

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E1 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m) (109)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 15:31-15:52/21 16:45	07:10 16:16-16:47/31 17:47	06:48 19:53	05:32 20:55	04:35 21:52
2	08:50 15:49	08:12 15:32-15:51/19 16:47	07:08 16:16-16:46/30 17:49	06:46 19:55	05:30 20:57	04:34 21:54
3	08:50 15:50	08:11 15:33-15:51/18 16:49	07:05 16:16-16:45/29 17:51	06:43 19:57	05:27 20:59	04:33 21:55
4	08:50 15:51	08:09 15:34-15:51/17 16:51	07:03 16:18-16:45/27 17:54	06:40 19:59	05:25 21:01	04:32 21:56
5	08:49 15:53	08:06 15:35-15:49/14 16:54	07:00 16:19-16:43/24 17:56	06:38 20:01	05:23 21:03	04:31 21:58
6	08:49 15:54	08:04 15:37-15:47/10 16:56	06:58 16:20-16:41/21 17:58	06:35 20:03	05:21 21:05	04:30 21:59
7	08:48 15:56	08:02 16:58	06:55 16:22-16:39/17 18:00	06:32 20:05	05:19 21:07	04:29 22:00
8	08:47 15:57	08:00 17:00	06:52 16:25-16:35/10 18:02	06:30 20:07	05:16 21:09	04:29 22:01
9	08:47 15:59	07:58 17:03	06:50 17:05-17:35/30 18:04	06:27 20:09	05:14 21:11	04:28 22:02
10	08:46 16:01	07:56 17:05	06:47 17:05-17:37/32 18:07	06:25 20:11	05:12 21:13	04:27 22:03
11	08:45 16:02	07:54 17:07	06:44 17:05-17:37/32 18:09	06:22 20:13	05:10 21:15	04:27 22:04
12	08:44 16:04	07:51 17:09	06:42 17:04-17:37/33 18:11	06:19 20:16	05:08 21:17	04:26 22:05
13	08:43 16:06	07:49 17:12	06:39 17:04-17:37/33 18:13	06:17 20:18	05:06 21:19	04:26 22:06
14	08:42 16:08	07:47 17:14	06:37 17:04-17:38/34 18:15	06:14 20:20	05:04 21:21	04:25 22:06
15	08:41 16:09	07:45 16:31-16:35/4 17:16	06:34 17:05-17:37/32 18:17	06:12 20:22	05:02 21:23	04:25 22:07
16	08:40 16:11	07:42 16:26-16:39/13 17:18	06:31 17:05-17:37/32 18:19	06:09 20:24	05:00 21:25	04:25 22:08
17	08:38 16:13	07:40 16:24-16:42/18 17:21	06:29 17:07-17:37/30 18:21	06:06 20:26	04:58 21:27	04:25 22:08
18	08:37 15:35-15:37/2 16:15	07:38 16:21-16:44/23 17:23	06:26 17:08-17:36/28 18:23	06:04 20:28	04:56 21:29	04:25 22:09
19	08:36 15:33-15:38/5 16:17	07:35 16:20-16:45/25 17:25	06:23 17:10-17:34/24 18:26	06:01 20:30	04:55 21:31	04:25 22:09
20	08:35 15:31-15:40/9 16:19	07:33 16:19-16:46/27 17:27	06:21 17:14-17:33/19 18:28	05:59 20:32	04:53 21:33	04:25 22:09
21	08:33 15:31-15:43/12 16:21	07:30 16:17-16:46/29 17:30	06:18 17:15-17:31/16 18:30	05:56 20:34	04:51 21:34	04:25 22:10
22	08:32 15:30-15:46/16 16:23	07:28 16:17-16:47/30 17:32	06:15 17:17-17:28/11 18:32	05:54 20:36	04:49 21:36	04:25 22:10
23	08:30 15:30-15:48/18 16:25	07:25 16:16-16:47/31 17:34	06:12 18:34	05:51 20:38	04:48 21:38	04:25 22:10
24	08:29 15:29-15:49/20 16:27	07:23 16:16-16:48/32 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10
25	08:27 15:29-15:50/21 16:30	07:20 16:16-16:48/32 17:38	06:07 18:38	05:46 20:43	04:45 21:41	04:26 22:10
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27	08:24 15:29-15:51/22 16:34	07:15 16:16-16:48/32 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10
28	08:22 15:29-15:51/22 16:36	07:13 16:15-16:47/32 17:45	05:59 18:44	05:39 20:49	04:40 21:46	04:27 22:10
29	08:20 15:29-15:51/22 16:38		06:56 19:46	05:37 20:51	04:39 21:48	04:28 22:09
30	08:18 15:29-15:52/23 16:40		06:54 19:48	05:34 20:53	04:38 21:49	04:29 22:09
31	08:16 15:30-15:52/22 16:43		06:51 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	235	460	667	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

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1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:29 22:09	05:15 21:28	06:17 20:14	07:17 18:53	17:43-18:16/33 16:36	07:22 15:45
2	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	17:43-18:15/32 16:33	07:24 15:44
3	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	17:42-18:14/32 16:31	07:27 15:43
4	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	17:43-18:14/31 16:29	07:29 15:42
5	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	17:07-17:08/1 17:43-18:12/29	07:31 16:27
6	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	17:00-17:14/14 17:44-18:09/25	07:33 16:25
7	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	16:57-17:16/19 17:44-18:04/20	07:35 16:23
8	04:36 22:04	05:29 21:13	06:31 19:55	07:31 18:35	16:55-17:17/22 17:45-18:03/18	07:37 16:21
9	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	16:53-17:18/25 17:47-18:00/13	07:40 16:19
10	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:29	16:51-17:19/28 17:51-17:56/5	07:42 16:17
11	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	16:50-17:19/29 16:15	07:44 15:38
12	04:42 22:00	05:37 21:04	06:39 19:44	07:39 18:24	16:50-17:20/30 16:13	07:46 15:38
13	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	16:49-17:20/31 16:11	07:48 15:38
14	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	16:48-17:20/32 16:09	07:50 15:37
15	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	16:47-17:20/33 16:07	07:53 15:37
16	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	16:47-17:20/33 16:05	07:55 15:37
17	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:11	16:48-17:20/32 16:04	07:57 15:37
18	04:50 21:52	05:49 20:49	06:51 19:28	07:52 18:09	16:48-17:19/31 16:02	07:59 15:38
19	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:06	16:47-17:18/31 16:00	08:01 15:38
20	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	16:48-17:17/29 15:59	08:03 15:38
21	04:55 21:48	05:55 20:42	06:57 19:20	07:58 18:01	16:49-17:17/28 15:57	08:05 15:38
22	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	16:49-17:16/27 15:56	08:07 15:39
23	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	16:50-17:14/24 15:54	08:09 15:39
24	05:00 21:43	06:01 20:34	07:03 19:12	08:05 17:54	16:52-17:13/21 15:53	08:11 15:40
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27	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	15:47-16:08/12 15:49	08:17 15:42
28	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	15:46-16:08/12 15:48	08:19 15:43
29	05:10 21:33	06:11 20:21	07:13 18:59	07:16 16:42	15:45-16:08/12 15:47	08:20 15:44
30	05:11 21:32	06:13 20:19	07:15 18:56	07:18 16:40	15:44-16:08/12 15:46	08:22 15:45
31	05:13 21:30	06:15 20:16		07:20 16:38		08:51 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	0	0	250	787	339	0

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

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

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 16:45	07:11 07:53-08:35/42 17:47	06:49 19:53	05:32 20:55	04:36 05:48-06:22/34 21:52
2	08:50 15:49	08:13 16:47	07:08 07:50-08:35/45 17:49	06:46 19:55	05:30 20:57	04:35 05:48-06:21/33 21:54
3	08:50 15:50	08:11 16:49	07:05 07:49-08:36/47 17:52	06:43 19:57	05:28 20:59	04:33 05:48-06:21/33 21:55
4	08:49 15:52	08:09 16:52	07:03 07:47-08:36/49 17:54	06:41 19:59	05:25 21:01	04:32 05:48-06:21/33 21:56
5	08:49 15:53	08:07 16:54	07:00 07:45-08:36/51 17:56	06:38 20:01	05:23 21:03	04:32 05:50-06:22/32 21:58
6	08:49 15:55	08:04 08:34-08:40/6 16:56	06:58 07:45-08:37/52 17:58	06:35 20:03	05:21 06:00-06:09/9 21:05	04:31 05:50-06:21/31 21:59
7	08:48 15:56	08:02 08:32-08:44/12 16:58	06:55 07:43-08:36/53 18:00	06:33 20:05	05:19 05:57-06:12/15 21:07	04:30 05:50-06:21/31 22:00
8	08:47 15:58	08:00 08:30-08:46/16 17:01	06:52 07:42-08:36/54 18:02	06:30 20:07	05:17 05:54-06:14/20 21:09	04:29 05:51-06:21/30 22:01
9	08:47 15:59	07:58 08:28-08:47/19 17:03	06:50 07:42-08:36/54 18:05	06:27 20:09	05:15 05:53-06:15/22 21:11	04:28 05:51-06:21/30 22:02
10	08:46 16:01	07:56 08:27-08:48/21 17:05	06:47 07:41-08:36/55 18:07	06:25 20:11	05:12 05:51-06:16/25 21:13	04:28 05:52-06:21/29 22:03
11	08:45 16:03	07:54 08:26-08:48/22 17:07	06:45 07:40-08:35/55 18:09	06:22 20:14	05:10 05:50-06:17/27 21:15	04:27 05:51-06:21/30 22:04
12	08:44 16:04	07:52 08:26-08:49/23 17:10	06:42 07:40-08:34/54 18:11	06:19 20:16	05:08 05:49-06:18/29 21:17	04:27 05:52-06:21/29 22:05
13	08:43 16:06	07:49 08:26-08:50/24 17:12	06:39 07:40-08:33/53 18:13	06:17 20:18	05:06 05:48-06:18/30 21:19	04:26 05:53-06:21/28 22:06
14	08:42 16:08	07:47 08:25-08:49/24 17:14	06:37 07:40-08:32/52 18:15	06:14 20:20	05:04 05:48-06:20/32 21:21	04:26 05:52-06:20/28 22:06
15	08:41 16:10	07:45 08:26-08:50/24 17:16	06:34 07:39-08:31/52 18:17	06:12 20:22	05:02 05:48-06:20/32 21:23	04:26 05:53-06:21/28 22:07
16	08:40 16:12	07:42 08:26-08:49/23 17:19	06:31 07:40-08:30/50 18:19	06:09 20:24	05:00 05:47-06:20/33 21:25	04:25 05:53-06:21/28 22:08
17	08:38 16:14	07:40 08:26-08:49/23 17:21	06:29 07:40-08:28/48 18:22	06:07 20:26	04:59 05:47-06:21/34 21:27	04:25 05:54-06:21/27 22:08
18	08:37 16:15	07:38 08:26-08:48/22 17:23	06:26 07:40-08:26/46 18:24	06:04 20:28	04:57 05:46-06:21/35 21:29	04:25 05:54-06:21/27 22:09
19	08:36 16:17	07:35 08:28-08:48/20 17:25	06:23 07:42-08:24/42 18:26	06:02 20:30	04:55 05:46-06:21/35 21:31	04:25 05:54-06:21/27 22:09
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21	08:33 16:21	07:30 08:30-08:45/15 17:30	06:18 07:43-08:16/33 18:30	05:56 20:34	04:51 05:46-06:21/35 21:34	04:25 05:56-06:22/26 22:10
22	08:32 16:24	07:28 08:32-08:42/10 17:32	06:15 07:43-08:11/28 18:32	05:54 20:36	04:50 05:46-06:22/36 21:36	04:25 05:56-06:22/26 22:10
23	08:30 16:26	07:26 08:10-08:23/13 17:34	06:13 07:46-08:09/23 18:34	05:52 20:39	04:48 05:45-06:21/36 21:38	04:26 05:55-06:22/27 22:10
24	08:29 16:28	07:23 08:07-08:27/20 17:36	06:10 07:48-08:06/18 18:36	05:49 20:41	04:47 05:46-06:22/36 21:40	04:26 05:55-06:22/27 22:10
25	08:27 16:30	07:21 08:04-08:29/25 17:39	06:07 07:52-08:00/8 18:38	05:47 20:43	04:45 05:46-06:22/36 21:41	04:26 05:56-06:23/27 22:10
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31	08:16 16:43		06:51 19:51		04:37 05:48-06:22/34 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	476	1103	0	803	867

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2	04:31 05:56-06:25/29 22:08	05:17 06:01-06:27/26 21:26	06:19 20:11	07:19 08:19-09:13/54 18:51	07:24 07:58-08:16/18 16:34	08:26 15:44
3	04:32 05:56-06:26/30 22:08	05:19 06:02-06:26/24 21:23	06:21 20:08	07:21 08:19-09:13/54 18:48	07:27 08:00-08:15/15 16:31	08:27 15:43
4	04:32 05:56-06:27/31 22:07	05:21 06:04-06:25/21 21:21	06:23 20:06	07:23 08:19-09:13/54 18:45	07:29 08:02-08:13/11 16:29	08:29 15:42
5	04:33 05:56-06:27/31 22:06	05:23 06:04-06:22/18 21:19	06:25 20:03	07:25 08:19-09:13/54 18:43	07:31 08:04-08:09/5 16:27	08:30 15:41
6	04:35 05:56-06:28/32 22:06	05:25 06:07-06:20/13 21:17	06:27 20:01	07:27 08:19-09:13/54 18:40	07:33 16:25	08:32 15:41
7	04:36 05:56-06:28/32 22:05	05:27 06:11-06:16/5 21:15	06:29 19:58	07:29 08:20-09:12/52 18:37	07:35 16:23	08:34 15:40
8	04:37 05:56-06:28/32 22:04	05:29 21:13	06:31 19:55	07:31 08:20-09:11/51 18:35	07:38 16:21	08:35 15:40
9	04:38 05:56-06:29/33 22:03	05:31 21:10	06:33 19:53	07:33 08:21-09:11/50 18:32	07:40 16:19	08:36 15:39
10	04:39 05:56-06:29/33 22:02	05:33 21:08	06:35 19:50	07:35 08:22-09:11/49 18:30	07:42 16:17	08:38 15:39
11	04:40 05:55-06:29/34 22:01	05:35 21:06	06:37 19:47	07:38 08:24-09:10/46 18:27	07:44 16:15	08:39 15:38
12	04:42 05:56-06:30/34 22:00	05:37 21:04	06:39 19:45	07:40 08:25-09:08/43 18:24	07:46 16:13	08:40 15:38
13	04:43 05:56-06:30/34 21:59	05:39 21:01	06:41 19:42	07:42 08:27-09:07/40 18:22	07:48 16:11	08:41 15:38
14	04:45 05:55-06:30/35 21:58	05:41 20:59	06:43 19:39	07:44 08:31-09:06/35 18:19	07:50 16:09	08:42 15:38
15	04:46 05:55-06:30/35 21:56	05:43 20:57	06:45 19:36	07:46 08:33-09:04/31 18:17	07:53 16:07	08:43 15:38
16	04:48 05:56-06:31/35 21:55	05:45 20:54	06:47 19:34	07:48 08:36-09:03/27 18:14	07:55 16:06	08:44 15:38
17	04:49 05:55-06:31/36 21:54	05:47 20:52	06:49 19:31	07:50 08:37-09:00/23 18:12	07:57 16:04	08:45 15:38
18	04:51 05:56-06:32/36 21:52	05:49 20:49	06:51 08:42-08:46/4 19:28	07:52 08:40-08:57/17 18:09	07:59 16:02	08:46 15:38
19	04:52 05:56-06:31/35 21:51	05:51 20:47	06:53 08:35-08:51/16 19:26	07:54 09:06-09:09/3 18:07	08:01 16:01	08:47 15:38
20	04:54 05:56-06:32/36 21:49	05:53 20:44	06:55 08:32-08:54/22 19:23	07:56 09:02-09:14/12 18:04	08:03 15:59	08:48 15:38
21	04:56 05:56-06:32/36 21:48	05:55 20:42	06:57 08:30-08:56/26 19:20	07:59 09:00-09:16/16 18:02	08:05 15:57	08:48 15:39
22	04:57 05:56-06:32/36 21:46	05:57 20:39	06:59 08:28-08:59/31 19:18	08:01 08:58-09:17/19 17:59	08:07 15:56	08:49 15:39
23	04:59 05:56-06:31/35 21:44	05:59 20:37	07:01 08:26-09:03/37 19:15	08:03 08:58-09:18/20 17:57	08:09 15:55	08:49 15:40
24	05:01 05:57-06:32/35 21:43	06:01 20:34	07:03 08:25-09:06/41 19:12	08:05 08:57-09:19/22 17:54	08:11 15:53	08:50 15:40
25	05:03 05:56-06:31/35 21:41	06:03 20:32	07:05 08:23-09:08/45 19:09	07:07 07:56-08:19/23 16:52	08:13 15:52	08:50 15:41
26	05:04 05:57-06:31/34 21:39	06:05 20:29	07:07 08:22-09:09/47 19:07	07:09 07:56-08:20/24 16:50	08:15 15:50	08:50 15:42
27	05:06 05:58-06:31/33 21:37	06:07 20:27	07:09 08:21-09:10/49 19:04	07:11 07:55-08:19/24 16:47	08:17 15:49	08:51 15:43
28	05:08 05:57-06:30/33 21:35	06:09 20:24	07:11 08:20-09:11/51 19:01	07:14 07:55-08:19/24 16:45	08:19 15:48	08:51 15:43
29	05:10 05:58-06:30/32 21:33	06:11 20:22	07:13 08:20-09:12/52 18:59	07:16 07:56-08:19/23 16:43	08:20 15:47	08:51 15:44
30	05:12 05:59-06:30/31 21:32	06:13 20:19	07:15 08:20-09:13/53 18:56	07:18 07:56-08:18/22 16:40	08:22 15:46	08:51 15:45
31	05:14 06:00-06:29/29 21:30	06:15 20:16		07:20 07:56-08:17/21 16:38		08:51 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1031	135	474	1048	69	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E11 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 09:10-09:54/44 16:45	07:11 17:47	06:49 07:31-08:08/37 19:53	05:32 20:55	04:36 21:52
2	08:50 15:49	08:13 09:10-09:54/44 16:47	07:08 17:50	06:46 07:30-08:08/38 19:55	05:30 20:57	04:35 21:54
3	08:50 15:51	08:11 09:11-09:54/43 16:50	07:05 17:52	06:43 07:29-08:07/38 19:57	05:28 20:59	04:34 21:55
4	08:49 15:52	08:09 09:11-09:54/43 16:52	07:03 17:54	06:41 07:29-08:08/39 19:59	05:25 21:01	04:33 21:56
5	08:49 15:53	08:07 09:11-09:53/42 16:54	07:00 17:56	06:38 07:28-08:07/39 20:01	05:23 21:03	04:32 21:58
6	08:48 15:55	08:04 09:11-09:52/41 16:56	06:58 17:58	06:35 07:29-08:07/38 20:03	05:21 21:05	04:31 21:59
7	08:48 15:56	08:02 09:12-09:52/40 16:58	06:55 18:00	06:33 07:28-08:07/39 20:05	05:19 21:07	04:30 22:00
8	08:47 15:58	08:00 09:13-09:51/38 17:01	06:52 18:02	06:30 07:28-08:05/37 20:07	05:17 21:09	04:29 22:01
9	08:47 15:59	07:58 09:13-09:49/36 17:03	06:50 18:05	06:27 07:28-08:05/37 20:09	05:15 21:11	04:28 22:02
10	08:46 16:01	07:56 09:14-09:48/34 17:05	06:47 18:07	06:25 07:28-08:04/36 20:11	05:12 21:13	04:28 22:03
11	08:45 16:03	07:54 09:15-09:44/29 17:07	06:45 18:09	06:22 07:29-08:03/34 20:14	05:10 21:15	04:27 22:04
12	08:44 16:04	07:51 09:16-09:39/23 17:10	06:42 18:11	06:20 07:29-08:02/33 20:16	05:08 21:17	04:27 22:05
13	08:43 09:29-09:36/7 16:06	07:49 09:18-09:38/20 17:12	06:39 18:13	06:17 07:30-08:01/31 20:18	05:06 21:19	04:26 22:06
14	08:42 09:28-09:39/11 16:08	07:47 09:20-09:35/15 17:14	06:37 18:15	06:14 07:31-07:59/28 20:20	05:04 21:21	04:26 22:06
15	08:41 09:26-09:41/15 16:10	07:45 09:24-09:31/7 17:16	06:34 18:17	06:12 07:33-07:57/24 20:22	05:02 21:23	04:26 22:07
16	08:40 09:25-09:43/18 16:12	07:42 17:19	06:31 18:19	06:09 07:34-07:54/20 20:24	05:00 21:25	04:25 22:08
17	08:38 09:24-09:44/20 16:14	07:40 17:21	06:29 18:22	06:07 07:37-07:51/14 20:26	04:59 21:27	04:25 22:08
18	08:37 09:23-09:46/23 16:16	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09
19	08:36 09:20-09:47/27 16:17	07:35 17:25	06:23 18:26	06:02 20:30	04:55 21:31	04:25 22:09
20	08:34 09:17-09:47/30 16:19	07:33 17:28	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09
21	08:33 09:16-09:49/33 16:22	07:30 17:30	06:18 18:30	05:57 20:34	04:51 21:34	04:25 22:10
22	08:32 09:15-09:50/35 16:24	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10
23	08:30 09:14-09:50/36 16:26	07:26 17:34	06:13 18:34	05:52 20:39	04:48 21:38	04:26 22:10
24	08:29 09:13-09:51/38 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:47 21:40	04:26 22:10
25	08:27 09:12-09:52/40 16:30	07:21 17:39	06:07 06:45-06:59/14 18:38	05:47 20:43	04:45 21:41	04:26 22:10
26	08:25 09:12-09:53/41 16:32	07:18 17:41	06:05 06:42-07:02/20 18:40	05:44 20:45	04:44 21:43	04:27 22:10
27	08:24 09:12-09:53/41 16:34	07:16 17:43	06:02 06:39-07:04/25 18:42	05:42 20:47	04:42 21:45	04:27 22:10
28	08:22 09:12-09:54/42 16:36	07:13 17:45	05:59 06:36-07:05/29 18:44	05:39 20:49	04:41 21:46	04:28 22:10
29	08:20 09:11-09:54/43 16:38		06:57 07:35-08:06/31 19:47	05:37 20:51	04:39 21:48	04:28 22:09
30	08:18 09:10-09:54/44 16:41		06:54 07:33-08:07/34 19:49	05:35 20:53	04:38 21:49	04:29 22:09
31	08:16 09:10-09:54/44 16:43		06:51 07:32-08:07/35 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	588	499	188	562	0	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E11 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 22:09	05:15 21:28	06:17 07:28-08:02/34 20:14	07:17 18:53	07:22 08:44-09:18/34 16:36	08:24 15:45
2	04:31 22:08	05:17 21:26	06:19 07:27-08:03/36 20:11	07:19 18:51	07:24 08:42-09:19/37 16:34	08:26 15:44
3	04:32 22:08	05:19 21:23	06:21 07:26-08:03/37 20:08	07:21 18:48	07:27 08:41-09:20/39 16:31	08:27 15:43
4	04:33 22:07	05:21 21:21	06:23 07:25-08:03/38 20:06	07:23 18:45	07:29 08:42-09:22/40 16:29	08:29 15:42
5	04:33 22:06	05:23 21:19	06:25 07:24-08:03/39 20:03	07:25 18:43	07:31 08:41-09:22/41 16:27	08:30 15:41
6	04:35 22:06	05:25 21:17	06:27 07:24-08:03/39 20:01	07:27 18:40	07:33 08:41-09:24/43 16:25	08:32 15:41
7	04:36 22:05	05:27 21:15	06:29 07:24-08:02/38 19:58	07:29 18:37	07:35 08:41-09:24/43 16:23	08:33 15:40
8	04:37 22:04	05:29 21:13	06:31 07:23-08:02/39 19:55	07:31 18:35	07:38 08:40-09:24/44 16:21	08:35 15:40
9	04:38 22:03	05:31 21:10	06:33 07:23-08:02/39 19:53	07:33 18:32	07:40 08:41-09:25/44 16:19	08:36 15:39
10	04:39 22:02	05:33 21:08	06:35 07:23-08:01/38 19:50	07:35 18:30	07:42 08:41-09:25/44 16:17	08:38 15:39
11	04:41 22:01	05:35 21:06	06:37 07:24-08:00/36 19:47	07:38 18:27	07:44 08:42-09:26/44 16:15	08:39 15:38
12	04:42 22:00	05:37 21:04	06:39 07:24-07:59/35 19:45	07:40 18:24	07:46 08:42-09:25/43 16:13	08:40 15:38
13	04:43 21:59	05:39 21:01	06:41 07:25-07:58/33 19:42	07:42 18:22	07:48 08:43-09:26/43 16:11	08:41 15:38
14	04:45 21:58	05:41 20:59	06:43 07:25-07:57/32 19:39	07:44 18:19	07:50 08:43-09:26/43 16:09	08:42 15:38
15	04:46 21:56	05:43 20:57	06:45 07:26-07:55/29 19:36	07:46 18:17	07:53 08:44-09:25/41 16:07	08:43 15:38
16	04:48 21:55	05:45 20:54	06:47 07:28-07:53/25 19:34	07:48 18:14	07:55 08:45-09:26/41 16:06	08:44 15:38
17	04:49 21:54	05:47 20:52	06:49 07:30-07:51/21 19:31	07:50 18:12	07:57 08:46-09:25/39 16:04	08:45 15:38
18	04:51 21:52	05:49 20:49	06:51 07:32-07:48/16 19:28	07:52 18:09	07:59 08:47-09:25/38 16:02	08:46 15:38
19	04:52 21:51	05:51 20:47	06:53 07:36-07:42/6 19:26	07:54 18:07	08:01 08:49-09:25/36 16:01	08:47 15:38
20	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 08:50-09:25/35 15:59	08:48 15:38
21	04:56 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 08:51-09:24/33 15:57	08:48 15:39
22	04:57 21:46	05:57 20:39	06:59 19:18	08:01 17:59	08:07 08:53-09:23/30 15:56	08:49 15:39
23	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 08:57-09:24/27 15:55	08:49 15:40
24	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 09:01-09:23/22 15:53	08:50 15:40
25	05:03 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 09:02-09:22/20 15:52	08:50 15:41
26	05:04 21:39	06:05 07:38-07:54/16 20:29	07:07 19:07	07:09 16:50	08:15 09:03-09:21/18 15:50	08:50 15:42
27	05:06 21:37	06:07 07:36-07:56/20 20:27	07:09 19:04	07:11 08:52-09:02/10 16:47	08:17 09:05-09:20/15 15:49	08:50 15:43
28	05:08 21:35	06:09 07:33-07:58/25 20:24	07:11 19:01	07:14 08:49-09:05/16 16:45	08:19 09:06-09:18/12 15:48	08:51 15:44
29	05:10 21:33	06:11 07:32-08:00/28 20:22	07:13 18:59	07:16 08:47-09:08/21 16:43	08:20 09:10-09:17/7 15:47	08:51 15:44
30	05:12 21:32	06:13 07:30-08:01/31 20:19	07:15 18:56	07:18 08:45-09:09/24 16:40	08:22 15:46	08:51 15:45
31	05:14 21:30	06:15 07:29-08:02/33 20:16		07:20 08:44-09:14/30 16:38		08:51 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	0	153	610	101	996	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E12 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 09:06-09:35/29 16:45	07:10 17:47	06:49 19:53	05:32 20:55	04:36 05:35-05:54/19 21:52
2	08:50 15:49	08:12 09:07-09:34/27 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:35 05:35-05:54/19 21:54
3	08:50 15:51	08:11 09:08-09:33/25 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:34 05:36-05:54/18 21:55
4	08:49 15:52	08:09 09:09-09:31/22 16:52	07:03 17:54	06:41 19:59	05:25 21:01	04:33 05:36-05:53/17 21:56
5	08:49 15:53	08:06 09:09-09:26/17 16:54	07:00 07:31-07:34/3 17:56	06:38 20:01	05:23 21:03	04:32 05:38-05:53/15 21:57
6	08:48 15:55	08:04 09:11-09:25/14 16:56	06:58 07:26-07:39/13 17:58	06:35 20:03	05:21 21:05	04:31 05:38-05:53/15 21:59
7	08:48 15:56	08:02 09:14-09:23/9 16:58	06:55 07:23-07:41/18 18:00	06:33 20:05	05:19 21:07	04:30 05:39-05:52/13 22:00
8	08:47 15:58	08:00 17:01	06:52 07:21-07:42/21 18:02	06:30 20:07	05:17 21:09	04:29 05:40-05:52/12 22:01
9	08:46 15:59	07:58 17:03	06:50 07:20-07:44/24 18:05	06:27 20:09	05:15 21:11	04:28 05:41-05:51/10 22:02
10	08:46 16:01	07:56 17:05	06:47 07:18-07:44/26 18:07	06:25 20:11	05:12 05:42-05:46/4 21:13	04:28 05:42-05:51/9 22:03
11	08:45 16:03	07:54 17:07	06:45 07:17-07:44/27 18:09	06:22 20:14	05:10 05:40-05:49/9 21:15	04:27 05:43-05:49/6 22:04
12	08:44 16:04	07:51 17:10	06:42 07:16-07:44/28 18:11	06:19 20:16	05:08 05:38-05:51/13 21:17	04:27 05:45-05:49/4 22:05
13	08:43 09:19-09:24/5 16:06	07:49 17:12	06:39 07:16-07:44/28 18:13	06:17 20:18	05:06 05:36-05:52/16 21:19	04:26 22:06
14	08:42 09:18-09:26/8 16:08	07:47 17:14	06:37 07:16-07:44/28 18:15	06:14 20:20	05:04 05:35-05:53/18 21:21	04:26 22:06
15	08:41 09:16-09:28/12 16:10	07:45 17:16	06:34 07:15-07:43/28 18:17	06:12 20:22	05:02 05:33-05:54/21 21:23	04:26 22:07
16	08:40 09:15-09:29/14 16:12	07:42 17:19	06:31 07:16-07:43/27 18:19	06:09 20:24	05:00 05:33-05:54/21 21:25	04:25 22:08
17	08:38 09:13-09:30/17 16:14	07:40 17:21	06:29 07:16-07:42/26 18:21	06:07 20:26	05:33-05:55/22 21:27	04:25 22:08
18	08:37 09:12-09:32/20 16:16	07:38 17:23	06:26 07:16-07:40/24 18:24	06:04 20:28	05:32-05:55/23 21:29	04:25 22:09
19	08:36 09:10-09:32/22 16:17	07:35 17:25	06:23 07:18-07:39/21 18:26	06:02 20:30	05:31-05:55/24 21:31	04:25 22:09
20	08:34 09:08-09:33/25 16:19	07:33 17:28	06:21 07:18-07:37/19 18:28	05:59 20:32	05:32-05:56/24 21:33	04:25 22:09
21	08:33 09:07-09:34/27 16:22	07:30 17:30	06:18 07:20-07:34/14 18:30	05:56 20:34	05:31-05:55/24 21:34	04:25 22:10
22	08:32 09:06-09:35/29 16:24	07:28 17:32	06:15 07:23-07:29/6 18:32	05:54 20:36	05:32-05:56/24 21:36	04:25 22:10
23	08:30 09:05-09:35/30 16:26	07:26 17:34	06:13 18:34	05:52 20:39	05:32-05:56/24 21:38	04:26 22:10
24	08:28 09:05-09:35/30 16:28	07:23 17:36	06:10 18:36	05:49 20:41	05:32-05:56/24 21:40	04:26 22:10
25	08:27 09:05-09:36/31 16:30	07:21 17:39	06:07 18:38	05:47 20:43	05:32-05:56/24 21:41	04:26 22:10
26	08:25 09:05-09:37/32 16:32	07:18 17:41	06:05 18:40	05:44 20:45	05:33-05:56/23 21:43	04:27 22:10
27	08:24 09:05-09:37/32 16:34	07:16 17:43	06:02 18:42	05:42 20:47	05:32-05:55/23 21:45	04:27 22:10
28	08:22 09:05-09:37/32 16:36	07:13 17:45	05:59 18:44	05:39 20:49	05:33-05:55/22 21:46	04:28 22:10
29	08:20 09:06-09:37/31 16:38		06:57 19:47	05:37 20:51	05:33-05:55/22 21:48	04:28 22:09
30	08:18 09:05-09:36/31 16:41		06:54 19:49	05:35 20:53	05:34-05:55/21 21:49	04:29 05:50-05:52/2 22:09
31	08:16 09:05-09:35/30 16:43		06:51 19:51		05:34-05:55/21 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	458	143	381	0	447	159

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E12 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 05:47-05:53/6 22:09	05:15 05:49-06:00/11 21:28	06:17 20:14	07:17 07:56-08:24/28 18:53	07:22 16:36	08:24 15:45
2	04:31 05:47-05:54/7 22:08	05:17 05:51-05:59/8 21:25	06:19 20:11	07:19 07:56-08:23/27 18:51	07:24 16:34	08:26 15:44
3	04:32 05:46-05:56/10 22:08	05:19 21:23	06:21 20:08	07:21 07:56-08:22/26 18:48	07:27 16:31	08:27 15:43
4	04:33 05:46-05:57/11 22:07	05:21 21:21	06:23 20:06	07:23 07:57-08:21/24 18:45	07:29 08:43-08:53/10 16:29	08:29 15:42
5	04:33 05:45-05:58/13 22:06	05:23 21:19	06:25 20:03	07:25 07:57-08:20/23 18:43	07:31 08:41-08:55/14 16:27	08:30 15:41
6	04:35 05:45-05:59/14 22:06	05:25 21:17	06:27 20:01	07:27 07:58-08:18/20 18:40	07:33 08:40-08:57/17 16:25	08:32 15:41
7	04:36 05:45-05:59/14 22:05	05:27 21:15	06:29 19:58	07:29 08:00-08:16/16 18:37	07:35 08:39-09:01/22 16:23	08:33 15:40
8	04:37 05:44-06:00/16 22:04	05:29 21:13	06:31 19:55	07:31 08:03-08:12/9 18:35	07:37 08:37-09:03/26 16:21	08:35 15:40
9	04:38 05:44-06:01/17 22:03	05:31 21:10	06:33 19:53	07:33 18:32	07:40 08:38-09:05/27 16:19	08:36 15:39
10	04:39 05:43-06:01/18 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 08:37-09:06/29 16:17	08:38 15:39
11	04:41 05:43-06:02/19 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 08:37-09:07/30 16:15	08:39 15:38
12	04:42 05:43-06:03/20 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 08:37-09:08/31 16:13	08:40 15:38
13	04:43 05:43-06:03/20 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 08:38-09:09/31 16:11	08:41 15:38
14	04:45 05:42-06:04/22 21:57	05:41 20:59	06:43 19:39	07:44 18:19	07:50 08:37-09:09/32 16:09	08:42 15:38
15	04:46 05:42-06:04/22 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:52 08:37-09:09/32 16:07	08:43 15:38
16	04:48 05:42-06:05/23 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 08:38-09:10/32 16:06	08:44 15:38
17	04:49 05:42-06:05/23 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 08:39-09:10/31 16:04	08:45 15:38
18	04:51 05:42-06:06/24 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 08:39-09:09/30 16:02	08:46 15:38
19	04:52 05:41-06:05/24 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 08:40-09:10/30 16:01	08:47 15:38
20	04:54 05:42-06:06/24 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 08:41-09:10/29 15:59	08:47 15:38
21	04:56 05:41-06:06/25 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 08:42-09:09/27 15:57	08:48 15:39
22	04:57 05:42-06:06/24 21:46	05:57 20:39	06:59 08:05-08:18/13 19:18	08:01 17:59	08:07 08:44-09:09/25 15:56	08:49 15:39
23	04:59 05:42-06:06/24 21:44	05:59 20:37	07:01 08:03-08:20/17 19:15	08:03 17:57	08:09 08:47-09:09/22 15:55	08:49 15:40
24	05:01 05:42-06:06/24 21:43	06:01 20:34	07:03 08:01-08:22/21 19:12	08:05 17:54	08:11 08:49-09:09/20 15:53	08:50 15:40
25	05:03 05:42-06:05/23 21:41	06:03 20:32	07:05 07:59-08:23/24 19:09	07:07 16:52	08:13 08:51-09:08/17 15:52	08:50 15:41
26	05:04 05:42-06:05/23 21:39	06:05 20:29	07:07 07:58-08:23/25 19:07	07:09 16:50	08:15 08:53-09:08/15 15:50	08:50 15:42
27	05:06 05:43-06:05/22 21:37	06:07 20:27	07:09 07:57-08:24/27 19:04	07:11 16:47	08:17 08:55-09:07/12 15:49	08:50 15:43
28	05:08 05:43-06:04/21 21:35	06:09 20:24	07:11 07:56-08:24/28 19:01	07:14 16:45	08:18 08:57-09:06/9 15:48	08:51 15:44
29	05:10 05:44-06:04/20 21:33	06:11 20:22	07:13 07:56-08:24/28 18:59	07:16 16:43	08:20 09:00-09:05/5 15:47	08:51 15:44
30	05:12 05:46-06:03/17 21:31	06:13 20:19	07:15 07:56-08:24/28 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	05:14 05:48-06:02/14 21:30	06:15 20:16		07:20 16:38		08:51 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	584	19	211	173	605	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Anna / anna@environment.lv
Calculated:
25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E13 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:51 09:41-11:23/102 13:11-13:25/14 15:48 13:45-14:40/55 12:52-12:56/4	08:15 10:02-11:07/65 09:03-09:50/47 16:45 13:56-14:59/63	07:11 16:01-16:53/52 17:48	06:49 07:21-07:39/18 19:53	05:33 06:01-06:36/35 20:55	04:36 05:10-05:36/26 21:52 20:27-20:58/31
2	08:50 09:41-11:23/102 13:13-13:26/13 15:49 13:45-14:41/56	08:13 10:03-11:05/62 09:02-09:51/49 16:47 13:58-14:59/61	07:08 16:01-16:51/50 17:50	06:46 07:17-07:41/24 19:55	05:30 06:01-06:34/33 20:57	04:35 05:09-05:36/27 21:54 20:26-20:59/33
3	08:50 09:41-11:23/102 13:14-13:25/11 15:51 13:45-14:42/57	08:11 10:04-11:02/58 09:01-09:52/51 16:50 13:59-14:59/60	07:06 16:02-16:51/49 17:52	06:43 07:16-07:43/27 19:57	05:28 06:27-06:30/3 20:59 06:01-06:24/23	04:34 05:08-05:36/28 21:55 20:26-20:59/33
4	08:50 09:41-11:23/102 13:15-13:23/8 15:52 13:45-14:43/58	08:09 14:01-14:58/57 09:00-09:52/52 16:52 10:05-10:51/46 08:39-08:43/4	07:03 16:02-16:50/48 17:54	06:41 07:14-07:44/30 19:59	05:26 06:01-06:24/23 21:02	04:33 05:08-05:37/29 21:57 20:26-20:59/33
5	08:49 09:42-11:24/102 13:19-13:22/3 15:53 13:46-14:44/58	08:07 14:04-14:58/54 09:00-09:53/53 16:54 10:06-10:51/45 08:37-08:45/8	07:00 16:02-16:49/47 17:56	06:38 07:12-07:45/33 20:01	05:23 06:02-06:24/22 21:04	04:32 05:07-05:37/30 21:58 20:26-21:01/35
6	08:49 09:42-11:24/102 15:55 13:46-14:45/59	08:05 10:07-10:49/42 08:34-08:46/12 16:56 14:06-14:56/50 08:58-09:53/55	06:58 16:04-16:49/45 17:58	06:35 07:07-07:46/39 20:03 07:01-07:04/3	05:21 06:02-06:23/21 21:06	04:31 05:06-05:37/31 21:59 20:26-21:01/35
7	08:48 09:42-11:24/102 15:56 13:46-14:46/60	08:03 10:08-10:48/40 08:32-08:48/16 16:59 14:12-14:56/44 08:58-09:53/55	06:55 16:04-16:47/43 18:00	06:33 06:58-07:46/48 20:05	05:19 06:02-06:23/21 21:08	04:30 05:06-05:37/31 22:00 20:25-21:01/36
8	08:47 09:42-11:24/102 15:58 13:46-14:47/61	08:00 10:10-10:46/36 08:30-08:49/19 17:01 14:19-14:54/35 08:58-09:54/56	06:53 07:23-07:33/10 18:03 16:05-16:46/41	06:30 06:56-07:47/51 20:08	05:17 06:03-06:22/19 21:10	04:29 05:05-05:37/32 22:01 20:26-21:02/36
9	08:47 09:42-11:24/102 15:59 13:46-14:48/62	07:58 10:11-10:43/32 08:29-08:49/20 17:03 14:20-14:52/32 08:57-09:53/56	06:50 07:20-07:37/17 18:05 16:08-16:44/36	06:28 06:53-07:47/54 20:10	05:15 06:04-06:21/17 21:12	04:29 05:05-05:37/32 22:02 20:26-21:02/36
10	08:46 09:42-11:24/102 16:01 13:46-14:49/63	07:56 10:14-10:39/25 08:28-08:50/22 17:05 14:23-14:50/27 08:57-09:54/57	06:47 07:18-07:38/20 18:07 16:10-16:42/32	06:25 06:50-07:46/56 20:12	05:13 06:05-06:19/14 21:14	04:28 05:06-05:37/31 22:03 20:26-21:03/37
11	08:45 09:43-11:24/101 16:03 13:47-14:50/63	07:54 10:19-10:36/17 08:28-08:51/23 17:08 14:26-14:46/20 08:57-09:54/57	06:45 07:15-07:39/24 16:14-16:21/7 18:09 16:27-16:38/11	06:22 06:48-07:47/59 20:14	05:11 06:06-06:17/11 21:16	04:27 05:06-05:38/32 22:04 20:25-21:02/37
12	08:44 09:43-11:24/101 16:05 13:46-14:50/64	07:52 10:24-10:30/6 08:56-09:53/57 17:10 08:27-08:51/24	06:42 07:15-07:41/26 18:11	06:20 06:46-07:46/60 20:16	05:08 06:09-06:15/6 21:18	04:27 05:06-05:37/31 22:05 20:26-21:03/37
13	08:43 09:42-11:23/101 09:19-09:25/6 16:06 13:47-14:52/65	07:49 08:27-08:52/25 17:12 08:57-09:53/56	06:39 07:13-07:41/28 18:13	06:17 06:46-07:46/60 20:18	05:06 06:06-06:15/6 21:20	04:26 05:06-05:38/32 22:06 20:26-21:04/38
14	08:42 09:43-11:23/100 09:18-09:28/10 16:08 13:47-14:53/66	07:47 16:17-16:25/8 08:56-09:52/56 17:14 08:27-08:51/24	06:37 07:03-07:41/38 18:15	06:14 06:45-07:45/60 20:20 06:40-06:44/4	05:04 06:03-06:15/6 21:22	04:25 05:06-05:38/32 22:07 20:27-21:04/37
15	08:41 09:44-11:23/99 09:17-09:30/13 16:10 13:47-14:53/66	07:45 16:13-16:29/16 08:57-09:52/55 17:17 08:27-08:52/25	06:34 07:01-07:42/41 18:17	06:12 06:38-07:45/67 20:22	05:03 06:02-06:15/6 21:23	04:26 05:07-05:38/31 22:07 20:26-21:04/38
16	08:40 09:44-11:21/97 09:16-09:31/15 16:12 13:47-14:54/67	07:43 16:10-16:31/21 16:37-16:47/10 17:19 08:27-08:51/24 08:57-09:51/54	06:32 06:59-07:42/43 18:20	06:09 06:35-07:44/69 20:24	05:01 06:02-06:15/6 21:25	04:25 05:06-05:38/32 22:08 20:26-21:04/38
17	08:39 09:44-11:20/96 09:15-09:33/18 16:14 13:47-14:55/68	07:40 16:09-16:34/25 16:35-16:50/15 17:21 08:28-08:51/23 08:58-09:50/52	06:29 06:57-07:41/44 18:22	06:07 06:33-07:43/70 20:26	04:59 06:03-06:15/6 21:27	04:25 05:06-05:38/32 22:08 20:26-21:04/38
18	08:37 09:44-11:18/94 09:15-09:34/19 16:16 13:48-14:56/68	07:38 16:06-16:51/45 08:58-09:49/51 17:23 08:28-08:50/22	06:26 06:55-07:40/45 18:24	06:04 06:30-07:42/72 20:28	04:57 06:02-06:15/6 21:29	04:25 05:06-05:38/32 22:09 20:27-21:05/38
19	08:36 09:44-11:13/89 09:10-09:34/24 16:18 13:48-14:56/68	07:35 16:06-16:53/47 08:59-09:48/49 17:25 08:29-08:49/20	06:24 06:55-07:41/46 18:26	06:02 06:28-07:41/73 20:30	04:55 05:25-05:27/2 21:31	04:25 05:07-05:38/31 22:09 20:27-21:05/38
20	08:35 09:45-11:14/89 09:09-09:36/27 16:20 13:49-14:57/68	07:33 16:04-16:54/50 08:59-09:46/47 17:28 08:30-08:48/18	06:21 06:54-07:39/45 18:28	05:59 06:50-07:39/49 20:32 06:26-06:49/23	04:53 05:25-05:27/2 21:33	04:25 05:08-05:39/31 22:10 20:27-21:05/38
21	08:33 09:46-11:14/88 09:07-09:36/29 16:22 13:49-14:58/69	07:31 16:04-16:55/51 09:00-09:44/44 17:30 08:32-08:46/14	06:18 06:53-07:39/46 18:30	05:57 06:53-07:38/45 20:35 06:23-06:48/25	04:52 05:24-05:30/6 21:35	04:25 05:08-05:39/31 22:10 20:28-21:06/38
22	08:32 09:46-11:13/87 09:05-09:37/32 16:24 13:49-14:58/69	07:28 16:03-16:55/52 09:01-09:41/40 17:32 08:34-08:43/9	06:15 06:53-07:39/46 18:32	05:54 06:54-07:37/43 20:37 06:21-06:48/27	04:50 20:39-20:44/5 21:36 05:22-05:30/8	04:25 05:08-05:39/31 22:10 20:28-21:06/38
23	08:30 09:47-11:13/86 09:04-09:37/33 16:26 13:49-14:58/69	07:26 16:03-16:56/53 17:34 09:03-09:37/34	06:13 06:53-07:38/45 18:34	05:52 06:53-07:34/41 20:39 06:19-06:47/28	04:48 20:36-20:48/12 21:38 05:21-05:32/11	04:26 05:08-05:39/31 22:10 20:28-21:06/38
24	08:29 09:48-11:14/86 09:04-09:39/35 16:28 13:50-14:58/68	07:23 16:02-16:56/54 17:37 09:04-09:26/22	06:10 06:52-07:37/45 18:36	05:49 06:54-07:31/37 06:16-06:18/2 20:41 06:19-06:47/28	04:47 20:33-20:50/17 21:40 05:19-05:32/13	04:26 05:09-05:40/31 22:10 20:28-21:06/38
25	08:27 09:49-11:13/84 09:04-09:42/38 16:30 13:51-15:00/69	07:21 16:01-16:55/54 17:39 09:07-09:24/17	06:07 06:53-07:36/43 18:38	05:47 06:56-07:21/25 06:14-06:46/32 20:43 07:23-07:26/3	04:45 20:32-20:52/20 21:42 05:18-05:33/15	04:26 05:08-05:40/32 22:10 20:28-21:07/39
26	08:25 09:50-11:13/83 09:04-09:43/39 16:32 13:52-15:00/68	07:18 16:01-16:55/54 17:41 09:11-09:19/8	06:05 06:53-07:35/42 18:40	05:44 06:56-07:19/23 20:45 06:11-06:44/33	04:44 20:31-20:53/22 21:43 05:17-05:34/17	04:27 05:09-05:41/32 22:10 20:28-21:06/38
27	08:24 09:51-11:13/82 09:03-09:45/42 16:34 13:52-15:00/68	07:16 16:01-16:54/53 17:43	06:02 06:53-07:33/40 18:43	05:42 06:58-07:17/19 20:47 06:09-06:43/34	04:42 05:16-05:35/19 21:45 20:29-20:54/25	04:27 05:09-05:41/32 22:10 20:29-21:07/38
28	08:22 09:52-11:12/80 09:03-09:46/43 16:36 13:53-15:00/67	07:13 16:01-16:54/53 17:45	05:59 06:55-07:32/37 18:45	05:40 07:00-07:15/15 20:49 06:07-06:41/34	04:41 05:14-05:34/20 21:46 20:29-20:55/26	04:28 05:10-05:41/31 22:10 20:29-21:06/37
29	08:20 09:54-11:11/77 09:03-09:48/45 16:39 13:54-15:00/66		06:57 07:56-08:29/33 19:47	05:37 07:03-07:12/9 20:51 06:05-06:39/34	04:40 05:13-05:35/22 21:48 20:28-20:56/28	04:29 05:09-05:41/32 22:10 20:29-21:07/38
30	08:18 09:56-11:10/74 09:04-09:49/45 16:41 13:55-15:00/65		06:54 07:57-08:26/29 19:49	05:35 06:03-06:38/35 20:53	04:38 05:12-05:35/23 21:50 20:28-20:57/29	04:29 05:10-05:42/32 22:09 20:30-21:07/37
31	08:17 10:00-11:09/69 09:04-09:50/46 16:43 13:55-14:59/64		06:51 08:17-08:21/4 07:29-07:35/6 19:51 08:01-08:08/8		04:37 05:11-05:35/24 21:51 20:27-20:58/31	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	5489	3220	1312	1621	643	2029

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Anna / anna@environment.lv
Calculated:
25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E13 - VESTAS V172-7.2 7200 172.0 IOI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 05:10-05:42/32 22:09 20:30-21:07/37	05:16 06:18-06:26/8 21:28	06:17 06:47-07:46/59 20:14	07:17 07:53-08:20/27 18:54	07:23 09:43-10:10/27 07:58-08:20/22 16:36 13:52-14:20/28 08:27-09:23/56	08:24 09:25-11:06/101 15:45 13:29-14:32/63
2	04:31 05:10-05:42/32 22:08 20:30-21:07/37	05:18 06:16-06:28/12 21:26	06:19 06:49-07:45/56 20:11	07:19 07:54-08:19/25 18:51 17:08-17:15/7	07:25 09:41-10:13/32 07:58-08:19/21 16:34 13:49-14:22/33 08:27-09:23/56	08:26 09:25-11:07/102 15:44 13:29-14:32/63
3	04:32 05:10-05:42/32 22:08 20:31-21:07/36	05:19 06:15-06:30/15 21:24	06:21 06:51-07:45/54 20:09	07:21 07:55-08:17/22 18:48 16:50-17:19/29	07:27 09:39-10:16/37 08:00-08:19/19 16:32 13:48-14:24/36 08:28-09:24/56	08:27 09:26-11:07/101 15:43 13:29-14:31/62
4	04:33 05:11-05:42/31 22:07 20:31-21:07/36	05:21 06:14-06:31/17 21:22	06:23 06:53-07:44/51 20:06	07:23 07:56-08:15/19 18:46 16:46-17:21/35	07:29 09:38-10:17/39 08:02-08:17/15 16:29 13:40-14:25/45 08:28-09:23/55	08:29 09:26-11:08/102 15:42 13:30-14:31/61
5	04:34 05:11-05:43/32 22:07 20:32-21:07/35	05:23 06:13-06:32/19 21:19	06:25 06:55-07:43/48 20:03	07:25 07:58-08:12/14 18:43 16:43-17:22/39	07:31 13:35-14:26/51 08:05-08:17/12 16:27 09:36-10:19/43 08:28-09:23/55	08:31 09:27-11:09/102 15:42 13:31-14:31/60
6	04:35 05:12-05:43/31 22:06 20:32-21:07/35	05:25 06:12-06:32/20 21:17	06:27 07:03-07:41/38 20:01	07:27 08:03-08:07/4 18:40 16:41-17:23/42	07:33 13:33-14:28/55 08:29-09:23/54 16:25 09:36-10:20/44 08:07-08:15/8	08:32 09:28-11:10/102 15:41 13:32-14:31/59
7	04:36 05:13-05:43/30 22:05 20:33-21:07/34	05:27 06:11-06:33/22 21:15	06:29 07:07-07:40/33 19:58	07:29 16:39-17:24/45 18:38	07:36 10:24-10:27/3 09:35-10:21/46 08:09-08:12/3 16:23 13:31-14:28/57 08:30-09:22/52	08:34 09:28-11:10/102 13:06-13:07/1 15:40 13:32-14:31/59
8	04:37 05:14-05:43/29 22:04 20:33-21:07/34	05:29 06:11-06:33/22 21:13	06:31 07:08-07:39/31 19:55	07:32 16:38-17:24/46 18:35	07:38 09:35-10:34/59 08:32-09:22/50 16:21 13:30-14:30/60	08:35 09:29-11:11/102 13:04-13:11/7 15:40 13:33-14:31/58
9	04:38 05:15-05:43/28 22:03 20:33-21:07/34	05:31 06:11-06:33/22 21:11	06:33 07:09-07:37/28 19:53	07:34 16:36-17:24/48 18:32	07:40 09:34-10:36/62 08:32-09:22/50 16:19 13:28-14:30/62	08:37 09:30-11:11/101 13:02-13:13/11 15:39 13:33-14:30/57
10	04:39 05:16-05:43/27 22:02 20:34-21:06/32	05:33 06:35-06:41/6 21:08	06:35 07:10-07:35/25 19:50	07:36 16:36-17:25/49 18:30	07:42 09:34-10:39/65 08:35-09:22/47 16:17 13:27-14:30/63	08:38 09:31-11:12/101 13:02-13:15/13 15:39 13:34-14:30/56
11	04:41 05:18-05:44/26 22:01 20:34-21:06/32	05:35 06:11-06:44/33 21:06	06:37 07:13-07:32/19 19:47	07:38 16:35-17:25/50 18:27	07:44 09:31-10:40/69 08:35-09:21/46 16:15 13:27-14:31/64	08:39 09:31-11:13/102 13:01-13:15/14 15:38 13:35-14:30/55 12:43-12:46/3
12	04:42 05:19-05:44/25 22:00 20:36-21:06/30	05:43 07:07-07:23/16 21:04	06:39 07:18-07:27/9 19:45	07:40 16:34-17:25/51 18:25	07:46 09:27-10:41/74 08:35-09:20/45 16:13 13:26-14:31/65	08:40 09:32-11:14/102 13:02-13:18/16 15:38 13:36-14:30/54 12:42-12:49/7
13	04:43 05:20-05:44/24 21:59 20:36-21:06/30	05:39 06:11-06:46/35 21:01	06:41 07:49-08:17/28 19:42	07:42 16:34-17:26/52 18:22	07:49 09:26-10:43/77 08:35-09:19/44 16:11 13:26-14:32/66	08:41 09:33-11:14/101 13:02-13:19/17 15:38 13:36-14:30/54 12:41-12:50/9
14	04:45 05:21-05:43/22 21:58 20:36-21:05/29	05:41 07:10-07:20/10 20:59	06:43 07:46-08:19/33 19:39	07:44 16:33-17:26/53 18:19	07:51 09:24-10:44/80 08:35-09:18/43 16:09 13:25-14:32/67	08:43 09:33-11:15/102 13:01-13:20/19 15:38 13:37-14:29/52 12:40-12:51/11
15	04:46 05:23-05:44/21 21:57 20:37-21:04/27	05:43 07:07-07:23/16 20:57	06:45 07:45-08:21/36 19:37	07:46 16:34-17:27/53 18:17	07:53 09:24-10:44/80 08:36-09:17/41 16:08 13:24-14:32/68	08:44 09:34-11:15/101 13:01-13:21/20 15:38 13:37-14:29/52 12:40-12:52/12
16	04:48 05:24-05:43/19 21:55 20:38-21:04/26	05:45 07:05-07:25/20 20:54	06:47 07:43-08:22/39 19:34	07:48 16:33-17:27/54 18:14	07:55 09:23-10:46/83 08:37-09:16/39 16:06 13:25-14:33/68	08:45 09:35-11:16/101 13:02-13:22/20 15:38 13:38-14:29/51 12:40-12:53/13
17	04:49 05:25-05:43/18 21:54 20:39-21:03/24	05:47 07:03-07:27/24 20:52	06:49 07:42-08:23/41 19:31	07:50 16:33-17:27/54 18:12	07:57 09:22-10:46/84 08:37-09:14/37 16:04 13:24-14:33/69	08:45 09:35-11:16/101 13:02-13:23/21 15:38 13:39-14:29/50 12:40-12:54/14
18	04:51 20:41-21:02/21 21:52 20:37-21:05/16	05:49 07:01-07:34/33 20:49	06:51 07:41-08:24/43 19:29	07:52 16:33-17:27/54 18:09	07:59 09:22-10:48/86 08:38-09:13/35 16:02 13:24-14:32/68	08:46 09:36-11:17/101 13:02-13:24/22 15:38 13:40-14:29/49 12:41-12:55/14
19	04:52 20:42-21:00/18 21:51 05:28-05:42/14	05:51 07:00-07:38/38 06:22-06:23/1 20:47	06:53 07:40-08:24/44 19:26	07:55 16:33-17:26/53 18:07	08:01 09:22-10:48/86 08:39-09:12/33 16:01 13:24-14:33/69	08:47 09:37-11:18/101 13:02-13:24/22 15:38 13:39-14:29/50 12:40-12:55/15
20	04:54 20:44-20:59/15 21:49 05:30-05:42/12	05:53 06:59-07:40/41 20:45	06:55 07:40-08:24/44 19:23	07:57 16:34-17:26/52 09:32-10:13/41 18:04 09:04-09:15/11	08:03 09:21-10:48/87 08:40-09:12/32 15:59 13:24-14:33/69	08:48 09:37-11:17/100 13:03-13:25/22 15:39 13:40-14:29/49 12:41-12:56/15
21	04:56 20:46-20:56/10 21:48 05:31-05:41/7	05:55 06:58-07:42/44 20:42	06:57 07:39-08:24/45 19:20	07:59 16:34-17:26/51 09:30-10:15/45 18:02 09:01-09:17/16	08:05 09:21-10:49/88 08:43-09:12/29 15:58 13:24-14:33/69	08:49 09:38-11:18/100 13:04-13:26/22 15:39 13:41-14:30/49 12:42-12:57/15
22	04:57 05:33-05:40/7 21:46	05:57 06:57-07:43/46 20:40	06:59 07:39-08:24/45 19:18	08:01 16:35-17:24/49 09:29-10:17/48 17:59 09:00-09:18/18	08:07 09:22-10:50/88 08:45-09:12/27 15:56 13:25-14:33/68	08:49 09:38-11:18/100 13:04-13:26/22 15:39 13:41-14:30/49 12:41-12:57/16
23	04:59 05:34-05:38/4 21:45	05:59 06:54-07:44/50 20:37	07:01 07:39-08:24/45 19:15	08:03 16:36-17:23/47 09:29-10:19/50 17:57 08:59-09:20/21	08:09 09:21-10:50/89 08:47-09:11/24 15:55 13:25-14:33/68	08:49 09:39-11:19/100 13:05-13:27/22 15:40 13:42-14:31/49 12:43-12:58/15
24	05:01 21:43	06:01 06:32-07:45/73 20:35	07:03 07:39-08:24/45 19:12	08:05 16:37-17:21/44 09:28-10:19/51 17:55 08:58-09:20/22	08:11 09:21-10:55/94 08:52-09:11/19 15:53 13:25-14:33/68	08:50 09:39-11:20/101 13:05-13:27/22 15:41 13:42-14:31/49 12:43-12:58/15
25	05:03 21:41	06:03 06:34-07:46/72 20:32	07:05 07:39-08:24/45 19:10	07:07 15:38-16:03/25 16:05-16:18/13 16:52 07:57-08:20/23 08:27-09:20/53	08:13 09:21-10:57/96 08:53-09:10/17 15:52 13:25-14:33/68	08:50 09:39-11:20/101 13:05-13:27/22 15:41 13:42-14:32/50 12:43-12:58/15
26	05:04 21:39	06:05 06:36-07:46/70 20:29	07:07 07:40-08:24/44 19:07	07:09 15:41-16:01/20 16:09-16:16/7 16:50 07:57-08:21/24 08:27-09:21/54	08:15 09:23-11:00/97 08:55-09:10/15 15:51 13:26-14:32/66	08:51 09:39-11:20/101 13:06-13:27/21 15:42 13:43-14:33/50 12:44-12:58/14
27	05:06 21:37	06:07 06:38-07:46/68 20:27	07:09 07:40-08:24/44 19:04	07:12 15:43-15:58/15 08:26-09:22/56 16:47 07:57-08:21/24	08:17 09:23-11:02/99 08:56-09:09/13 15:49 13:27-14:33/66	08:51 09:40-11:20/100 13:06-13:27/21 15:43 13:43-14:34/51 12:45-12:58/13
28	05:08 21:36	06:09 06:39-07:46/67 20:24	07:11 07:41-08:23/42 19:02	07:14 15:48-15:52/4 08:26-09:22/56 16:45 07:56-08:21/25	08:19 09:23-11:03/100 08:58-09:08/10 15:48 13:27-14:33/66	08:51 09:40-11:21/101 13:07-13:27/20 15:44 13:43-14:35/52 12:46-12:58/12
29	05:10 21:34	06:11 06:46-07:46/60 20:22	07:13 07:43-08:22/39 18:59	07:16 07:57-08:21/24 16:43 08:26-09:23/57	08:21 09:24-11:04/100 09:00-09:07/7 15:47 13:28-14:33/65	08:51 09:40-11:21/101 13:08-13:27/19 15:45 13:44-14:36/52 12:47-12:58/11
30	05:12 21:32	06:13 06:46-07:46/60 20:19	07:15 07:46-08:21/35 18:56	07:18 09:52-10:01/9 07:57-08:20/23 16:40 14:00-14:05/5 08:26-09:23/57	08:22 09:24-11:05/101 15:46 13:28-14:33/65	08:51 09:41-11:22/101 13:09-13:27/18 15:46 13:44-14:37/53 12:48-12:58/10
31	05:14 21:30	06:15 06:46-07:46/60 20:17	07:20 09:47-10:05/18 07:58-08:20/22 16:38 13:54-14:16/22 08:27-09:24/57	07:20 09:47-10:05/18 07:58-08:20/22 16:38 13:54-14:16/22 08:27-09:24/57	07:20 09:47-10:05/18 07:58-08:20/22 16:38 13:54-14:16/22 08:27-09:24/57	08:51 09:41-11:23/102 13:10-13:27/17 15:47 13:45-14:39/54 12:50-12:58/8
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1134	1445	1198	2275	5234	5516

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E14 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:51 09:35-10:35/60 15:48	08:15 09:25-10:35/70 16:45	07:11 07:37-08:26/49 17:48	06:49 07:14-07:25/11 19:53	05:33 06:17-07:14/57 20:55	04:36 05:14-05:36/22 21:52
2	08:50 09:35-10:36/61 15:49	08:13 09:26-10:35/69 16:48	07:08 07:34-08:25/51 17:50	06:46 07:11-07:26/15 19:55	05:30 06:17-07:14/57 20:57	04:35 05:14-05:37/23 21:54
3	08:50 09:35-10:36/61 15:51	08:11 09:26-10:35/69 16:50	07:06 07:32-08:25/53 17:52	06:43 07:09-07:28/19 19:57	05:28 06:17-07:13/56 20:59	04:34 05:15-05:38/23 21:55
4	08:50 09:34-10:36/62 15:52	08:09 09:26-10:34/68 16:52	07:03 07:29-08:23/54 17:54	06:41 07:06-07:28/22 19:59	05:26 06:17-07:13/56 21:02	04:33 05:15-05:38/23 21:56
5	08:49 09:35-10:38/63 15:53	08:07 09:27-10:34/67 16:54	07:00 07:26-08:21/55 17:56	06:38 07:03-07:28/25 20:01	05:23 06:17-07:12/55 21:04	04:32 05:14-05:38/24 21:58
6	08:49 09:35-10:38/63 15:55	08:05 09:26-10:32/66 16:56	06:58 07:24-08:20/56 17:58	06:35 07:01-07:29/28 20:03	05:21 06:17-07:11/54 21:06	04:31 05:14-05:38/24 21:59
7	08:48 09:35-10:38/63 15:56	08:03 09:27-10:31/64 16:59	06:55 07:21-08:17/56 18:01	06:33 06:58-07:28/30 20:05	05:19 06:17-07:10/53 21:08	04:30 05:15-05:38/23 22:00
8	08:47 09:35-10:39/64 15:58	08:00 09:28-10:30/62 17:01	06:53 07:18-08:05/47 18:03	06:30 06:56-07:29/33 20:08	05:17 06:18-07:09/51 21:10	04:29 05:15-05:38/23 22:01
9	08:47 09:35-10:39/64 16:00	07:58 09:27-10:27/60 17:03	06:50 07:16-08:04/48 18:05	06:28 06:53-07:28/35 20:10	05:15 05:54-07:07/73 21:12	04:29 05:16-05:39/23 22:02
10	08:46 09:35-10:40/65 16:01	07:56 09:28-10:25/57 17:05	06:47 07:13-08:02/49 18:07	06:25 06:51-07:27/36 20:12	05:13 05:53-07:06/73 21:14	04:28 05:15-05:38/23 22:03
11	08:45 09:35-10:40/65 16:03	07:54 09:29-10:22/53 17:08	06:45 07:10-08:00/50 18:09	06:22 06:48-07:26/38 20:14	05:11 05:52-07:04/72 21:16	04:27 05:15-05:39/23 22:04
12	08:44 09:35-10:41/66 16:05	07:52 09:30-10:10/40 17:10	06:42 07:08-08:00/52 18:11	06:20 06:45-07:25/40 20:16	05:09 05:51-07:02/71 21:18	04:27 05:16-05:38/22 22:05
13	08:43 09:35-10:40/65 16:06	07:49 09:31-10:08/37 17:12	06:40 07:05-07:59/54 18:13	06:17 06:44-07:24/40 20:18	05:07 05:51-07:02/71 21:20	04:26 05:16-05:39/23 22:06
14	08:42 09:35-10:41/66 16:08	07:47 09:31-10:04/33 17:14	06:37 07:02-07:57/55 18:15	06:15 06:43-07:22/39 20:20	05:05 05:50-07:01/71 21:22	04:26 05:17-05:39/22 22:07
15	08:41 09:34-10:40/66 16:10	07:45 09:33-10:03/30 17:17	06:34 07:01-07:57/56 18:18	06:12 06:42-07:20/38 20:22	05:03 05:49-07:00/71 21:23	04:26 05:17-05:40/23 22:07
16	08:40 09:33-10:41/68 16:12	07:43 09:34-10:01/27 17:19	06:32 06:59-07:56/57 18:20	06:09 06:41-07:15/34 20:24	05:01 05:48-07:00/72 21:25	04:26 05:17-05:40/23 22:08
17	08:39 09:32-10:41/69 16:14	07:40 09:37-09:59/22 17:21	06:29 06:57-07:54/57 18:22	06:07 06:40-07:13/33 20:26	04:59 05:48-07:00/72 21:27	04:25 05:17-05:39/22 22:08
18	08:37 09:31-10:41/70 16:16	07:38 09:39-09:56/17 17:23	06:26 06:56-07:52/56 18:24	06:04 06:39-07:14/35 20:28	04:57 05:48-06:25/37 21:29	04:25 05:17-05:39/22 22:09
19	08:36 09:30-10:41/71 16:18	07:35 08:03-08:23/20 17:26	06:24 06:56-07:50/54 18:26	06:02 06:40-07:15/35 20:30	04:55 05:48-06:26/38 21:31	04:25 05:18-05:40/22 22:09
20	08:35 09:30-10:41/71 16:20	07:33 08:00-08:24/24 17:28	06:21 06:55-07:47/52 18:28	05:59 06:33-06:39/6 20:33	04:53 05:47-06:26/39 21:33	04:25 05:18-05:41/23 22:10
21	08:33 09:29-10:40/71 16:22	07:31 07:58-08:26/28 17:30	06:18 06:54-07:37/43 18:30	05:57 06:28-07:16/48 20:35	04:52 05:24-05:29/5 06:29-06:56/27 21:35	04:25 05:18-05:41/23 22:10
22	08:32 09:28-10:40/72 16:24	07:28 07:55-08:26/31 17:32	06:16 06:55-07:37/42 18:32	05:54 06:26-07:17/51 20:37	04:50 05:22-05:30/8 06:29-06:55/26 21:36	04:26 05:18-05:41/23 22:10
23	08:30 09:28-10:39/71 16:26	07:26 07:53-08:27/34 17:34	06:13 06:54-07:36/42 18:34	05:52 06:23-07:16/53 20:39	04:48 05:21-05:32/11 06:31-06:54/23 21:38	04:26 05:18-05:41/23 22:10
24	08:29 09:28-10:39/71 16:28	07:23 07:50-08:27/37 17:37	06:10 06:54-07:35/41 18:36	05:49 06:22-07:17/55 20:41	04:47 05:19-05:32/13 06:32-06:52/20 21:40	04:26 05:19-05:41/22 22:10
25	08:27 09:27-10:38/71 16:30	07:21 07:48-08:28/40 17:39	06:07 06:55-07:35/40 18:38	05:47 06:21-07:17/56 20:43	04:45 05:18-05:33/15 06:34-06:51/17 21:42	04:26 05:19-05:41/22 22:10
26	08:25 09:27-10:36/69 16:32	07:18 07:45-08:27/42 17:41	06:05 06:55-07:33/38 18:41	05:44 06:19-07:16/57 20:45	04:44 05:17-05:34/17 06:36-06:49/13 21:43	04:27 05:19-05:42/23 22:10
27	08:24 09:27-10:36/69 16:34	07:16 07:42-08:27/45 17:43	06:02 06:55-07:31/36 18:43	05:42 06:19-07:16/57 20:47	04:42 05:16-05:35/19 06:39-06:47/8 21:45	04:27 05:19-05:42/23 22:10
28	08:22 09:27-10:36/69 16:37	07:13 07:40-08:27/47 17:45	05:59 06:56-07:30/34 18:45	05:40 06:18-07:16/58 20:49	04:41 05:14-05:35/21 21:46	04:28 05:20-05:42/22 22:10
29	08:20 09:26-10:36/70 16:39		06:57 07:57-08:28/31 19:47	05:37 06:18-07:16/58 20:51	04:40 05:14-05:35/21 21:48	04:29 05:19-05:42/23 22:10
30	08:18 09:26-10:36/70 16:41		06:54 07:58-08:24/26 19:49	05:35 06:18-07:16/58 20:53	04:38 05:14-05:36/22 21:50	04:29 05:20-05:43/23 22:09
31	08:17 09:26-10:36/70 16:43		06:51 07:17-07:22/5 19:51		04:37 05:14-05:36/22 21:51	04:29 05:20-05:43/23 22:09
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	2076	1293	1805	1179	2075	1722

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E14 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 05:20-05:43/23 22:09 05:56-06:31/35 04:31 05:20-05:43/23 22:08 05:56-06:31/35	05:16 06:02-07:13/71 21:28 05:18 06:02-07:15/73 21:26	06:17 06:47-07:25/38 20:14 06:19 06:50-07:26/36 20:11	07:17 07:46-08:39/53 18:54 18:02-18:21/19 07:19 07:48-08:39/51 18:51 18:04-18:19/15	07:23 08:58-09:56/58 16:36 08:57-09:57/60 16:34	08:24 09:17-10:22/65 15:45 08:26 09:18-10:23/65 15:44
2	04:32 05:20-05:43/23 22:08 05:56-06:31/35 04:33 05:20-05:43/23 22:07 05:56-06:32/36	05:20 06:04-07:17/73 21:24 05:21 06:05-07:18/73 21:22	06:21 06:51-07:26/35 20:09 06:23 06:53-07:26/33 20:06	07:21 07:50-08:39/49 18:48 18:06-18:16/10 07:23 07:52-08:41/49 18:46	07:27 08:57-10:00/63 16:32 07:29 08:56-10:01/65 16:29	08:27 09:18-10:22/64 15:43 08:29 09:19-10:23/64 15:42
3	04:34 05:20-05:44/24 22:07 05:56-06:32/36 04:35 05:21-05:44/23 22:06 05:56-06:33/37	05:23 06:28-07:20/52 21:19 06:07-06:27/20 05:25 06:27-07:20/53 21:17 06:09-06:23/14	06:25 06:55-07:25/30 20:03 06:27 06:57-07:25/28 20:01	07:25 07:54-08:42/48 18:43 07:27 07:56-08:51/55 18:40	07:31 08:56-10:02/66 16:27 08:56-10:03/67 16:25	09:20-10:23/63 15:42 09:21-10:24/63 15:41
4	04:36 05:21-05:44/23 22:05 05:56-06:33/37 04:37 05:21-05:44/23 22:04 05:56-06:33/37	05:27 06:26-07:21/55 21:15 06:13-06:19/6 05:29 06:26-07:22/56 21:13	06:29 06:58-07:23/25 19:58 06:31 07:00-07:22/22 19:55	07:30 07:58-08:54/56 18:38 07:32 08:00-08:56/56 18:35	07:33 08:56-10:04/68 16:23 08:57-10:05/68 16:21	09:21-10:24/63 15:40 09:22-10:24/62 15:40
5	04:38 05:21-05:44/23 22:03 05:56-06:34/38 04:39 05:21-05:44/23 22:02 05:56-06:34/38	05:31 06:26-07:22/56 21:11 05:33 06:26-07:23/57 21:08	07:02-07:21/19 19:53 07:04-07:20/16 19:50	08:03-08:58/55 18:32 08:05-08:59/54 18:30	08:56-10:06/70 16:19 08:56-10:06/70 16:17	09:23-10:24/61 15:39 09:24-10:25/61 15:39
6	04:41 05:22-05:45/23 22:01 05:57-06:35/38 04:42 05:22-05:45/23 22:00 05:56-06:35/38	05:35 06:26-07:24/58 21:06 05:37 06:25-07:23/58 21:04	07:06-07:18/12 19:47 07:08-07:14/6 07:54-08:03/9 19:45	08:07-08:59/52 18:27 08:10-08:59/49 18:25	08:57-10:07/70 16:15 08:57-10:07/70 16:13	09:25-10:25/60 15:39 09:26-10:26/60 15:38
7	04:43 05:22-05:44/22 21:59 05:56-06:35/39 04:45 05:22-05:44/22 21:58 05:56-06:35/39	05:39 06:25-07:23/58 21:01 05:41 06:26-07:24/58 20:59	07:50-08:15/25 19:42 07:48-08:18/30 19:39	08:11-08:59/48 18:22 08:13-08:59/46 18:20	08:58-10:08/70 16:11 08:58-10:08/70 16:09	09:27-10:26/59 15:38 09:28-10:27/59 15:38
8	04:46 05:24-05:44/20 21:56 05:57-06:36/39 04:48 05:24-05:44/20 06:50-06:53/3 21:55 05:56-06:36/40	05:43 06:26-07:24/58 20:57 05:45 06:26-07:24/58 20:54	07:46-08:19/33 19:37 07:44-08:20/36 19:34	08:16-09:00/44 18:17 08:18-08:59/41 18:14	08:59-10:08/69 16:08 09:00-10:09/69 16:06	09:28-10:27/59 15:38 09:29-10:27/58 15:38
9	04:49 05:26-05:44/18 06:46-06:57/11 21:54 05:56-06:35/39 04:51 05:27-05:43/16 06:44-07:00/16 21:52 05:57-06:36/39	05:47 06:27-07:24/57 20:52 05:49 06:28-07:23/55 20:49	07:43-08:21/38 19:31 18:14-18:21/7 07:42-08:22/40 19:29 18:10-18:24/14	08:20-08:59/39 18:12 08:22-08:58/36 18:09	09:00-10:11/71 16:04 09:02-10:13/71 16:02	09:30-10:28/58 15:38 09:31-10:28/57 15:38
10	04:53 05:28-05:42/14 06:42-07:01/19 21:51 05:56-06:36/40 04:54 05:30-05:42/12 06:41-07:03/22 21:49 05:57-06:36/39	05:51 06:28-07:22/54 20:47 05:53 06:29-07:22/53 20:45	07:41-08:22/41 19:26 18:07-18:25/18 07:41-08:23/42 19:23 18:05-18:25/20	08:25-08:58/33 18:07 08:27-08:57/30 18:04	09:03-10:14/71 16:01 09:03-10:15/72 15:59	09:31-10:28/57 15:38 09:32-10:29/57 15:39
11	04:56 05:31-05:41/10 06:40-07:04/24 21:48 05:57-06:36/39 04:58 05:33-05:40/7 06:39-07:06/27 21:46 05:57-06:36/39	05:55 06:31-07:21/50 20:42 05:57 06:33-07:20/47 20:40	07:40-08:23/43 19:20 18:03-18:26/23 07:40-08:23/43 19:18 18:02-18:26/24	08:29-08:56/27 18:02 08:31-08:54/23 17:59	09:04-10:15/71 15:58 09:06-10:17/71 15:56	09:33-10:30/57 15:39 09:33-10:30/57 15:40
12	04:59 05:35-05:38/3 06:38-07:06/28 21:45 05:57-06:35/38 05:01 05:58-06:36/38 21:43 06:37-07:08/31	05:59 06:38-06:41/3 20:37 06:44-07:20/36 06:01 06:43-07:19/36 20:35	07:40-08:30/50 19:15 18:01-18:27/26 07:40-08:33/53 19:12 18:00-18:27/27	08:34-08:53/19 17:57 10:13-10:23/10 08:05 10:08-10:27/19 17:55 08:36-08:51/15	09:07-10:18/71 15:55 09:08-10:18/70 15:53	09:34-10:31/57 15:40 09:34-10:31/57 15:41
13	05:03 05:58-06:36/38 21:41 06:37-07:09/32 05:05 05:58-06:35/37 21:39 06:36-07:09/33	06:03 06:43-07:17/34 20:32 06:05 06:43-07:16/33 20:29	07:40-08:35/55 19:10 18:00-18:26/26 07:07 07:40-08:36/56 19:07 18:00-18:26/26	09:05-09:29/24 16:52 07:38-07:48/10 07:10 09:04-09:32/28 16:50	09:10-10:19/69 15:52 09:11-10:19/68 15:51	09:34-10:31/57 15:41 09:34-10:32/58 15:42
14	05:06 05:59-07:10/71 21:37 05:08 06:00-07:11/71 21:36	06:07 06:43-07:18/35 20:27 06:09 06:43-07:21/38 20:24	07:41-08:37/56 19:04 17:59-18:25/26 07:11 07:41-08:38/57 19:02 18:00-18:24/24	09:02-09:33/31 16:48 09:01-09:34/33 16:45	09:14-10:20/66 15:49 09:15-10:21/66 15:48	09:34-10:32/58 15:43 09:34-10:33/59 15:44
15	05:10 05:59-07:11/72 21:34 05:12 06:00-07:12/72 21:32	06:11 06:43-07:23/40 20:22 06:13 06:44-07:24/40 20:19	07:42-08:38/56 18:59 18:01-18:24/23 07:15 07:44-08:38/54 18:56 18:01-18:23/22	09:00-09:38/38 16:43 08:59-09:40/41 16:41	09:16-10:21/65 15:47 09:16-10:22/66 15:46	09:34-10:33/59 15:45 09:35-10:34/59 15:46
16	05:14 06:01-07:13/72 21:30 529	06:15 06:45-07:25/40 20:17 469		07:20 08:58-09:52/54 16:38 324		09:35-10:35/60 15:47 216
Potential sun hours						
Sum of minutes with flicker	2028	1658	1428	1360	2041	1853

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E15 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:51 15:48	08:15 08:45-09:17/32 16:45 15:41-15:48/7	07:11 15:34-15:56/22 17:48	06:49 07:14-07:23/9 19:53 07:28-07:51/23	05:33 20:55	04:36 05:23-05:51/28 21:52 20:26-20:36/10
2	08:50 15:49	08:13 08:43-09:17/34 16:47 15:37-15:52/15	07:08 15:37-15:52/15 17:50	06:46 07:11-07:24/13 19:55 07:29-07:49/20	05:30 20:57	04:35 05:22-05:52/30 21:54 20:28-20:34/6
3	08:50 15:51	08:11 08:41-09:18/37 16:50 15:34-15:55/21	07:06 17:14-17:23/9 17:52	06:43 07:09-07:26/17 19:57 07:30-07:48/18	05:28 20:59	04:34 05:22-05:52/30 21:55
4	08:50 15:52	08:09 08:40-09:18/38 16:52 15:33-15:58/25	07:03 17:11-17:25/14 17:54	06:41 07:06-07:26/20 19:59 07:31-07:46/15	05:26 21:01	04:33 05:22-05:54/32 21:56
5	08:49 15:53	08:07 08:40-09:18/38 16:54 15:31-15:59/28	07:00 17:09-17:27/18 17:56	06:38 07:05-07:26/21 20:01 07:32-07:42/10	05:23 21:04	04:32 05:22-05:54/32 21:58
6	08:49 15:55	08:05 08:39-09:17/38 16:56 15:30-16:00/30	06:58 17:08-17:29/21 17:58	06:35 07:04-07:27/23 20:03	05:21 20:26-20:33/7 21:06	04:31 05:21-05:54/33 21:59
7	08:48 15:56	08:03 08:39-09:17/38 16:59 15:29-16:02/33	06:55 17:07-17:29/22 18:00	06:33 07:04-07:26/22 20:05	05:19 20:24-20:35/11 21:08	04:30 05:22-05:55/33 22:00
8	08:47 15:58	08:00 08:39-09:17/38 17:01 15:28-16:03/35	06:53 17:06-17:29/23 18:03	06:30 07:04-07:27/23 20:07	05:17 20:22-20:36/14 21:10	04:29 05:21-05:56/35 22:01
9	08:47 16:00	07:58 08:39-09:15/36 17:03 15:27-16:04/37	06:50 17:06-17:30/24 18:05	06:28 07:03-07:26/23 20:10	05:15 20:21-20:38/17 21:12	04:29 05:21-05:56/35 22:02
10	08:46 16:01	07:56 08:39-09:14/35 17:05 15:27-16:05/38	06:47 17:05-17:29/24 18:07	06:25 07:03-07:25/22 20:12	05:13 20:19-20:39/20 21:14	04:28 05:21-05:56/35 22:03
11	08:45 16:03	07:54 08:40-09:12/32 17:08 15:25-16:05/40	06:45 17:05-17:29/24 18:09	06:22 07:04-07:24/20 20:14	05:11 20:19-20:40/21 21:16	04:27 05:21-05:57/36 22:04
12	08:44 16:05	07:52 08:40-09:06/26 17:10 15:25-16:06/41	06:42 17:05-17:28/23 18:11	06:20 07:04-07:23/19 20:16	05:09 20:18-20:40/22 21:18	04:27 05:21-05:57/36 22:05
13	08:43 16:06	07:49 08:41-09:04/23 17:12 15:25-16:07/42	06:39 17:06-17:28/22 18:13	06:17 07:06-07:22/16 20:18	05:07 20:17-20:41/24 21:20	04:26 05:21-05:58/37 22:06
14	08:42 16:08	07:47 08:42-09:00/18 17:14 15:24-16:06/42	06:37 17:06-17:26/20 18:15	06:14 07:07-07:19/12 20:20	05:05 20:18-20:42/24 21:21	04:26 05:21-05:58/37 22:06
15	08:41 16:10	07:45 08:43-08:59/16 17:17 15:25-16:07/42	06:34 17:07-17:24/17 18:17	06:12 07:10-07:16/6 20:22	05:03 20:17-20:42/25 21:23	04:26 05:22-05:59/37 22:07
16	08:40 16:12	07:42 08:45-08:56/11 17:19 15:24-16:07/43	06:32 17:09-17:23/14 18:20	06:09 20:24	05:01 20:17-20:41/24 21:25	04:26 05:21-05:58/37 22:08
17	08:39 16:14	07:40 15:24-16:07/43 17:21	06:29 17:11-17:20/9 18:22	06:07 20:26	04:59 20:17-20:42/25 21:27	04:25 05:21-05:58/37 22:08
18	08:37 16:16	07:38 15:24-16:07/43 17:23	06:26 18:24	06:04 20:28	04:57 20:17-20:42/25 21:29	04:25 05:21-05:59/38 22:09
19	08:36 16:18	07:35 15:25-16:07/42 17:26	06:24 18:26	06:02 20:30	04:55 20:17-20:41/24 21:31	04:25 05:21-05:59/38 22:09
20	08:35 16:20	07:33 15:24-16:06/42 17:28	06:21 06:46-06:54/8 18:28	05:59 20:32	04:53 20:17-20:42/25 21:33	04:25 05:22-06:00/38 22:10
21	08:33 16:22	07:31 15:25-16:06/41 17:30	06:18 06:43-06:55/12 18:30	05:57 20:35	04:52 20:17-20:41/24 21:35	04:25 05:22-06:00/38 22:10
22	08:32 16:24	07:28 15:25-16:05/40 17:32	06:15 06:41-06:57/16 18:32	05:54 20:37	04:50 20:18-20:41/23 21:36	04:26 05:22-06:00/38 22:10
23	08:30 09:03-09:05/2 16:26	07:26 15:27-16:05/38 17:34	06:13 06:38-06:57/19 18:34	05:52 20:39	04:48 20:19-20:41/22 21:38	04:26 05:22-06:00/38 22:10
24	08:29 09:02-09:10/8 16:28	07:23 15:27-16:04/37 17:37	06:10 06:35-06:57/22 18:36	05:49 20:41	04:47 20:19-20:40/21 21:40	04:26 05:23-06:01/38 22:10
25	08:27 09:00-09:11/11 16:30	07:21 15:27-16:02/35 17:39	06:07 06:33-06:58/25 18:38	05:47 20:43	04:45 05:32-05:41/9 21:42	04:26 05:23-06:01/38 22:10
26	08:25 08:58-09:13/15 16:32	07:18 15:29-16:02/33 17:41	06:05 06:31-06:58/27 18:40	05:44 20:45	04:44 05:29-05:44/15 21:43	04:27 05:23-06:00/37 22:10
27	08:24 08:56-09:14/18 16:34	07:16 15:30-16:00/30 17:43	06:02 06:29-06:57/28 18:43	05:42 20:47	04:42 05:28-05:46/18 21:45	04:27 05:24-06:01/37 22:10
28	08:22 08:54-09:15/21 16:36	07:13 15:32-15:59/27 17:45	05:59 06:29-06:57/28 18:45	05:40 20:49	04:41 05:26-05:47/21 21:46	04:28 05:24-06:01/37 22:10
29	08:20 08:52-09:16/24 16:39		06:57 07:29-07:56/27 19:47	05:37 20:51	04:40 05:25-05:48/23 21:48	04:29 05:24-06:01/37 22:10
30	08:18 08:50-09:17/27 16:41		06:54 07:28-07:54/26 19:49	05:35 20:53	04:38 05:24-05:49/25 21:49	04:29 05:25-06:01/36 22:09
31	08:16 08:48-09:17/29 16:43		06:51 07:29-07:53/24 19:51		04:37 05:23-05:50/27 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	155	1460	583	352	656	1084

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E15 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July		August		September		October		November		December	
1	04:30	05:25-06:02/37	05:16	20:28-20:50/22	06:17	07:03-07:23/20	07:17	17:45-18:08/23	07:22	08:09-08:44/35	08:24	
	22:09		21:28		20:14		18:54		16:36	14:56-15:34/38	15:45	
2	04:31	05:25-06:01/36	05:18	20:29-20:50/21	06:19	07:02-07:24/22	07:19	17:44-18:07/23	07:25	08:08-08:45/37	08:26	
	22:08		21:26		20:11		18:51		16:34	14:57-15:33/36	15:44	
3	04:32	05:26-06:01/35	05:20	20:30-20:49/19	06:21	07:01-07:24/23	07:21	17:43-18:07/24	07:27	08:09-08:46/37	08:27	
	22:08		21:24		20:09		18:48		16:32	14:58-15:33/35	15:43	
4	04:33	05:26-06:01/35	05:21	20:31-20:48/17	06:23	07:01-07:24/23	07:23	17:43-18:07/24	07:29	08:08-08:47/39	08:29	
	22:07		21:22		20:06		18:46		16:29	14:59-15:31/32	15:42	
5	04:34	05:27-06:01/34	05:23	20:32-20:45/13	06:25	07:01-07:24/23	07:25	17:43-18:06/23	07:31	08:08-08:47/39	08:31	
	22:07		21:19		20:03		18:43		16:27	15:00-15:30/30	15:42	
6	04:35	05:27-06:01/34	05:25	20:34-20:43/9	06:27	07:01-07:23/22	07:27	17:43-18:05/22	07:33	08:09-08:48/39	08:32	
	22:06		21:17		20:01		18:40		16:25	15:02-15:29/27	15:41	
7	04:36	05:28-06:01/33	05:27	20:38-20:41/3	06:29	07:00-07:21/21	07:29	17:43-18:04/21	07:36	08:10-08:48/38	08:34	
	22:05		21:15		19:58	07:28-07:37/9	18:38		16:23	15:03-15:27/24	15:40	
8	04:37	05:28-06:00/32	05:29		06:31	07:00-07:21/21	07:32	17:44-18:03/19	07:38	08:12-08:49/37	08:35	
	22:04		21:13		19:55	07:25-07:40/15	18:35		16:21	15:05-15:26/21	15:40	
9	04:38	05:29-06:00/31	05:31		06:33	07:02-07:19/17	07:34	17:45-18:01/16	07:40	08:14-08:48/34	08:36	
	22:03		21:11		19:53	07:23-07:41/18	18:32		16:19	15:08-15:23/15	15:39	
10	04:39	05:29-05:59/30	05:33		06:35	07:04-07:18/14	07:36	17:47-17:59/12	07:42	08:16-08:48/32	08:38	
	22:02	20:36-20:40/4	21:08		19:50	07:22-07:42/20	18:30		16:17	15:12-15:18/6	15:39	
11	04:41	05:31-06:00/29	05:35		06:37	07:06-07:15/9	07:38	17:50-17:56/6	07:44	08:19-08:48/29	08:39	
	22:01	20:34-20:42/8	21:06		19:47	07:21-07:43/22	18:27	16:14-16:24/10	16:15		15:39	
12	04:42	05:32-05:59/27	05:37		06:39	07:08-07:11/3	07:40	16:09-16:28/19	07:46	08:21-08:48/27	08:40	13:40-13:45/5
	22:00	20:34-20:45/11	21:04		19:45	07:20-07:45/25	18:25		16:13		15:38	
13	04:43	05:32-05:58/26	05:39		06:41	07:19-07:46/27	07:42	16:06-16:30/24	07:48	08:24-08:48/24	08:41	13:40-13:47/7
	21:59	20:32-20:46/14	21:01		19:42		18:22		16:11		15:38	
14	04:45	05:33-05:57/24	05:41		06:43	07:19-07:46/27	07:44	16:04-16:31/27	07:51	08:26-08:47/21	08:42	13:40-13:48/8
	21:58	20:31-20:46/15	20:59		19:39		18:19		16:09		15:38	
15	04:46	05:35-05:57/22	05:43		06:45	07:19-07:46/27	07:46	16:02-16:33/31	07:53	08:28-08:46/18	08:44	13:40-13:49/9
	21:56	20:30-20:47/17	20:57		19:37		18:17		16:08		15:38	
16	04:48	05:36-05:55/19	05:45		06:47	07:19-07:46/27	07:48	16:01-16:34/33	07:55	08:31-08:46/15	08:44	13:40-13:50/10
	21:55	20:30-20:48/18	20:54		19:34		18:14		16:06		15:38	
17	04:49	05:37-05:54/17	05:47		06:49	07:19-07:46/27	07:50	15:59-16:35/36	07:57	08:33-08:44/11	08:45	13:40-13:51/11
	21:54	20:29-20:49/20	20:52		19:31		18:12		16:04		15:38	
18	04:51	05:40-05:52/12	05:49		06:51	07:20-07:46/26	07:52	15:58-16:35/37	07:59	08:36-08:43/7	08:46	13:40-13:52/12
	21:52	20:29-20:50/21	20:49		19:29		18:09		16:02		15:38	
19	04:53	05:43-05:48/5	05:51		06:53	07:22-07:45/23	07:54	15:56-16:35/39	08:01	08:38-08:40/2	08:47	13:40-13:52/12
	21:51	20:29-20:50/21	20:47		19:26		18:07		16:01		15:38	
20	04:54	05:44-05:51/22	05:53		06:55	07:24-07:44/20	07:57	15:56-16:37/41	08:03		08:48	13:40-13:53/13
	21:49		20:45		19:23		18:04		15:59		15:39	
21	04:56	20:28-20:51/23	05:55		06:57	07:26-07:43/17	07:59	15:55-16:37/42	08:05		08:48	13:41-13:54/13
	21:48		20:42		19:20		18:02		15:58		15:39	
22	04:58	20:28-20:52/24	05:57		06:59	07:28-07:41/13	08:01	15:55-16:36/41	08:07		08:49	13:41-13:54/13
	21:46		20:40		19:18		17:59		15:56		15:39	
23	04:59	20:27-20:51/24	05:59		07:01	07:30-07:39/9	08:03	15:55-16:37/42	08:09		08:49	13:41-13:54/13
	21:44		20:37		19:15		17:57		15:55		15:40	
24	05:01	20:28-20:52/24	06:01		07:03	07:32-07:36/4	08:05	15:54-16:37/43	08:11		08:50	13:43-13:55/12
	21:43		20:35		19:12		17:55		15:53		15:41	
25	05:03	20:27-20:52/25	06:03		07:05		07:07	08:18-08:23/5	08:13		08:50	13:43-13:55/12
	21:41		20:32		19:10		16:52	14:54-15:37/43	15:52		15:41	
26	05:05	20:27-20:52/25	06:05		07:07	17:54-18:00/6	07:09	08:15-08:27/12	08:15		08:50	13:44-13:55/11
	21:39		20:29		19:07		16:50	14:54-15:37/43	15:51		15:42	
27	05:06	20:28-20:52/24	06:07		07:09	17:50-18:03/13	07:12	08:12-08:28/16	08:17		08:51	13:44-13:55/11
	21:37		20:27		19:04		16:47	14:54-15:36/42	15:49		15:43	
28	05:08	20:27-20:52/25	06:09	07:11-07:17/6	07:11	17:48-18:05/17	07:14	08:11-08:29/18	08:19		08:51	13:45-13:55/10
	21:36		20:24		19:02		16:45	14:54-15:36/42	15:48		15:44	
29	05:10	20:27-20:52/25	06:11	07:07-07:20/13	07:13	17:46-18:06/20	07:16	08:10-08:34/24	08:20		08:51	13:46-13:55/9
	21:34		20:22		18:59		16:43	14:55-15:36/41	15:47		15:45	
30	05:12	20:28-20:52/24	06:13	07:05-07:22/17	07:15	17:46-18:07/21	07:18	08:09-08:38/29	08:22		08:51	13:48-13:55/7
	21:32		20:19		18:56		16:41	14:55-15:35/40	15:46		15:46	
31	05:14	20:29-20:52/23	06:15	07:04-07:23/19			07:20	08:08-08:41/33			08:51	13:49-13:54/5
	21:30		20:17				16:38	14:55-15:34/39			15:47	
Potential sun hours	529		469		385		324		247		216	
Sum of minutes with flicker	955		159		651		1105		785		203	

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E16 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January			February			March	April			May			June				
1	08:51	12:39-13:23/44		08:15			07:11	06:49			05:33			04:36	19:52-20:30/38			
	15:48			16:45			17:47	19:53			20:55			21:52				
2	08:50	12:39-13:23/44		08:13			07:08	06:46			05:30			04:35	19:53-20:30/37			
	15:49			16:47			17:50	19:55			20:57			21:54				
3	08:50	12:40-13:24/44		08:11	15:58-16:10/12		07:06	06:43			05:28			04:34	19:53-20:29/36			
	15:51			16:50			17:52	19:57			20:59			21:55				
4	08:50	12:40-13:24/44		08:09	15:56-16:13/17		07:03	06:41			05:26	20:05-20:15/10		04:33	19:53-20:29/36			
	15:52			16:52			17:54	19:59			21:01			21:56				
5	08:49	12:40-13:24/44		08:07	15:54-16:14/20		07:00	06:38			05:23	20:02-20:18/16		04:32	19:54-20:30/36			
	15:53			16:54			17:56	20:01			21:03			21:58				
6	08:49	12:42-13:25/43		08:05	15:53-16:16/23		06:58	06:35			05:21	20:00-20:21/21		04:31	19:54-20:29/35			
	15:55			16:56			17:58	20:03			21:06			21:59				
7	08:48	12:42-13:25/43		08:02	15:52-16:17/25		06:55	06:33			05:19	19:58-20:22/24		04:30	19:55-20:29/34			
	15:56			16:59			18:00	20:05			21:08			22:00				
8	08:47	12:42-13:26/44		08:00	15:51-16:18/27		06:53	06:30	06:58-07:06/8		05:17	19:57-20:24/27		04:29	19:56-20:30/34			
	15:58			17:01			18:03	20:07			21:10			22:01				
9	08:47	12:43-13:26/43		07:58	15:50-16:19/29		06:50	06:27	06:54-07:09/15		05:15	19:55-20:25/30		04:29	19:55-20:29/34			
	15:59			17:03			18:05	20:10			21:12			22:02				
10	08:46	12:44-13:26/42		07:56	15:50-16:20/30		06:47	06:25	06:51-07:10/19		05:13	19:54-20:25/31		04:28	19:56-20:29/33			
	16:01			17:05			18:07	20:12			21:14			22:03				
11	08:45	12:44-13:27/43		07:54	15:49-16:20/31		06:45	06:22	06:50-07:12/22		05:11	19:53-20:26/33		04:27	19:56-20:29/33			
	16:03			17:08			18:09	20:14			21:16			22:04				
12	08:44	12:44-13:26/42		07:52	15:50-16:20/30		06:42	06:20	06:48-07:12/24		05:08	19:52-20:26/34		04:27	19:57-20:29/32			
	16:05			17:10			18:11	20:16			21:18			22:05				
13	08:43	12:45-13:27/42		07:49	15:50-16:21/31		06:39	06:17	06:48-07:13/25		05:06	19:52-20:27/35		04:26	19:58-20:30/32			
	16:06			17:12			18:13	20:18			21:19			22:06				
14	08:42	12:46-13:27/41		07:47	15:49-16:20/31		06:37	06:14	06:46-07:13/27		05:05	19:52-20:28/36		04:26	19:58-20:30/32			
	16:08			17:14			18:15	20:20			21:21			22:06				
15	08:41	12:46-13:27/41		07:45	15:50-16:21/31		06:34	06:12	06:46-07:14/28		05:03	19:51-20:28/37		04:26	19:58-20:29/31			
	16:10			17:17			18:17	20:22			21:23			22:07				
16	08:40	12:47-13:27/40		07:42	15:50-16:20/30		06:31	06:09	06:45-07:13/28		05:01	19:50-20:28/38		04:26	19:58-20:29/31			
	16:12			17:19			18:20	20:24			21:25			22:08				
17	08:39	12:47-13:26/39		07:40	15:50-16:20/30		06:29	06:07	06:45-07:14/29		04:59	19:51-20:29/38		04:25	19:59-20:29/30			
	16:14			17:21			18:22	20:26			21:27			22:08				
18	08:37	12:49-13:27/38		07:38	15:50-16:19/29		06:26	06:04	06:44-07:13/29		04:57	19:50-20:29/39		04:25	19:59-20:30/31			
	16:16			17:23			18:24	20:28			21:29			22:09				
19	08:36	12:49-13:26/37		07:35	15:52-16:19/27		06:23	06:02	06:45-07:13/28		04:55	19:50-20:29/39		04:25	19:59-20:30/31			
	16:18			17:25			18:26	20:30			21:31			22:09				
20	08:35	12:50-13:26/36		07:33	15:52-16:17/25		06:21	05:59	06:45-07:13/28		04:53	19:50-20:30/40		04:25	19:59-20:30/31			
	16:20			17:28			18:28	20:32			21:33			22:09				
21	08:33	12:52-13:26/34		07:31	15:54-16:16/22		06:18	05:57	06:45-07:11/26		04:52	19:50-20:29/39		04:25	20:00-20:31/31			
	16:22			17:30			18:30	20:34			21:35			22:10				
22	08:32	12:53-13:25/32		07:28	15:55-16:14/19		06:15	05:54	06:45-07:11/26		04:50	19:50-20:30/40		04:26	20:00-20:31/31			
	16:24			17:32			18:32	20:37			21:36			22:10				
23	08:30	12:54-13:24/30		07:26	15:57-16:11/14		06:13	05:52	06:45-07:09/24		04:48	19:51-20:30/39		04:26	20:00-20:31/31			
	16:26			17:34			18:34	20:39			21:38			22:10				
24	08:29	12:55-13:23/28		07:23			06:10	05:49	06:47-07:08/21		04:47	19:50-20:30/40		04:26	20:00-20:31/31			
	16:28			17:37			18:36	20:41			21:40			22:10				
25	08:27	12:57-13:22/25		07:21			06:07	05:47	06:48-07:07/19		04:45	19:51-20:30/39		04:26	20:01-20:31/30			
	16:30			17:39			18:38	20:43			21:41			22:10				
26	08:25	13:00-13:21/21		07:18			06:05	05:44	06:49-07:04/15		04:44	19:51-20:30/39		04:27	20:00-20:31/31			
	16:32			17:41			18:40	20:45			21:43			22:10				
27	08:24	13:02-13:19/17		07:16			06:02	05:42	06:51-07:02/11		04:42	19:50-20:30/40		04:27	20:01-20:32/31			
	16:34			17:43			18:43	20:47			21:45			22:10				
28	08:22	13:06-13:16/10		07:13			05:59	05:40			04:41	19:51-20:30/39		04:28	20:01-20:32/31			
	16:36			17:45			18:45	20:49			21:46			22:10				
29	08:20						06:57	05:37			04:40	19:51-20:30/39		04:29	20:01-20:33/32			
	16:39						19:47	20:51			21:48			22:09				
30	08:18						06:54	05:35			04:38	19:52-20:30/38		04:29	20:01-20:33/32			
	16:41						19:49	20:53			21:49			22:09				
31	08:16						06:51				04:37	19:52-20:30/38						
	16:43						19:51				21:51							
Potential sun hours	235			266			366			426			508			528		
Sum of minutes with flicker	1031			533			0			452			958			978		

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E16 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 20:01-20:33/32 22:09	05:16 20:03-20:37/34 21:28	06:17 06:49-07:11/22 20:14	07:17 18:54	07:22 15:20-15:49/29 16:36	08:24 12:26-13:09/43 15:45
2	04:31 20:01-20:34/33 22:08	05:18 20:04-20:36/32 21:26	06:19 06:50-07:09/19 20:11	07:19 18:51	07:25 15:20-15:48/28 16:34	08:26 12:26-13:09/43 15:44
3	04:32 20:01-20:34/33 22:08	05:20 20:05-20:35/30 21:24	06:21 06:52-07:07/15 20:09	07:21 18:48	07:27 15:20-15:47/27 16:32	08:27 12:26-13:09/43 15:43
4	04:33 20:01-20:35/34 22:07	05:21 20:06-20:34/28 21:21	06:23 06:55-07:03/8 20:06	07:23 18:46	07:29 15:22-15:47/25 16:29	08:29 12:27-13:10/43 15:42
5	04:34 20:01-20:35/34 22:06	05:23 20:06-20:32/26 21:19	06:25 20:03	07:25 18:43	07:31 15:23-15:45/22 16:27	08:31 12:27-13:11/44 15:42
6	04:35 20:01-20:36/35 22:06	05:25 20:08-20:31/23 21:17	06:27 20:01	07:27 18:40	07:33 15:25-15:45/20 16:25	08:32 12:28-13:11/43 15:41
7	04:36 20:01-20:36/35 22:05	05:27 20:10-20:29/19 21:15	06:29 19:58	07:29 18:38	07:35 15:26-15:42/16 16:23	08:34 12:27-13:11/44 15:40
8	04:37 20:01-20:36/35 22:04	05:29 20:12-20:27/15 21:13	06:31 19:55	07:31 18:35	07:38 15:28-15:39/11 16:21	08:35 12:28-13:12/44 15:40
9	04:38 20:00-20:37/37 22:03	05:31 20:17-20:23/6 21:11	06:33 19:53	07:34 18:32	07:40 16:19	08:36 12:28-13:12/44 15:39
10	04:39 20:00-20:37/37 22:02	05:33 21:08	06:35 19:50	07:36 18:30	07:42 16:17	08:38 12:29-13:13/44 15:39
11	04:41 20:00-20:37/37 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 16:15	08:39 12:29-13:13/44 15:39
12	04:42 20:01-20:38/37 22:00	05:37 21:04	06:39 19:45	07:40 18:25	07:46 16:13	08:40 12:29-13:13/44 15:38
13	04:43 20:00-20:38/38 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 12:30-13:14/44 15:38
14	04:45 20:00-20:38/38 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:51 12:38-12:48/10 16:09	08:42 12:31-13:15/44 15:38
15	04:46 20:00-20:38/38 21:56	05:43 07:03-07:05/2 20:57	06:45 19:37	07:46 18:17	07:53 12:34-12:51/17 16:08	08:43 12:31-13:15/44 15:38
16	04:48 20:00-20:39/39 21:55	05:45 06:58-07:10/12 20:54	06:47 19:34	07:48 18:14	07:55 12:33-12:54/21 16:06	08:44 12:32-13:15/43 15:38
17	04:49 20:00-20:39/39 21:54	05:47 06:56-07:12/16 20:52	06:49 19:31	07:50 18:12	07:57 12:31-12:56/25 16:04	08:45 12:32-13:16/44 15:38
18	04:51 20:00-20:40/40 21:52	05:49 06:53-07:13/20 20:49	06:51 19:28	07:52 16:32-16:40/8 18:09	07:59 12:29-12:57/28 16:02	08:46 12:33-13:17/44 15:38
19	04:53 20:00-20:39/39 21:51	05:51 06:52-07:14/22 20:47	06:53 19:26	07:54 16:27-16:43/16 18:07	08:01 12:29-12:59/30 16:01	08:47 12:33-13:16/43 15:38
20	04:54 20:00-20:40/40 21:49	05:53 06:51-07:15/24 20:44	06:55 19:23	07:57 16:26-16:46/20 18:04	08:03 12:28-13:00/32 15:59	08:48 12:33-13:17/44 15:39
21	04:56 20:00-20:40/40 21:48	05:55 06:50-07:16/26 20:42	06:57 19:20	07:59 16:24-16:47/23 18:02	08:05 12:27-13:01/34 15:58	08:48 12:33-13:17/44 15:39
22	04:58 20:00-20:40/40 21:46	05:57 06:49-07:16/27 20:40	06:59 19:18	08:01 16:22-16:48/26 17:59	08:07 12:27-13:03/36 15:56	08:49 12:34-13:18/44 15:39
23	04:59 20:00-20:40/40 21:44	05:59 06:49-07:16/27 20:37	07:01 19:15	08:03 16:22-16:49/27 17:57	08:09 12:26-13:03/37 15:55	08:49 12:34-13:18/44 15:40
24	05:01 20:01-20:40/39 21:43	06:01 06:48-07:17/29 20:34	07:03 19:12	08:05 16:21-16:49/28 17:55	08:11 12:26-13:04/38 15:53	08:50 12:35-13:19/44 15:41
25	05:03 20:00-20:39/39 21:41	06:03 06:48-07:17/29 20:32	07:05 19:10	07:07 15:20-15:49/29 16:52	08:13 12:26-13:05/39 15:52	08:50 12:36-13:20/44 15:41
26	05:05 20:01-20:39/38 21:39	06:05 06:48-07:16/28 20:29	07:07 19:07	07:09 15:19-15:49/30 16:50	08:15 12:25-13:05/40 15:51	08:50 12:36-13:20/44 15:42
27	05:06 20:01-20:39/38 21:37	06:07 06:47-07:15/28 20:27	07:09 19:04	07:12 15:19-15:50/31 16:47	08:17 12:25-13:06/41 15:49	08:51 12:36-13:20/44 15:43
28	05:08 20:01-20:38/37 21:35	06:09 06:47-07:15/28 20:24	07:11 19:02	07:14 15:19-15:50/31 16:45	08:19 12:26-13:07/41 15:48	08:51 12:37-13:21/44 15:44
29	05:10 20:02-20:38/36 21:34	06:11 06:47-07:14/27 20:22	07:13 18:59	07:16 15:19-15:50/31 16:43	08:20 12:26-13:08/42 15:47	08:51 12:38-13:21/43 15:45
30	05:12 20:02-20:38/36 21:32	06:13 06:48-07:13/25 20:19	07:15 18:56	07:18 15:19-15:50/31 16:40	08:22 12:26-13:08/42 15:46	08:51 12:38-13:22/44 15:46
31	05:14 20:03-20:38/35 21:30	06:15 06:48-07:12/24 20:16		07:20 15:19-15:49/30 16:38		08:51 12:38-13:22/44 15:47
Potential sun hours	529	469	385	324	248	216
Sum of minutes with flicker	1148	607	64	361	731	1356

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E2 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:50 15:48	08:14 16:45	07:10 17:47	06:48 19:53	05:32 20:55	04:35 21:52	04:30 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 21:54	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	07:24 16:33	08:26 15:44
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 21:55	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	07:27 16:31	08:27 15:43
4	08:50 15:52	08:09 16:52	07:03 17:54	06:40 19:59	05:25 21:01	04:32 21:56	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 16:29	08:29 15:42
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 21:58	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	07:31 16:27	08:31 15:41
6	08:49 15:54	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	04:30 21:59	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	07:33 16:25	08:32 15:41
7	08:48 15:56	08:02 16:58	06:55 18:00	06:32 20:05	05:19 21:07	04:30 22:00	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:34 15:40
8	08:47 15:57	08:00 17:01	06:52 18:02	06:30 20:07	05:16 21:09	04:29 22:01	04:37 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:38 16:21	08:35 15:39
9	08:47 15:59	07:58 17:03	06:50 18:04	06:27 20:09	05:14 21:11	04:28 22:02	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	07:40 16:19	08:36 15:39
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:13	04:28 22:03	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:38
11	08:45 16:02	07:54 17:07	06:45 18:09	06:22 20:14	05:10 21:15	04:27 22:04	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	07:44 16:15	08:39 15:38
12	08:44 16:04	07:51 17:10	06:42 18:11	06:19 20:16	05:08 21:17	04:26 22:05	04:42 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 16:13	08:40 15:38
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	04:26 22:06	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 22:06	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:50 16:09	08:42 15:37
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 22:07	04:46 21:56	05:43 20:57	06:45 19:36	07:46 18:17	07:53 16:07	08:43 15:37
16	08:40 16:11	07:42 17:18	06:31 18:19	06:09 20:24	05:00 21:25	04:25 22:08	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 16:05	08:44 15:37
17	08:38 16:13	07:40 17:21	06:29 18:21	06:06 20:26	04:58 21:27	04:25 22:08	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09	04:51 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	08:36 16:17	07:35 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 22:09	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 16:00	08:47 15:38
20	08:35 16:19	07:33 17:27	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	04:25 22:10	04:55 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 15:57	08:48 15:39
22	08:32 16:23	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	08:07 15:56	08:49 15:39
23	08:30 16:25	07:25 17:34	06:13 18:34	05:51 20:39	04:48 21:38	04:25 22:10	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	08:27 16:30	07:21 17:38	06:07 18:38	05:46 20:43	04:45 21:41	04:26 22:10	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	08:25 16:32	07:18 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:26 22:10	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:49	08:15 15:50	08:50 15:42
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	08:17 15:49	08:51 15:42
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 22:10	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	08:20 16:38	07:10 19:46	06:56 20:51	05:37 21:48	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:22	07:13 18:59	07:16 16:42	08:20 15:47	08:51 15:44
30	08:18 16:40	07:04 19:49	06:54 20:53	05:35 21:49	04:38 21:49	04:29 22:09	05:12 21:32	06:13 20:19	07:15 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	08:16 16:43	07:01 19:51	06:51 21:51	05:31 21:51	04:37 21:51	05:13 21:30	06:15 20:16	07:20 16:38	07:20 16:38	07:20 16:38	07:20 16:38	08:51 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	247	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E3 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:50 15:48	08:14 16:45	07:10 17:47	06:48 19:53	05:32 20:55	04:36 21:52	04:30 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 21:54	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	07:24 16:33	08:26 15:44
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 21:55	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	07:27 16:31	08:27 15:43
4	08:49 15:52	08:09 16:52	07:03 17:54	06:40 19:59	05:25 21:01	04:32 21:56	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 16:29	08:29 15:42
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 21:58	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	07:31 16:27	08:30 15:41
6	08:49 15:54	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	04:30 21:59	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	07:33 16:25	08:32 15:41
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	05:19 21:07	04:30 22:00	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:33 15:40
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	05:17 21:09	04:29 22:01	04:37 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:38 16:21	08:35 15:39
9	08:47 15:59	07:58 17:03	06:50 18:04	06:27 20:09	05:14 21:11	04:28 22:02	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	07:40 16:19	08:36 15:39
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:13	04:28 22:03	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:39
11	08:45 16:02	07:54 17:07	06:45 18:09	06:22 20:14	05:10 21:15	04:27 22:04	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	07:44 16:15	08:39 15:38
12	08:44 16:04	07:51 17:10	06:42 18:11	06:19 20:16	05:08 21:17	04:26 22:05	04:42 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 16:13	08:40 15:38
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	04:26 22:06	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 22:06	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 22:07	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:53 16:07	08:43 15:37
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	05:00 21:25	04:25 22:08	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 16:06	08:44 15:37
17	08:38 16:13	07:40 17:21	06:29 18:21	06:06 20:26	04:58 21:27	04:25 22:08	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09	04:51 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	08:36 16:17	07:35 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 22:09	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 16:00	08:47 15:38
20	08:35 16:19	07:33 17:27	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	04:25 22:10	04:55 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 15:57	08:48 15:39
22	08:32 16:23	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	08:07 15:56	08:49 15:39
23	08:30 16:25	07:25 17:34	06:13 18:34	05:51 20:39	04:48 21:38	04:25 22:10	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	08:27 16:30	07:21 17:38	06:07 18:38	05:47 20:43	04:45 21:41	04:26 22:10	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	08:25 16:32	07:18 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:27 22:10	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	08:17 15:49	08:51 15:42
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 22:10	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	08:20 16:38	07:10 19:46	06:56 19:46	05:37 20:51	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:22	07:13 18:59	07:16 16:42	08:20 15:47	08:51 15:44
30	08:18 16:41	07:06 19:49	06:54 19:49	05:35 20:53	04:38 21:49	04:29 22:09	05:12 21:32	06:13 20:19	07:15 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	08:16 16:43	07:04 19:51	06:51 19:51	05:33 20:53	04:37 21:51	05:13 21:51	06:15 21:30	07:20 20:16	07:20 16:38	07:20 15:46	07:20 15:46	08:51 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	247	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E4 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:50 15:48	08:14 16:45	07:10 17:47	06:48 19:53	05:32 20:55	04:36 21:52	04:30 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	08:50 15:49	08:12 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 21:54	04:31 22:08	05:17 21:25	06:19 20:11	07:19 18:51	07:24 16:33	08:26 15:44
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 21:55	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	07:27 16:31	08:27 15:43
4	08:49 15:52	08:09 16:52	07:03 17:54	06:40 19:59	05:25 21:01	04:32 21:56	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 16:29	08:29 15:42
5	08:49 15:53	08:06 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 21:58	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	07:31 16:27	08:30 15:41
6	08:48 15:55	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	04:31 21:59	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	07:33 16:25	08:32 15:41
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	05:19 21:07	04:30 22:00	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:33 15:40
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	05:17 21:09	04:29 22:01	04:37 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:37 16:21	08:35 15:39
9	08:46 15:59	07:58 17:03	06:50 18:04	06:27 20:09	05:14 21:11	04:28 22:02	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	07:40 16:19	08:36 15:39
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:13	04:28 22:03	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:39
11	08:45 16:03	07:54 17:07	06:45 18:09	06:22 20:13	05:10 21:15	04:27 22:04	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	07:44 16:15	08:39 15:38
12	08:44 16:04	07:51 17:10	06:42 18:11	06:19 20:16	05:08 21:17	04:27 22:05	04:42 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 16:13	08:40 15:38
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	04:26 22:06	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 22:06	04:45 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 22:07	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:52 16:07	08:43 15:38
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	05:00 21:25	04:25 22:08	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 16:06	08:44 15:38
17	08:38 16:13	07:40 17:21	06:29 18:21	06:07 20:26	04:58 21:27	04:25 22:08	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09	04:51 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	08:36 16:17	07:35 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 22:09	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 16:00	08:47 15:38
20	08:34 16:19	07:33 17:27	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	04:25 22:10	04:55 21:48	05:55 20:42	06:57 19:20	07:58 18:02	08:05 15:57	08:48 15:39
22	08:32 16:23	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	08:07 15:56	08:49 15:39
23	08:30 16:26	07:25 17:34	06:13 18:34	05:51 20:38	04:48 21:38	04:25 22:10	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	08:28 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	08:27 16:30	07:21 17:38	06:07 18:38	05:47 20:43	04:45 21:41	04:26 22:10	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	08:25 16:32	07:18 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:27 22:10	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	08:17 15:49	08:50 15:42
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 22:10	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	08:18 15:48	08:51 15:43
29	08:20 16:38	07:10 19:46	06:56 20:51	05:37 21:48	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:21	07:13 18:59	07:16 16:43	08:20 15:47	08:51 15:44
30	08:18 16:41	07:06 19:49	06:54 20:53	05:35 21:49	04:38 21:49	04:29 22:09	05:12 21:32	06:13 20:19	07:15 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	08:16 16:43	07:04 19:51	06:51 21:51	05:33 21:51	04:37 21:51	05:13 21:30	06:15 20:16	07:20 16:38	07:20 16:38	07:20 16:38	07:20 16:38	08:51 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	247	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E5 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January		February		March	April		May		June	
1	08:51	10:50-11:33/43	08:15	07:11		06:49		05:32	07:25-08:48/83	04:36	07:34-08:33/59
	15:48		16:45	17:47		19:53		20:55	06:31-07:14/43	21:53	
2	08:50	10:51-11:34/43	08:13	07:08		06:46		05:30	07:25-08:48/83	04:34	07:35-08:32/57
	15:49		16:47	17:50		19:55		20:57	06:31-07:14/43	21:54	
3	08:50	10:51-11:34/43	08:11	07:06	07:35-07:45/10	06:43		05:28	07:25-08:47/82	04:33	07:35-08:31/56
	15:50		16:49	17:52		19:57		20:59	06:31-07:14/43	21:55	
4	08:50	10:51-11:34/43	08:09	07:03	07:31-07:48/17	06:41	08:04-08:23/19	05:25	07:25-08:47/82	04:32	07:36-08:31/55
	15:52		16:52	17:54		19:59		21:02	06:31-07:13/42	21:57	
5	08:49	10:52-11:35/43	08:07	07:00	07:29-07:49/20	06:38	07:59-08:27/28	05:23	07:25-08:47/82	04:31	07:37-08:31/54
	15:53		16:54	17:56		20:01		21:04	06:31-07:13/42	21:58	
6	08:49	10:53-11:36/43	08:05	06:58	07:28-07:51/23	06:35	07:55-08:31/36	05:21	07:25-08:47/82	04:31	07:37-08:30/53
	15:55		16:56	17:58		20:03		21:06	06:32-07:13/41	21:59	
7	08:48	10:53-11:36/43	08:03	06:55	07:26-07:51/25	06:33	07:52-08:34/42	05:19	07:25-08:46/81	04:30	07:38-08:29/51
	15:56		16:58	18:00		20:05		21:08	06:32-07:12/40	22:00	
8	08:47	10:53-11:36/43	08:00	06:53	07:25-07:52/27	06:30	07:48-08:35/47	05:17	07:25-08:46/81	04:29	07:39-08:30/51
	15:58		17:01	18:02		20:07		21:10	06:32-07:12/40	22:01	
9	08:47	10:54-11:37/43	07:58	06:50	07:25-07:53/28	06:27	07:47-08:38/51	05:14	07:25-08:45/80	04:28	07:39-08:29/50
	15:59		17:03	18:05		20:10		21:12	06:33-07:11/38	22:02	
10	08:46	10:54-11:37/43	07:56	06:47	07:24-07:52/28	06:25	07:44-08:39/55	05:12	07:25-08:45/80	04:28	07:40-08:29/49
	16:01		17:05	18:07		20:12		21:14	06:33-07:10/37	22:03	
11	08:45	10:55-11:37/42	07:54	06:45	07:23-07:52/29	06:22	07:43-08:41/58	05:10	07:25-08:44/79	04:27	07:40-08:28/48
	16:02		17:07	18:09		20:14		21:16	06:34-07:09/35	22:04	
12	08:44	10:56-11:38/42	07:52	06:42	07:24-07:52/28	06:19	07:40-08:42/62	05:08	07:25-08:44/79	04:26	07:41-08:28/47
	16:04		17:10	18:11		20:16	06:45-06:47/2	21:18	06:34-07:08/34	22:05	
13	08:43	10:55-11:37/42	07:49	06:39	07:23-07:52/29	06:17	07:39-08:43/64	05:06	07:25-08:43/78	04:26	07:42-08:28/46
	16:06		17:12	18:13		20:18	06:43-06:50/7	21:20	06:35-07:07/32	22:06	
14	08:42	10:56-11:38/42	07:47	06:37	07:23-07:51/28	06:14	07:37-08:44/67	05:04	07:25-08:42/77	04:26	07:41-08:27/46
	16:08		17:14	18:15		20:20	06:40-06:51/11	21:22	06:37-07:07/30	22:07	
15	08:41	10:57-11:39/42	07:45	06:34	07:23-07:49/26	06:12	07:36-08:45/69	05:02	07:26-08:42/76	04:25	07:42-08:27/45
	16:10		17:16	18:17		20:22	06:38-06:53/15	21:24	06:37-07:05/28	22:07	
16	08:40	10:57-11:38/41	07:42	06:31	07:24-07:49/25	06:09	07:35-08:45/70	05:00	07:26-08:41/75	04:25	07:42-08:27/45
	16:12		17:19	18:19		20:24	06:35-07:03/28	21:25	06:38-07:04/26	22:08	
17	08:39	10:59-11:39/40	07:40	06:29	07:25-07:47/22	06:07	07:34-08:46/72	04:58	07:26-08:41/75	04:25	07:43-08:28/45
	16:13		17:21	18:22		20:26	06:33-07:06/33	21:27	06:39-07:02/23	22:08	
18	08:37	10:59-11:38/39	07:38	06:26	07:26-07:45/19	06:04	07:32-08:46/74	04:57	07:27-08:41/74	04:25	07:43-08:28/45
	16:15		17:23	18:24		20:28	06:32-07:08/36	21:29	06:41-07:01/20	22:09	
19	08:36	10:59-11:38/39	07:35	06:23	07:28-07:44/16	06:02	07:32-08:47/75	04:55	07:27-08:40/73	04:25	07:44-08:28/44
	16:17		17:25	18:26		20:30	06:32-07:10/38	21:31	06:43-06:59/16	22:09	
20	08:35	11:01-11:38/37	07:33	06:21	07:30-07:40/10	05:59	07:30-08:47/77	04:53	07:28-08:40/72	04:25	07:44-08:28/44
	16:19		17:28	18:28		20:32	06:31-07:10/39	21:33	06:46-06:56/10	22:10	
21	08:33	11:01-11:38/37	07:31	06:18		05:56	07:30-08:48/78	04:51	07:28-08:39/71	04:25	07:44-08:28/44
	16:21		17:30	18:30		20:35	06:32-07:11/39	21:35		22:10	
22	08:32	11:02-11:37/35	07:28	06:15		05:54	07:28-08:47/79	04:50	07:29-08:38/69	04:25	07:45-08:29/44
	16:23		17:32	18:32		20:37	06:32-07:13/41	21:36		22:10	
23	08:30	11:03-11:36/33	07:26	06:13		05:51	07:28-08:48/80	04:48	07:28-08:37/69	04:25	07:45-08:29/44
	16:26		17:34	18:34		20:39	06:32-07:13/41	21:38		22:10	
24	08:29	11:05-11:36/31	07:23	06:10		05:49	07:28-08:48/80	04:46	07:29-08:37/68	04:26	07:44-08:29/45
	16:28		17:36	18:36		20:41	06:33-07:13/40	21:40		22:10	
25	08:27	11:06-11:36/30	07:21	06:07		05:47	07:27-08:48/81	04:45	07:30-08:37/67	04:26	07:45-08:30/45
	16:30		17:39	18:38		20:43	06:34-07:14/40	21:42		22:10	
26	08:25	11:07-11:34/27	07:18	06:05		05:44	07:26-08:48/82	04:43	07:30-08:35/65	04:27	07:45-08:29/44
	16:32		17:41	18:40		20:45	06:33-07:14/41	21:43		22:10	
27	08:24	11:09-11:33/24	07:16	06:02		05:42	07:26-08:48/82	04:42	07:31-08:35/64	04:27	07:45-08:30/45
	16:34		17:43	18:42		20:47	06:32-07:14/42	21:45		22:10	
28	08:22	11:11-11:31/20	07:13	05:59		05:39	07:26-08:48/82	04:41	07:32-08:35/63	04:28	07:45-08:30/45
	16:36		17:45	18:45		20:49	06:32-07:14/42	21:47		22:10	
29	08:20	11:14-11:29/15		06:57		05:37	07:25-08:48/83	04:39	07:32-08:34/62	04:28	07:45-08:31/46
	16:38			19:47		20:51	06:31-07:14/43	21:48		22:10	
30	08:18	11:19-11:24/5		06:54		05:35	07:25-08:48/83	04:38	07:33-08:34/61	04:29	07:44-08:31/47
	16:41			19:49		20:53	06:31-07:14/43	21:50		22:09	
31	08:17			06:51				04:37	07:34-08:33/59		
	16:43			19:51				21:51			
Potential sun hours	235		266	366		426		508		529	
Sum of minutes with flicker	1093		0	410		2397		2955		1439	

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E5 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 07:44-08:32/48 22:09	05:15 07:35-08:54/79 21:28 06:44-07:19/35	06:17 07:42-08:40/58 20:14	07:17 08:03-08:31/28 18:53	07:22 16:36	08:24 10:37-11:20/43 15:45
2	04:31 07:44-08:33/49 22:08	05:17 07:35-08:55/80 21:26 06:44-07:20/36	06:19 07:43-08:38/55 20:11	07:19 08:02-08:31/29 18:51	07:25 16:34	08:26 10:37-11:20/43 15:44
3	04:31 07:44-08:34/50 22:08	05:19 07:35-08:55/80 21:24 06:43-07:21/38	06:21 07:45-08:36/51 20:09	07:21 08:02-08:30/28 18:48	07:27 16:31	08:28 10:38-11:21/43 15:43
4	04:32 07:44-08:35/51 22:07	05:21 07:34-08:55/81 21:22 06:43-07:21/38	06:23 07:45-08:32/47 20:06	07:23 08:02-08:30/28 18:45	07:29 16:29	08:29 10:37-11:20/43 15:42
5	04:33 07:44-08:35/51 22:07	05:23 07:34-08:55/81 21:19 06:42-07:21/39	06:25 07:48-08:30/42 20:03	07:25 08:02-08:29/27 18:43	07:31 16:27	08:31 10:38-11:21/43 15:41
6	04:34 07:44-08:36/52 22:06	05:25 07:34-08:56/82 21:17 06:41-07:22/41	06:27 07:50-08:27/37 20:01	07:27 08:02-08:28/26 18:40	07:33 16:25	08:32 10:39-11:22/43 15:41
7	04:35 07:44-08:37/53 22:05	05:27 07:34-08:56/82 21:15 06:41-07:22/41	06:29 07:53-08:23/30 19:58	07:29 08:03-08:27/24 18:38	07:36 16:23	08:34 10:38-11:21/43 15:40
8	04:37 07:43-08:38/55 22:04	05:29 07:34-08:56/82 21:13 06:41-07:23/42	06:31 07:58-08:17/19 19:55	07:31 08:04-08:25/21 18:35	07:38 16:21	08:35 10:39-11:22/43 15:39
9	04:38 07:43-08:38/55 22:03	05:31 07:34-08:57/83 21:11 06:41-07:23/42	06:33 19:53	07:33 08:06-08:24/18 18:32	07:40 16:19	08:37 10:40-11:23/43 15:39
10	04:39 07:42-08:39/57 22:02	05:33 07:33-08:56/83 21:08 06:39-07:22/43	06:35 19:50	07:36 08:08-08:21/13 18:30	07:42 16:17	08:38 10:40-11:23/43 15:39
11	04:40 07:42-08:40/58 22:01	05:35 07:33-08:56/83 21:06 06:39-07:22/43	06:37 19:47	07:38 08:11-08:17/6 18:27	07:44 16:15	08:39 10:40-11:23/43 15:38
12	04:42 07:41-08:40/59 22:00	05:37 07:33-08:56/83 21:04 06:39-07:22/43	06:39 19:45	07:40 18:24	07:46 10:49-10:56/7 16:13	08:40 10:41-11:24/43 15:38
13	04:43 07:42-08:42/60 21:59	05:39 07:33-08:56/83 21:01 06:39-07:22/43	06:41 19:42	07:42 18:22	07:48 10:46-11:01/15 16:11	08:42 10:42-11:24/42 15:38
14	04:45 07:41-08:42/61 21:58	05:41 07:33-08:56/83 20:59 06:40-07:22/42	06:43 19:39	07:44 18:19	07:51 10:43-11:03/20 16:09	08:43 10:42-11:25/43 15:38
15	04:46 07:40-08:43/63 21:57	05:43 07:34-08:56/82 20:57 06:40-07:22/42	06:45 19:37	07:46 18:17	07:53 10:41-11:05/24 16:07	08:44 10:42-11:25/43 15:38
16	04:47 07:41-08:44/63 21:55	05:45 07:33-08:55/82 20:54 06:40-07:22/42	06:47 19:34	07:48 18:14	07:55 10:40-11:07/27 16:06	08:45 10:43-11:25/42 15:38
17	04:49 07:40-08:45/65 21:54	05:47 07:33-08:54/81 20:52 06:39-07:20/41	06:49 19:31	07:50 18:12	07:57 10:39-11:09/30 16:04	08:46 10:44-11:26/42 15:38
18	04:51 07:39-08:45/66 21:52	05:49 07:33-08:54/81 20:49 06:39-07:20/41	06:51 19:28	07:52 18:09	07:59 10:39-11:10/31 16:02	08:46 10:44-11:26/42 15:38
19	04:52 07:39-08:46/67 21:51	05:51 07:34-08:54/80 20:47 06:38-07:19/41	06:53 19:26	07:54 18:07	08:01 10:38-11:11/33 16:01	08:47 10:45-11:27/42 15:38
20	04:54 07:38-08:47/69 21:49	05:53 07:34-08:53/79 20:45 06:37-07:18/41	06:55 19:23	07:57 18:04	08:03 10:37-11:12/35 15:59	08:48 10:45-11:27/42 15:38
21	04:55 07:39-08:48/69 21:48	05:55 07:34-08:53/79 20:42 06:37-07:17/40	06:57 19:20	07:59 18:02	08:05 10:36-11:13/37 15:57	08:48 10:46-11:28/42 15:39
22	04:57 07:39-08:49/70 21:46	05:57 07:35-08:52/77 20:40 06:36-07:16/40	06:59 19:18	08:01 17:59	08:07 10:37-11:14/37 15:56	08:49 10:46-11:28/42 15:39
23	04:59 07:38-08:49/71 21:45 06:59-07:03/4	05:59 07:35-08:51/76 20:37 06:36-07:15/39	07:01 08:16-08:22/6 19:15	08:03 17:57	08:09 10:36-11:15/39 15:54	08:50 10:47-11:29/42 15:40
24	05:01 07:38-08:50/72 21:43 06:55-07:08/13	06:01 07:36-08:51/75 20:35 06:36-07:13/37	07:03 08:11-08:26/15 19:12	08:05 17:54	08:11 10:36-11:15/39 15:53	08:50 10:47-11:29/42 15:40
25	05:02 07:37-08:50/73 21:41 06:52-07:10/18	06:03 07:35-08:49/74 20:32 06:36-07:10/34	07:05 08:09-08:28/19 19:10	07:07 16:52	08:13 10:36-11:16/40 15:52	08:50 10:47-11:29/42 15:41
26	05:04 07:37-08:51/74 21:39 06:51-07:12/21	06:05 07:36-08:48/72 20:29 06:35-07:08/33	07:07 08:07-08:29/22 19:07	07:09 16:50	08:15 10:36-11:17/41 15:50	08:51 10:47-11:30/43 15:42
27	05:06 07:37-08:52/75 21:37 06:50-07:14/24	06:07 07:37-08:47/70 20:27 06:37-07:04/27	07:09 08:07-08:31/24 19:04	07:12 16:47	08:17 10:36-11:18/42 15:49	08:51 10:48-11:30/42 15:42
28	05:08 07:36-08:52/76 21:36 06:48-07:15/27	06:09 07:37-08:46/69 20:24 06:39-06:54/15	07:11 08:05-08:31/26 19:01	07:14 16:45	08:19 10:36-11:18/42 15:48	08:51 10:48-11:31/43 15:43
29	05:10 07:36-08:53/77 21:34 06:47-07:16/29	06:11 07:38-08:44/66 20:22 06:41-06:52/11	07:13 08:04-08:31/27 18:59	07:16 16:43	08:21 10:37-11:19/42 15:47	08:51 10:49-11:31/42 15:44
30	05:12 07:36-08:54/78 21:32 06:46-07:17/31	06:13 07:39-08:43/64 20:19 06:43-06:50/7	07:15 08:03-08:31/28 18:56	07:18 16:40	08:22 10:37-11:19/42 15:46	08:51 10:49-11:32/43 15:45
31	05:13 07:35-08:53/78 21:30 06:45-07:18/33	06:15 07:40-08:41/61 20:16 06:45-06:47/2		07:20 16:38		08:51 10:50-11:33/43 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	2165	3512	506	248	623	1320

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E6 - VESTAS V172-7.2 7200 172.0 !OI! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:51 15:48	08:15 09:12-09:41/29 16:45	07:11 06:49 17:47	06:49 05:32 19:53	05:32 04:36 20:55	04:36 04:30 21:52	04:30 03:15 22:09	03:15 02:17 21:28	02:17 01:17 20:14	01:17 00:14 18:53	00:14 08:50-09:04/14 16:36	08:50-09:04/14 15:45
2	08:50 15:49	08:13 09:12-09:41/29 16:47	07:08 06:46 17:49	06:46 05:30 19:55	05:30 04:34 20:57	04:34 04:31 21:54	04:31 03:16 22:08	03:16 02:18 21:26	02:18 01:19 20:11	01:19 00:15 18:51	00:15 08:48-09:06/18 16:34	08:48-09:06/18 15:44
3	08:50 15:50	08:11 09:13-09:41/28 16:49	07:05 06:43 17:52	06:43 05:28 19:57	05:28 04:33 20:59	04:33 04:31 21:55	04:31 03:19 22:08	03:19 02:24 21:24	02:24 01:20 20:09	01:20 00:18 18:48	00:18 08:47-09:08/21 16:31	08:47-09:08/21 15:43
4	08:50 15:52	08:09 09:14-09:41/27 16:52	07:03 06:41 17:54	06:41 05:25 19:59	05:25 04:32 21:01	04:32 04:32 21:56	04:32 03:21 22:07	03:21 02:21 21:21	02:21 01:23 20:06	01:23 00:18 18:45	00:18 08:46-09:09/23 16:29	08:46-09:09/23 15:42
5	08:49 15:53	08:07 09:15-09:41/26 16:54	07:00 06:38 17:56	06:38 05:23 20:01	05:23 04:31 21:03	04:31 04:33 21:58	04:33 03:23 22:07	03:23 02:19 21:19	02:19 01:23 20:03	01:23 00:18 18:43	00:18 08:44-09:09/25 16:27	08:44-09:09/25 15:41
6	08:49 15:55	08:05 09:15-09:39/24 16:56	06:58 06:35 17:58	06:35 05:21 20:03	05:21 04:31 21:06	04:31 04:34 21:59	04:34 03:25 22:06	03:25 02:21 21:17	02:21 01:25 20:01	01:25 00:18 18:40	00:18 08:44-09:11/27 16:25	08:44-09:11/27 15:41
7	08:48 15:56	08:02 09:16-09:39/23 16:58	06:55 06:33 18:00	06:33 05:19 20:05	05:19 04:30 21:08	04:30 04:35 22:00	04:35 03:27 22:05	03:27 02:25 21:15	02:25 01:29 20:01	01:29 00:18 18:37	00:18 08:43-09:11/28 16:23	08:43-09:11/28 15:40
8	08:47 15:58	08:00 09:18-09:38/20 17:01	06:53 06:30 18:02	06:30 05:17 20:07	05:17 04:29 21:10	04:29 04:37 22:01	04:37 03:29 22:04	03:29 02:29 21:13	02:29 01:31 20:03	01:31 00:18 18:35	00:18 08:44-09:12/28 16:21	08:44-09:12/28 15:39
9	08:47 15:59	07:58 09:19-09:36/17 17:03	06:50 06:27 18:05	06:27 05:14 20:09	05:14 04:28 21:12	04:28 04:38 22:02	04:38 03:31 22:03	03:31 02:31 21:11	02:31 01:33 20:03	01:33 00:18 18:32	00:18 08:43-09:12/29 16:19	08:43-09:12/29 15:39
10	08:46 16:01	07:56 09:21-09:34/13 17:05	06:47 06:25 18:07	06:25 05:12 20:12	05:12 04:28 21:14	04:28 04:39 22:03	04:39 03:33 22:02	03:33 02:33 21:08	02:33 01:35 20:01	01:35 00:18 18:30	00:18 08:43-09:12/29 16:17	08:43-09:12/29 15:39
11	08:45 16:03	07:54 08:20-08:26/6 17:07	06:45 06:22 18:09	06:22 05:10 20:14	05:10 04:27 21:16	04:27 04:40 22:04	04:40 03:35 22:01	03:35 02:35 21:06	02:35 01:37 20:01	01:37 00:18 18:27	00:18 08:43-09:13/30 16:15	08:43-09:13/30 15:38
12	08:44 16:04	07:52 08:20-08:26/6 17:10	06:42 06:19 18:11	06:19 05:08 20:16	05:08 04:27 21:18	04:27 04:42 22:05	04:42 03:37 22:00	03:37 02:37 21:04	02:37 01:39 20:01	01:39 00:18 18:24	00:18 08:43-09:12/29 16:13	08:43-09:12/29 15:38
13	08:43 16:06	07:49 08:18-08:29/11 17:12	06:39 06:17 18:13	06:17 05:06 20:18	05:06 04:26 21:20	04:26 04:43 22:06	04:43 03:39 21:01	03:39 02:39 21:01	02:39 01:41 20:01	01:41 00:18 18:22	00:18 08:44-09:13/29 16:11	08:44-09:13/29 15:38
14	08:42 16:08	07:47 08:15-08:30/15 17:14	06:37 06:14 18:15	06:14 05:04 20:20	05:04 04:26 21:21	04:26 04:45 22:07	04:45 03:41 21:58	03:41 02:41 20:59	02:41 01:43 20:01	01:43 00:18 18:19	00:18 08:48-08:58/10 16:09	08:48-08:58/10 15:38
15	08:41 16:10	07:45 08:13-08:32/19 17:16	06:34 06:12 18:17	06:12 05:02 20:22	05:02 04:25 21:23	04:25 04:46 22:07	04:46 03:43 21:56	03:43 02:43 20:57	02:43 01:45 20:01	01:45 00:18 18:17	00:18 08:46-09:01/15 16:07	08:46-09:01/15 15:38
16	08:40 09:20-09:26/6 16:12	07:42 08:10-08:32/22 17:19	06:31 06:09 18:19	06:09 05:00 20:24	05:00 04:25 21:25	04:25 04:47 22:08	04:47 03:45 21:55	03:45 02:45 20:54	02:45 01:47 20:01	01:47 00:18 18:14	00:18 08:44-09:02/18 16:06	08:44-09:02/18 15:38
17	08:39 09:18-09:29/11 16:13	07:40 08:10-08:33/23 17:21	06:29 06:07 18:22	06:07 05:04 20:26	05:04 04:28 21:27	04:28 04:49 22:08	04:49 03:47 21:54	03:47 02:47 20:52	02:47 01:49 20:01	01:49 00:18 18:12	00:18 08:42-09:03/21 16:04	08:42-09:03/21 15:38
18	08:37 09:16-09:31/15 16:15	07:38 08:09-08:33/24 17:23	06:26 06:04 18:24	06:04 05:04 20:28	05:04 04:28 21:29	04:28 04:57 22:09	04:57 03:51 21:52	03:51 02:51 20:49	02:51 01:53 20:01	01:53 00:18 18:09	00:18 08:41-09:03/22 16:02	08:41-09:03/22 15:38
19	08:36 09:15-09:32/17 16:17	07:35 08:09-08:34/25 17:25	06:23 06:01 18:26	06:01 05:05 20:30	05:05 04:29 21:31	04:29 04:54 22:09	04:54 03:53 21:51	03:53 02:53 20:47	02:53 01:55 20:01	01:55 00:18 18:07	00:18 08:41-09:04/23 16:01	08:41-09:04/23 15:38
20	08:35 09:14-09:34/20 16:19	07:33 08:09-08:33/24 17:28	06:21 06:04 18:28	06:04 05:09 20:32	05:09 04:33 21:33	04:33 04:54 22:10	04:54 03:55 21:49	03:55 02:55 20:44	02:55 01:57 20:01	01:57 00:18 18:04	00:18 08:40-09:04/24 16:00	08:40-09:04/24 15:38
21	08:33 09:13-09:35/22 16:21	07:31 08:09-08:34/25 17:30	06:18 06:03 18:30	06:03 05:06 20:34	05:06 04:31 21:35	04:31 04:56 22:10	04:56 03:56 21:48	03:56 02:56 20:42	02:56 01:59 20:01	01:59 00:18 18:02	00:18 08:40-09:04/24 15:57	08:40-09:04/24 15:39
22	08:32 09:13-09:36/23 16:23	07:28 08:09-08:33/24 17:32	06:15 06:04 18:32	06:04 05:07 20:37	05:07 04:32 21:36	04:32 04:57 22:10	04:57 03:57 21:46	03:57 02:57 20:39	02:57 01:59 20:01	01:59 00:18 18:01	00:18 08:39-09:04/25 15:56	08:39-09:04/25 15:39
23	08:30 09:12-09:37/25 16:26	07:26 08:10-08:33/23 17:34	06:13 06:05 18:34	06:05 05:08 20:39	05:08 04:33 21:38	04:33 04:59 22:10	04:59 03:59 21:44	03:59 02:59 20:37	02:59 01:59 20:01	01:59 00:18 18:03	00:18 08:40-09:04/24 15:54	08:40-09:04/24 15:40
24	08:29 09:13-09:38/25 16:28	07:23 08:10-08:32/22 17:36	06:10 06:04 18:36	06:04 05:09 20:41	05:09 04:34 21:40	04:34 04:56 22:10	04:56 03:56 21:43	03:56 02:56 20:34	02:56 01:59 20:01	01:59 00:18 18:05	00:18 08:40-09:03/23 15:53	08:40-09:03/23 15:40
25	08:27 09:12-09:39/27 16:30	07:21 08:10-08:30/20 17:39	06:07 06:04 18:38	06:04 05:07 20:43	05:07 04:32 21:42	04:32 04:57 22:10	04:57 03:57 21:41	03:57 02:57 20:32	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:40-08:02/22 16:52	07:40-08:02/22 15:41
26	08:25 09:12-09:40/28 16:32	07:18 08:12-08:30/18 17:41	06:05 06:04 18:40	06:04 05:07 20:45	05:07 04:33 21:43	04:33 04:57 22:10	04:57 03:57 21:39	03:57 02:57 20:29	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:41-08:02/21 16:50	07:41-08:02/21 15:40
27	08:24 09:12-09:40/28 16:34	07:16 08:14-08:27/13 17:43	06:02 06:04 18:42	06:04 05:07 20:47	05:07 04:34 21:45	04:34 04:57 22:10	04:57 03:57 21:37	03:57 02:57 20:27	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:43-08:01/18 16:47	07:43-08:01/18 15:40
28	08:22 09:12-09:41/29 16:36	07:13 08:17-08:24/7 17:45	05:59 06:04 18:44	06:04 05:09 20:49	05:09 04:34 21:46	04:34 04:57 22:10	04:57 03:57 21:36	03:57 02:57 20:24	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:45-07:59/14 16:45	07:45-07:59/14 15:40
29	08:20 09:12-09:41/29 16:38		05:57 06:04 18:47	06:04 05:09 20:51	05:09 04:34 21:48	04:34 04:57 22:10	04:57 03:57 21:34	03:57 02:57 20:22	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:48-07:58/10 16:43	07:48-07:58/10 15:40
30	08:18 09:12-09:41/29 16:41		05:54 06:04 18:49	06:04 05:09 20:53	05:09 04:38 21:50	04:38 04:57 22:09	04:57 03:57 21:32	03:57 02:57 20:19	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:50-07:54/4 16:40	07:50-07:54/4 15:40
31	08:16 09:12-09:42/30 16:43		05:51 06:04 19:51	06:04 05:09 21:51	05:09 04:37 21:51	04:37 04:57 21:30	04:57 03:57 20:16	03:57 02:57 20:16	02:57 01:59 20:01	01:59 00:18 18:07	00:18 07:20-08:04-08:59/5 16:38	07:20-08:04-08:59/5 15:40
Potential sun hours	235	266	366	426	508	529	529	469	385	324	247	216
Sum of minutes with flicker	364	557	0	0	0	0	0	0	0	323	607	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E7 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June	
1	08:51 12:33-13:09/36 15:48 10:14-11:18/64	08:15 11:00-11:11/11 16:45	07:11 08:03-08:33/30 17:47 07:37-07:54/17	06:49 19:53	05:32 06:19-07:26/67 20:55	04:36 21:52	
2	08:50 12:35-13:09/34 15:49 10:16-11:19/63	08:13 16:47	07:08 08:06-08:12/6 08:14-08:31/17 17:50 07:34-07:55/21	06:46 19:55	05:30 05:58-06:05/7 20:57 06:20-07:20/60	04:35 21:54	
3	08:50 12:35-13:09/34 15:50 10:16-11:19/63	08:11 08:41-08:46/5 16:50	07:06 07:34-07:56/22 17:52 08:17-08:29/12	06:43 19:57	05:28 05:56-06:07/11 20:59 06:21-07:19/58	04:33 21:55	
4	08:50 12:35-13:09/34 15:52 10:16-11:19/63	08:09 08:39-08:48/9 16:52	07:03 07:33-07:56/23 17:54	06:41 07:22-07:33/11 19:59	05:25 05:54-06:08/14 21:02 06:23-07:19/56	04:32 21:57	
5	08:49 12:36-13:10/34 15:53 10:18-11:20/62	08:07 08:37-08:50/13 16:54	07:00 07:32-07:56/24 17:56	06:38 07:16-07:36/20 20:01	05:23 05:52-06:09/17 21:04 06:25-07:18/53	04:32 21:58	
6	08:49 12:37-13:10/33 15:55 10:19-11:20/61	08:05 08:34-08:51/17 16:56	06:58 07:32-07:57/25 17:58	06:35 07:14-07:39/25 20:03	05:21 05:50-06:09/19 21:06 06:25-07:17/52	04:31 21:59	
7	08:48 12:38-13:10/32 15:56 10:19-11:21/62	08:03 08:32-08:52/20 16:58	06:55 07:32-07:56/24 18:00	06:33 07:11-07:40/29 20:05	05:19 05:49-06:10/21 21:08 06:26-07:16/50	04:30 22:00	
8	08:47 12:38-13:10/32 15:58 10:20-11:21/61	08:00 08:31-08:53/22 17:01	06:53 07:31-07:55/24 18:03	06:30 07:09-07:41/32 20:07	05:17 05:49-06:10/21 21:10 06:26-07:15/49	04:29 22:01	
9	08:47 12:39-13:10/31 15:59 10:21-11:22/61	07:58 08:30-08:53/23 17:03	06:50 07:32-07:55/23 18:05	06:27 07:08-07:42/34 20:10	05:15 05:48-06:10/22 21:12 06:26-07:14/48	04:28 22:02	
10	08:46 12:40-13:10/30 10:38-11:22/44 16:01 10:23-10:37/14	07:56 08:30-08:54/24 17:05	06:47 07:32-07:54/22 18:07	06:25 07:06-07:43/37 20:12	05:12 05:48-06:10/22 21:14 06:26-07:13/47	04:28 22:03	
11	08:45 12:42-13:10/28 10:38-11:23/45 16:03 10:25-10:36/11	07:54 08:31-08:54/23 17:07	06:45 07:33-07:53/20 18:09	06:22 07:05-07:44/39 20:14	05:10 05:48-06:10/22 21:16 06:27-07:12/45	04:27 22:04	
12	08:44 12:43-13:10/27 10:39-11:23/44 16:04 10:27-10:35/8	07:52 08:30-08:53/23 17:10	06:42 07:35-07:52/17 18:11	06:20 07:04-07:44/40 20:16	05:08 05:48-06:10/22 21:18 06:27-07:10/43	04:27 22:05	
13	08:43 12:43-13:08/25 16:06 10:39-11:23/44	07:49 08:20-08:30/10 17:12 08:31-08:54/23	06:39 07:36-07:49/13 18:13	06:17 07:01-07:44/43 20:18	05:06 05:48-06:09/21 21:20 06:28-07:08/40	04:26 22:06	
14	08:42 12:45-13:08/23 16:08 10:39-11:23/44	07:47 08:16-08:53/37 17:14	06:37 07:40-07:44/4 18:15	06:14 06:55-07:44/49 20:20	05:04 05:49-06:10/21 21:22 06:29-07:06/37	04:26 22:07	
15	08:41 12:47-13:08/21 16:10 10:40-11:24/44	07:45 08:15-08:53/38 17:16	06:34 18:17	06:12 06:53-07:44/51 20:22	05:02 05:49-06:09/20 21:23 06:30-07:03/33	04:25 22:07	
16	08:40 12:48-13:06/18 16:12 10:40-11:24/44	07:42 08:10-08:51/41 17:19	06:31 18:19	06:09 06:45-07:44/59 20:24	05:00 05:50-06:08/18 21:25 06:30-06:56/26	04:25 22:08	
17	08:39 12:51-13:05/14 16:14 10:41-11:24/43	07:40 08:08-08:51/43 17:21	06:29 18:22	06:07 06:41-07:44/63 20:26	04:59 05:51-06:08/17 21:27 06:32-06:56/24	04:25 22:08	
18	08:37 12:54-13:02/8 16:15 10:41-11:24/43	07:38 08:05-08:48/43 17:23	06:26 18:24	06:04 06:38-07:43/65 20:28 06:30-06:32/2	04:57 05:51-06:07/16 21:29 06:33-06:54/21	04:25 22:09	
19	08:36 10:42-11:24/42 16:17	07:35 08:03-08:46/43 17:25	06:23 18:26	06:02 06:28-07:43/75 20:30	04:55 05:52-06:05/13 21:31 06:34-06:52/18	04:25 22:09	
20	08:35 10:43-11:24/41 16:19	07:33 08:00-08:38/38 17:28	06:21 18:28	05:59 06:25-07:42/77 20:32	04:53 05:54-06:04/10 21:33 06:37-06:51/14	04:25 22:10	
21	08:33 10:43-11:24/41 16:22	07:31 08:00-08:39/39 17:30	06:18 18:30	05:57 06:23-07:42/79 20:35	04:51 05:56-06:02/6 21:35 06:39-06:48/9	04:25 22:10	
22	08:32 10:44-11:23/39 16:24	07:28 07:59-08:38/39 17:32	06:15 18:32	05:54 06:21-07:41/80 20:37	04:50 21:36	04:25 22:10	
23	08:30 10:45-11:23/38 16:26	07:26 08:00-08:39/39 17:34	06:13 18:34	05:52 06:19-07:40/81 20:39	04:48 21:38	04:26 22:10	
24	08:29 10:46-11:23/37 16:28	07:23 07:59-08:38/39 17:36	06:10 18:36	05:49 06:19-07:39/80 20:41	04:47 21:40	04:26 22:10	
25	08:27 10:47-11:23/36 16:30	07:21 08:00-08:37/37 17:39	06:07 18:38	05:47 06:19-07:38/79 20:43	04:45 21:42	04:26 22:10	
26	08:25 10:48-11:22/34 16:32	07:18 08:00-08:37/37 17:41	06:05 18:40	05:44 06:18-07:36/78 20:45	04:44 21:43	04:27 22:10	
27	08:24 10:49-11:21/32 16:34	07:16 08:01-08:36/35 17:43 07:42-07:50/8	06:02 18:42	05:42 06:18-07:35/77 20:47	04:42 21:45	04:27 22:10	
28	08:22 10:51-11:20/29 16:36	07:13 08:02-08:35/33 17:45 07:40-07:53/13	05:59 18:45	05:39 06:18-07:34/76 20:49	04:41 21:46	04:28 22:10	
29	08:20 10:52-11:19/27 16:38		06:57 19:47	05:37 06:18-07:32/74 20:51	04:39 21:48	04:28 22:10	
30	08:18 10:54-11:17/23 16:41		06:54 19:49	05:35 06:18-07:29/71 20:53	04:38 21:50	04:29 22:09	
31	08:17 10:57-11:15/18 16:43		06:51 19:51		04:37 21:51		
Potential sun hours	235	266	366	426	508	529	
Sum of minutes with flicker	1919	825	344	1526	1190	0	

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E7 - VESTAS V172-7.2 7200 172.0 !OI hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 22:09	05:15 05:58-06:20/22 21:28 06:37-07:21/44	06:17 07:04-07:43/39 20:14	07:17 08:14-08:30/16 18:53	07:22 08:00-08:23/23 16:36	08:24 12:24-12:52/28 10:20-11:05/45 15:45 10:07-10:18/11
2	04:31 22:08	05:17 05:58-06:20/22 21:26 06:37-07:22/45	06:19 07:05-07:42/37 20:11	07:19 08:12-08:31/19 18:51	07:25 08:00-08:22/22 16:34	08:26 12:24-12:53/29 10:21-11:05/44 15:44 10:06-10:20/14
3	04:31 22:08	05:19 05:59-06:20/21 21:24 06:36-07:24/48	06:21 07:06-07:40/34 20:09	07:21 08:11-08:32/21 18:48	07:27 08:01-08:22/21 16:31	08:27 12:22-12:53/31 15:43 10:06-11:06/60
4	04:32 22:07	05:21 05:59-06:20/21 21:22 06:36-07:25/49	06:23 07:07-07:39/32 20:06	07:23 08:10-08:32/22 18:45	07:29 08:02-08:21/19 16:29	08:29 12:23-12:54/31 15:42 10:04-11:05/61
5	04:33 22:07	05:23 05:58-06:19/21 21:19 06:35-07:25/50	06:25 07:07-07:36/29 20:03	07:25 08:09-08:32/23 18:43	07:31 08:05-08:21/16 16:27	08:31 12:23-12:55/32 15:41 10:04-11:06/62
6	04:34 22:06	05:25 05:59-06:19/20 21:17 06:35-07:26/51	06:27 07:09-07:34/25 20:01	07:27 08:08-08:32/24 18:40	07:33 08:07-08:20/13 16:25	08:32 12:23-12:56/33 15:41 10:05-11:07/62
7	04:36 22:05	05:27 06:00-06:19/19 21:15 06:35-07:27/52	06:29 07:11-07:32/21 19:58	07:29 08:07-08:32/25 18:38	07:36 08:09-08:18/9 16:23	08:34 12:23-12:56/33 15:40 10:04-11:06/62
8	04:37 22:04	05:29 06:02-06:18/16 21:13 06:34-07:28/54	06:31 07:16-07:28/12 19:55	07:31 08:07-08:32/25 18:35	07:38 08:12-08:16/4 16:21	08:35 12:23-12:57/34 15:40 10:04-11:07/63
9	04:38 22:03	05:31 06:04-06:17/13 21:11 06:31-07:28/57	06:33 19:53	07:34 08:08-08:32/24 18:32	07:40 16:19	08:37 12:23-12:57/34 15:39 10:05-11:08/63
10	04:39 22:02	05:33 06:06-06:16/10 21:08 06:30-07:28/58	06:35 19:50	07:36 08:08-08:31/23 18:30 08:53-09:01/8	07:42 10:30-10:42/12 16:17	08:38 12:24-12:58/34 15:39 10:05-11:08/63
11	04:40 22:01	05:35 06:07-06:12/5 21:06 06:28-07:28/60	06:37 19:47	07:38 08:08-08:30/22 18:27 08:49-09:04/15	07:44 10:28-10:46/18 16:15	08:39 12:24-12:59/35 15:38 10:05-11:08/63
12	04:42 22:00	05:37 06:27-07:35/68 21:04	06:39 19:45	07:40 08:38-09:06/28 18:25 08:09-08:29/20	07:46 10:25-10:48/23 16:13	08:40 12:24-13:00/36 15:38 10:06-11:09/63
13	04:43 21:59	05:39 06:26-07:38/72 21:01	06:41 19:42	07:42 08:36-09:07/31 18:22 08:11-08:27/16	07:48 10:24-10:51/27 16:11	08:41 12:25-13:00/35 15:38 10:06-11:09/63
14	04:45 21:58	05:41 06:26-07:40/74 20:59	06:43 19:39	07:44 08:34-09:08/34 18:19 08:13-08:24/11	07:51 10:23-10:52/29 16:09	08:43 12:25-13:01/36 15:38 10:06-11:09/63
15	04:46 21:57	05:43 06:26-07:42/76 20:57	06:45 19:37	07:46 08:33-09:09/36 18:17 08:16-08:22/6	07:53 10:21-10:53/32 16:07	08:44 12:25-13:01/36 15:38 10:06-11:10/64
16	04:48 21:55	05:45 06:25-07:43/78 20:54	06:47 19:34	07:48 08:32-09:09/37 18:14	07:55 10:21-10:55/34 16:06	08:45 12:25-13:02/37 15:38 10:06-11:10/64
17	04:49 21:54	05:47 06:25-07:43/78 20:52	06:49 19:31	07:50 08:31-09:09/38 18:12	07:57 10:20-10:56/36 16:04	08:45 12:26-13:02/36 15:38 10:07-11:11/64
18	04:51 21:52	05:49 06:24-07:44/80 20:49	06:51 19:28	07:52 08:30-09:09/39 18:09	07:59 10:20-10:57/37 16:02	08:46 12:26-13:03/37 15:38 10:07-11:11/64
19	04:52 21:51	05:51 06:25-07:45/80 20:47	06:53 19:26	07:54 08:31-09:10/39 18:07	08:01 10:20-10:58/38 16:01	08:47 12:27-13:04/37 15:38 10:08-11:12/64
20	04:54 21:49	05:53 06:25-07:46/81 20:45	06:55 19:23	07:57 08:31-09:09/38 18:04	08:03 10:19-10:58/39 15:59	08:48 12:27-13:04/37 15:38 10:08-11:12/64
21	04:56 21:48	05:55 06:26-07:46/80 20:42	06:57 19:20	07:59 08:31-09:09/38 18:02	08:05 10:18-10:59/41 15:57	08:48 12:28-13:04/36 15:39 10:09-11:12/63
22	04:57 06:53-06:55/2 21:46	05:57 06:28-07:46/78 20:40	06:59 19:18	08:01 08:31-09:08/37 17:59	08:07 10:19-11:00/41 15:56	08:49 12:28-13:04/36 15:39 10:09-11:12/63
23	04:59 06:05-06:13/8 21:45 06:48-06:59/11	05:59 06:30-07:47/77 20:37	07:01 19:15	08:03 08:34-09:17/43 17:57	08:09 10:19-11:01/42 15:55	08:49 12:29-13:05/36 15:40 10:10-11:14/64
24	05:01 06:04-06:15/11 21:43 06:46-07:02/16	06:01 06:41-07:47/66 20:35 06:32-06:40/8	07:03 19:12	08:05 08:36-09:19/43 17:54	08:11 12:31-12:39/8 15:53 10:18-11:01/43	08:50 12:29-13:06/37 15:40 10:10-11:14/64
25	05:03 06:03-06:17/14 21:41 06:44-07:03/19	06:03 06:42-07:47/65 20:32	07:05 19:10	07:07 07:38-08:20/42 16:52	08:13 12:28-12:42/14 15:52 10:18-11:01/43	08:50 12:29-13:06/37 15:41 10:10-11:14/64
26	05:04 06:01-06:17/16 21:39 06:43-07:05/22	06:05 06:43-07:46/63 20:29	07:07 19:07	07:09 07:41-08:22/41 16:50	08:15 12:26-12:44/18 15:50 10:19-11:03/44	08:51 12:30-13:06/36 15:42 10:11-11:14/63
27	05:06 06:01-06:18/17 21:37 06:42-07:07/25	06:07 06:47-07:46/59 20:27	07:09 19:04	07:12 07:45-08:22/37 16:47	08:17 12:26-12:47/21 15:49 10:19-11:03/44	08:51 12:30-13:06/36 15:43 10:11-11:15/64
28	05:08 06:00-06:18/18 21:36 06:40-07:07/27	06:09 06:54-07:45/51 20:24	07:11 19:02	07:14 07:46-08:22/36 16:45	08:19 12:25-12:48/23 15:48 10:19-11:04/45	08:51 12:31-13:07/36 15:43 10:12-11:15/63
29	05:10 05:59-06:19/20 21:34 06:40-07:15/35	06:11 06:56-07:45/49 20:22	07:13 18:59	07:16 07:50-07:58/8 16:43 08:00-08:23/23	08:21 12:24-12:49/25 15:47 10:20-11:04/44	08:51 12:31-13:07/36 15:44 10:12-11:16/64
30	05:12 05:59-06:20/21 21:32 06:39-07:18/39	06:13 07:02-07:44/42 20:19	07:15 08:17-08:28/11 18:56	07:18 08:00-08:23/23 16:40	08:22 12:24-12:51/27 10:20-11:04/44 15:46 10:08-10:16/8	08:51 12:32-13:08/36 15:45 10:13-11:17/64
31	05:14 05:59-06:21/22 21:30 06:39-07:20/41	06:15 07:04-07:43/39 20:16		07:20 08:00-08:24/24 16:38		08:51 12:33-13:09/36 15:46 10:14-11:18/64
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	384	2122	240	1035	1027	3025

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E8 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January		February		March	April		May		June	
1	08:51	10:40-10:48/8	08:15	07:11		06:49		05:32		04:36	05:30-06:08/38
	15:48	09:30-09:43/13	16:45	17:47		19:53		20:55		21:52	
2	08:50	10:42-10:48/6	08:13	07:08		06:46		05:30		04:35	05:30-06:07/37
	15:49	09:30-09:45/15	16:47	17:50		19:55		20:57		21:54	
3	08:50	09:29-09:45/16	08:11	07:05		06:43		05:28		04:33	05:30-06:07/37
	15:50		16:49	17:52		19:57		20:59		21:55	
4	08:50	09:28-09:45/17	08:09	07:03		06:41		05:25		04:32	05:30-06:07/37
	15:52		16:52	17:54		19:59		21:01		21:56	
5	08:49	09:28-09:47/19	08:07	07:00		06:38		05:23		04:31	05:31-06:07/36
	15:53		16:54	17:56		20:01		21:03		21:58	
6	08:49	09:27-09:47/20	08:05	06:58	07:24-07:31/7	06:35		05:21		04:31	05:31-06:07/36
	15:55		16:56	17:58		20:03		21:06		21:59	
7	08:48	09:27-09:48/21	08:02	06:55	07:21-07:33/12	06:33		05:19		04:30	05:31-06:07/36
	15:56		16:58	18:00		20:05		21:08		22:00	
8	08:47	09:27-09:49/22	08:00	06:53	07:18-07:34/16	06:30	06:55-07:05/10	05:17	05:51-05:56/5	04:29	05:32-06:09/37
	15:58		17:01	18:02		20:07		21:10		22:01	
9	08:47	09:27-09:49/22	07:58	06:50	07:16-07:36/20	06:27	06:53-07:08/15	05:15	05:48-06:00/12	04:28	05:31-06:09/38
	15:59		17:03	18:05		20:09		21:12		22:02	
10	08:46	09:27-09:50/23	07:56	06:47	07:13-07:36/23	06:25	06:50-07:09/19	05:12	05:46-06:02/16	04:28	05:32-06:10/38
	16:01		17:05	18:07		20:12		21:14		22:03	
11	08:45	09:28-09:51/23	07:54	06:45	07:10-07:35/25	06:22	06:48-07:10/22	05:10	05:44-06:03/19	04:27	05:31-06:10/39
	16:03		17:07	18:09		20:14		21:16		22:04	
12	08:44	09:28-09:51/23	07:52	06:42	07:08-07:36/28	06:20	06:45-07:10/25	05:08	05:43-06:04/21	04:27	05:31-06:10/39
	16:04		17:10	18:11		20:16		21:18		22:05	
13	08:43	09:28-09:51/23	07:49	06:39	07:05-07:35/30	06:17	06:43-07:11/28	05:06	05:41-06:05/24	04:26	05:31-06:11/40
	16:06		17:12	18:13		20:18		21:20		22:06	
14	08:42	09:28-09:52/24	07:47	06:37	07:02-07:35/33	06:14	06:40-07:10/30	05:04	05:41-06:06/25	04:26	05:30-06:11/41
	16:08		17:14	18:15		20:20		21:21		22:06	
15	08:41	09:29-09:53/24	07:45	06:34	06:59-07:33/34	06:12	06:38-07:11/33	05:02	05:41-06:06/25	04:25	05:30-06:11/41
	16:10		17:16	18:17		20:22		21:23		22:07	
16	08:40	09:29-09:53/24	07:42	06:31	06:57-07:33/36	06:09	06:36-07:10/34	05:00	05:38-06:07/29	04:25	05:31-06:12/41
	16:12		17:19	18:19		20:24		21:25		22:08	
17	08:39	09:30-09:53/23	07:40	06:29	06:54-07:31/37	06:07	06:35-07:10/35	04:59	05:37-06:08/31	04:25	05:31-06:12/41
	16:14		17:21	18:22		20:26		21:27		22:08	
18	08:37	09:30-09:53/23	07:38	06:26	06:52-07:28/36	06:04	06:34-07:09/35	04:57	05:35-06:08/33	04:25	05:31-06:13/42
	16:15		17:23	18:24		20:28		21:29		22:09	
19	08:36	09:30-09:53/23	07:35	06:23	06:52-07:25/33	06:02	06:34-07:08/34	04:55	05:34-06:07/33	04:25	05:31-06:13/42
	16:17		17:25	18:26		20:30		21:31		22:09	
20	08:35	09:31-09:53/22	07:33	06:21	06:52-07:22/30	05:59	06:33-07:07/34	04:53	05:33-06:08/35	04:25	05:31-06:13/42
	16:19		17:28	18:28		20:32		21:33		22:10	
21	08:33	09:32-09:53/21	07:31	06:18	06:51-07:21/30	05:57	06:33-07:06/33	04:51	05:32-06:08/36	04:25	05:31-06:13/42
	16:21		17:30	18:30		20:34		21:35		22:10	
22	08:32	09:32-09:53/21	07:28	06:15	06:52-07:20/28	05:54	06:34-07:04/30	04:50	05:32-06:08/36	04:25	05:32-06:14/42
	16:24		17:32	18:32		20:37		21:36		22:10	
23	08:30	09:33-09:52/19	07:26	06:13	06:52-07:17/25	05:52	06:33-07:01/28	04:48	05:31-06:08/37	04:25	05:32-06:14/42
	16:26		17:34	18:34		20:39		21:38		22:10	
24	08:29	09:35-09:52/17	07:23	06:10	06:52-07:10/18	05:49	06:34-06:58/24	04:47	05:31-06:08/37	04:26	05:32-06:14/42
	16:28		17:36	18:36		20:41		21:40		22:10	
25	08:27	09:36-09:51/15	07:21	06:07	06:52-07:09/17	05:47	06:35-06:57/22	04:45	05:31-06:09/38	04:26	05:33-06:14/41
	16:30		17:39	18:38		20:43		21:42		22:10	
26	08:25	09:38-09:50/12	07:18	06:05	06:54-07:07/13	05:44	06:35-06:55/20	04:44	05:31-06:09/38	04:27	05:33-06:14/41
	16:32		17:41	18:40		20:45		21:43		22:10	
27	08:24	09:41-09:48/7	07:16	06:02	06:57-07:04/7	05:42	06:36-06:53/17	04:42	05:30-06:08/38	04:27	05:34-06:15/41
	16:34		17:43	18:42		20:47		21:45		22:10	
28	08:22		07:13	05:59		05:39	06:39-06:51/12	04:41	05:30-06:08/38	04:28	05:33-06:14/41
	16:36		17:45	18:45		20:49		21:46		22:10	
29	08:20			06:57		05:37		04:39	05:30-06:08/38	04:28	05:34-06:14/40
	16:38			19:47		20:51		21:48		22:10	
30	08:18			06:54		05:35		04:38	05:30-06:08/38	04:29	05:35-06:15/40
	16:41			19:49		20:53		21:49		22:09	
31	08:16			06:51				04:37	05:30-06:08/38		
	16:43			19:51				21:51			
Potential sun hours	235		266	366		426		508		529	1190
Sum of minutes with flicker	546		0	538		540		720		1190	

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E8 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July		August		September		October		November		December	
1	04:30	05:35-06:14/39	05:15	05:53-06:14/21	06:17	06:47-07:09/22	07:17	07:46-08:15/29	07:22		08:24	09:10-09:33/23
	22:09		21:28		20:14		18:53		16:36		15:45	
2	04:31	05:36-06:14/38	05:17	05:55-06:13/18	06:19	06:49-07:08/19	07:19	07:48-08:15/27	07:25		08:26	09:10-09:33/23
	22:08		21:26		20:11		18:51		16:34		15:44	
3	04:31	05:36-06:14/38	05:19	05:57-06:11/14	06:21	06:51-07:06/15	07:21	07:50-08:14/24	07:27		08:27	09:11-09:33/22
	22:08		21:24		20:09		18:48		16:31		15:43	
4	04:32	05:37-06:14/37	05:21	05:59-06:09/10	06:23	06:53-07:04/11	07:23	07:52-08:13/21	07:29		08:29	09:11-09:33/22
	22:07		21:21		20:06		18:45		16:29		15:42	
5	04:33	05:37-06:14/37	05:23		06:25		07:25	07:54-08:12/18	07:31		08:31	09:12-09:33/21
	22:07		21:19		20:03		18:43		16:27		15:41	
6	04:34	05:37-06:14/37	05:25		06:27		07:27	07:56-08:10/14	07:33		08:32	09:13-09:33/20
	22:06		21:17		20:01		18:40		16:25		15:41	
7	04:36	05:37-06:14/37	05:27		06:29		07:29	07:58-08:08/10	07:35		08:34	09:14-09:33/19
	22:05		21:15		19:58		18:38		16:23		15:40	
8	04:37	05:38-06:14/36	05:29		06:31		07:31	08:00-08:04/4	07:38		08:35	09:16-09:33/17
	22:04		21:13		19:55		18:35		16:21		15:40	
9	04:38	05:38-06:14/36	05:31		06:33		07:33		07:40		08:36	09:18-09:34/16
	22:03		21:11		19:53		18:32		16:19		15:39	
10	04:39	05:38-06:15/37	05:33		06:35		07:36		07:42		08:38	10:31-10:36/5
	22:02		21:08		19:50		18:30		16:17		15:39	09:19-09:34/15
11	04:40	05:38-06:15/37	05:35		06:37		07:38		07:44		08:39	10:30-10:38/8
	22:01		21:06		19:47		18:27		16:15		15:38	09:20-09:33/13
12	04:42	05:39-06:16/37	05:37		06:39		07:40		07:46		08:40	10:30-10:40/10
	22:00		21:04		19:45		18:24		16:13		15:38	09:22-09:34/12
13	04:43	05:39-06:16/37	05:39		06:41		07:42		07:48		08:41	10:30-10:41/11
	21:59		21:01		19:42		18:22		16:11		15:38	09:23-09:34/11
14	04:45	05:39-06:17/38	05:41	06:49-06:55/6	06:43		07:44		07:51		08:43	10:30-10:42/12
	21:58		20:59		19:39		18:19		16:09		15:38	09:24-09:34/10
15	04:46	05:39-06:17/38	05:43	06:45-06:59/14	06:45		07:46		07:53	09:12-09:20/8	08:44	10:29-10:43/14
	21:56		20:57		19:36		18:17		16:07		15:38	09:25-09:34/9
16	04:48	05:40-06:18/38	05:45	06:44-07:01/17	06:47	07:47-07:52/5	07:48		07:55	09:11-09:23/12	08:45	10:30-10:43/13
	21:55		20:54		19:34		18:14		16:06		15:38	09:26-09:34/8
17	04:49	05:40-06:17/37	05:47	06:41-07:02/21	06:49	07:43-07:55/12	07:50		07:57	09:09-09:24/15	08:45	10:30-10:44/14
	21:54		20:52		19:31		18:12		16:04		15:38	09:27-09:35/8
18	04:51	05:40-06:18/38	05:49	06:40-07:03/23	06:51	07:41-07:57/16	07:52		07:59	09:09-09:26/17	08:46	10:30-10:45/15
	21:52		20:49		19:28		18:09		16:02		15:38	09:28-09:35/7
19	04:52	05:40-06:18/38	05:51	06:39-07:03/24	06:53	07:39-07:58/19	07:54		08:01	09:08-09:27/19	08:47	10:31-10:46/15
	21:51		20:47		19:26		18:07		16:01		15:38	09:29-09:36/7
20	04:54	05:41-06:19/38	05:53	06:39-07:07/28	06:55	07:38-08:02/24	07:57		08:03	09:07-09:28/21	08:48	10:31-10:46/15
	21:49		20:44		19:23		18:04		15:59		15:38	09:29-09:35/6
21	04:56	05:42-06:18/36	05:55	06:38-07:09/31	06:57	07:37-08:05/28	07:59		08:05	09:07-09:28/21	08:48	10:31-10:47/16
	21:48		20:42		19:20		18:02		15:57		15:39	09:30-09:36/6
22	04:57	05:43-06:19/36	05:57	06:38-07:10/32	06:59	07:36-08:05/29	08:01		08:07	09:07-09:30/23	08:49	10:31-10:47/16
	21:46		20:39		19:18		17:59		15:56		15:39	09:30-09:36/6
23	04:59	05:43-06:18/35	05:59	06:38-07:11/33	07:01	07:35-08:06/31	08:03		08:09	09:07-09:30/23	08:49	10:33-10:48/15
	21:44		20:37		19:15		17:57		15:54		15:40	09:31-09:37/6
24	05:01	05:44-06:18/34	06:01	06:38-07:12/34	07:03	07:35-08:07/32	08:05		08:11	09:07-09:30/23	08:50	10:33-10:48/15
	21:43		20:34		19:12		17:54		15:53		15:40	09:31-09:37/6
25	05:02	05:44-06:18/34	06:03	06:38-07:12/34	07:05	07:35-08:10/35	07:07		08:13	09:07-09:30/23	08:50	10:33-10:48/15
	21:41		20:32		19:10		16:52		15:52		15:41	09:31-09:38/7
26	05:04	05:46-06:18/32	06:05	06:37-07:12/35	07:07	07:36-08:13/37	07:09		08:15	09:08-09:32/24	08:50	10:34-10:48/14
	21:39		20:29		19:07		16:50		15:50		15:42	09:31-09:38/7
27	05:06	05:48-06:18/30	06:07	06:38-07:12/34	07:09	07:38-08:14/36	07:12		08:17	09:08-09:32/24	08:51	10:34-10:48/14
	21:37		20:27		19:04		16:47		15:49		15:43	09:31-09:39/8
28	05:08	05:49-06:17/28	06:09	06:39-07:12/33	07:11	07:40-08:15/35	07:14		08:19	09:08-09:32/24	08:51	10:35-10:49/14
	21:36		20:24		19:01		16:45		15:48		15:43	09:31-09:40/9
29	05:10	05:51-06:16/25	06:11	06:41-07:11/30	07:13	07:42-08:15/33	07:16		08:20	09:09-09:32/23	08:51	10:36-10:49/13
	21:34		20:22		18:59		16:43		15:47		15:44	09:31-09:41/10
30	05:12	05:52-06:16/24	06:13	06:43-07:11/28	07:15	07:45-08:15/30	07:18		08:22	09:09-09:33/24	08:51	10:37-10:49/12
	21:32		20:19		18:56		16:40		15:46		15:45	09:31-09:42/11
31	05:14	05:53-06:16/23	06:15	06:45-07:10/25			07:20				08:51	10:39-10:49/10
	21:30		20:16				16:38				15:46	09:31-09:43/12
Potential sun hours	529		469		385		324		247		216	
Sum of minutes with flicker		1085		545		469		147		324		663

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E9 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 16:45	07:11 17:47	06:49 19:53	05:32 20:55	06:25-07:16/51 21:52
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	05:30 20:57	06:24-07:16/52 21:54
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	06:24-07:16/52 21:55
4	08:50 15:52	08:09 16:52	07:03 17:54	06:41 19:59	05:25 21:01	06:24-07:16/52 21:56
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	05:23 21:03	06:24-07:16/52 21:58
6	08:49 15:55	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	06:24-07:16/52 21:59
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	05:19 21:07	06:23-07:16/53 22:00
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	05:17 21:10	06:23-07:15/52 22:01
9	08:47 15:59	07:58 17:03	06:50 18:05	06:27 20:09	05:14 21:12	06:23-07:15/52 22:02
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:14	06:23-07:14/51 22:03
11	08:45 16:03	07:54 17:07	06:45 18:09	06:22 20:14	05:10 21:16	06:23-07:14/51 22:04
12	08:44 16:04	07:52 17:10	06:42 18:11	06:19 20:16	05:08 21:17	06:24-07:13/49 22:05
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	06:24-07:12/48 22:06
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	06:25-07:12/47 22:06
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	06:25-07:12/47 22:07
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	05:00 21:25	06:25-07:10/45 22:08
17	08:39 16:14	07:40 17:21	06:29 18:22	06:07 20:26	04:59 21:27	06:25-07:09/44 22:08
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	06:27-07:09/42 22:09
19	08:36 16:17	07:35 17:25	06:23 18:26	06:02 20:30	04:55 21:31	06:27-07:08/41 22:09
20	08:35 16:19	07:33 17:28	06:21 18:28	05:59 20:32	04:53 21:33	06:28-07:07/39 22:09
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	06:28-07:06/38 22:10
22	08:32 16:24	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	06:30-07:05/35 22:10
23	08:30 16:26	07:26 17:34	06:13 18:34	05:52 20:39	04:48 21:38	06:30-07:03/33 22:10
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:47 21:40	06:32-07:02/30 22:10
25	08:27 16:30	07:21 17:39	06:07 18:38	05:47 20:43	04:45 21:41	06:33-07:01/28 22:10
26	08:25 16:32	07:18 17:41	06:05 18:40	05:44 20:45	04:44 21:43	06:34-06:58/24 22:10
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	06:36-06:55/19 22:10
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	06:38-06:51/13 22:10
29	08:20 16:38		06:57 19:47	05:37 20:51	04:39 21:48	06:41-06:48/7 22:09
30	08:18 16:41		06:54 19:49	05:35 20:53	04:38 21:49	
31	08:16 16:43		06:51 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	566	488	1199	0

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

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

Project:

Mezares_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:40/4.0.540

SHADOW - Calendar per WTG

WTG: E9 - VESTAS V172-7.2 7200 172.0 !O! hub: 175.0 m (TOT: 261.0 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
442	466	539	464	488	781	784	938	1,215	1,079	833	556	8,584

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

	July	August	September	October	November	December
1	04:30 22:09	05:15 06:34-07:23/49 21:28	06:17 20:14	07:17 07:53-08:18/25 18:53	07:22 16:36	08:24 15:45
2	04:31 22:08	05:17 06:34-07:24/50 21:26	06:19 20:11	07:19 07:53-08:17/24 18:51	07:25 16:34	08:26 15:44
3	04:31 22:08	05:19 06:34-07:25/51 21:24	06:21 20:09	07:21 07:54-08:16/22 18:48	07:27 16:31	08:27 15:43
4	04:32 22:07	05:21 06:34-07:25/51 21:21	06:23 20:06	07:23 07:55-08:14/19 18:45	07:29 16:29	08:29 15:42
5	04:33 22:06	05:23 06:33-07:25/52 21:19	06:25 20:03	07:25 07:56-08:12/16 18:43	07:31 16:27	08:31 15:41
6	04:34 22:06	05:25 06:33-07:25/52 21:17	06:27 20:01	07:27 07:59-08:09/10 18:40	07:33 16:25	08:32 15:41
7	04:36 22:05	05:27 06:33-07:25/52 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:34 15:40
8	04:37 22:04	05:29 06:33-07:25/52 21:13	06:31 19:55	07:31 18:35	07:38 16:21	08:35 15:40
9	04:38 22:03	05:31 06:33-07:25/52 21:10	06:33 19:53	07:33 18:32	07:40 16:19	08:36 15:39
10	04:39 22:02	05:33 06:33-07:24/51 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:39
11	04:40 22:01	05:35 06:33-07:24/51 21:06	06:37 19:47	07:38 18:27	07:44 16:15	08:39 15:38
12	04:42 22:00	05:37 06:33-07:24/51 21:04	06:39 07:34-07:43/9 19:45	07:40 18:24	07:46 16:13	08:40 15:38
13	04:43 21:59	05:39 06:34-07:24/50 21:01	06:41 07:31-07:45/14 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	04:45 06:52-06:54/2 21:58	05:41 06:34-07:23/49 20:59	06:43 07:30-07:46/16 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	04:46 06:48-06:58/10 21:56	05:43 06:35-07:23/48 20:57	06:45 07:28-07:47/19 19:36	07:46 18:17	07:53 16:07	08:43 15:38
16	04:48 06:46-07:01/15 21:55	05:45 06:36-07:22/46 20:54	06:47 07:27-07:47/20 19:34	07:48 18:14	07:55 16:06	08:44 15:38
17	04:49 06:44-07:07/23 21:54	05:47 06:36-07:21/45 20:52	06:49 07:27-07:47/20 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	04:51 06:43-07:10/27 21:52	05:49 06:37-07:20/43 20:49	06:51 07:26-07:47/21 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	04:52 06:42-07:11/29 21:51	05:51 06:38-07:19/41 20:47	06:53 07:26-07:47/21 19:26	07:54 18:07	08:01 16:01	08:47 15:38
20	04:54 06:41-07:13/32 21:49	05:53 06:40-07:18/38 20:44	06:55 07:25-07:45/20 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	04:56 06:40-07:14/34 21:48	05:55 06:42-07:16/34 20:42	06:57 07:25-07:44/19 19:20	07:59 18:02	08:05 15:57	08:48 15:39
22	04:57 06:40-07:16/36 21:46	05:57 06:45-07:15/30 20:39	06:59 07:27-07:43/16 19:18	08:01 17:59	08:07 15:56	08:49 15:39
23	04:59 06:38-07:17/39 21:44	05:59 06:48-07:13/25 20:37	07:01 07:29-07:41/12 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	05:01 06:38-07:18/40 21:43	06:01 06:50-07:10/20 20:34	07:03 07:31-07:39/8 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	05:02 06:37-07:19/42 21:41	06:03 06:52-07:05/13 20:32	07:05 07:54-08:19/25 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	05:04 06:37-07:20/43 21:39	06:05 20:29	07:07 07:53-08:19/26 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	05:06 06:36-07:21/45 21:37	06:07 20:27	07:09 07:53-08:19/26 19:04	07:11 16:47	08:17 15:49	08:51 15:43
28	05:08 06:35-07:21/46 21:35	06:09 20:24	07:11 07:52-08:19/27 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	05:10 06:35-07:22/47 21:34	06:11 20:22	07:13 07:53-08:19/26 18:59	07:16 16:43	08:20 15:47	08:51 15:44
30	05:12 06:35-07:23/48 21:32	06:13 20:19	07:15 07:53-08:19/26 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	05:14 06:34-07:23/49 21:30	06:15 20:16		07:20 16:38		08:51 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	607	1096	461	116	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