 17:16	05:29 18:03	05:24 19:52	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 17:18	05:27 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 16:26		06:25 19:06	05:20 19:56	04:36 20:39	04:30 20:56
30	07:19 16:27		06:23 19:08	05:18 19:57	04:36 20:40	04:31 20:56
31	07:18 16:29		06:21 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	0	237	0	84	170	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: 16 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (16)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 05:48-06:02/14 20:26	05:52 19:27	06:39 18:20	06:29 15:23-15:39/16 16:17	07:18 15:39
2	04:32 20:55	05:07 05:47-06:02/15 20:24	05:54 19:25	06:40 18:18	06:31 15:23-15:39/16 16:15	07:19 15:39
3	04:33 20:55	05:09 05:46-06:02/16 20:23	05:56 06:34-06:39/5 19:22	06:42 18:16	06:33 15:23-15:39/16 16:14	07:20 15:38
4	04:33 20:54	05:10 05:47-06:02/15 20:21	05:57 06:31-06:40/9 19:20	06:43 18:14	06:34 15:24-15:38/14 16:12	07:22 15:38
5	04:34 20:54	05:12 05:46-06:02/16 20:19	05:59 06:30-06:42/12 19:18	06:45 18:11	06:36 15:24-15:36/12 16:10	07:23 15:37
6	04:35 20:54	05:13 05:46-06:01/15 20:18	06:00 06:29-06:41/12 19:16	06:46 18:09	06:38 15:26-15:35/9 16:09	07:24 15:37
7	04:36 20:53	05:15 05:47-06:01/14 20:16	06:02 06:29-06:42/13 19:14	06:48 18:07	06:40 15:29-15:33/4 16:07	07:25 15:36
8	04:37 20:52	05:16 05:47-06:00/13 20:14	06:03 06:28-06:41/13 19:12	06:50 18:05	06:41 16:05	07:27 15:36
9	04:38 20:52	05:17 05:48-06:00/12 20:13	06:05 06:30-06:40/10 19:09	06:51 18:03	06:43 16:04	07:28 15:36
10	04:39 20:51	05:19 05:49-05:58/9 20:11	06:06 06:31-06:39/8 19:07	06:53 18:01	06:45 16:02	07:29 15:36
11	04:40 20:50	05:20 05:52-05:54/2 20:09	06:08 06:33-06:37/4 19:05	06:54 17:58	06:46 16:01	07:30 15:36
12	04:41 20:50	05:22 20:07	06:09 19:03	06:56 17:56	06:48 15:59	07:31 15:35
13	04:42 20:49	05:23 20:05	06:11 19:00	06:58 17:54	06:50 15:58	07:32 15:35
14	04:43 20:48	05:25 20:03	06:12 18:58	06:59 17:05-17:09/4 17:52	06:51 15:57	07:33 15:35
15	04:44 20:47	05:27 20:02	06:14 18:56	07:01 17:03-17:12/9 17:50	06:53 15:55	07:34 15:36
16	04:45 20:46	05:28 20:00	06:15 18:54	07:03 17:02-17:13/11 17:48	06:55 15:54	07:35 15:36
17	04:46 20:45	05:30 19:58	06:17 18:51	07:04 17:00-17:12/12 17:46	06:56 15:53	07:35 15:36
18	04:47 20:44	05:31 19:56	06:18 18:49	07:06 17:00-17:13/13 17:44	06:58 15:51	07:36 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:08 17:00-17:12/12 17:42	07:00 15:50	07:37 15:36
20	04:50 20:42	05:34 19:52	06:22 18:45	07:09 17:01-17:12/11 17:40	07:01 15:49	07:37 15:37
21	04:51 20:41	05:36 19:50	06:23 18:43	07:11 17:01-17:10/9 17:38	07:03 15:48	07:38 15:37
22	04:52 20:40	05:37 19:48	06:25 18:40	07:12 17:04-17:08/4 17:36	07:04 15:47	07:39 15:38
23	04:53 20:38	05:39 19:46	06:26 18:38	07:14 17:34	07:06 15:46	07:39 15:38
24	04:55 20:37	05:40 19:44	06:28 18:36	07:16 17:32	07:07 15:45	07:39 15:39
25	04:56 20:36	05:42 19:42	06:29 18:34	06:18 16:30	07:09 15:44	07:40 15:39
26	04:57 20:35	05:43 19:40	06:31 18:31	06:19 15:29-15:33/4 16:28	07:11 15:43	07:40 15:40
27	04:59 20:33	05:45 19:37	06:32 18:29	06:21 15:26-15:36/10 16:26	07:12 15:42	07:40 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	06:23 15:25-15:37/12 16:24	07:13 15:41	07:41 15:42
29	05:02 05:51-05:58/7 20:30	05:48 19:33	06:35 18:25	06:24 15:24-15:38/14 16:22	07:15 15:41	07:41 15:42
30	05:03 05:49-06:00/11 20:29	05:49 19:31	06:37 18:22	06:26 15:23-15:38/15 16:21	07:16 15:40	07:41 15:43
31	05:04 05:48-06:00/12 20:27	05:51 19:29		06:28 15:22-15:39/17 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	30	141	86	157	87	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: 17 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (17)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 15:41-15:55/14 16:31	06:26 17:20	06:18 19:11	05:17 05:55-06:02/7 19:59	04:34 05:29-05:45/16 20:42
2	07:41 15:46	07:15 15:41-15:54/13 16:33	06:24 17:22	06:16 19:12	05:15 20:00	04:33 05:30-05:45/15 20:43
3	07:41 15:48	07:14 15:42-15:53/11 16:34	06:22 17:23	06:14 19:14	05:13 20:02	04:32 05:30-05:44/14 20:44
4	07:41 15:49	07:12 15:44-15:53/9 16:36	06:20 16:50-16:59/9 17:25	06:12 19:16	05:11 20:04	04:32 05:31-05:43/12 20:45
5	07:41 15:50	07:11 15:46-15:50/4 16:38	06:18 16:49-17:00/11 17:27	06:10 19:17	05:09 20:05	04:31 05:32-05:43/11 20:46
6	07:40 15:51	07:09 16:40	06:15 16:48-17:01/13 17:28	06:07 19:19	05:08 20:07	04:30 05:33-05:42/9 20:47
7	07:40 15:52	07:07 16:42	06:13 16:48-17:01/13 17:30	06:05 19:21	05:06 20:08	04:30 05:35-05:41/6 20:48
8	07:40 15:53	07:06 16:43	06:11 16:47-17:00/13 17:32	06:03 19:22	05:04 20:10	04:29 05:37-05:40/3 20:49
9	07:39 15:55	07:04 16:45	06:09 16:48-16:59/11 17:33	06:01 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 16:16-16:19/3 16:47	06:07 16:49-16:58/9 17:35	05:59 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 16:15-16:22/7 16:49	06:05 16:51-16:55/4 17:37	05:57 19:27	04:59 05:34-05:38/4 20:14	04:28 20:51
12	07:38 15:59	06:59 16:14-16:23/9 16:50	06:03 17:38	05:54 19:29	04:58 05:31-05:41/10 20:16	04:28 20:52
13	07:37 16:00	06:57 16:14-16:25/11 16:52	06:00 17:40	05:52 19:30	04:56 05:29-05:42/13 20:17	04:28 20:52
14	07:36 16:02	06:55 16:14-16:25/11 16:54	05:58 17:42	05:50 06:13-06:16/3 19:32	04:55 05:28-05:44/16 20:19	04:28 20:53
15	07:36 16:03	06:54 16:14-16:25/11 16:56	05:56 17:43	05:48 06:10-06:16/6 19:33	04:53 05:27-05:44/17 20:20	04:27 20:53
16	07:35 16:05	06:52 16:14-16:24/10 16:57	05:54 17:45	05:46 06:08-06:16/8 19:35	04:52 05:26-05:45/19 20:22	04:27 20:54
17	07:34 16:06	06:50 16:16-16:23/7 16:59	05:52 17:47	05:44 06:06-06:16/10 19:37	04:50 05:26-05:46/20 20:23	04:27 20:54
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 06:04-06:15/11 19:38	04:49 05:26-05:46/20 20:24	04:27 20:55
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 06:04-06:15/11 19:40	04:48 05:25-05:46/21 20:26	04:27 20:55
20	07:31 16:11	06:44 17:04	05:45 17:52	05:38 06:05-06:13/8 19:41	04:46 05:25-05:46/21 20:27	04:27 20:55
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 05:58-06:03/5 19:43	04:45 05:25-05:47/22 20:29	04:27 20:56
22	07:29 16:14	06:40 17:08	05:41 17:55	05:34 05:57-06:06/9 19:45	04:44 05:25-05:47/22 20:30	04:28 20:56
23	07:28 16:16	06:38 17:10	05:38 17:56	05:32 05:55-06:06/11 19:46	04:43 05:25-05:47/22 20:31	04:28 20:56
24	07:27 15:45-15:46/1 16:17	06:36 17:11	05:36 17:58	05:30 05:53-06:07/14 19:48	04:42 05:25-05:47/22 20:33	04:28 20:56
25	07:26 15:42-15:49/7 16:19	06:34 17:13	05:34 18:00	05:28 05:52-06:07/15 19:49	04:41 05:26-05:47/21 20:34	04:29 20:56
26	07:25 15:42-15:51/9 16:21	06:32 17:15	05:32 18:01	05:26 05:52-06:07/15 19:51	04:39 05:26-05:47/21 20:35	04:29 20:56
27	07:23 15:41-15:52/11 16:22	06:30 17:16	05:29 18:03	05:24 05:52-06:06/14 19:53	04:38 05:26-05:46/20 20:36	04:29 20:56
28	07:22 15:41-15:54/13 16:24	06:28 17:18	05:27 18:04	05:22 05:52-06:05/13 19:54	04:37 05:27-05:46/19 20:38	04:30 20:56
29	07:21 15:40-15:54/14 16:26		06:25 19:06	05:20 05:53-06:05/12 19:56	04:36 05:27-05:46/19 20:39	04:30 20:56
30	07:19 15:40-15:54/14 16:28		06:23 19:08	05:18 05:54-06:04/10 19:57	04:36 05:28-05:46/18 20:40	04:31 20:56
31	07:18 15:40-15:54/14 16:29		06:21 19:09		04:35 05:28-05:45/17 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	83	120	83	179	391	86

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: 17 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (17)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:56	05:06 20:26	05:42-05:51/9 19:27	06:39 18:20	06:29 15:46-15:48/2 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:40 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:56 19:23	06:42 17:27-17:35/8 18:16	06:33 16:14	07:21 15:38
4	04:33 20:55	05:10 20:21	05:57 19:20	06:43 17:26-17:36/10 18:14	06:35 16:12	07:22 15:38
5	04:34 05:41-05:47/6 20:54	05:12 20:19	05:59 19:18	06:45 17:24-17:36/12 18:11	06:36 16:10	07:23 15:37
6	04:35 05:40-05:48/8 20:54	05:13 20:18	06:00 19:16	06:47 17:24-17:37/13 18:09	06:38 15:15-15:20/5 16:09	07:24 15:37
7	04:36 05:39-05:49/10 20:53	05:15 20:16	06:02 19:14	06:48 17:24-17:37/13 18:07	06:40 15:13-15:22/9 16:07	07:26 15:36
8	04:37 05:39-05:50/11 20:53	05:16 20:14	06:03 19:12	06:50 17:24-17:35/11 18:05	06:41 15:13-15:24/11 16:05	07:27 15:36
9	04:38 05:38-05:51/13 20:52	05:18 20:13	06:05 19:09	06:51 17:25-17:34/9 18:03	06:43 15:12-15:25/13 16:04	07:28 15:36
10	04:39 05:38-05:52/14 20:51	05:19 20:11	06:06 19:07	06:53 17:26-17:33/7 18:01	06:45 15:12-15:26/14 16:02	07:29 15:36
11	04:40 05:37-05:53/16 20:51	05:21 20:09	06:08 19:05	06:55 17:58	06:46 15:12-15:26/14 16:01	07:30 15:36
12	04:41 05:37-05:54/17 20:50	05:22 06:03-06:11/8 20:07	06:09 19:03	06:56 17:56	06:48 15:11-15:25/14 15:59	07:31 15:35
13	04:42 05:37-05:54/17 20:49	05:24 06:01-06:12/11 20:05	06:11 19:00	06:58 17:54	06:50 15:12-15:25/13 15:58	07:32 15:35
14	04:43 05:36-05:55/19 20:48	05:25 06:00-06:13/13 20:03	06:12 18:58	06:59 17:52	06:51 15:13-15:25/12 15:57	07:33 15:35
15	04:44 05:36-05:55/19 20:47	05:27 05:59-06:13/14 20:02	06:14 18:56	07:01 17:50	06:53 15:14-15:25/11 15:55	07:34 15:36
16	04:45 05:36-05:56/20 20:46	05:28 05:59-06:14/15 20:00	06:15 18:54	07:03 17:48	06:55 15:15-15:24/9 15:54	07:35 15:36
17	04:46 05:36-05:56/20 20:45	05:30 05:58-06:13/15 19:58	06:17 18:52	07:04 17:46	06:56 15:15-15:22/7 15:53	07:35 15:36
18	04:47 05:35-05:56/21 20:44	05:31 05:59-06:13/14 19:56	06:18 18:49	07:06 17:44	06:58 15:19-15:20/1 15:51	07:36 15:36
19	04:48 05:35-05:56/21 20:43	05:33 05:59-06:12/13 19:54	06:20 18:47	07:08 17:42	07:00 15:50	07:37 15:36
20	04:50 05:35-05:56/21 20:42	05:34 06:00-06:11/11 19:52	06:22 18:45	07:09 17:40	07:01 15:49	07:37 15:37
21	04:51 05:35-05:56/21 20:41	05:36 06:02-06:10/8 19:50	06:23 18:43	07:11 17:38	07:03 15:48	07:38 15:37
22	04:52 05:36-05:57/21 20:40	05:37 06:03-06:07/4 19:48	06:25 18:40	07:13 17:36	07:04 15:47	07:39 15:38
23	04:53 05:36-05:57/21 20:38	05:39 06:09-06:18/9 19:46	06:26 18:38	07:14 17:34	07:06 15:46	07:39 15:38
24	04:55 05:35-05:57/22 20:37	05:40 06:08-06:19/11 19:44	06:28 18:36	07:16 16:48-16:51/3 17:32	07:08 15:45	07:40 15:39
25	04:56 05:35-05:56/21 20:36	05:42 06:08-06:19/11 19:42	06:29 18:34	06:18 15:45-15:53/8 16:30	07:09 15:44	07:40 15:39
26	04:57 05:37-05:57/20 20:35	05:43 06:09-06:19/10 19:40	06:31 18:31	06:19 15:44-15:54/10 16:28	07:11 15:43	07:40 15:40
27	04:59 05:37-05:56/19 20:33	05:45 06:11-06:19/8 19:37	06:32 18:29	06:21 15:43-15:55/12 16:26	07:12 15:42	07:41 15:41
28	05:00 05:37-05:55/18 20:32	05:46 06:12-06:18/6 19:35	06:34 18:27	06:23 15:43-15:55/12 16:24	07:14 15:41	07:41 15:42
29	05:02 05:38-05:55/17 20:30	05:48 06:14-06:17/3 19:33	06:35 18:25	06:24 15:44-15:54/10 16:22	07:15 15:41	07:41 15:42
30	05:03 05:39-05:54/15 20:29	05:49 19:31	06:37 18:22	06:26 15:44-15:52/8 16:21	07:16 15:40	07:41 15:43
31	05:04 05:40-05:52/12 20:27	05:51 19:29		06:28 15:44-15:50/6 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	460	198	0	152	135	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: 18 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (18)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:41 15:46	07:17 16:31	06:26 17:20	06:18 19:11	05:17 19:59	04:34 20:42	04:32 20:56	05:06 20:26	05:53 19:27	06:27-06:42/15	06:39 18:20	06:29 16:17
2	07:41 15:47	07:15 16:33	06:24 17:22	06:16 19:13	05:15 20:01	04:33 20:43	05:07 20:55	05:07 20:24	05:54 19:25	06:28-06:39/11	06:40 18:18	06:31 16:15
3	07:41 15:48	07:14 16:35	06:22 17:23	06:14 19:14	05:13 20:02	04:32 20:44	05:09 20:55	05:09 20:23	05:56 19:23	06:33-06:34/1	06:42 18:16	06:33 16:14
4	07:41 15:49	07:12 16:36	06:20 17:25	06:12 19:16	05:11 20:04	04:32 20:45	05:10 20:55	05:10 20:21	05:57 19:20		06:43 18:14	06:35 16:12
5	07:41 15:50	07:11 16:38	06:18 17:27	06:10 19:17	05:09 20:05	04:31 20:46	05:12 20:54	05:12 20:20	05:59 19:18		06:45 18:12	06:36 16:10
6	07:40 15:51	07:09 16:40	06:16 17:28	06:07 19:19	05:08 20:07	04:31 20:47	05:13 20:54	05:13 20:18	06:00 19:16		06:47 18:09	06:38 16:09
7	07:40 15:52	07:07 16:42	06:13 17:30	06:05 19:21	05:06 20:08	04:30 20:48	05:15 20:53	05:15 20:16	06:02 19:14		06:48 18:07	06:40 16:07
8	07:40 15:53	07:06 16:43	06:11 17:32	06:03 19:22	05:04 20:10	04:30 20:49	05:16 20:53	05:16 20:14	06:03 19:12		06:50 18:05	06:41 16:05
9	07:39 15:53	07:04 16:45	06:09 17:33	06:01 19:24	05:03 20:11	04:29 20:50	05:18 20:52	05:18 20:13	06:05 19:09		06:51 18:03	06:43 16:04
10	07:39 15:56	07:02 16:47	06:07 17:35	05:59 19:25	06:30-06:41/11	04:29 20:13	05:19 20:51	05:19 20:11	06:06 19:07		06:53 18:01	06:45 16:02
11	07:38 15:57	07:01 16:49	06:05 17:37	05:57 19:27	06:28-06:43/15	04:59 20:14	05:21 20:51	05:21 20:09	06:08 19:05		06:55 17:59	06:46 16:01
12	07:38 15:59	07:00 16:50	06:03 17:38	05:55 19:29	06:26-06:45/19	04:58 20:16	05:22 20:50	05:22 20:07	06:09 19:03		06:56 17:56	06:48 15:59
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 19:30	06:25-06:45/20	04:56 20:17	05:24 20:50	05:24 20:05	06:11 19:01		06:57 17:54	06:50 15:58
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 19:32	06:24-06:46/22	04:55 20:19	05:25 20:48	05:25 20:04	06:12 18:58		06:59 17:52	06:52 15:57
15	07:36 16:03	06:54 16:56	05:56 17:43	05:48 19:33	06:22-06:45/23	04:53 20:20	05:27 20:53	05:27 20:02	06:14 18:56	07:00-07:08/8	07:01 17:50	06:53 15:55
16	07:35 16:05	06:52 16:57	05:54 17:45	05:46 19:35	06:22-06:45/23	04:52 20:22	05:28 20:54	05:28 20:00	06:16 18:54	06:58-07:09/11	07:03 17:48	06:55 15:54
17	07:34 16:06	06:50 16:59	05:52 17:47	05:44 19:37	06:21-06:45/24	04:51 20:23	05:30 20:54	05:30 20:05	06:17 18:52	06:57-07:11/14	07:04 17:46	06:56 15:53
18	07:33 16:08	06:48 17:01	05:49 17:48	05:42 19:38	06:21-06:45/24	04:49 20:25	05:31 20:55	05:31 20:04	06:19 18:49	06:55-07:10/15	07:06 17:44	06:58 15:51
19	07:32 16:09	06:46 17:03	05:47 17:50	05:40 19:40	06:21-06:44/23	04:48 20:26	05:33 20:55	05:33 20:03	06:31-06:45/14	06:55-07:11/16	07:08 17:42	07:00 15:50
20	07:31 16:11	06:44 17:04	05:45 17:52	05:38 19:41	06:21-06:44/23	04:47 20:27	05:34 20:55	05:34 20:02	06:29-06:46/17	06:54-07:10/16	07:09 17:40	07:01 15:49
21	07:30 16:12	06:42 17:06	05:43 17:53	05:36 19:43	06:23-06:44/21	04:45 20:29	05:36 20:56	05:36 20:01	06:28-06:47/19	06:54-07:10/16	07:11 17:38	07:03 15:48
22	07:29 16:14	06:40 17:08	05:41 17:55	05:34 19:45	06:23-06:42/19	04:44 20:30	05:37 20:56	05:37 20:00	06:26-06:47/21	06:54-07:08/14	07:13 17:36	07:05 15:47
23	07:28 16:16	06:38 17:10	05:38 17:56	05:32 19:46	06:24-06:41/17	04:43 20:31	05:39 20:56	05:39 20:03	06:26-06:48/22	06:56-07:07/11	07:14 17:34	07:06 15:46
24	07:27 16:17	06:36 17:11	05:36 17:58	05:30 19:48	06:25-06:39/14	04:42 20:33	05:40 20:56	05:40 20:04	06:25-06:48/23	06:57-07:04/7	07:16 17:32	07:08 15:45
25	07:26 16:19	06:34 17:13	05:34 18:00	05:28 19:49	06:28-06:36/8	04:41 20:34	05:42 20:56	05:42 20:06	06:25-06:49/24		06:18 16:30	07:09 15:44
26	07:25 16:21	06:32 17:15	05:32 18:01	05:26 19:51		04:40 20:35	05:43 20:56	05:43 20:05	06:24-06:48/24		06:19 16:28	07:11 15:43
27	07:24 16:22	06:30 17:17	05:29 18:03	05:24 19:53		04:38 20:36	05:45 20:59	05:45 20:07	06:25-06:48/23		06:21 16:26	07:12 15:42
28	07:22 16:24	06:28 17:18	05:27 18:05	05:22 19:54	06:09-06:19/10	04:37 20:38	05:46 20:56	05:46 20:09	06:24-06:47/23		06:23 16:24	07:14 15:41
29	07:21 16:26		06:25 19:06	05:20 19:56		04:37 20:39	05:48 20:56	05:48 20:11	06:25-06:47/22		06:24 16:23	07:15 15:41
30	07:20 16:28		06:23 19:08	05:18 19:57		04:36 20:40	05:03 20:56	05:03 20:13	06:25-06:45/20		06:26 16:21	07:17 15:40
31	07:18 16:29		06:21 19:09			04:35 20:41	05:04 20:28	05:04 19:29	06:25-06:43/18		06:28 16:19	07:41 15:44
Potential sun hours	265	280	367	413	479	491	495	450	380	155	334	271
Sum of minutes with flicker	0	0	125	306	0	0	0	279	155	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: 19 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (19)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June	
1	07:41	14:43-14:58/15	07:17	06:26		06:18		05:17		04:34	05:01-05:11/10	
	15:45		16:31	17:20		19:11		19:59		20:42		
2	07:41	14:44-14:59/15	07:15	06:24		06:16		05:15		04:33	05:01-05:12/11	
	15:46		16:33	17:22		19:13		20:00		20:43		
3	07:41	14:44-14:59/15	07:14	06:22		06:14		05:13		04:32	05:00-05:12/12	
	15:48		16:35	17:23		19:14		20:02		20:44		
4	07:41	14:44-14:59/15	07:12	06:20		06:12		05:11		04:32	04:59-05:11/12	
	15:49		16:36	17:25		19:16		20:04		20:45		
5	07:41	14:45-15:00/15	07:11	06:18	16:59-17:02/3	06:10		05:09		04:31	04:59-05:12/13	
	15:50		16:38	17:27		19:17		20:05		20:46		
6	07:40	14:45-15:00/15	07:09	06:16	16:57-17:04/7	06:07		05:08		04:31	04:58-05:11/13	
	15:51		16:40	17:28		19:19		20:07		20:47		
7	07:40	14:46-15:00/14	07:07	06:13	16:57-17:05/8	06:05		05:06		04:30	04:59-05:12/13	
	15:52		16:42	17:30		19:21		20:08		20:48		
8	07:40	14:46-15:00/14	07:06	06:11	16:55-17:06/11	06:03		05:04		04:29	05:00-05:12/12	
	15:53		16:43	17:32		19:22		20:10		20:49		
9	07:39	14:48-15:01/13	07:04	06:09	16:55-17:06/11	06:01		05:03		04:29	05:00-05:12/12	
	15:55		16:45	17:33		19:24		20:11		20:49		
10	07:39	14:48-15:00/12	07:02	06:07	16:56-17:06/10	05:59		05:01		04:29	05:00-05:12/12	
	15:56		16:47	17:35		19:25		20:13		20:50		
11	07:38	14:50-15:01/11	07:01	06:05	16:57-17:04/7	05:57		04:59		04:28	05:01-05:12/11	
	15:57		16:49	17:37		19:27		20:14		20:51		
12	07:38	14:51-15:00/9	06:59	06:03		05:55	06:17-06:18/1	04:58		04:28	05:01-05:13/12	
	15:59		16:50	17:38		19:29		20:16		20:52		
13	07:37	14:52-14:59/7	06:57	06:00		05:52	06:15-06:19/4	04:56		04:28	05:01-05:12/11	
	16:00		16:52	17:40		19:30		20:17		20:52		
14	07:36	14:55-14:57/2	06:55	05:58		05:50	06:13-06:19/6	04:55		04:28	05:02-05:12/10	
	16:02		16:54	17:42		19:32		20:19		20:53		
15	07:36		06:54	05:56		05:48	06:10-06:18/8	04:53		04:27	05:02-05:12/10	
	16:03		16:56	17:43		19:33		20:20		20:53		
16	07:35	08:02-08:08/6	06:52	07:16-07:21/5	05:54	05:46	06:08-06:18/10	04:52		04:27	05:02-05:12/10	
	16:05		16:57	17:45		19:35		20:22		20:54		
17	07:34	08:01-08:10/9	06:50	07:13-07:23/10	05:52	05:44	06:07-06:17/10	04:50		04:27	05:03-05:12/9	
	16:06		16:59	17:47		19:37		20:23		20:54		
18	07:33	08:01-08:11/10	06:48	07:12-07:24/12	05:49	05:42	06:08-06:16/8	04:49		04:27	05:03-05:12/9	
	16:08		17:01	17:48		19:38		20:25		20:55		
19	07:32	08:00-08:12/12	06:46	07:11-07:25/14	05:47	05:40	06:11-06:13/2	04:48		04:27	05:03-05:12/9	
	16:09		17:03	17:50		19:40		20:26		20:55		
20	07:31	08:00-08:13/13	06:44	07:11-07:25/14	05:45	05:38		04:46		04:27	05:03-05:12/9	
	16:11		17:04	17:52		19:41		20:27		20:55		
21	07:30	08:00-08:14/14	06:42	07:11-07:25/14	05:43	05:36		04:45		04:27	05:04-05:13/9	
	16:12		17:06	17:53		19:43		20:29		20:56		
22	07:29	08:01-08:14/13	06:40	07:11-07:24/13	05:41	05:34		04:44		04:28	05:04-05:13/9	
	16:14		17:08	17:55		19:45		20:30		20:56		
23	07:28	08:01-08:15/14	06:38	07:12-07:23/11	05:38	05:32		04:43		04:28	05:04-05:13/9	
	16:16		17:10	17:56		19:46		20:31		20:56		
24	07:27	08:01-08:14/13	06:36	07:13-07:22/9	05:36	05:30		04:42		04:28	05:04-05:13/9	
	16:17		17:11	17:58		19:48		20:33		20:56		
25	07:26	08:02-08:15/13	06:34	07:16-07:19/3	05:34	05:28		04:41		04:29	05:05-05:14/9	
	16:19		17:13	18:00		19:49		20:34		20:56		
26	07:25	08:03-08:15/12	06:32	05:32		05:26		04:39	05:06-05:08/2	04:29	05:05-05:14/9	
	16:21		17:15	18:01		19:51		20:35		20:56		
27	07:23	08:03-08:13/10	06:30	05:29		05:24		04:38	05:05-05:09/4	04:29	05:05-05:15/10	
	16:22		17:17	18:03		19:53		20:36		20:56		
28	07:22	08:05-08:13/8	06:28	05:27		05:22		04:37	05:04-05:09/5	04:30	05:05-05:15/10	
	16:24		17:18	18:04		19:54		20:38		20:56		
29	07:21	08:08-08:10/2		06:25		05:20		04:36	05:03-05:10/7	04:30	05:05-05:16/11	
	16:26			19:06		19:56		20:39		20:56		
30	07:20			06:23		05:18		04:36	05:03-05:11/8	04:31	05:05-05:16/11	
	16:28			19:08		19:57		20:40		20:56		
31	07:18			06:21				04:35	05:02-05:11/9			
	16:29			19:09				20:41				
Potential sun hours	265		280	367		413		479		491		
Sum of minutes with flicker	321		105	57		49		35		316		

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: 19 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (19)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 05:05-05:16/11 20:56	05:06 20:26	05:53 19:27	06:39 18:20	06:29 16:17	07:18 14:32-14:43/11 15:39
2	04:32 05:05-05:16/11 20:55	05:07 20:24	05:54 19:25	06:40 17:37-17:42/5 18:18	06:31 16:15	07:19 14:31-14:43/12 15:39
3	04:33 05:05-05:17/12 20:55	05:09 20:23	05:56 19:23	06:42 17:34-17:43/9 18:16	06:33 16:14	07:21 14:31-14:44/13 15:38
4	04:33 05:05-05:18/13 20:55	05:10 20:21	05:57 19:20	06:43 17:33-17:44/11 18:14	06:35 16:12	07:22 14:32-14:45/13 15:38
5	04:34 05:05-05:18/13 20:54	05:12 20:20	05:59 19:18	06:45 17:32-17:44/12 18:11	06:36 16:10	07:23 14:31-14:45/14 15:37
6	04:35 05:05-05:18/13 20:54	05:13 20:18	06:00 19:16	06:47 17:32-17:42/10 18:09	06:38 16:09	07:24 14:31-14:46/15 15:37
7	04:36 05:05-05:18/13 20:53	05:15 20:16	06:02 19:14	06:48 17:33-17:40/7 18:07	06:40 16:07	07:26 14:32-14:47/15 15:36
8	04:37 05:06-05:19/13 20:53	05:16 20:14	06:03 19:12	06:50 17:33-17:38/5 18:05	06:41 16:05	07:27 14:32-14:47/15 15:36
9	04:38 05:07-05:19/12 20:52	05:18 20:13	06:05 19:09	06:51 18:03	06:43 16:04	07:28 14:32-14:48/16 15:36
10	04:39 05:08-05:19/11 20:51	05:19 20:11	06:06 19:07	06:53 18:01	06:45 16:02	07:29 14:33-14:48/15 15:36
11	04:40 05:09-05:19/10 20:51	05:21 20:09	06:08 19:05	06:55 17:58	06:46 16:01	07:30 14:33-14:48/15 15:36
12	04:41 05:10-05:19/9 20:50	05:22 20:07	06:09 19:03	06:56 17:56	06:48 15:59	07:31 14:34-14:49/15 15:35
13	04:42 05:11-05:19/8 20:49	05:24 20:05	06:11 19:01	06:58 17:54	06:50 07:39-07:42/3 15:58	07:32 14:34-14:49/15 15:35
14	04:43 05:12-05:19/7 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 07:37-07:45/8 15:57	07:33 14:35-14:50/15 15:35
15	04:44 05:13-05:19/6 20:47	05:27 20:02	06:14 18:56	07:01 17:50	06:53 07:36-07:46/10 15:55	07:34 14:35-14:50/15 15:36
16	04:45 05:14-05:19/5 20:46	05:28 20:00	06:15 18:54	07:03 17:48	06:55 07:36-07:48/12 15:54	07:35 14:36-14:51/15 15:36
17	04:46 05:15-05:18/3 20:45	05:30 19:58	06:17 18:52	07:04 07:47-07:53/6 17:46	06:56 07:36-07:49/13 15:53	07:35 14:37-14:51/14 15:36
18	04:47 05:16-05:17/1 20:44	05:31 19:56	06:19 18:49	07:06 07:44-07:54/10 17:44	06:58 07:35-07:48/13 15:51	07:36 14:36-14:51/15 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:08 07:43-07:55/12 17:42	07:00 07:35-07:49/14 15:50	07:37 14:37-14:52/15 15:36
20	04:50 20:42	05:34 19:52	06:22 18:45	07:09 07:42-07:56/14 17:40	07:01 07:36-07:49/13 15:49	07:38 14:37-14:52/15 15:37
21	04:51 20:41	05:36 19:50	06:23 18:43	07:11 07:42-07:56/14 17:38	07:03 07:36-07:50/14 15:48	07:38 14:38-14:53/15 15:37
22	04:52 20:40	05:37 19:48	06:25 18:40	07:13 07:41-07:55/14 17:36	07:04 07:36-07:49/13 15:47	07:39 14:38-14:53/15 15:38
23	04:53 20:39	05:39 19:46	06:26 18:38	07:14 07:42-07:55/13 17:34	07:06 07:37-07:49/12 15:46	07:39 14:39-14:54/15 15:38
24	04:55 20:37	05:40 06:14-06:17/3 19:44	06:28 18:36	07:16 07:43-07:54/11 17:32	07:08 07:39-07:49/10 15:45	07:40 14:39-14:54/15 15:39
25	04:56 20:36	05:42 06:12-06:20/8 19:42	06:29 18:34	06:18 06:44-06:53/9 16:30	07:09 07:39-07:48/9 15:44	07:40 14:40-14:55/15 15:39
26	04:57 20:35	05:43 06:10-06:20/10 19:40	06:31 18:31	06:19 06:46-06:49/3 16:28	07:11 07:41-07:47/6 15:43	07:40 14:40-14:55/15 15:40
27	04:59 20:33	05:45 06:11-06:21/10 19:38	06:32 18:29	06:21 16:26	07:12 15:42	07:41 14:41-14:56/15 15:41
28	05:00 20:32	05:46 06:12-06:20/8 19:35	06:34 18:27	06:23 16:24	07:14 14:35-14:36/1 15:41	07:41 14:41-14:56/15 15:42
29	05:02 20:30	05:48 06:14-06:20/6 19:33	06:36 18:25	06:24 16:22	07:15 14:33-14:40/7 15:41	07:41 14:41-14:56/15 15:42
30	05:03 20:29	05:49 06:15-06:19/4 19:31	06:37 18:22	06:26 16:21	07:16 14:32-14:41/9 15:40	07:41 14:42-14:57/15 15:43
31	05:04 20:27	05:51 06:16-06:17/1 19:29		06:28 16:19		07:41 14:42-14:57/15 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	171	50	0	165	167	453

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: 20 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (20)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June	
1	07:41	08:25-08:45/20	07:17	15:34-15:49/15	06:26	07:04-07:28/24	06:18		05:17		04:34	05:09-05:21/12
	15:45	14:56-15:08/12	16:31		17:20		19:11		19:59		20:42	
2	07:41	08:26-08:46/20	07:15	15:34-15:49/15	06:24	07:03-07:28/25	06:16		05:15		04:33	05:10-05:22/12
	15:46	14:57-15:09/12	16:33		17:22		19:13		20:01		20:43	
3	07:41	08:26-08:47/21	07:14	15:35-15:49/14	06:22	07:02-07:27/25	06:14		05:13		04:32	05:10-05:21/11
	15:48	14:57-15:10/13	16:35		17:23		19:14		20:02		20:44	
4	07:41	08:26-08:47/21	07:12	15:36-15:48/12	06:20	07:03-07:27/24	06:12		05:11		04:32	05:11-05:20/9
	15:49	14:57-15:10/13	16:36		17:25		19:16		20:04		20:45	
5	07:41	08:26-08:48/22	07:11	15:37-15:47/10	06:18	07:03-07:26/23	06:10		05:09		04:31	05:12-05:20/8
	15:50	14:57-15:11/14	16:38		17:27		19:17		20:05		20:46	
6	07:40	08:27-08:49/22	07:09	15:40-15:45/5	06:16	07:04-07:25/21	06:07		05:08		04:31	05:13-05:19/6
	15:51	14:57-15:11/14	16:40		17:28		19:19		20:07		20:47	
7	07:40	08:27-08:49/22	07:07		06:13	07:04-07:24/20	06:05		05:06		04:30	05:15-05:17/2
	15:52	14:58-15:12/14	16:42		17:30		19:21		20:08		20:48	
8	07:40	08:28-08:50/22	07:06		06:11	07:06-07:23/17	06:03		05:04		04:29	
	15:53	14:58-15:12/14	16:43		17:32		19:22		20:10		20:49	
9	07:39	08:27-08:50/23	07:04		06:09	07:07-07:20/13	06:01		05:03		04:29	
	15:55	14:59-15:13/14	16:45		17:33		19:24		20:11		20:50	
10	07:39	08:27-08:50/23	07:02	16:18-16:19/1	06:07	07:10-07:16/6	05:59		05:01		04:29	
	15:56	14:59-15:13/14	16:47		17:35		19:25		20:13		20:50	
11	07:38	08:29-08:51/22	07:01	16:17-16:21/4	06:05		05:57		04:59		04:28	
	15:57	15:00-15:14/14	16:49		17:37		19:27		20:14		20:51	
12	07:38	08:29-08:52/23	06:59	16:16-16:23/7	06:03		05:55		04:58		04:28	
	15:59	15:00-15:14/14	16:50		17:38		19:29		20:16		20:52	
13	07:37	08:29-08:52/23	06:57	16:15-16:25/10	06:00		05:52		04:56		04:28	
	16:00	15:00-15:14/14	16:52		17:40		19:30		20:17		20:52	
14	07:36	08:29-08:52/23	06:55	16:14-16:26/12	05:58		05:50		04:55		04:28	
	16:02	15:01-15:14/13	16:54		17:42		19:32		20:19		20:53	
15	07:36	08:30-08:52/22	06:54	16:14-16:26/12	05:56		05:48		04:53		04:27	
	16:03	15:02-15:14/12	16:56		17:43		19:33		20:20		20:53	
16	07:35	08:30-08:52/22	06:52	16:15-16:26/11	05:54		05:46		04:52		04:27	
	16:05	15:03-15:14/11	16:57		17:45		19:35		20:22		20:54	
17	07:34	08:31-08:52/21	06:50	16:16-16:25/9	05:52		05:44		04:51	05:16-05:18/2	04:27	
	16:06	15:04-15:13/9	16:59		17:47		19:37		20:23		20:54	
18	07:33	08:32-08:52/20	06:48	16:18-16:23/5	05:49		05:42		04:49	05:15-05:20/5	04:27	
	16:08	15:05-15:12/7	17:01		17:48		19:38		20:25		20:55	
19	07:32	08:33-08:52/19	06:46		05:47		05:40	06:02-06:04/2	04:48	05:13-05:20/7	04:27	
	16:09		17:03		17:50		19:40		20:26		20:55	
20	07:31	08:34-08:51/17	06:44		05:45		05:38	06:00-06:06/6	04:46	05:12-05:21/9	04:27	
	16:11		17:04		17:52		19:41		20:27		20:55	
21	07:30	08:35-08:51/16	06:42		05:43		05:36	05:59-06:07/8	04:45	05:11-05:21/10	04:27	
	16:12		17:06		17:53		19:43		20:29		20:56	
22	07:29	08:37-08:50/13	06:40		05:41		05:34	05:57-06:07/10	04:44	05:10-05:22/12	04:28	
	16:14		17:08		17:55		19:45		20:30		20:56	
23	07:28	08:39-08:49/10	06:38	07:11-07:21/10	05:38		05:32	05:55-06:07/12	04:43	05:09-05:22/13	04:28	
	16:16		17:10		17:56		19:46		20:31		20:56	
24	07:27	08:41-08:46/5	06:36	07:09-07:23/14	05:36		05:30	05:55-06:07/12	04:42	05:08-05:22/14	04:28	
	16:17	15:38-15:41/3	17:11		17:58		19:48		20:33		20:56	
25	07:26	15:36-15:44/8	06:34	07:07-07:25/18	05:34		05:28	05:55-06:06/11	04:41	05:07-05:23/16	04:29	
	16:19		17:13		18:00		19:49		20:34		20:56	
26	07:25	15:35-15:46/11	06:32	07:06-07:26/20	05:32		05:26	05:55-06:05/10	04:39	05:07-05:23/16	04:29	
	16:21		17:15		18:01		19:51		20:35		20:56	
27	07:24	15:34-15:47/13	06:30	07:05-07:27/22	05:29		05:24	05:57-06:02/5	04:38	05:07-05:22/15	04:29	
	16:22		17:17		18:03		19:53		20:36		20:56	
28	07:22	15:34-15:48/14	06:28	07:04-07:28/24	05:27		05:22		04:37	05:07-05:22/15	04:30	
	16:24		17:18		18:05		19:54		20:38		20:56	
29	07:21	15:33-15:48/15			06:25		05:20		04:36	05:07-05:22/15	04:30	
	16:26				19:06		19:56		20:39		20:56	
30	07:20	15:33-15:49/16			06:23		05:18		04:36	05:08-05:22/14	04:31	
	16:28				19:08		19:57		20:40		20:56	
31	07:18	15:33-15:49/16			06:21				04:35	05:09-05:22/13		
	16:29				19:09				20:41			
Potential sun hours	265		280		367		413		479		491	60
Sum of minutes with flicker		796		250		198		76		176		

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: 20 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (20)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:56	05:06 20:26	05:53 19:27	06:39 18:20	06:29 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:40 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:56 19:23	06:42 18:16	06:33 16:14	07:21 15:38
4	04:34 20:55	05:10 20:21	05:57 19:20	06:43 18:14	07:46-07:57/11 16:12	08:12-08:34/22 15:38
5	04:34 20:54	05:12 20:20	05:59 19:18	06:45 18:11	07:43-07:59/16 16:10	08:12-08:34/22 15:37
6	04:35 05:20-05:24/4 20:54	05:13 20:18	06:00 19:16	06:47 07:41-08:00/19 18:09	06:38 15:06-15:17/11 16:09	07:24 08:12-08:34/22 15:37
7	04:36 05:19-05:26/7 20:53	05:15 20:16	06:02 19:14	06:48 07:40-08:01/21 18:07	06:40 15:05-15:18/13 16:07	07:26 08:13-08:35/22 15:36
8	04:37 05:18-05:27/9 20:53	05:16 20:14	06:03 19:12	06:50 07:38-08:01/23 18:05	06:41 15:05-15:19/14 16:05	07:27 08:14-08:35/21 15:36
9	04:38 05:18-05:28/10 20:52	05:18 20:13	06:05 19:09	06:51 07:38-08:01/23 18:03	06:43 15:05-15:20/15 16:04	07:28 08:14-08:35/21 15:36
10	04:39 05:18-05:29/11 20:51	05:19 20:11	06:06 19:07	06:53 07:38-08:02/24 18:01	06:45 15:05-15:20/15 16:02	07:29 08:15-08:35/20 15:36
11	04:40 05:17-05:30/13 20:51	05:21 20:09	06:08 19:05	06:55 07:36-08:01/25 17:59	06:46 15:05-15:21/16 16:01	07:30 08:15-08:36/21 15:36
12	04:41 05:17-05:30/13 20:50	05:22 20:07	06:09 19:03	06:56 07:37-08:01/24 17:56	06:48 15:04-15:20/16 15:59	07:31 08:16-08:36/20 15:35
13	04:42 05:17-05:31/14 20:49	05:24 20:05	06:11 19:01	06:58 07:37-08:01/24 17:54	06:50 15:05-15:20/15 15:58	07:32 08:16-08:36/20 15:35
14	04:43 05:17-05:31/14 20:48	05:25 20:04	06:12 18:58	06:59 07:37-08:00/23 17:52	06:52 15:06-15:20/14 15:57	07:33 08:17-08:36/19 15:35
15	04:44 05:16-05:32/16 20:47	05:27 20:02	06:14 18:56	07:01 07:37-07:59/22 17:50	06:53 15:07-15:19/12 15:55	07:34 08:18-08:37/19 15:36
16	04:45 05:16-05:32/16 20:46	05:28 06:04-06:11/7 20:00	06:15 18:54	07:03 07:38-07:58/20 17:48	06:55 15:08-15:19/11 15:54	07:35 08:19-08:37/18 15:36
17	04:46 05:16-05:32/16 20:45	05:30 06:02-06:11/9 19:58	06:17 18:52	07:04 07:40-07:57/17 17:46	06:56 15:09-15:17/8 15:53	07:35 08:19-08:38/19 15:36
18	04:47 05:16-05:32/16 20:44	05:31 06:01-06:13/12 19:56	06:19 18:49	07:06 07:41-07:54/13 17:44	06:58 08:15-08:20/5 15:51	07:36 08:19-08:38/19 15:36
19	04:48 05:17-05:32/15 20:43	05:33 06:00-06:12/12 19:54	06:20 18:47	07:08 07:44-07:51/7 17:42	07:00 08:13-08:23/10 15:50	07:37 08:20-08:38/18 15:36
20	04:50 05:18-05:32/14 20:42	05:34 06:00-06:12/12 19:52	06:22 18:45	07:09 17:40	07:01 08:12-08:25/13 15:49	07:38 08:21-08:39/18 15:37
21	04:51 05:20-05:33/13 20:41	05:36 06:02-06:12/10 19:50	06:23 18:43	07:11 17:38	07:03 08:11-08:27/16 15:48	07:38 08:21-08:39/18 15:37
22	04:52 05:21-05:32/11 20:40	05:37 06:03-06:11/8 19:48	06:25 18:40	07:13 17:36	07:05 08:10-08:27/17 15:47	07:39 08:22-08:40/18 15:38
23	04:53 05:22-05:32/10 20:39	05:39 06:05-06:10/5 19:46	06:26 18:38	07:14 17:34	07:06 08:10-08:29/19 15:46	07:39 08:22-08:40/18 15:38
24	04:55 05:23-05:31/8 20:37	05:40 06:06-06:08/2 19:44	06:28 18:36	07:16 16:47-16:54/7 17:32	07:08 08:10-08:30/20 15:45	07:40 08:22-08:40/18 15:39
25	04:56 05:24-05:30/6 20:36	05:42 19:42	06:29 18:34	06:18 15:46-15:55/9 16:30	07:09 08:09-08:30/21 15:44	07:40 08:23-08:42/19 15:39
26	04:57 05:26-05:30/4 20:35	05:43 19:40	06:31 18:31	06:19 15:44-15:55/11 16:28	07:11 08:09-08:31/22 15:43	07:40 08:23-08:42/19 15:40
27	04:59 05:27-05:28/1 20:33	05:45 19:38	06:32 18:29	06:21 15:44-15:56/12 16:26	07:12 08:10-08:32/22 15:42	07:41 08:23-08:42/19 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	06:23 15:44-15:56/12 16:24	07:14 08:09-08:32/23 15:41	07:41 08:24-08:43/19 15:42
29	05:02 20:30	05:48 19:33	06:36 18:25	06:24 15:45-15:54/9 16:23	07:15 08:10-08:33/23 15:41	07:41 08:24-08:43/19 15:42
30	05:03 20:29	05:50 19:31	06:37 18:23	06:26 15:45-15:52/7 16:21	07:17 08:10-08:33/23 15:40	07:41 08:24-08:44/20 15:43
31	05:04 20:28	05:51 19:29		06:28 15:46-15:50/4 16:19		07:41 08:25-08:45/20 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	241	77	0	383	482	945

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: 21 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (21)**Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 08:22-08:34/12 14:54-15:06/12 15:46 09:35-10:15/40	07:17 06:26 16:31 17:20	06:18 19:11		05:17 06:07-06:16/9 19:59	04:34 20:42
2	07:41 08:22-08:34/12 14:55-15:07/12 15:47 09:36-10:16/40	07:15 06:24 16:33 17:22	06:16 19:13		05:15 20:01	04:33 20:43
3	07:41 08:23-08:35/12 14:55-15:08/13 15:48 09:36-10:17/41	07:14 06:22 16:35 17:23	06:14 19:14		05:13 20:02	04:32 20:44
4	07:41 08:23-08:35/12 14:55-15:08/13 15:49 09:36-10:16/40	07:12 06:20 16:36 17:25	06:12 19:16		05:11 20:04	04:32 20:45
5	07:41 08:24-08:35/11 14:55-15:09/14 15:50 09:37-10:17/40	07:11 06:18 16:38 17:27	06:10 19:17		05:09 20:05	04:31 20:46
6	07:41 08:25-08:36/11 14:55-15:09/14 15:51 09:38-10:18/40	07:09 06:16 16:40 17:28	06:08 19:19		05:08 20:07	04:31 20:47
7	07:40 08:26-08:35/9 14:56-15:10/14 15:52 09:38-10:17/39	07:08 06:13 16:42 17:30	06:05 19:21		05:06 20:08	04:30 20:48
8	07:40 08:27-08:35/8 14:55-15:10/15 15:53 09:39-10:18/39	07:06 06:11 16:43 17:32	06:03 19:22		05:04 20:10	04:30 20:49
9	07:39 08:28-08:35/7 14:56-15:11/15 15:55 09:39-10:18/39	07:04 06:09 16:45 17:33	06:01 19:24		05:03 20:11	04:29 20:50
10	07:39 08:29-08:33/4 14:56-15:12/16 15:56 09:40-10:18/38	07:02 06:07 16:47 17:35	05:59 19:25		05:01 20:13	04:29 20:50
11	07:38 09:41-10:18/37 15:57 14:57-15:13/16	07:01 06:05 16:49 17:37	05:57 19:27		04:59 20:14	04:28 20:51
12	07:38 09:42-10:18/36 15:59 14:58-15:13/15	06:59 06:03 16:50 17:38	05:55 19:29		04:58 20:16	04:28 20:52
13	07:37 09:42-10:18/36 16:00 14:58-15:13/15	06:57 06:00 16:52 17:40	05:52 19:30		04:56 20:17	04:28 20:52
14	07:37 09:43-10:18/35 16:02 14:58-15:13/15	06:55 05:58 16:54 17:42	05:50 19:32		04:55 20:19	04:28 20:53
15	07:36 09:43-10:17/34 16:03 14:59-15:13/14	06:54 05:56 16:56 17:43	05:48 19:33		04:53 20:20	04:27 20:53
16	07:35 09:44-10:17/33 16:05 15:00-15:12/12	06:52 05:54 16:57 17:45	05:46 19:35		04:52 20:22	04:27 20:54
17	07:34 09:45-10:17/32 16:06 15:01-15:12/11	06:50 05:52 16:59 17:47	05:44 19:37		04:51 20:23	04:27 20:54
18	07:33 09:46-10:16/30 16:08 15:02-15:12/10	06:48 05:49 17:01 17:48	05:42 19:38	06:10-06:18/8	04:49 20:25	04:27 20:55
19	07:32 09:48-10:16/28 16:09 15:04-15:11/7	06:46 05:47 17:03 17:50	05:40 19:40	06:08-06:20/12	04:48 20:26	04:27 20:55
20	07:31 09:49-10:15/26 16:11 15:07-15:08/1	06:44 05:45 17:04 17:52	05:38 19:41	06:06-06:21/15	04:47 20:27	04:27 20:55
21	07:30 09:51-10:14/23 16:12	06:42 05:43 17:06 17:53	05:36 19:43	06:06-06:23/17	04:45 20:29	04:28 20:56
22	07:29 09:53-10:13/20 16:14	06:40 05:41 17:08 17:55	05:34 19:45	06:05-06:23/18	04:44 20:30	04:28 20:56
23	07:28 09:55-10:11/16 16:16	06:38 05:38 17:10 17:56	05:32 19:46	06:04-06:23/19	04:43 20:31	04:28 20:56
24	07:27 09:58-10:07/9 16:17	06:36 05:36 17:11 17:58	05:30 19:48	06:04-06:23/19	04:42 20:33	04:28 20:56
25	07:26 16:19	06:34 05:34 17:13 18:00	05:28 19:49	06:03-06:23/20	04:41 20:34	04:29 20:56
26	07:25 16:21	06:32 05:32 17:15 18:01	05:26 19:51	06:03-06:22/19	04:40 20:35	04:29 20:56
27	07:24 16:22	06:30 05:30 17:17 18:03	05:24 19:53	06:03-06:21/18	04:38 20:36	04:29 20:56
28	07:22 16:24	06:28 05:27 17:18 18:05	05:22 19:54	06:03-06:20/17	04:37 20:38	04:30 20:56
29	07:21 16:26	06:25 05:25 19:06 19:56	05:20 19:57	06:05-06:20/15	04:37 20:39	04:30 20:56
30	07:20 16:28	06:23 05:18 19:08 19:57	05:18 19:57	06:06-06:18/12	04:36 20:40	04:31 20:56
31	07:18 16:29	06:21 05:19 19:09			04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	1143	0	0	209	9	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: 21 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (21)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:56	05:06 20:26	05:53 19:27	06:39 18:20	06:30 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 19:25	06:40 18:18	06:31 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:56 19:23	06:42 18:16	06:33 16:14	07:21 15:38
4	04:34 20:55	05:10 20:21	05:57 19:20	06:43 18:14	06:35 16:12	07:22 15:38
5	04:34 20:54	05:12 20:20	05:59 19:18	06:45 18:12	06:36 16:10	07:23 15:37
6	04:35 20:54	05:13 20:18	06:00 19:16	06:47 18:09	06:38 16:09	07:24 15:37
7	04:36 20:53	05:15 20:16	06:02 19:14	06:48 18:07	06:40 16:07	07:26 15:36
8	04:37 20:53	05:16 20:14	06:03 19:12	06:50 18:05	06:41 16:05	07:27 15:36
9	04:38 20:52	05:18 20:13	06:05 19:09	06:51 18:03	06:43 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:53 18:01	06:45 16:02	07:29 15:36
11	04:40 20:51	05:21 20:09	06:08 19:05	06:55 17:59	06:46 16:01	07:30 15:36
12	04:41 20:50	05:22 20:07	06:09 19:03	06:56 17:56	06:48 15:59	07:31 15:36
13	04:42 20:49	05:24 20:05	06:11 19:01	06:58 17:54	06:50 15:58	07:32 15:35
14	04:43 20:48	05:25 20:04	06:12 18:58	06:59 17:52	06:52 15:57	07:33 15:36
15	04:44 20:47	05:27 20:02	06:14 18:56	07:01 17:50	06:53 15:55	07:34 15:36
16	04:45 20:46	05:28 20:00	06:16 18:54	07:03 17:48	06:55 15:54	07:35 15:36
17	04:46 20:45	05:30 19:58	06:17 18:52	07:04 17:46	06:56 15:53	07:35 15:36
18	04:47 20:44	05:31 19:56	06:19 18:49	07:06 17:44	06:58 15:51	07:36 15:36
19	04:48 20:43	05:33 19:54	06:20 18:47	07:08 17:42	07:00 15:50	07:37 15:37
20	04:50 20:42	05:34 19:52	06:22 18:45	07:09 17:40	07:01 15:49	07:38 15:37
21	04:51 20:41	05:36 19:50	06:23 18:43	07:11 17:38	07:03 15:48	07:38 15:37
22	04:52 20:40	05:37 19:48	06:25 18:40	07:13 17:36	07:05 15:47	07:39 15:38
23	04:54 20:39	05:39 19:46	06:26 18:38	07:14 17:34	07:06 15:46	07:39 15:38
24	04:55 20:37	05:40 19:44	06:28 18:36	07:16 17:32	07:08 15:45	07:40 15:39
25	04:56 20:36	05:42 19:42	06:29 18:34	07:18 17:30	07:09 15:44	07:40 15:39
26	04:57 20:35	05:43 19:40	06:31 18:31	07:19 17:28	07:11 15:43	07:40 15:40
27	04:59 20:33	05:45 19:38	06:32 18:29	07:21 17:26	07:12 15:42	07:41 15:41
28	05:00 20:32	05:46 19:35	06:34 18:27	07:23 17:24	07:14 15:41	07:41 15:42
29	05:02 20:30	05:48 19:33	06:36 18:25	07:24 17:23	07:15 15:41	07:41 15:42
30	05:03 20:29	05:50 19:31	06:37 18:23	07:26 17:21	07:17 15:40	07:41 15:43
31	05:04 20:28	05:51 19:29		06:28 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	0	221	0	0	457	2105

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: 22 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (22)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June	
1	07:41		07:17	06:26	16:47-16:54/7		06:18	18:41-18:45/4	05:16		04:34	
	15:45		16:31	17:20			19:11		19:59		20:42	
2	07:41		07:15	06:24	16:44-16:55/11		06:16	18:39-18:47/8	05:15		04:33	
	15:46		16:33	17:22			19:13		20:00		20:43	
3	07:41		07:14	06:22	16:43-16:56/13		06:14	18:37-18:48/11	05:13		04:32	
	15:48		16:34	17:23			19:14		20:02		20:44	
4	07:41		07:12	06:20	16:43-16:57/14		06:12	18:37-18:49/12	05:11		04:32	
	15:49		16:36	17:25			19:16		20:04		20:45	
5	07:41		07:11	06:18	16:42-16:57/15		06:10	18:35-18:48/13	05:09		04:31	
	15:50		16:38	17:27			19:17		20:05		20:46	
6	07:40		07:09	06:15	16:42-16:57/15		06:07	18:35-18:48/13	05:08		04:30	
	15:51		16:40	17:28			19:19		20:07		20:47	
7	07:40		07:07	06:13	16:43-16:57/14		06:05	18:36-18:47/11	05:06		04:30	
	15:52		16:42	17:30			19:21		20:08		20:48	
8	07:40		07:06	06:11	16:43-16:55/12		06:03	18:37-18:45/8	05:04		04:29	
	15:53		16:43	17:32			19:22		20:10		20:49	
9	07:39		07:04	06:09	16:44-16:53/9		06:01	18:40-18:42/2	05:03		04:29	04:57-04:58/1
	15:55		16:45	17:33			19:24		20:11		20:49	
10	07:39		07:02	06:07	17:05-17:10/5		05:59		05:01		04:29	04:57-04:59/2
	15:56		16:47	17:35			19:25		20:13		20:50	
11	07:38		07:01	06:05	17:03-17:12/9		05:57		04:59		04:28	04:57-05:00/3
	15:57		16:49	17:37			19:27		20:14		20:51	
12	07:38	15:26-15:27/1	06:59	06:03	17:03-17:14/11		05:54		04:58		04:28	04:56-05:00/4
	15:59		16:50	17:38			19:29		20:16		20:52	
13	07:37	15:25-15:28/3	06:57	06:00	17:02-17:14/12		05:52		04:56		04:28	04:56-05:01/5
	16:00		16:52	17:40			19:30		20:17		20:52	
14	07:36	15:24-15:30/6	06:55	05:58	17:02-17:13/11		05:50		04:55		04:28	04:56-05:01/5
	16:02		16:54	17:42			19:32		20:19		20:53	
15	07:36	15:24-15:31/7	06:54	05:56	17:03-17:12/9		05:48		04:53		04:27	04:56-05:02/6
	16:03		16:56	17:43			19:33		20:20		20:53	
16	07:35	15:23-15:33/10	06:52	05:54	17:04-17:11/7		05:46		04:52		04:27	04:56-05:02/6
	16:05		16:57	17:45			19:35		20:22		20:54	
17	07:34	15:23-15:34/11	06:50	05:52			05:44		04:50	05:16-05:17/1	04:27	04:56-05:03/7
	16:06		16:59	17:47			19:37		20:23		20:54	
18	07:33	15:23-15:36/13	06:48	05:49			05:42		04:49	05:15-05:18/3	04:27	04:56-05:03/7
	16:08		17:01	17:48			19:38		20:25		20:55	
19	07:32	15:24-15:36/12	06:46	05:47			05:40		04:48	05:13-05:18/5	04:27	04:56-05:03/7
	16:09		17:03	17:50			19:40		20:26		20:55	
20	07:31	15:24-15:36/12	06:44	05:45			05:38		04:46	05:12-05:18/6	04:27	04:56-05:03/7
	16:11		17:04	17:52			19:41		20:27		20:55	
21	07:30	15:25-15:37/12	06:42	05:43			05:36		04:45	05:11-05:18/7	04:27	04:57-05:04/7
	16:12		17:06	17:53			19:43		20:29		20:56	
22	07:29	15:26-15:37/11	06:40	05:41			05:34		04:44	05:10-05:19/9	04:28	04:57-05:04/7
	16:14		17:08	17:55			19:45		20:30		20:56	
23	07:28	15:27-15:37/10	06:38	05:38			05:32		04:43	05:09-05:19/10	04:28	04:57-05:04/7
	16:16		17:10	17:56			19:46		20:31		20:56	
24	07:27	15:27-15:36/9	06:36	05:36			05:30		04:42	05:08-05:18/10	04:28	04:57-05:04/7
	16:17		17:11	17:58			19:48		20:33		20:56	
25	07:26	15:29-15:35/6	06:34	05:34			05:28		04:40	05:07-05:18/11	04:28	04:58-05:05/7
	16:19		17:13	18:00			19:49		20:34		20:56	
26	07:25		06:32	05:32			05:26		04:39	05:08-05:18/10	04:29	04:58-05:04/6
	16:21		17:15	18:01			19:51		20:35		20:56	
27	07:23		06:30	05:29			05:24		04:38	05:09-05:17/8	04:29	04:59-05:05/6
	16:22		17:16	18:03			19:53		20:36		20:56	
28	07:22		06:28	05:27			05:22		04:37	05:09-05:16/7	04:30	04:59-05:05/6
	16:24		17:18	18:04			19:54		20:38		20:56	
29	07:21			06:25			05:20		04:36	05:11-05:15/4	04:30	05:00-05:05/5
	16:26			19:06			19:56		20:39		20:56	
30	07:19			06:23			05:18		04:36		04:31	05:00-05:04/4
	16:28			19:08			19:57		20:40		20:56	
31	07:18			06:21					04:35			
	16:29			19:09					20:41			
Potential sun hours	265		280	367			413		479		491	
Sum of minutes with flicker	123		0	174			82		91		122	

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: 22 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (22)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 05:01-05:05/4 20:56	05:06 20:26	05:53 19:27	06:39 17:41-17:53/12 18:20	06:29 16:17	07:18 15:39
2	04:32 05:01-05:04/3 20:55	05:07 20:24	05:54 19:25	06:40 17:42-17:52/10 18:18	06:31 16:15	07:19 15:39
3	04:33 05:02-05:04/2 20:55	05:09 20:23	05:56 18:38-18:40/2 19:23	06:42 17:42-17:49/7 18:16	06:33 16:14	07:21 15:38
4	04:33 20:55	05:10 20:21	05:57 18:34-18:42/8 19:20	06:43 17:23-17:30/7 18:14 17:44-17:47/3	06:35 16:12	07:22 15:38
5	04:34 20:54	05:12 20:19	05:59 18:33-18:44/11 19:18	06:45 17:20-17:31/11 18:11	06:36 16:10	07:23 15:37
6	04:35 20:54	05:13 20:18	06:00 18:32-18:44/12 19:16	06:47 17:19-17:32/13 18:09	06:38 16:09	07:24 15:37
7	04:36 20:53	05:15 20:16	06:02 18:31-18:44/13 19:14	06:48 17:18-17:33/15 18:07	06:40 16:07	07:26 15:36
8	04:37 20:53	05:16 20:14	06:03 18:31-18:43/12 19:12	06:50 17:17-17:32/15 18:05	06:41 16:05	07:27 15:36
9	04:38 20:52	05:18 20:13	06:05 18:30-18:42/12 19:09	06:51 17:17-17:32/15 18:03	06:43 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 18:32-18:41/9 19:07	06:53 17:18-17:32/14 18:01	06:45 16:02	07:29 15:36
11	04:40 20:51	05:21 20:09	06:08 18:33-18:38/5 19:05	06:55 17:18-17:30/12 17:58	06:46 16:01	07:30 15:36
12	04:41 20:50	05:22 20:07	06:09 19:03	06:56 17:19-17:29/10 17:56	06:48 15:59	07:31 08:41-08:44/3 15:35
13	04:42 20:49	05:24 20:05	06:11 19:00	06:58 17:22-17:26/4 17:54	06:50 15:58	07:32 08:40-08:46/6 15:35
14	04:43 05:22-05:23/1 20:48	05:25 20:03	06:12 18:58	06:59 17:52	06:51 15:57	07:33 08:40-08:47/7 15:35
15	04:44 05:19-05:25/6 20:47	05:27 20:02	06:14 18:56	07:01 17:50	06:53 15:55	07:34 08:40-08:48/8 15:36
16	04:45 05:18-05:26/8 20:46	05:28 20:00	06:15 18:54	07:03 17:48	06:55 15:54	07:35 08:41-08:49/8 15:36
17	04:46 05:18-05:27/9 20:45	05:30 19:58	06:17 18:52	07:04 17:46	06:56 15:02-15:08/6 15:53	07:35 08:41-08:50/9 15:36
18	04:47 05:17-05:27/10 20:44	05:31 19:56	06:18 18:49	07:06 17:44	06:58 15:01-15:10/9 15:51	07:36 08:41-08:50/9 15:36
19	04:48 05:17-05:28/11 20:43	05:33 19:54	06:20 18:47	07:08 17:42	07:00 15:01-15:11/10 15:50	07:37 08:41-08:51/10 15:36
20	04:50 05:18-05:28/10 20:42	05:34 19:52	06:22 18:45	07:09 17:40	07:01 15:01-15:12/11 15:49	07:37 08:42-08:52/10 15:37
21	04:51 05:19-05:28/9 20:41	05:36 19:50	06:23 18:43	07:11 17:38	07:03 15:00-15:12/12 15:48	07:38 08:42-08:52/10 15:37
22	04:52 05:21-05:29/8 20:40	05:37 19:48	06:25 18:40	07:13 17:36	07:04 15:00-15:13/13 15:47	07:39 08:43-08:53/10 15:38
23	04:53 05:22-05:29/7 20:39	05:39 19:46	06:26 18:38	07:14 17:34	07:06 15:01-15:13/12 15:46	07:39 08:43-08:53/10 15:38
24	04:55 05:23-05:28/5 20:37	05:40 19:44	06:28 18:36	07:16 17:32	07:08 15:01-15:14/13 15:45	07:40 08:43-08:53/10 15:39
25	04:56 05:24-05:28/4 20:36	05:42 19:42	06:29 18:34	06:18 16:30	07:09 15:01-15:12/11 15:44	07:40 08:44-08:54/10 15:39
26	04:57 05:26-05:28/2 20:35	05:43 19:40	06:31 18:31	06:19 16:28	07:11 15:02-15:12/10 15:43	07:40 08:45-08:54/9 15:40
27	04:59 20:33	05:45 19:37	06:32 17:47-17:51/4 18:29	06:21 16:26	07:12 15:03-15:10/7 15:42	07:41 08:45-08:54/9 15:41
28	05:00 20:32	05:46 19:35	06:34 17:44-17:53/9 18:27	06:23 16:24	07:14 15:04-15:10/6 15:41	07:41 08:46-08:54/8 15:42
29	05:02 20:30	05:48 19:33	06:36 17:43-17:54/11 18:25	06:24 16:22	07:15 15:05-15:08/3 15:41	07:41 08:47-08:54/7 15:42
30	05:03 20:29	05:49 19:31	06:37 17:41-17:53/12 18:22	06:26 16:21	07:16 15:07-15:08/1 15:40	07:41 08:48-08:54/6 15:43
31	05:04 20:27	05:51 19:29		06:28 16:19		07:41 08:49-08:54/5 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	99	0	120	148	124	164

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: 23 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (23)****Assumptions for shadow calculations**

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2,18	3,07	3,69	4,28	5,39	5,21	5,74	5,60	4,30	3,94	2,30	1,54

Operational time

N	NE	E	SE	S	SW	W	NW	Sum
525	525	600	750	825	1 125	2 025	1 125	7 500

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:41 15:45	07:17 15:23-15:46/23 16:31	06:26 17:20	06:18 19:11	05:16 19:59	04:34 20:42
2	07:41 15:46	07:15 15:23-15:45/22 16:33	06:24 17:22	06:16 19:12	05:15 20:00	04:33 20:43
3	07:41 15:47	07:14 15:23-15:45/22 16:34	06:22 17:23	06:14 18:42-18:49/7 19:14	05:13 20:02	04:32 20:44
4	07:41 15:49	07:12 15:24-15:45/21 16:36	06:20 17:25	06:12 18:40-18:50/10 19:16	05:11 20:04	04:32 20:45
5	07:41 15:50	07:11 15:24-15:45/21 16:38	06:18 17:27	06:10 18:38-18:50/12 19:17	05:09 20:05	04:31 20:46
6	07:40 15:51	07:09 15:25-15:44/19 16:40	06:15 17:28	06:07 18:38-18:50/12 19:19	05:08 20:07	04:30 20:47
7	07:40 15:52	07:07 15:26-15:44/18 16:42	06:13 17:30	06:05 18:37-18:50/13 19:21	05:06 20:08	04:30 20:48
8	07:40 15:53	07:06 15:28-15:43/15 16:43	06:11 17:32	06:03 18:38-18:50/12 19:22	05:04 20:10	04:29 20:49
9	07:39 15:55	07:04 15:29-15:41/12 16:45	06:09 17:33	06:01 18:38-18:49/11 19:24	05:03 20:11	04:29 20:49
10	07:39 15:56	07:02 15:32-15:38/6 16:47	06:07 17:35	05:59 18:40-18:47/7 19:25	05:01 20:13	04:29 20:50
11	07:38 15:57	07:01 16:49	06:05 17:37	05:57 19:27	04:59 20:14	04:28 20:51
12	07:38 15:59	06:59 16:50	06:03 17:38	05:54 19:29	04:58 20:16	04:28 20:52
13	07:37 16:00	06:57 16:52	06:00 17:40	05:52 19:30	04:56 05:21-05:24/3 20:17	04:28 20:52
14	07:36 16:02	06:55 16:54	05:58 17:42	05:50 19:32	04:55 05:20-05:26/6 20:19	04:27 20:53
15	07:36 16:03	06:53 16:22-16:24/2 16:56	05:56 17:43	05:48 19:33	04:53 05:18-05:26/8 20:20	04:27 20:53
16	07:35 16:05	06:52 16:18-16:27/9 16:57	05:54 17:45	05:46 19:35	04:52 05:17-05:27/10 20:22	04:27 20:54
17	07:34 16:06	06:50 16:16-16:29/13 16:59	05:52 17:47	05:44 19:37	04:50 05:16-05:27/11 20:23	04:27 20:54
18	07:33 16:08	06:48 16:15-16:30/15 17:01	05:49 17:48	05:42 19:38	04:49 05:15-05:28/13 20:24	04:27 20:55
19	07:32 16:09	06:46 16:15-16:31/16 17:03	05:47 17:50	05:40 19:40	04:48 05:13-05:27/14 20:26	04:27 20:55
20	07:31 16:11	06:44 16:14-16:31/17 17:04	05:45 17:08-17:18/10 17:51	05:38 19:41	04:46 05:13-05:27/14 20:27	04:27 20:55
21	07:30 16:12	06:42 16:14-16:31/17 17:06	05:43 17:06-17:20/14 17:53	05:36 19:43	04:45 05:14-05:27/13 20:29	04:27 20:56
22	07:29 16:14	06:40 16:14-16:31/17 17:08	05:40 17:04-17:20/16 17:55	05:34 19:45	04:44 05:14-05:27/13 20:30	04:28 20:56
23	07:28 15:29-15:35/6 16:16	06:38 16:15-16:30/15 17:10	05:38 17:03-17:21/18 17:56	05:32 19:46	04:43 05:15-05:27/12 20:31	04:28 20:56
24	07:27 15:27-15:38/11 16:17	06:36 16:15-16:29/14 17:11	05:36 17:02-17:21/19 17:58	05:30 19:48	04:42 05:15-05:26/11 20:33	04:28 20:56
25	07:26 15:26-15:40/14 16:19	06:34 16:17-16:28/11 17:13	05:34 17:02-17:21/19 18:00	05:28 19:49	04:40 05:16-05:26/10 20:34	04:28 20:56
26	07:25 15:25-15:41/16 16:21	06:32 16:19-16:26/7 17:15	05:32 17:01-17:20/19 18:01	05:26 19:51	04:39 05:17-05:25/8 20:35	04:29 20:56
27	07:23 15:24-15:42/18 16:22	06:30 17:16	05:29 17:01-17:20/19 18:03	05:24 19:53	04:38 05:19-05:23/4 20:36	04:29 20:56
28	07:22 15:24-15:43/19 16:24	06:28 17:18	05:27 17:02-17:19/17 18:04	05:22 19:54	04:37 20:37	04:30 20:56
29	07:21 15:23-15:44/21 16:26		06:25 18:03-18:18/15 19:06	05:20 19:56	04:36 20:39	04:30 20:56
30	07:19 15:23-15:45/22 16:27		06:23 18:05-18:16/11 19:08	05:18 19:57	04:36 20:40	04:31 20:56
31	07:18 15:23-15:45/22 16:29		06:21 18:07-18:11/4 19:09		04:35 20:41	
Potential sun hours	265	280	367	413	479	491
Sum of minutes with flicker	149	332	181	84	150	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: 23 - VESTAS V112/120/180 3000 80.0 !O! hub: 90,0 m (TOT: 130,0 m) (23)****Assumptions for shadow calculations**

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

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2,18 3,07 3,69 4,28 5,39 5,21 5,74 5,60 4,30 3,94 2,30 1,54

Operational time

N NE E SE S SW W NW Sum
525 525 600 750 825 1 125 2 025 1 125 7 500

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:31 20:55	05:06 20:26	05:52 19:27	06:39 18:20	06:29 15:01-15:08/7 16:17	07:18 15:39
2	04:32 20:55	05:07 20:24	05:54 18:38-18:45/7 19:25	06:40 18:18	06:31 14:58-15:11/13 16:15	07:19 15:39
3	04:33 20:55	05:09 20:23	05:56 18:36-18:47/11 19:23	06:42 18:16	06:33 14:57-15:13/16 16:14	07:21 15:38
4	04:33 20:55	05:10 20:21	05:57 18:35-18:47/12 19:20	06:43 18:14	06:35 14:56-15:14/18 16:12	07:22 15:38
5	04:34 20:54	05:12 20:19	05:59 18:35-18:47/12 19:18	06:45 18:11	06:36 14:55-15:15/20 16:10	07:23 15:37
6	04:35 20:54	05:13 20:18	06:00 18:34-18:46/12 19:16	06:46 18:09	06:38 14:54-15:15/21 16:09	07:24 15:37
7	04:36 20:53	05:15 20:16	06:02 18:33-18:45/12 19:14	06:48 18:07	06:40 14:54-15:15/21 16:07	07:26 15:36
8	04:37 20:52	05:16 20:14	06:03 18:34-18:45/11 19:12	06:50 18:05	06:41 14:54-15:16/22 16:05	07:27 15:36
9	04:38 20:52	05:17 20:13	06:05 18:35-18:42/7 19:09	06:51 18:03	06:43 14:54-15:16/22 16:04	07:28 15:36
10	04:39 20:51	05:19 20:11	06:06 19:07	06:53 18:01	06:45 14:54-15:16/22 16:02	07:29 15:36
11	04:40 20:50	05:20 20:09	06:08 19:05	06:54 17:58	06:46 14:55-15:16/21 16:01	07:30 15:36
12	04:41 20:50	05:22 20:07	06:09 18:00-18:03/3 19:03	06:56 17:56	06:48 14:54-15:16/22 15:59	07:31 15:35
13	04:42 20:49	05:23 20:05	06:11 17:55-18:06/11 19:00	06:58 17:54	06:50 14:55-15:15/20 15:58	07:32 15:35
14	04:43 20:48	05:25 20:03	06:12 17:54-18:08/14 18:58	06:59 17:52	06:51 14:56-15:15/19 15:57	07:33 15:35
15	04:44 20:47	05:27 20:02	06:14 17:52-18:08/16 18:56	07:01 17:50	06:53 14:57-15:15/18 15:55	07:34 15:36
16	04:45 05:29-05:32/3 20:46	05:28 20:00	06:15 17:51-18:09/18 18:54	07:03 16:50-16:59/9 17:48	06:55 14:58-15:14/16 15:54	07:35 15:36
17	04:46 05:27-05:34/7 20:45	05:30 19:58	06:17 17:50-18:08/18 18:52	07:04 16:47-17:00/13 17:46	06:56 14:59-15:13/14 15:53	07:35 15:36
18	04:47 05:26-05:35/9 20:44	05:31 19:56	06:18 17:50-18:09/19 18:49	07:06 16:46-17:01/15 17:44	06:58 15:01-15:12/11 15:51	07:36 15:36
19	04:48 05:25-05:36/11 20:43	05:33 19:54	06:20 17:49-18:08/19 18:47	07:08 16:46-17:02/16 17:42	07:00 15:04-15:10/6 15:50	07:37 15:36
20	04:50 05:25-05:36/11 20:42	05:34 19:52	06:22 17:49-18:07/18 18:45	07:09 16:45-17:02/17 17:40	07:01 15:49	07:37 15:37
21	04:51 05:24-05:37/13 20:41	05:36 19:50	06:23 17:49-18:06/17 18:43	07:11 16:44-17:01/17 17:38	07:03 15:48	07:38 15:37
22	04:52 05:25-05:38/13 20:40	05:37 19:48	06:25 17:50-18:05/15 18:40	07:13 16:45-17:01/16 17:36	07:04 15:47	07:39 15:38
23	04:53 05:24-05:38/14 20:38	05:39 19:46	06:26 17:51-18:02/11 18:38	07:14 16:45-17:01/16 17:34	07:06 15:46	07:39 15:38
24	04:55 05:24-05:38/14 20:37	05:40 19:44	06:28 17:54-18:00/6 18:36	07:16 16:46-17:00/14 17:32	07:08 15:45	07:40 15:39
25	04:56 05:24-05:38/14 20:36	05:42 19:42	06:29 18:34	06:18 15:46-15:58/12 16:30	07:09 15:44	07:40 15:39
26	04:57 05:26-05:38/12 20:35	05:43 19:40	06:31 18:31	06:19 15:48-15:56/8 16:28	07:11 15:43	07:40 15:40
27	04:59 05:27-05:38/11 20:33	05:45 19:37	06:32 18:29	06:21 16:26	07:12 15:42	07:41 15:41
28	05:00 05:28-05:37/9 20:32	05:46 19:35	06:34 18:27	06:23 16:24	07:14 15:41	07:41 15:42
29	05:02 05:30-05:37/7 20:30	05:48 19:33	06:35 18:25	06:24 16:22	07:15 15:41	07:41 15:42
30	05:03 05:31-05:36/5 20:29	05:49 19:31	06:37 18:22	06:26 16:21	07:16 15:40	07:41 15:43
31	05:04 05:32-05:34/2 20:27	05:51 19:29		06:28 16:19		07:41 15:44
Potential sun hours	495	450	380	334	271	251
Sum of minutes with flicker	155	0	269	153	329	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