Ballyteige Solar Farm
Residential Based Receptors
Figure 6.1

Key

- **Development Boundary** (red outline)
- **Panel Boundary** (blue hatched)
- **1km Study Area** (dashed line)
- ● **Glare Not Possible at Receptor** (magenta dot)
- ● **Glare Possible at Receptor** (orange dot)
- **Residential Area** (orange shading)
- **Non-Reflection Zone** (grey shading)

The Non Reflection Zones are areas where it is impossible for ground based receptors to receive any glint and glare impacts. Receptors outwith these areas are analysed in detail within the report to determine if any impacts are possible. See Paragraph 6.83 - 6.85 of the report for an in depth description of the Non Reflection Zones.

Neo Office Address:
Johnstown Business Centre, Johnstown House, Naas, Co. Kildare

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Date: 18/11/2024
Drawn By: David Thomson
Scale (A3): 1:15,000
Drawing No: NEO00687/035I/B

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0   0.25   0.5   1 Kilometres
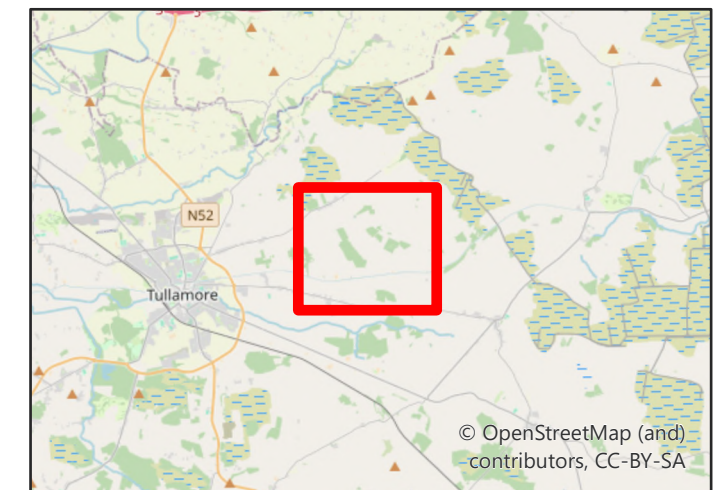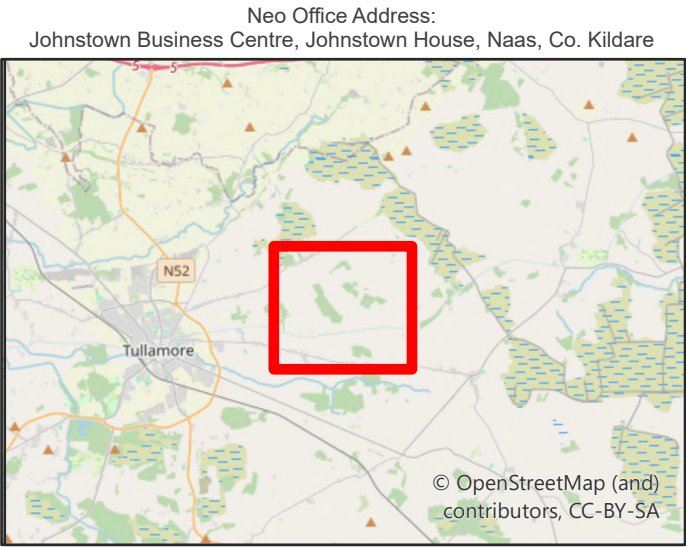
Ballyteige Solar Farm
Road Based Receptors
Figure 6.2

Key

Development Boundary

Panel Boundary

1km Study Area

● Glare Not Possible at Receptor

● Glare Possible at Receptor

Non-Reflection Zone

The Non Reflection Zones are areas where it is impossible for ground based receptors to receive any glint and glare impacts. Receptors outwith these areas are analysed in detail within the report to determine if any impacts are possible. See Paragraph 6.83 - 6.85 of the report for an in depth description of the Non Reflection Zones.

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ENVIRONMENTAL

ForgeSolar

Ballyteige Solar Farm
Ballyteige Solar Farm Residential 10 degrees

Created Jul 25, 2023
Updated Oct 02, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 96018.16825

Project type Advanced
Project status: active
Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results   Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	65,165	6,818	-

Component Data

PV Array(s)

Total PV footprint area: 467,677 m^2

Name: PV array 1
Footprint area: 467,677 m^2
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg

Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.293813	-7.412660	71.00	2.50	73.50
2	53.294044	-7.410922	72.13	2.50	74.63
3	53.292403	-7.409248	74.00	2.50	76.50
4	53.292261	-7.409699	73.92	2.50	76.42
5	53.290158	-7.408990	73.35	2.50	75.85
6	53.288978	-7.407789	72.74	2.50	75.24
7	53.288785	-7.408390	72.32	2.50	74.82
8	53.284343	-7.399724	72.00	2.50	74.50
9	53.284478	-7.399553	72.06	2.50	74.56
10	53.284029	-7.398340	72.00	2.50	74.50
11	53.284741	-7.395422	72.34	2.50	74.84
12	53.284138	-7.393813	72.64	2.50	75.14
13	53.286345	-7.389929	74.71	2.50	77.21
14	53.286075	-7.389028	74.45	2.50	76.95
15	53.285703	-7.389006	73.98	2.50	76.48
16	53.285113	-7.389907	73.93	2.50	76.43
17	53.283394	-7.390830	73.00	2.50	75.50
18	53.282060	-7.406773	67.69	2.50	70.19
19	53.280726	-7.409112	68.00	2.50	70.50
20	53.280238	-7.409284	68.03	2.50	70.53
21	53.280238	-7.409584	68.03	2.50	70.53
22	53.281290	-7.410700	68.11	2.50	70.61
23	53.281637	-7.409820	67.01	2.50	69.51
24	53.282753	-7.409584	68.63	2.50	71.13
25	53.283086	-7.409906	69.12	2.50	71.62
26	53.282483	-7.412331	69.99	2.50	72.49
27	53.285947	-7.414476	71.29	2.50	73.79
28	53.286434	-7.412889	71.00	2.50	73.50
29	53.284831	-7.411687	69.62	2.50	72.12
30	53.283882	-7.409970	70.00	2.50	72.50
31	53.284215	-7.408683	70.25	2.50	72.75
32	53.282984	-7.407546	68.96	2.50	71.46
33	53.284780	-7.403662	70.48	2.50	72.98
34	53.285164	-7.403919	70.91	2.50	73.41
35	53.287740	-7.407613	72.00	2.50	74.50
36	53.287984	-7.407635	72.25	2.50	74.75
37	53.288817	-7.408965	71.53	2.50	74.03
38	53.289843	-7.409845	71.95	2.50	74.45
39	53.289702	-7.410510	71.58	2.50	74.08
40	53.290690	-7.411154	72.00	2.50	74.50
41	53.290780	-7.410317	72.94	2.50	75.44

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.288494	-7.419744	72.79	2.00	74.79
OP 2	53.285646	-7.421547	76.94	2.00	78.94
OP 3	53.284947	-7.422609	75.04	2.00	77.04
OP 4	53.285595	-7.423928	73.90	2.00	75.90
OP 5	53.285448	-7.425709	72.53	2.00	74.53
OP 6	53.285114	-7.427276	70.46	2.00	72.46
OP 7	53.284543	-7.426257	71.24	2.00	73.24
OP 8	53.283639	-7.426321	69.97	2.00	71.97
OP 9	53.283222	-7.426278	69.79	2.00	71.79
OP 10	53.278436	-7.422437	70.00	2.00	72.00
OP 11	53.278443	-7.421621	70.00	2.00	72.00
OP 12	53.278513	-7.418591	71.41	2.00	73.41
OP 13	53.278821	-7.417083	71.81	2.00	73.81
OP 14	53.279873	-7.389656	73.43	2.00	75.43
OP 15	53.277378	-7.380161	74.81	2.00	76.81
OP 16	53.278930	-7.379753	75.96	2.00	77.96
OP 17	53.288616	-7.376726	80.33	2.00	82.33
OP 18	53.289738	-7.376909	80.79	2.00	82.79
OP 19	53.292169	-7.380076	83.33	2.00	85.33
OP 20	53.292265	-7.381975	81.96	2.00	83.96
OP 21	53.291668	-7.382415	80.62	2.00	82.62
OP 22	53.292149	-7.383649	81.49	2.00	83.49
OP 23	53.292175	-7.385161	81.09	2.00	83.09
OP 24	53.292412	-7.387683	81.70	2.00	83.70
OP 25	53.293118	-7.390247	83.59	2.00	85.59
OP 26	53.293041	-7.392060	81.68	2.00	83.68
OP 27	53.293233	-7.392521	80.75	2.00	82.75
OP 28	53.294682	-7.394495	79.98	2.00	81.98
OP 29	53.292791	-7.405836	75.00	2.00	77.00
OP 30	53.290399	-7.400203	74.48	2.00	76.48
OP 31	53.288340	-7.398283	75.00	2.00	77.00
OP 32	53.287173	-7.398905	75.43	2.00	77.43
OP 33	53.286416	-7.400139	74.97	2.00	76.97

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	65,165	6,818	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	736	1252	924	730	792	1226	1153	35	0	0
pv-array-1 (yellow)	0	0	0	0	343	511	494	42	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1　*potential temporary after-image*

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	3446	0
OP: OP 2	3923	0
OP: OP 3	3771	0
OP: OP 4	3594	0
OP: OP 5	3379	0
OP: OP 6	3148	0
OP: OP 7	3387	0
OP: OP 8	3286	0
OP: OP 9	3226	0
OP: OP 10	1061	1553
OP: OP 11	1272	1251
OP: OP 12	1032	1384
OP: OP 13	1130	1386
OP: OP 14	2103	929
OP: OP 15	2257	41
OP: OP 16	2520	131
OP: OP 17	853	0
OP: OP 18	758	0
OP: OP 19	508	0
OP: OP 20	514	0
OP: OP 21	566	0
OP: OP 22	576	0
OP: OP 23	570	0
OP: OP 24	633	0
OP: OP 25	627	0
OP: OP 26	658	0
OP: OP 27	500	0
OP: OP 28	0	0

OP: OP 29	2544	143
OP: OP 30	2543	0
OP: OP 31	3260	0
OP: OP 32	3480	0
OP: OP 33	4040	0

PV array 1: OP 1

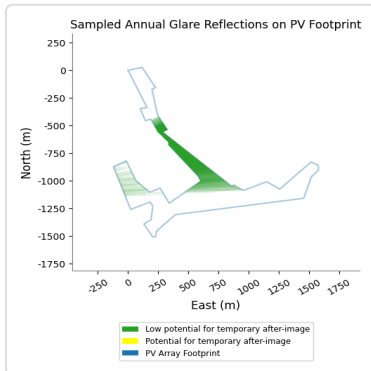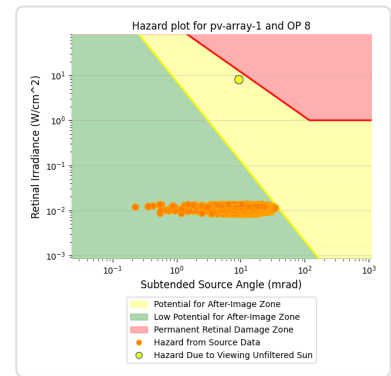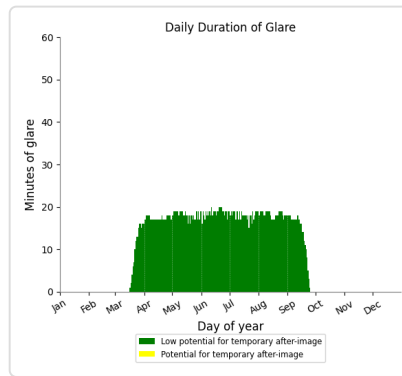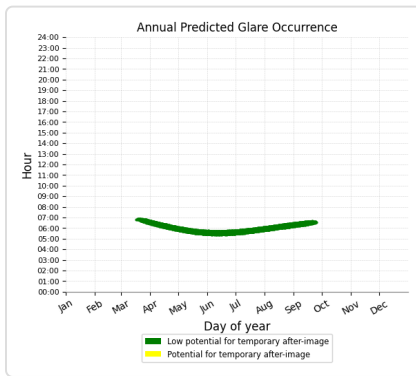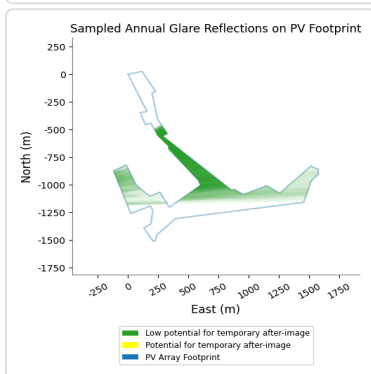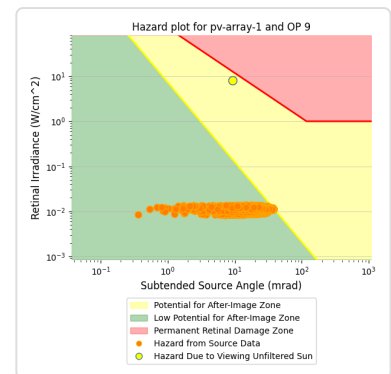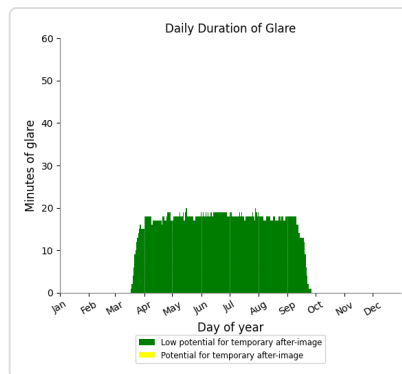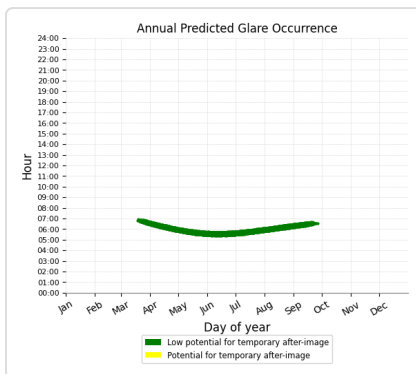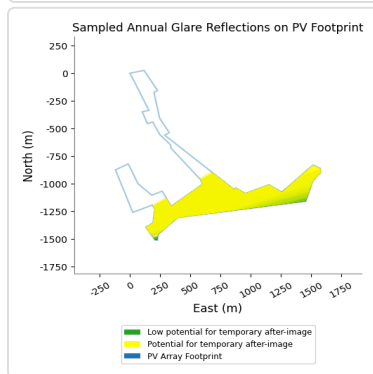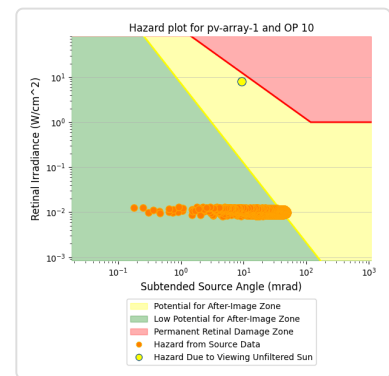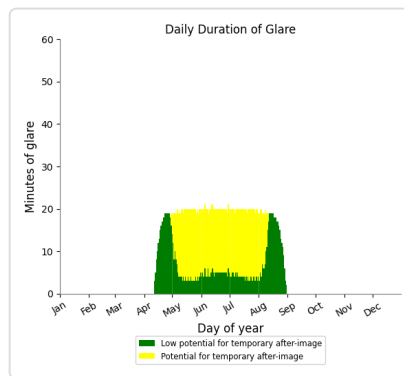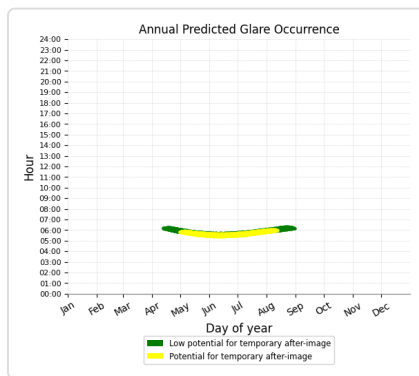PV array is expected to produce the following glare for this receptor:
- 3,446 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
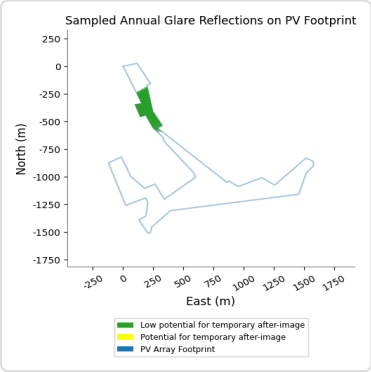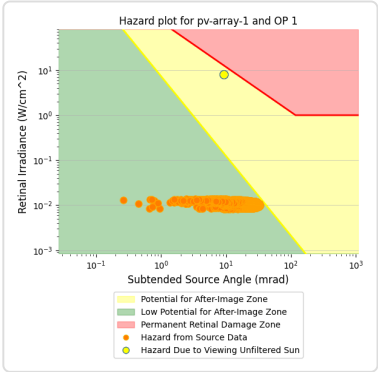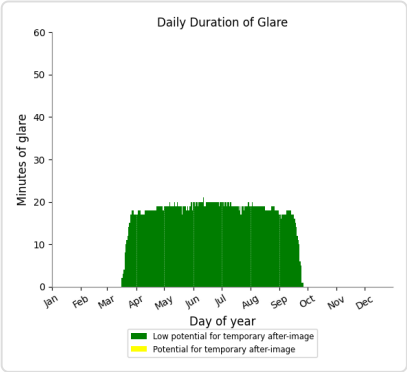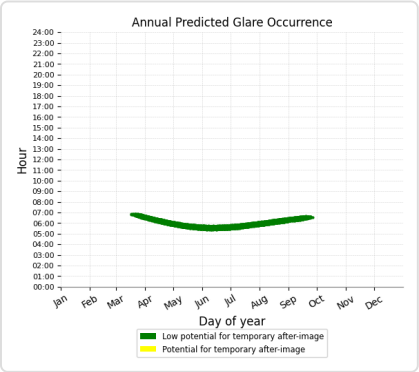
PV array 1: OP 2

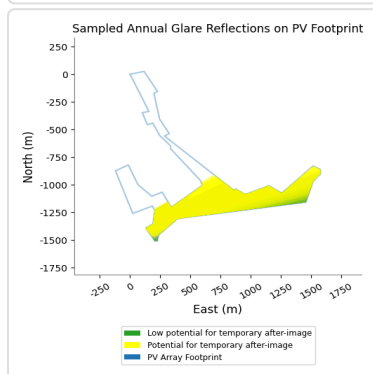PV array is expected to produce the following glare for this receptor:
- 3,923 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 3

PV array is expected to produce the following glare for this receptor:
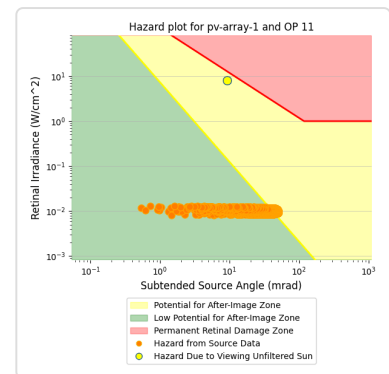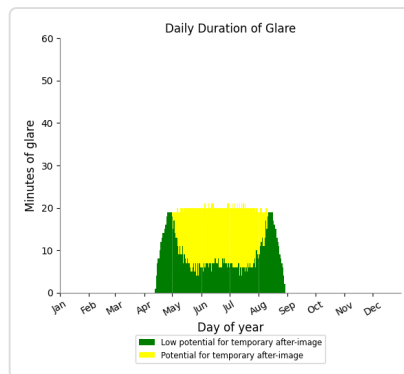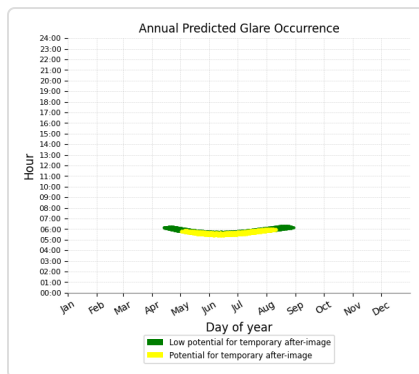- 3,771 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
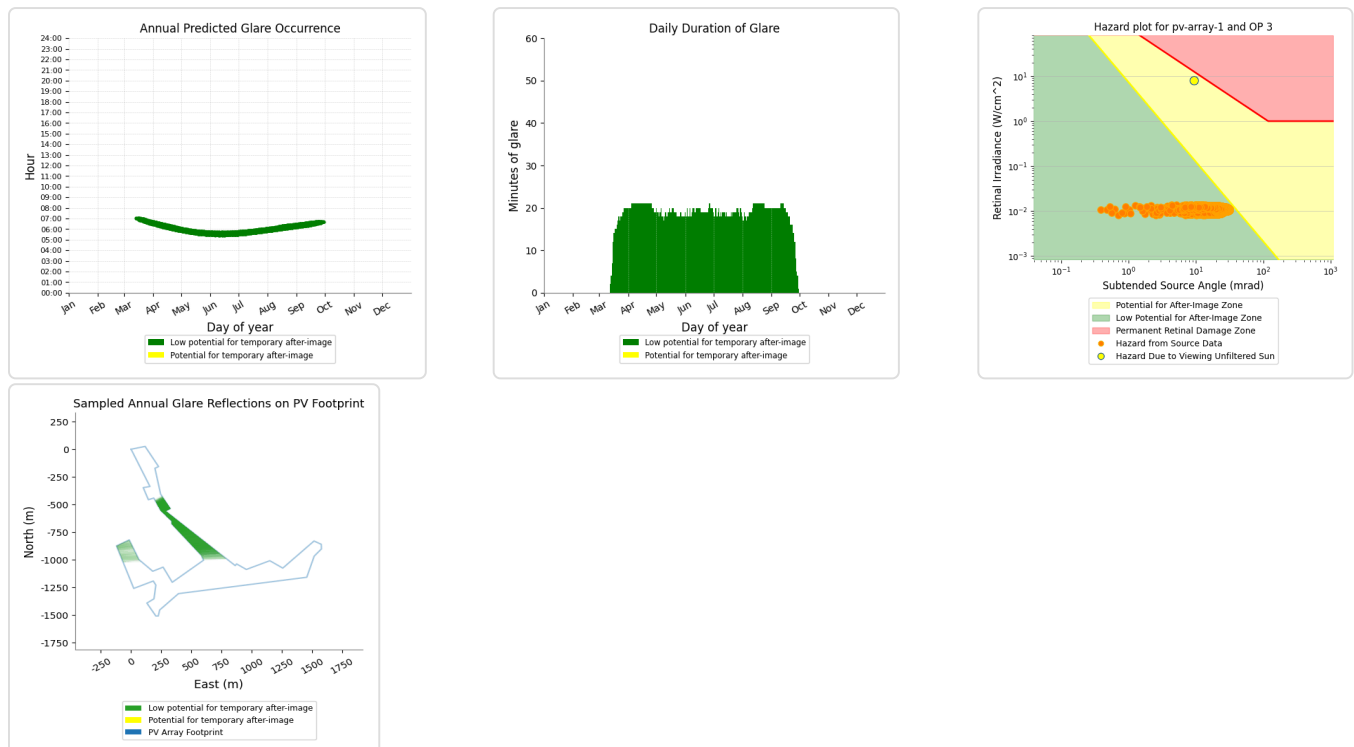
PV array 1: OP 4

PV array is expected to produce the following glare for this receptor:
- 3,594 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
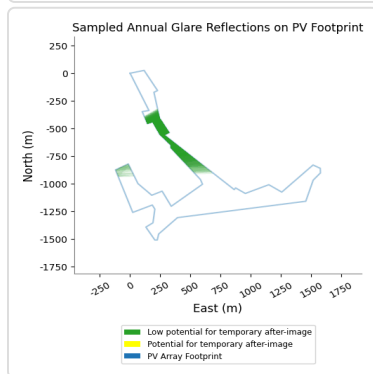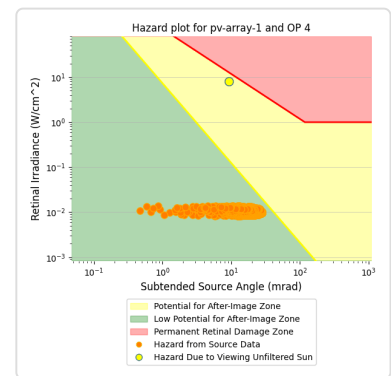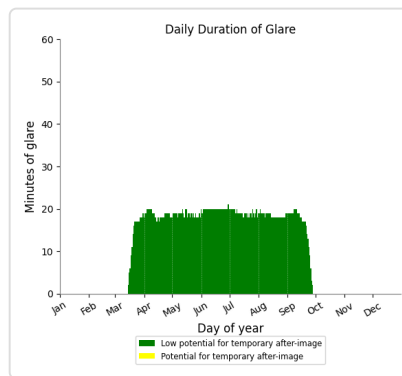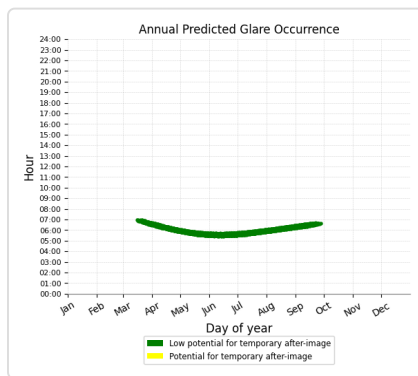
PV array 1: OP 5

PV array is expected to produce the following glare for this receptor:
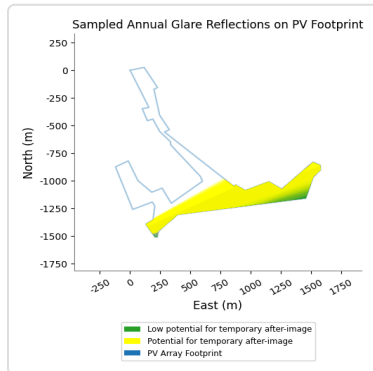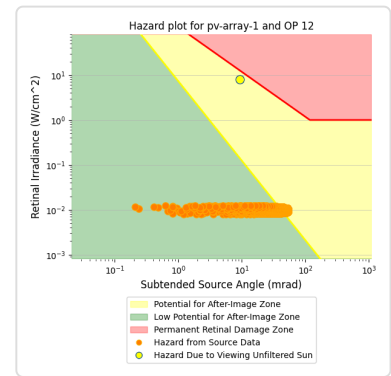- 3,379 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
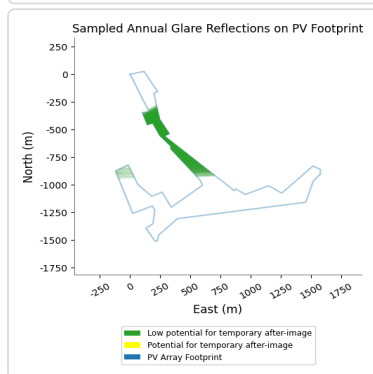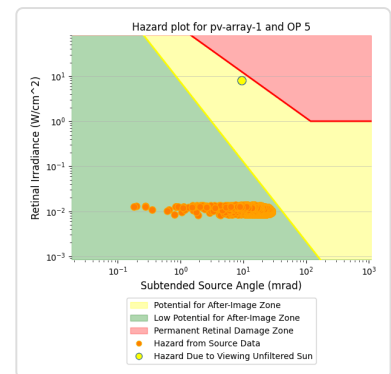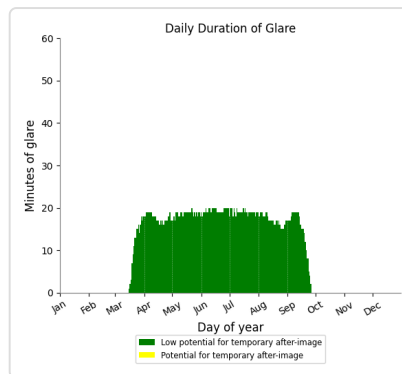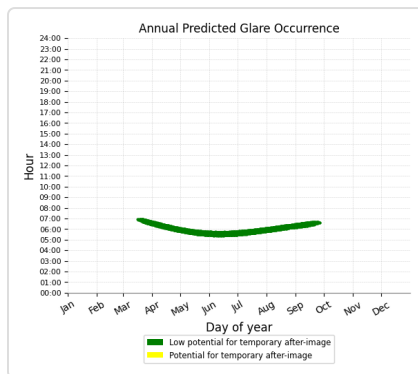
PV array 1: OP 6

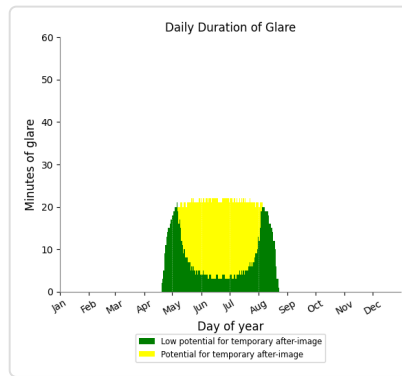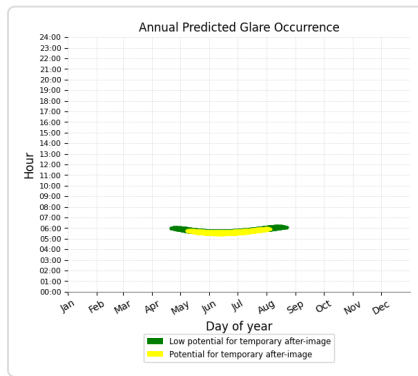PV array is expected to produce the following glare for this receptor:
- 3,148 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 7

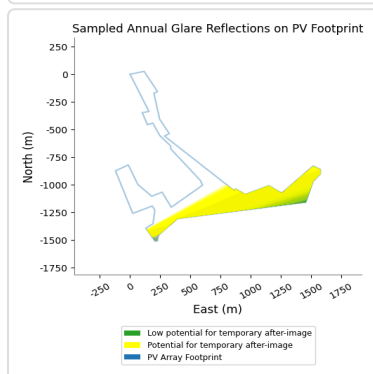PV array is expected to produce the following glare for this receptor:
- 3,387 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
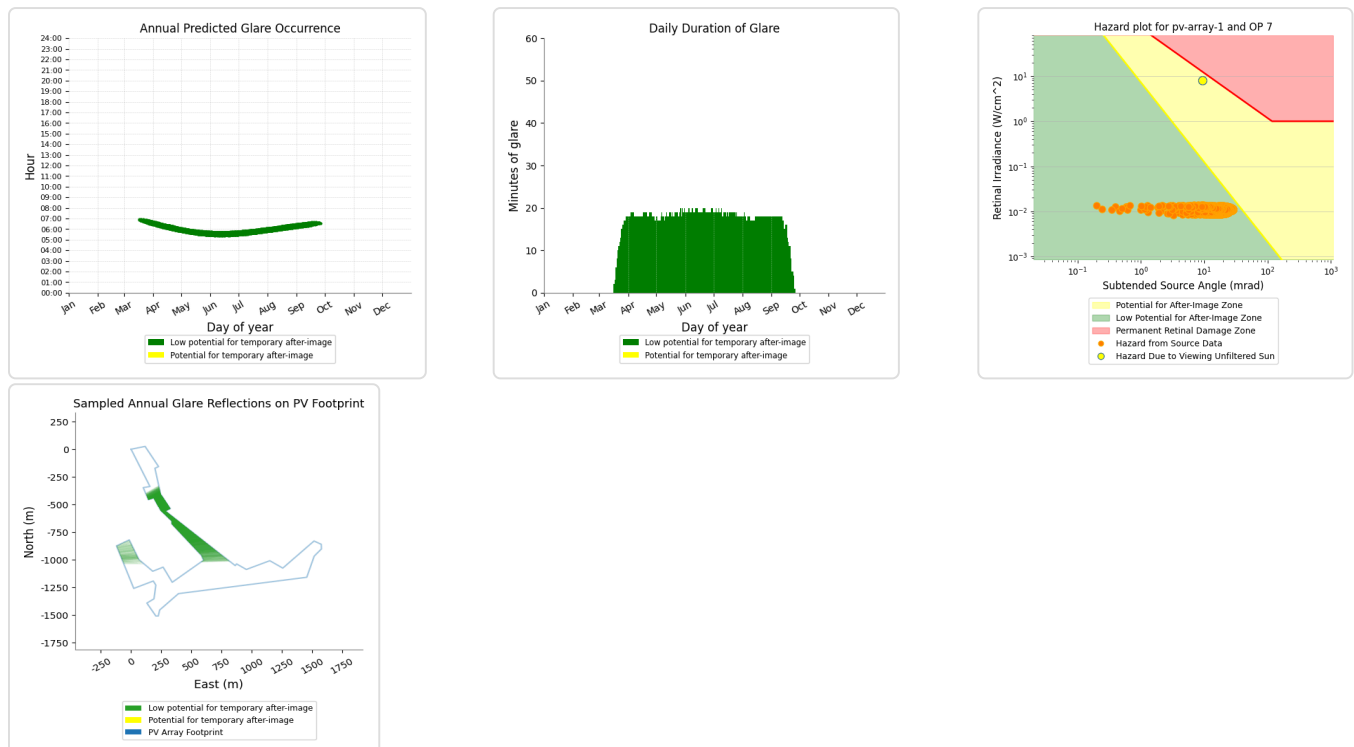
PV array 1: OP 8

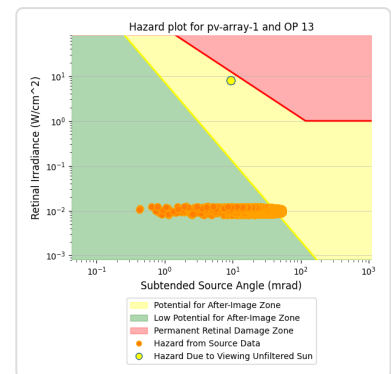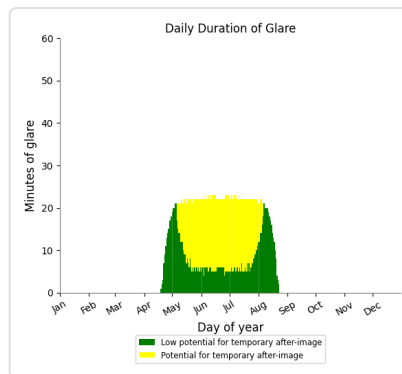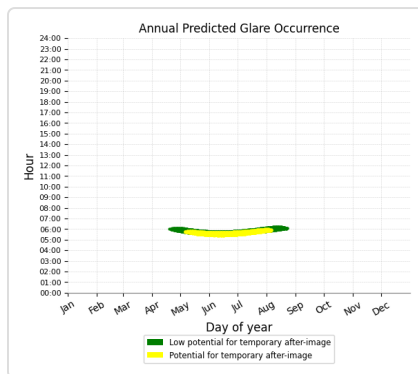PV array is expected to produce the following glare for this receptor:
- 3,286 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 9

PV array is expected to produce the following glare for this receptor:
- 3,226 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 10

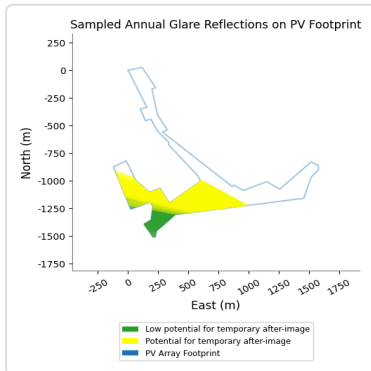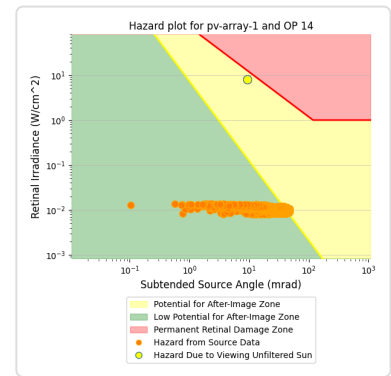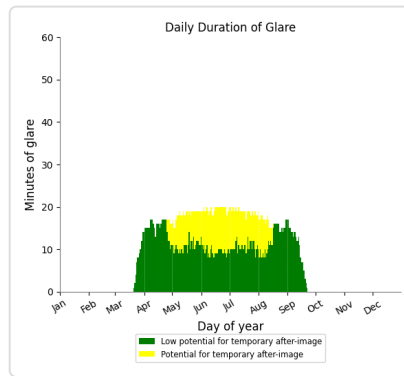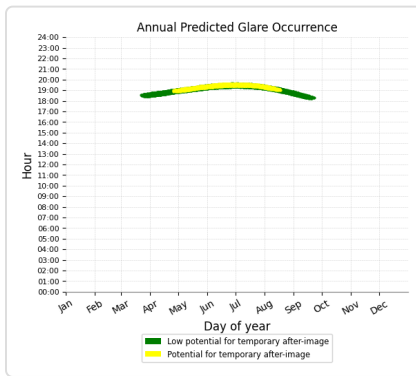PV array is expected to produce the following glare for this receptor:
- 1,061 minutes of "green" glare with low potential to cause temporary after-image.
- 1,553 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 11

PV array is expected to produce the following glare for this receptor:
- 1,272 minutes of "green" glare with low potential to cause temporary after-image.
- 1,251 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 12

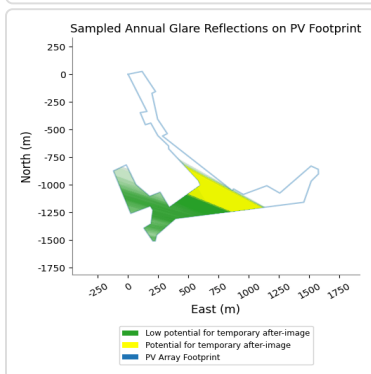PV array is expected to produce the following glare for this receptor:
- 1,032 minutes of "green" glare with low potential to cause temporary after-image.
- 1,384 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 13

PV array is expected to produce the following glare for this receptor:
- 1,130 minutes of "green" glare with low potential to cause temporary after-image.
- 1,386 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 14

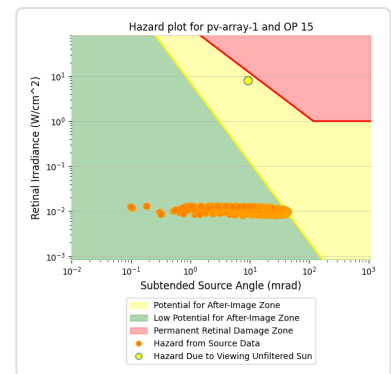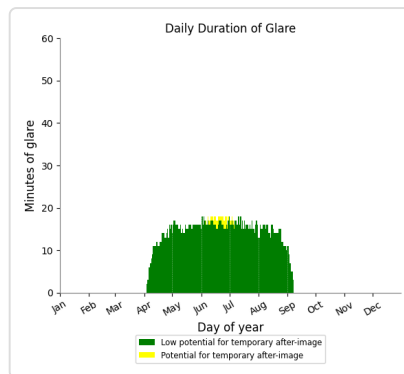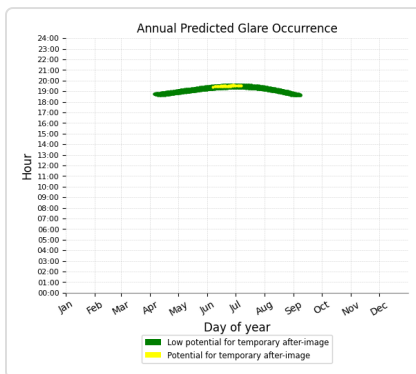PV array is expected to produce the following glare for this receptor:
- 2,103 minutes of "green" glare with low potential to cause temporary after-image.
- 929 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 15

PV array is expected to produce the following glare for this receptor:
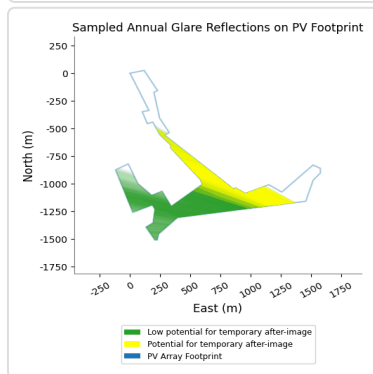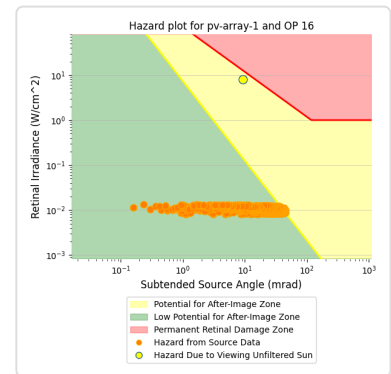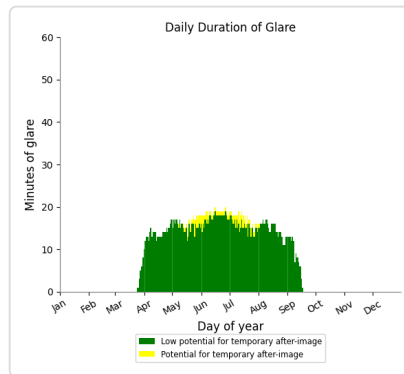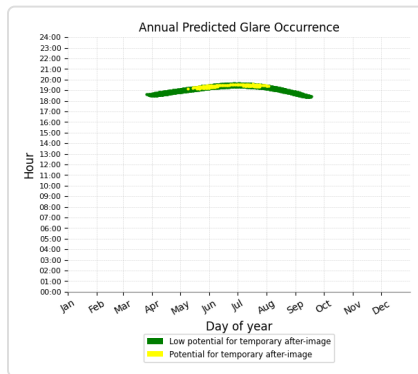- 2,257 minutes of "green" glare with low potential to cause temporary after-image.
- 41 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 16

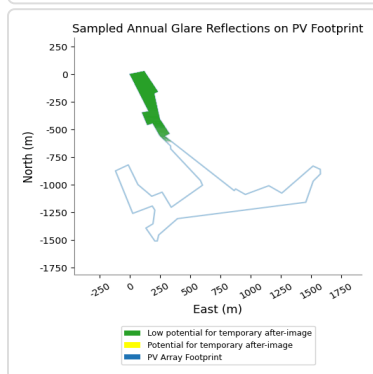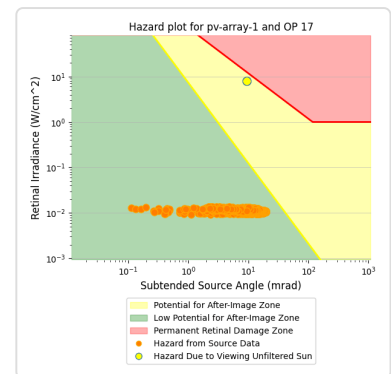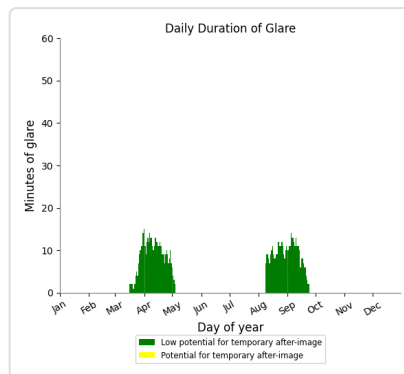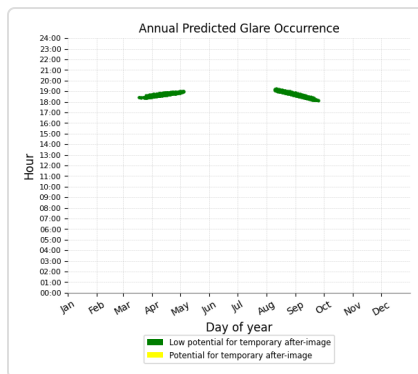PV array is expected to produce the following glare for this receptor:
- 2,520 minutes of "green" glare with low potential to cause temporary after-image.
- 131 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 17

PV array is expected to produce the following glare for this receptor:
- 853 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 18

PV array is expected to produce the following glare for this receptor:
- 758 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 19

PV array is expected to produce the following glare for this receptor:
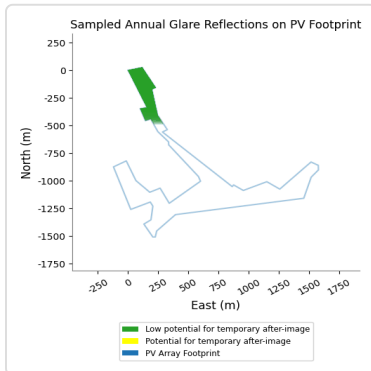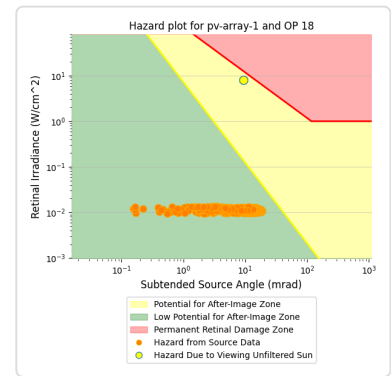- 508 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 20

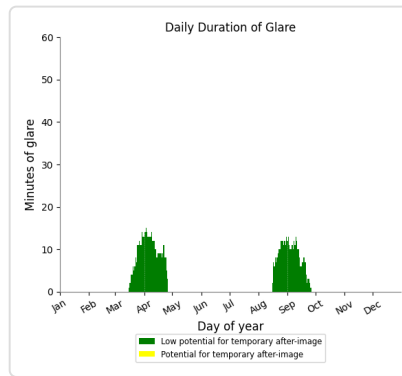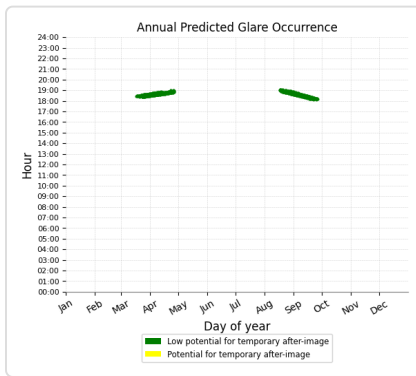PV array is expected to produce the following glare for this receptor:
- 514 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 21

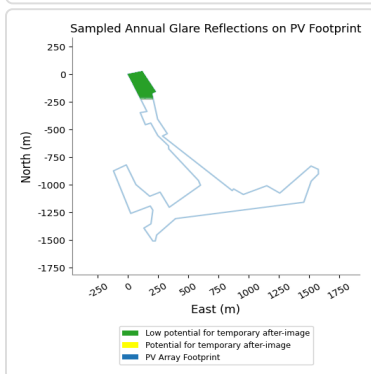PV array is expected to produce the following glare for this receptor:
- 566 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 22

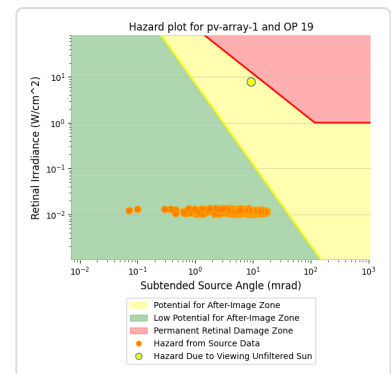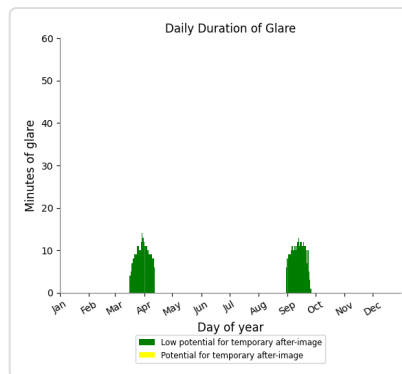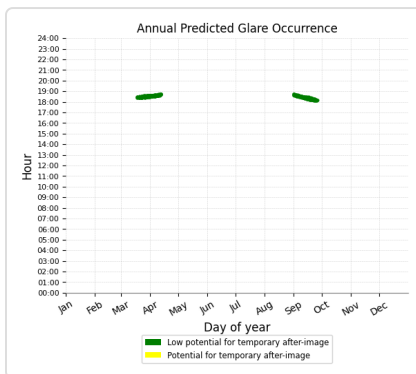PV array is expected to produce the following glare for this receptor:
- 576 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 23

PV array is expected to produce the following glare for this receptor:
- 570 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 24

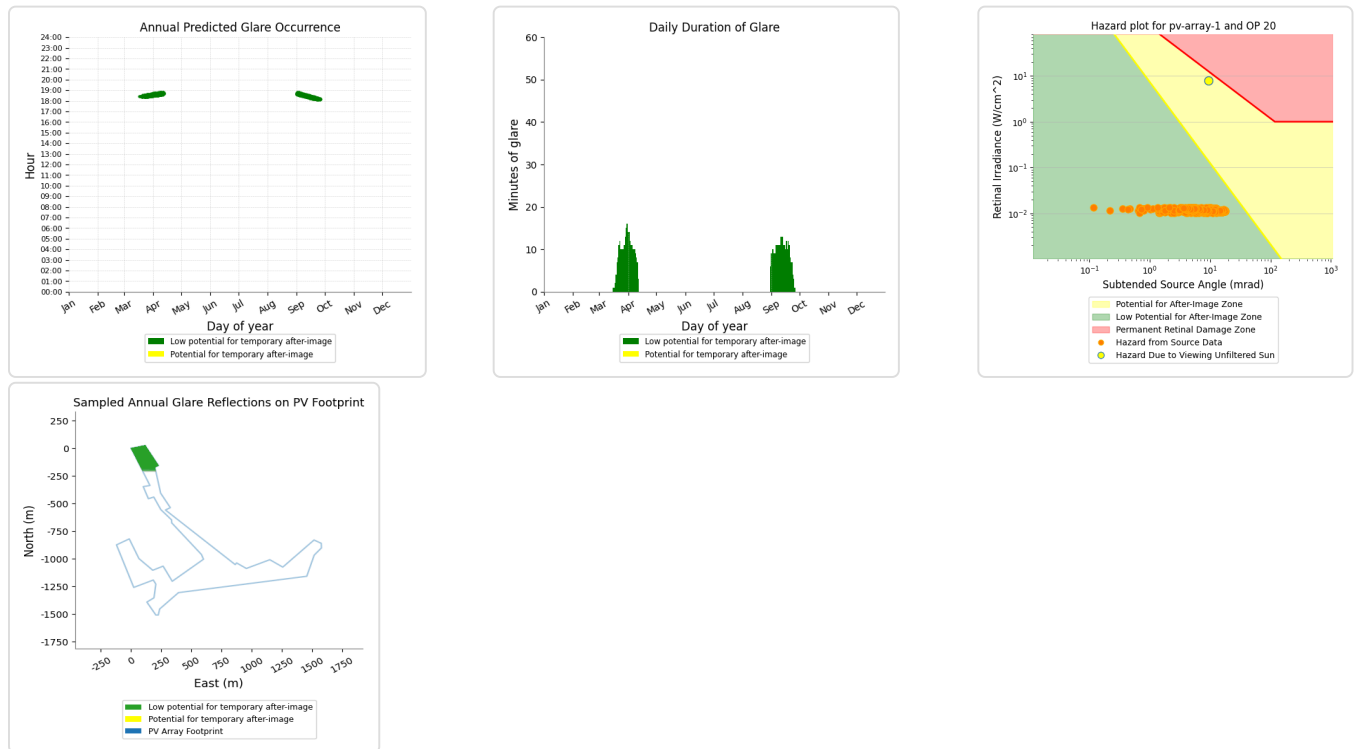PV array is expected to produce the following glare for this receptor:
- 633 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 25

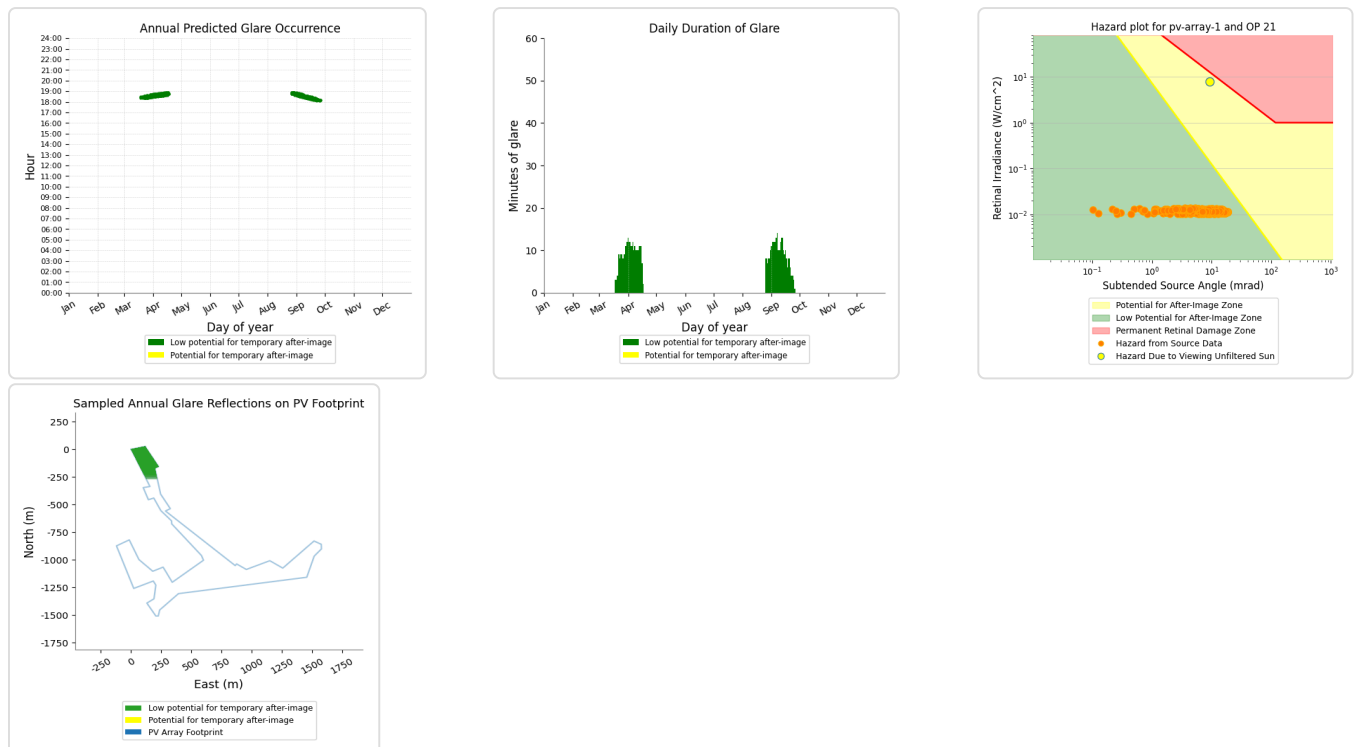PV array is expected to produce the following glare for this receptor:
- 627 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 26

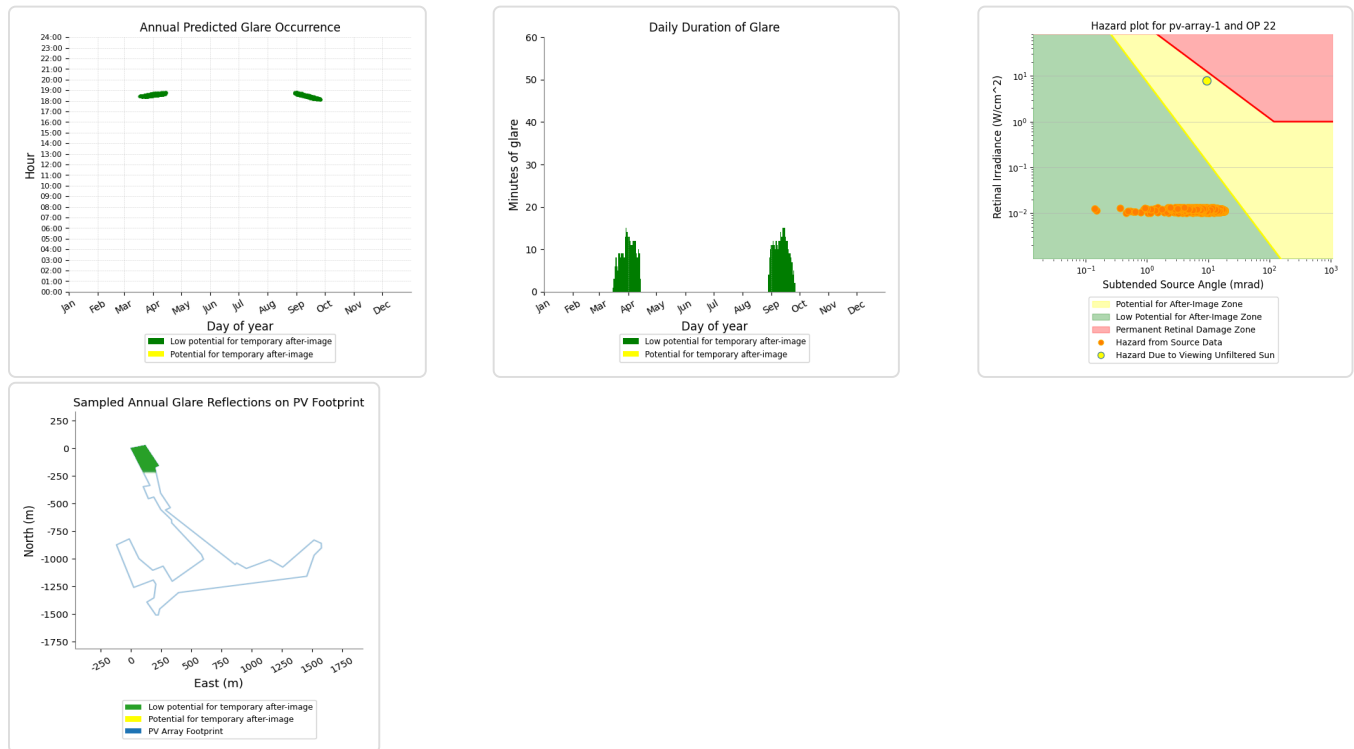PV array is expected to produce the following glare for this receptor:
- 658 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 27

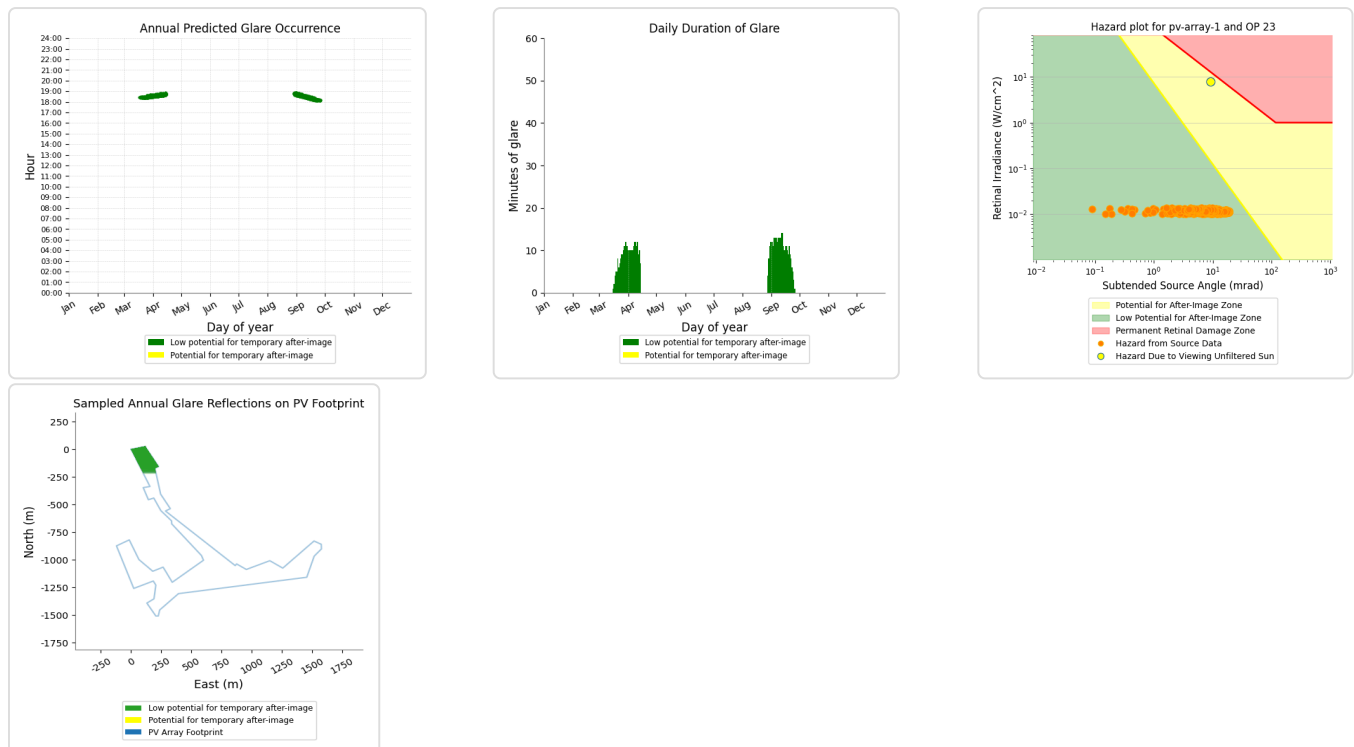PV array is expected to produce the following glare for this receptor:
- 500 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 28

No glare found

PV array 1: OP 29

PV array is expected to produce the following glare for this receptor:
- 2,544 minutes of "green" glare with low potential to cause temporary after-image.
- 143 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 30

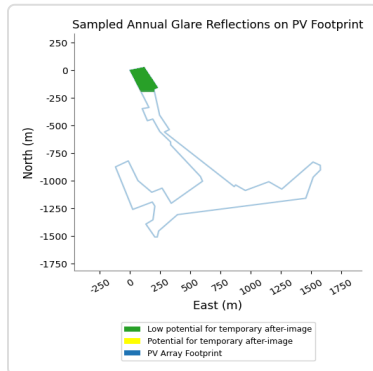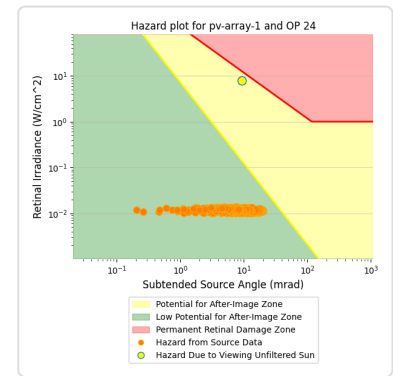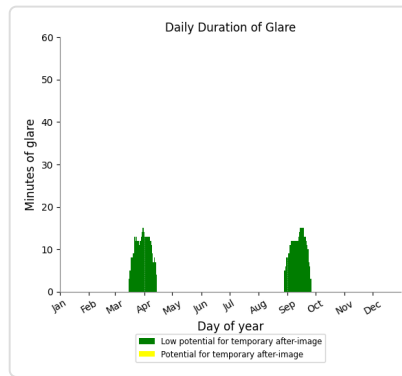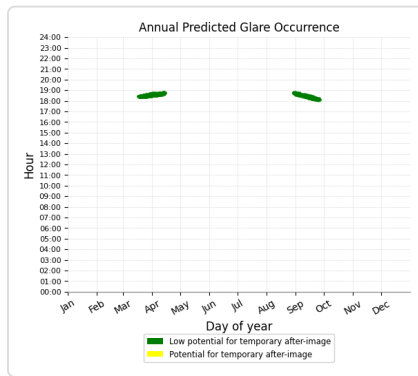PV array is expected to produce the following glare for this receptor:
- 2,543 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 31

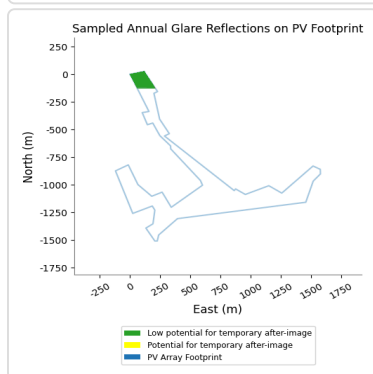PV array is expected to produce the following glare for this receptor:
- 3,260 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
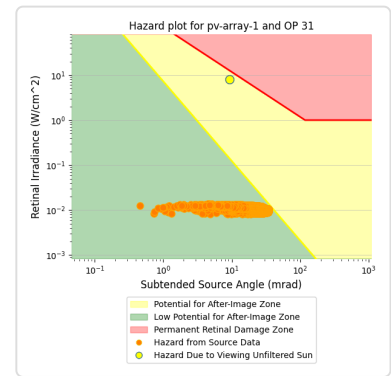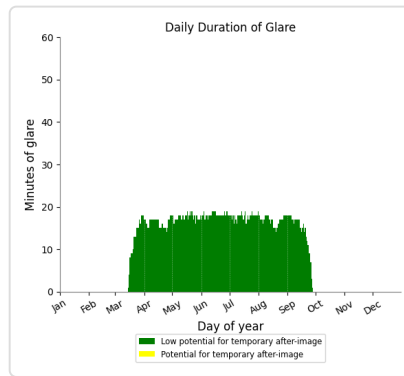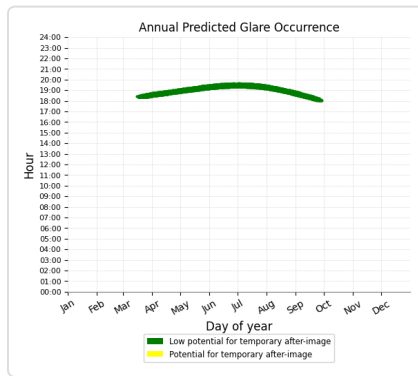
PV array 1: OP 32

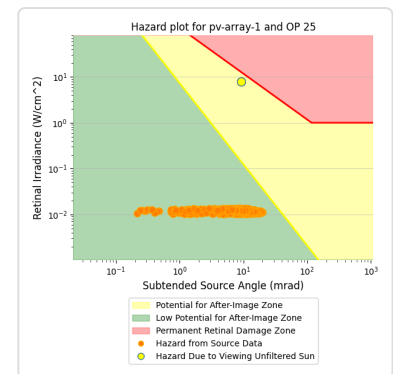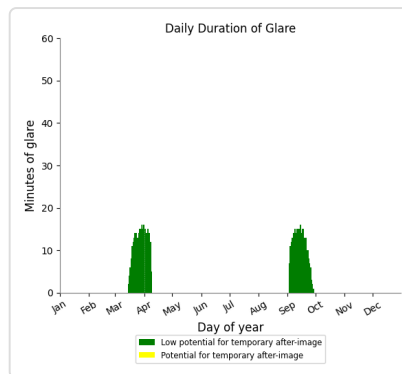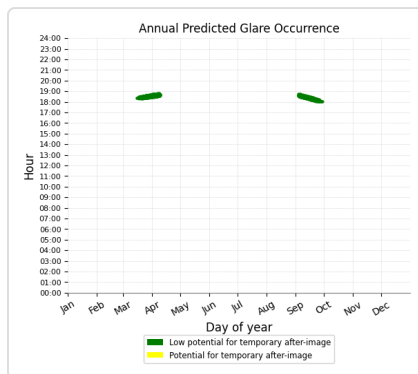PV array is expected to produce the following glare for this receptor:
- 3,480 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
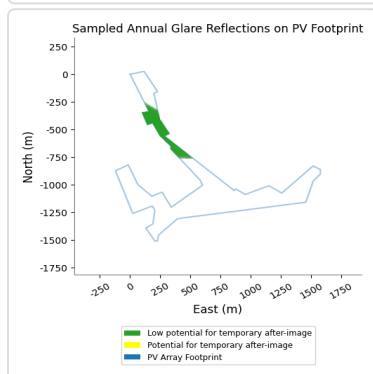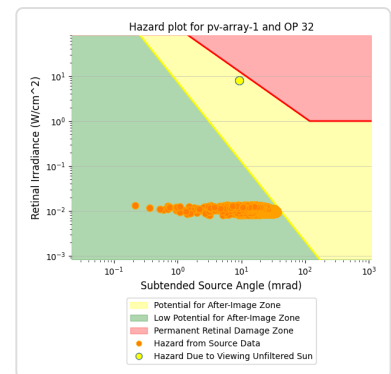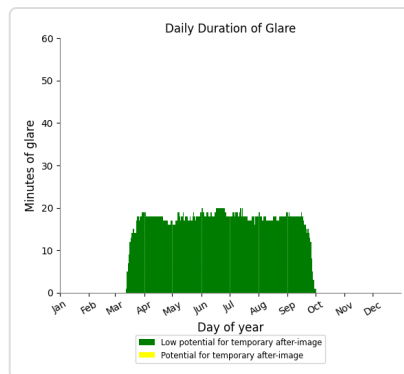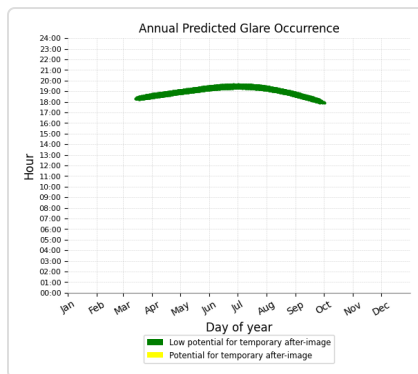
PV array 1: OP 33

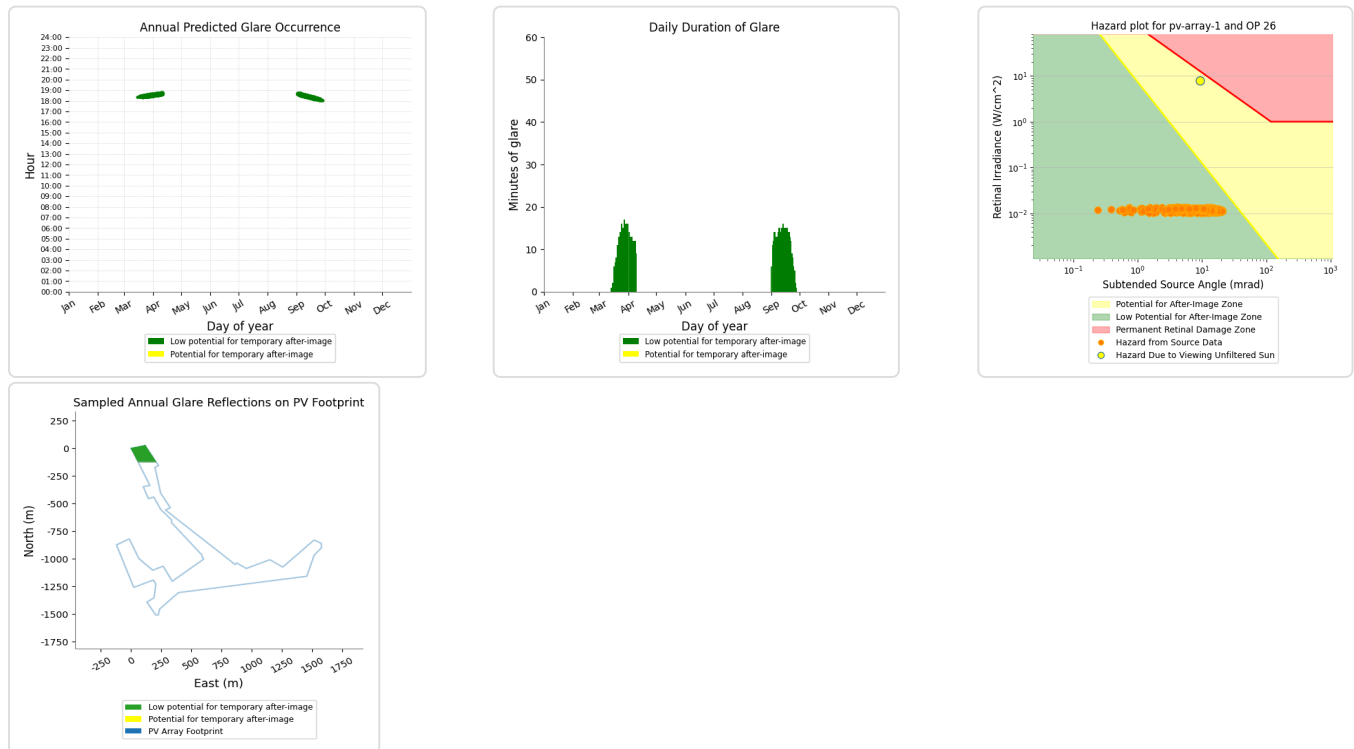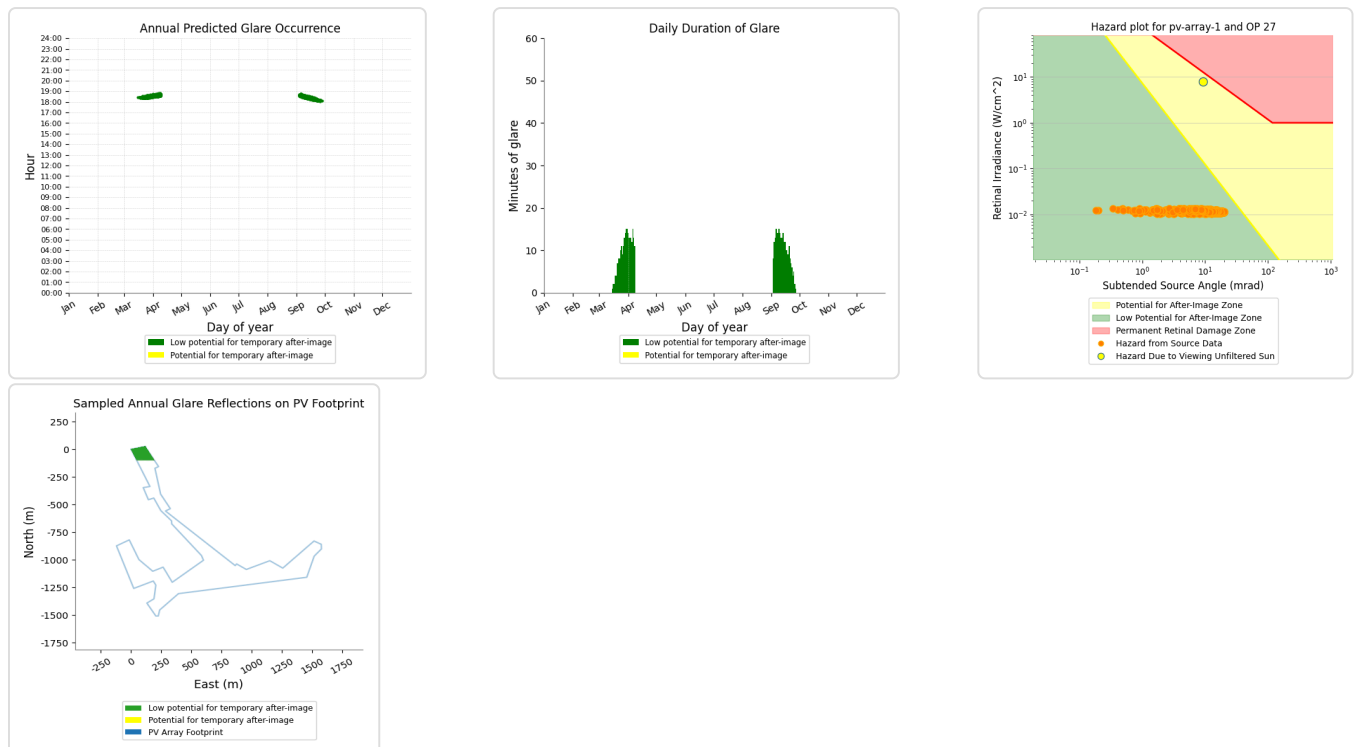PV array is expected to produce the following glare for this receptor:
- 4,040 minutes of "green" glare with low potential to cause temporary after-image.
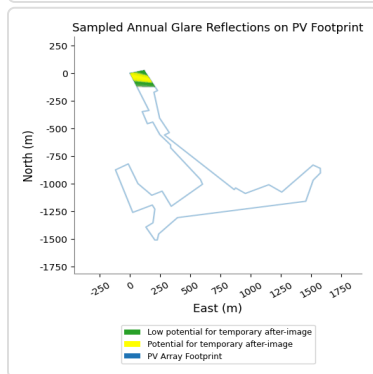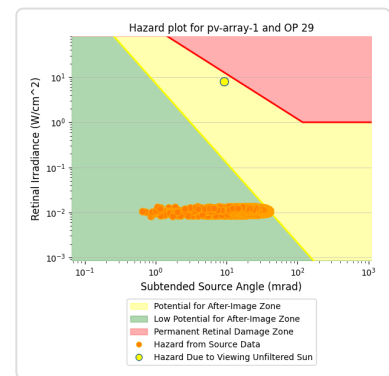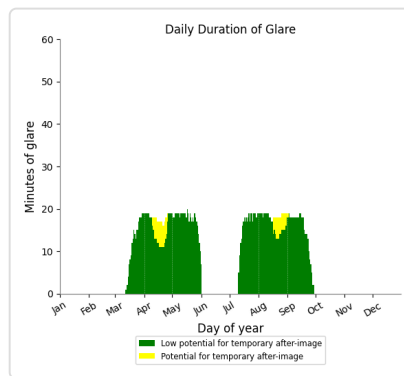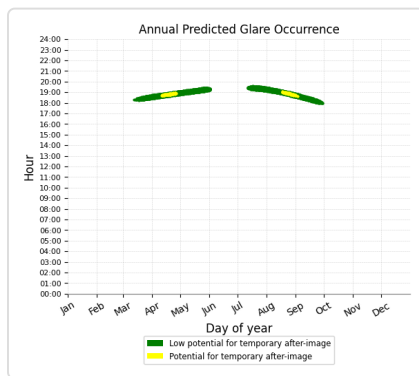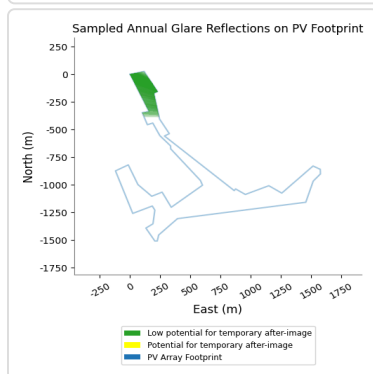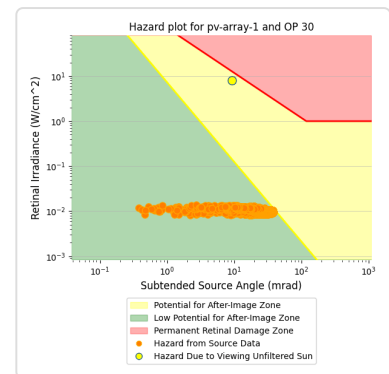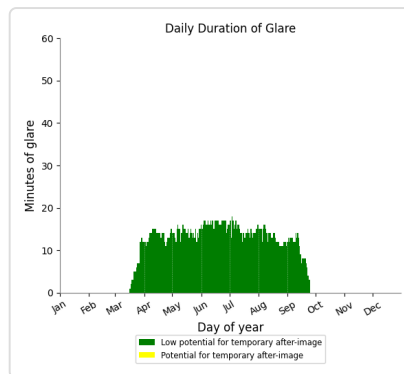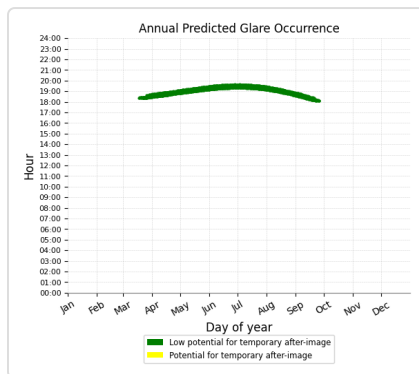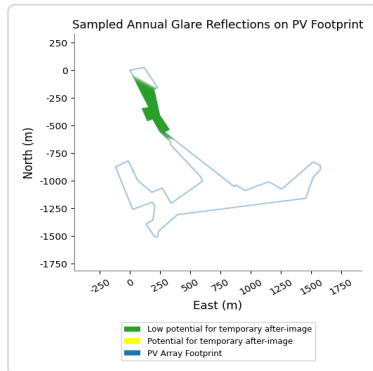- 0 minutes of "yellow" glare with potential to cause temporary after-image.

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Ballyteige Solar Farm
Ballyteige Solar Farm Residential 20 degrees

Created Jul 25, 2023
Updated Oct 02, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 96018.16825

Project type Advanced
Project status: active
Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results   Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	20.0	180.0	55,748	5,573	-

Component Data

PV Array(s)

Total PV footprint area: 467,677 m^2

Name: PV array 1
Footprint area: 467,677 m^2
Axis tracking: Fixed (no rotation)
Tilt: 20.0 deg
Orientation: 180.0 deg

Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.293813	-7.412660	71.00	2.50	73.50
2	53.294044	-7.410922	72.13	2.50	74.63
3	53.292403	-7.409248	74.00	2.50	76.50
4	53.292261	-7.409699	73.92	2.50	76.42
5	53.290158	-7.408990	73.35	2.50	75.85
6	53.288978	-7.407789	72.74	2.50	75.24
7	53.288785	-7.408390	72.32	2.50	74.82
8	53.284343	-7.399724	72.00	2.50	74.50
9	53.284478	-7.399553	72.06	2.50	74.56
10	53.284029	-7.398340	72.00	2.50	74.50
11	53.284741	-7.395422	72.34	2.50	74.84
12	53.284138	-7.393813	72.64	2.50	75.14
13	53.286345	-7.389929	74.71	2.50	77.21
14	53.286075	-7.389028	74.45	2.50	76.95
15	53.285703	-7.389006	73.98	2.50	76.48
16	53.285113	-7.389907	73.93	2.50	76.43
17	53.283394	-7.390830	73.00	2.50	75.50
18	53.282060	-7.406773	67.69	2.50	70.19
19	53.280726	-7.409112	68.00	2.50	70.50
20	53.280238	-7.409284	68.03	2.50	70.53
21	53.280238	-7.409584	68.03	2.50	70.53
22	53.281290	-7.410700	68.11	2.50	70.61
23	53.281637	-7.409820	67.01	2.50	69.51
24	53.282753	-7.409584	68.63	2.50	71.13
25	53.283086	-7.409906	69.12	2.50	71.62
26	53.282483	-7.412331	69.99	2.50	72.49
27	53.285947	-7.414476	71.29	2.50	73.79
28	53.286434	-7.412889	71.00	2.50	73.50
29	53.284831	-7.411687	69.62	2.50	72.12
30	53.283882	-7.409970	70.00	2.50	72.50
31	53.284215	-7.408683	70.25	2.50	72.75
32	53.282984	-7.407546	68.96	2.50	71.46
33	53.284780	-7.403662	70.48	2.50	72.98
34	53.285164	-7.403919	70.91	2.50	73.41
35	53.287740	-7.407613	72.00	2.50	74.50
36	53.287984	-7.407635	72.25	2.50	74.75
37	53.288817	-7.408965	71.53	2.50	74.03
38	53.289843	-7.409845	71.95	2.50	74.45
39	53.289702	-7.410510	71.58	2.50	74.08
40	53.290690	-7.411154	72.00	2.50	74.50
41	53.290780	-7.410317	72.94	2.50	75.44

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.288494	-7.419744	72.79	2.00	74.79
OP 2	53.285646	-7.421547	76.94	2.00	78.94
OP 3	53.284947	-7.422609	75.04	2.00	77.04
OP 4	53.285595	-7.423928	73.90	2.00	75.90
OP 5	53.285448	-7.425709	72.53	2.00	74.53
OP 6	53.285114	-7.427276	70.46	2.00	72.46
OP 7	53.284543	-7.426257	71.24	2.00	73.24
OP 8	53.283639	-7.426321	69.97	2.00	71.97
OP 9	53.283222	-7.426278	69.79	2.00	71.79
OP 10	53.278436	-7.422437	70.00	2.00	72.00
OP 11	53.278443	-7.421621	70.00	2.00	72.00
OP 12	53.278513	-7.418591	71.41	2.00	73.41
OP 13	53.278821	-7.417083	71.81	2.00	73.81
OP 14	53.279873	-7.389656	73.43	2.00	75.43
OP 15	53.277378	-7.380161	74.81	2.00	76.81
OP 16	53.278930	-7.379753	75.96	2.00	77.96
OP 17	53.288616	-7.376726	80.33	2.00	82.33
OP 18	53.289738	-7.376909	80.79	2.00	82.79
OP 19	53.292169	-7.380076	83.33	2.00	85.33
OP 20	53.292265	-7.381975	81.96	2.00	83.96
OP 21	53.291668	-7.382415	80.62	2.00	82.62
OP 22	53.292149	-7.383649	81.49	2.00	83.49
OP 23	53.292175	-7.385161	81.09	2.00	83.09
OP 24	53.292412	-7.387683	81.70	2.00	83.70
OP 25	53.293118	-7.390247	83.59	2.00	85.59
OP 26	53.293041	-7.392060	81.68	2.00	83.68
OP 27	53.293233	-7.392521	80.75	2.00	82.75
OP 28	53.294682	-7.394495	79.98	2.00	81.98
OP 29	53.292791	-7.405836	75.00	2.00	77.00
OP 30	53.290399	-7.400203	74.48	2.00	76.48
OP 31	53.288340	-7.398283	75.00	2.00	77.00
OP 32	53.287173	-7.398905	75.43	2.00	77.43
OP 33	53.286416	-7.400139	74.97	2.00	76.97

Summary of PV Glare Analysis
PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	20.0	180.0	55,748	5,573	-	-

Distinct glare per month
Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	523	843	861	664	748	875	867	0	0	0
pv-array-1 (yellow)	0	0	5	227	202	401	325	213	46	0	0	0

PV & Receptor Analysis Results
Results for each PV array and receptor
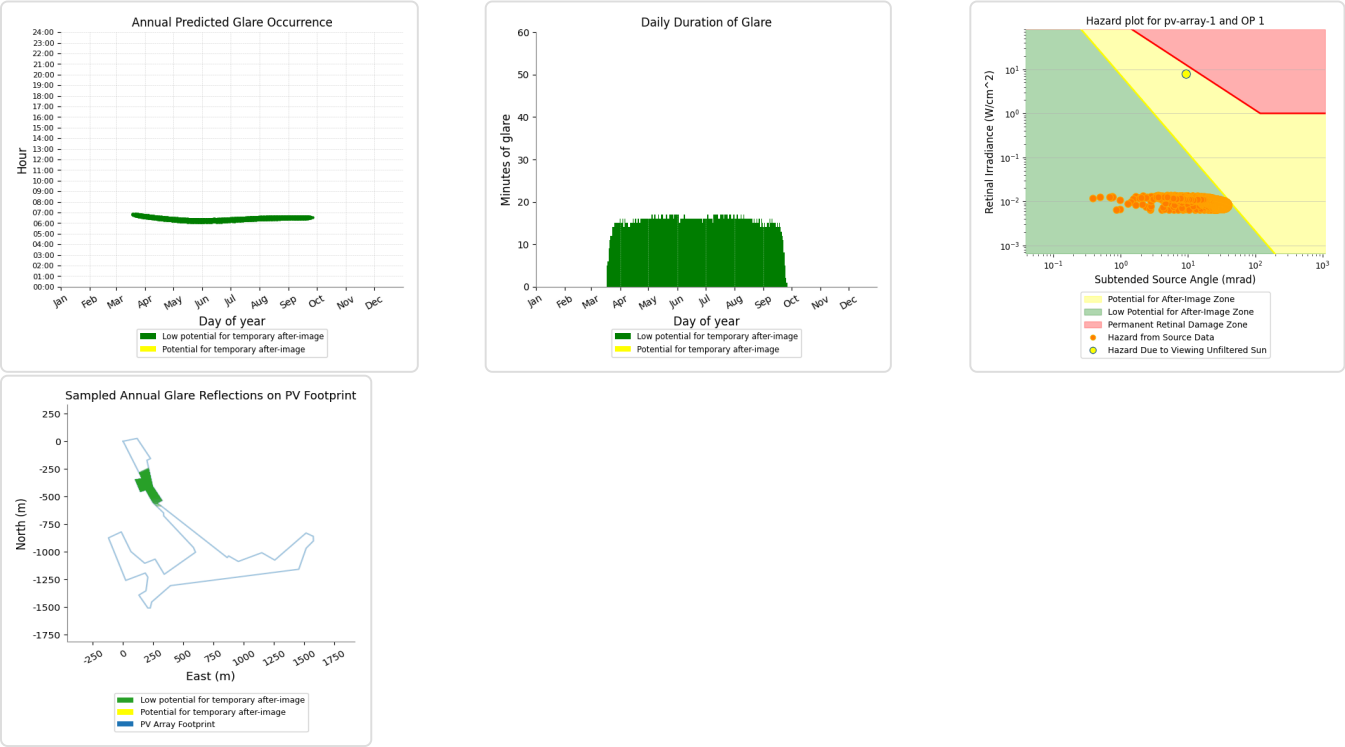
PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	2964	0
OP: OP 2	3239	0
OP: OP 3	3217	0
OP: OP 4	3023	0
OP: OP 5	2877	0
OP: OP 6	2727	0
OP: OP 7	2901	0
OP: OP 8	2834	0
OP: OP 9	2754	16
OP: OP 10	930	1213
OP: OP 11	1148	904
OP: OP 12	1103	790
OP: OP 13	1084	892
OP: OP 14	1870	696
OP: OP 15	1878	4
OP: OP 16	2004	136
OP: OP 17	842	0
OP: OP 18	724	0
OP: OP 19	456	0
OP: OP 20	468	0
OP: OP 21	530	0
OP: OP 22	534	0
OP: OP 23	516	0
OP: OP 24	571	0
OP: OP 25	528	0
OP: OP 26	573	0
OP: OP 27	428	0
OP: OP 28	0	0

OP: OP 29	2506	413
OP: OP 30	2120	0
OP: OP 31	2754	0
OP: OP 32	2852	0
OP: OP 33	2793	509

PV array 1: OP 1

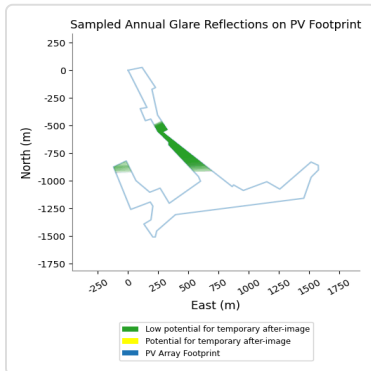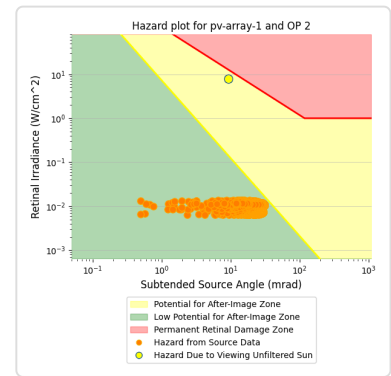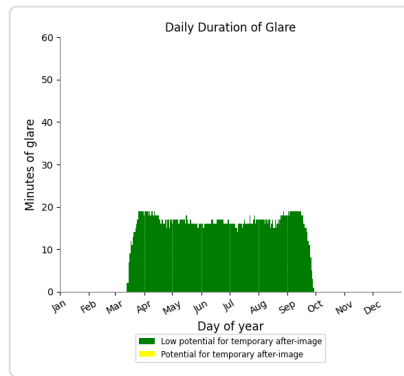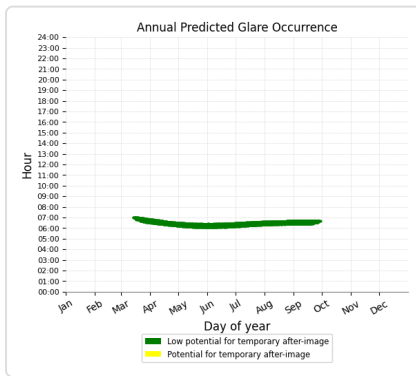PV array is expected to produce the following glare for this receptor:
- 2,964 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 2

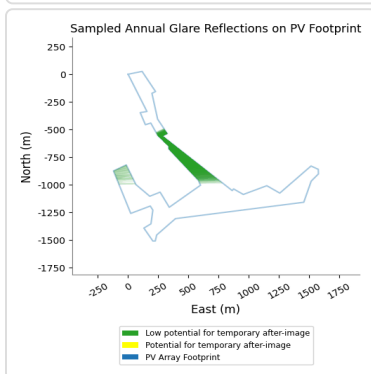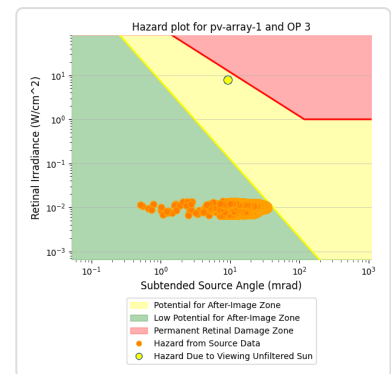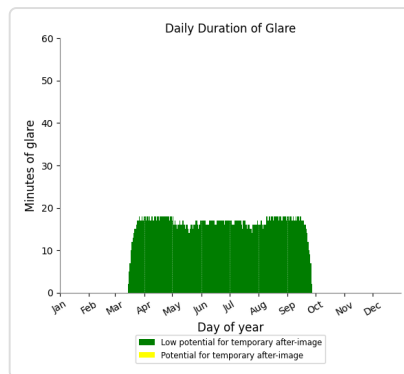PV array is expected to produce the following glare for this receptor:
- 3,239 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 3

PV array is expected to produce the following glare for this receptor:
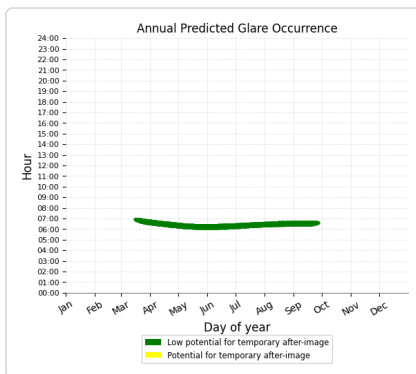- 3,217 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 4

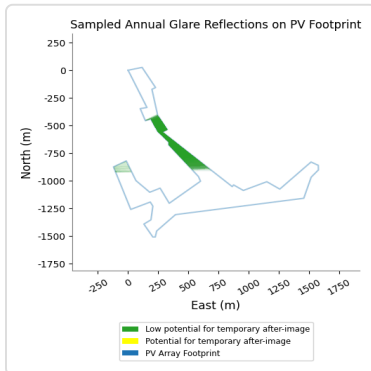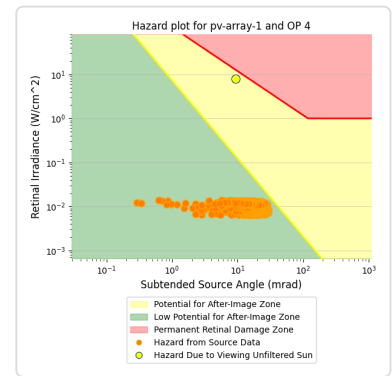PV array is expected to produce the following glare for this receptor:
- 3,023 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 5

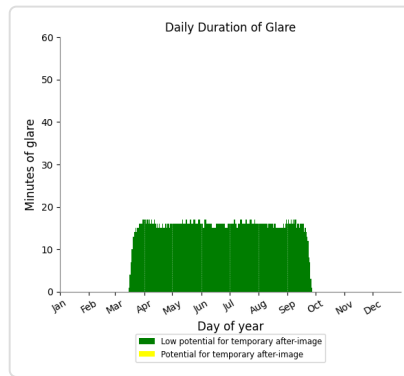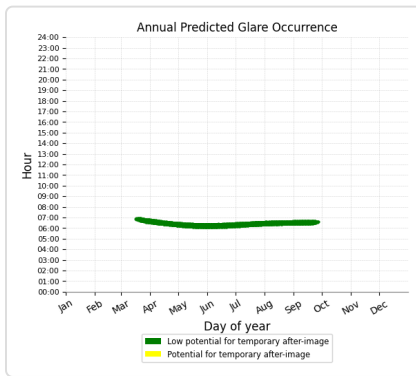PV array is expected to produce the following glare for this receptor:
- 2,877 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 6

PV array is expected to produce the following glare for this receptor:
- 2,727 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 7

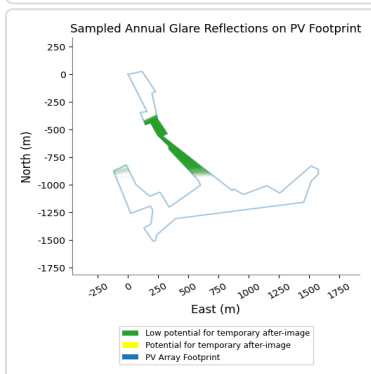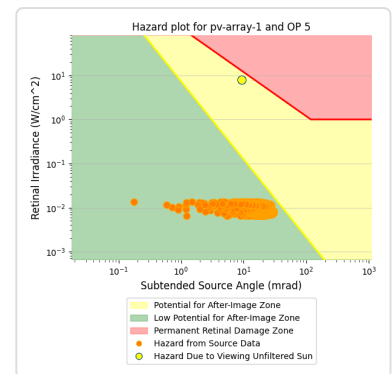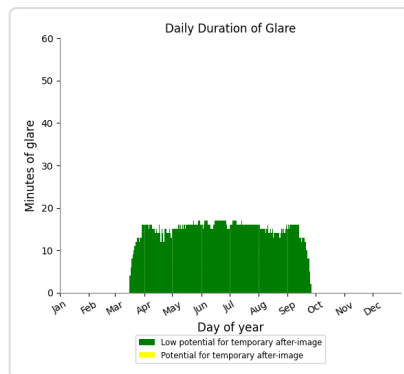PV array is expected to produce the following glare for this receptor:
- 2,901 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 8

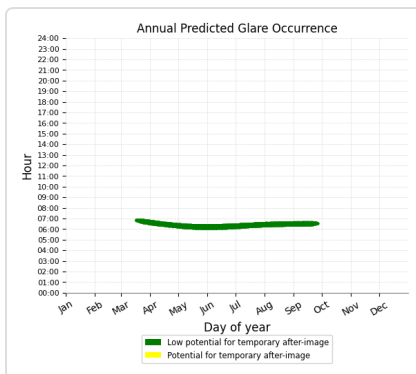PV array is expected to produce the following glare for this receptor:
- 2,834 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 9

PV array is expected to produce the following glare for this receptor:
- 2,754 minutes of "green" glare with low potential to cause temporary after-image.
- 16 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 10

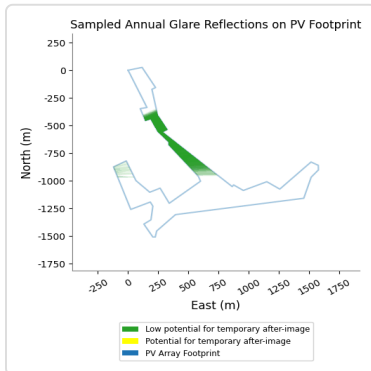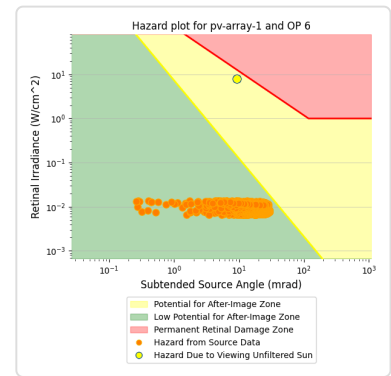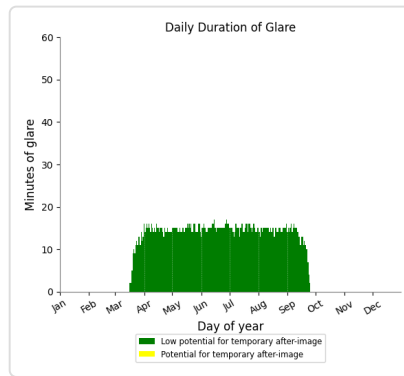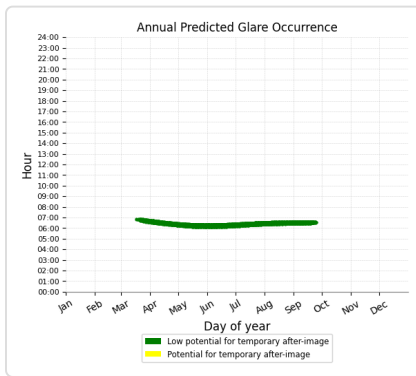PV array is expected to produce the following glare for this receptor:
- 930 minutes of "green" glare with low potential to cause temporary after-image.
- 1,213 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 11

PV array is expected to produce the following glare for this receptor:
- 1,148 minutes of "green" glare with low potential to cause temporary after-image.
- 904 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 12

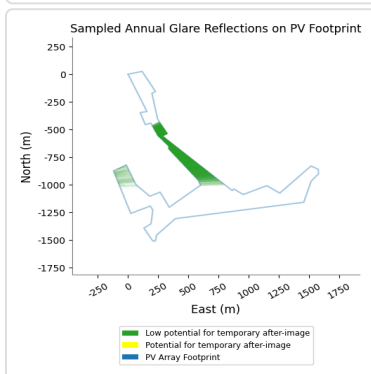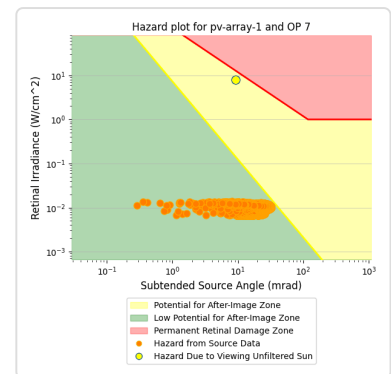PV array is expected to produce the following glare for this receptor:
- 1,103 minutes of "green" glare with low potential to cause temporary after-image.
- 790 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 13

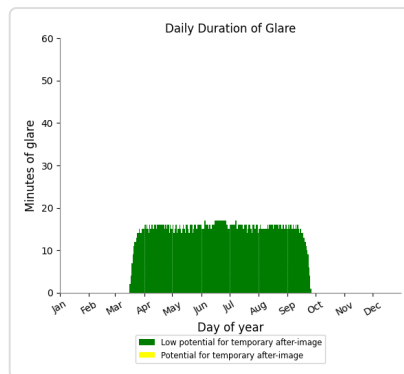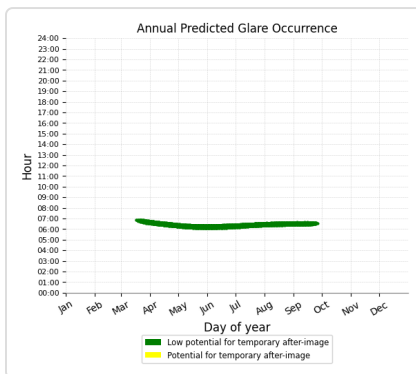PV array is expected to produce the following glare for this receptor:
- 1,084 minutes of "green" glare with low potential to cause temporary after-image.
- 892 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 14

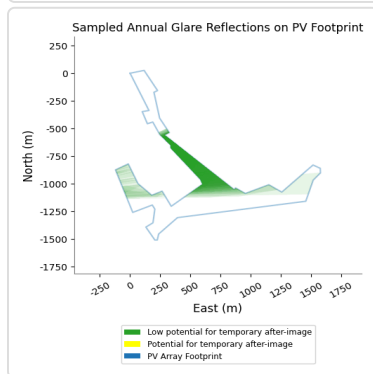PV array is expected to produce the following glare for this receptor:
- 1,870 minutes of "green" glare with low potential to cause temporary after-image.
- 696 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 15

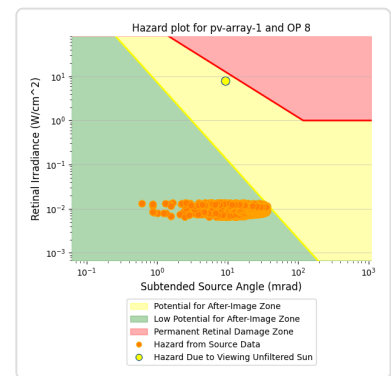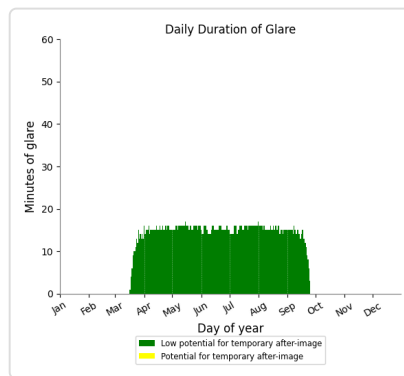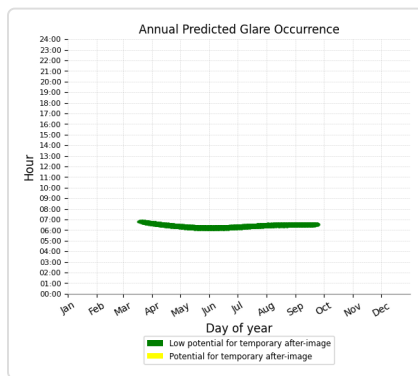PV array is expected to produce the following glare for this receptor:
- 1,878 minutes of "green" glare with low potential to cause temporary after-image.
- 4 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 16

PV array is expected to produce the following glare for this receptor:
- 2,004 minutes of "green" glare with low potential to cause temporary after-image.
- 136 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 17

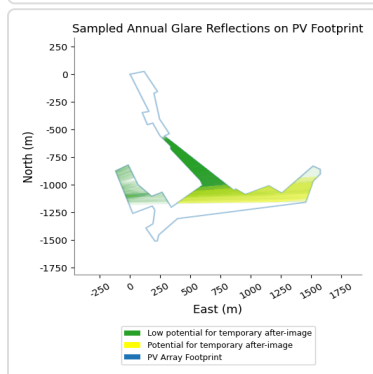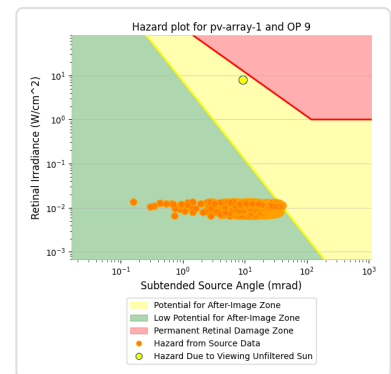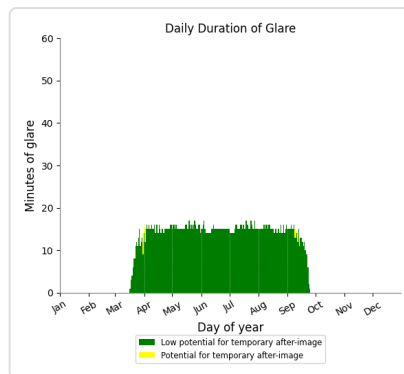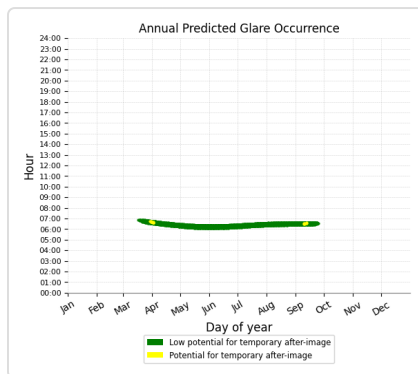PV array is expected to produce the following glare for this receptor:
- 842 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 18

PV array is expected to produce the following glare for this receptor:
- 724 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 19

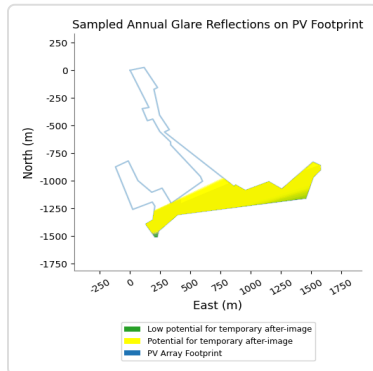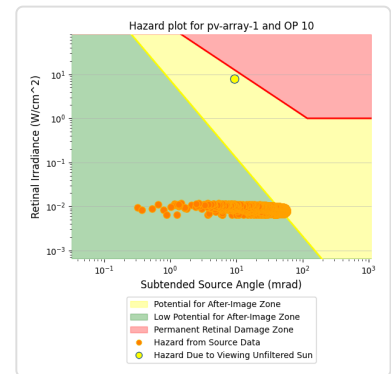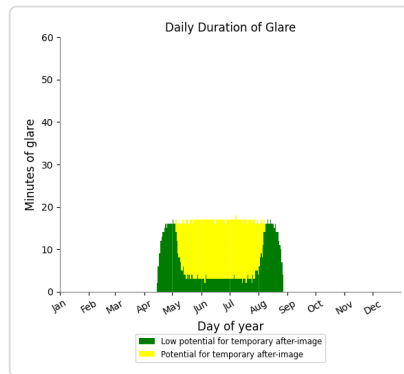PV array is expected to produce the following glare for this receptor:
- 456 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 20

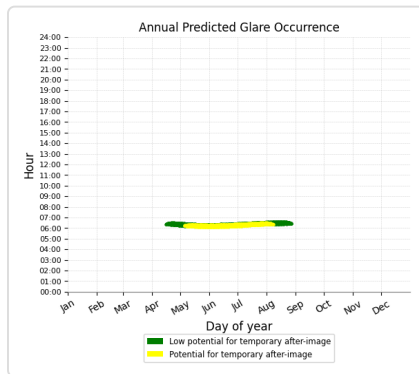PV array is expected to produce the following glare for this receptor:
- 468 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
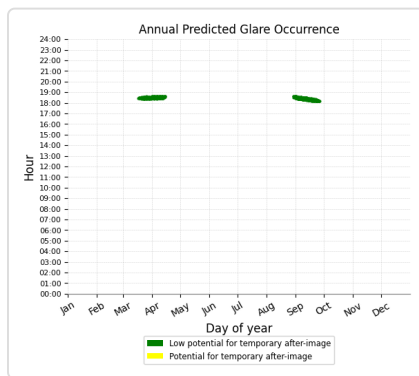
PV array 1: OP 21

PV array is expected to produce the following glare for this receptor:
- 530 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
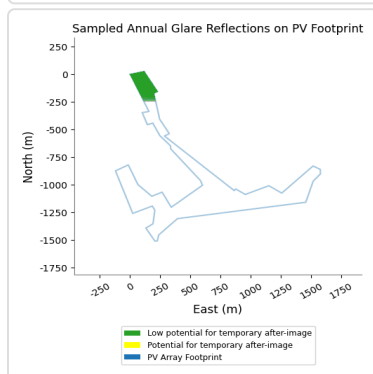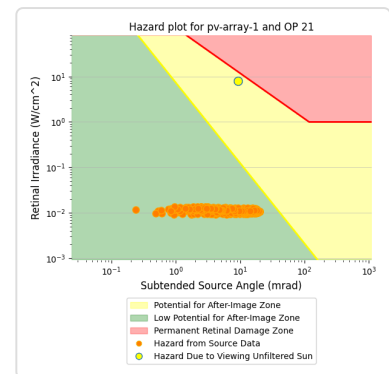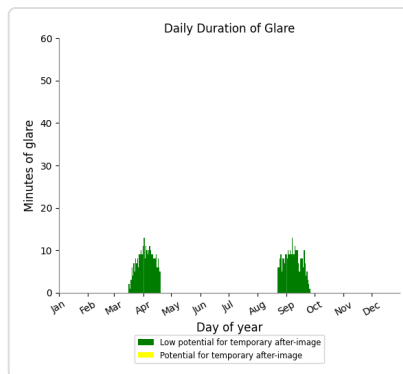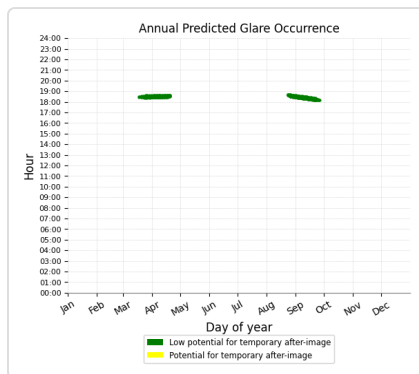
PV array 1: OP 22

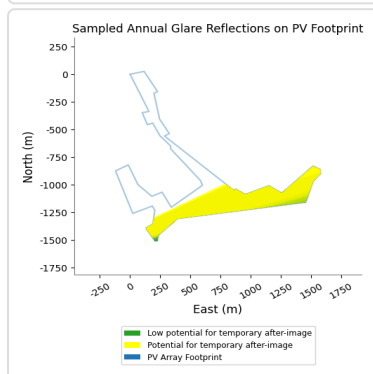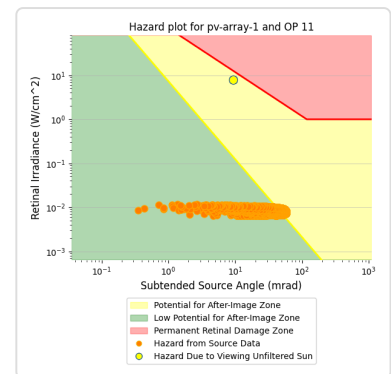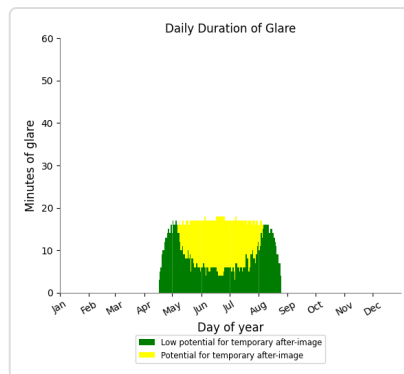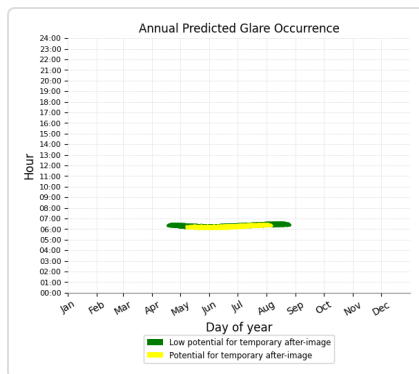PV array is expected to produce the following glare for this receptor:
- 534 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
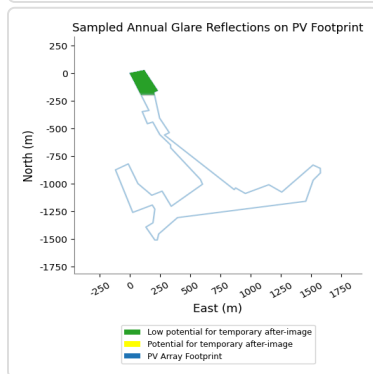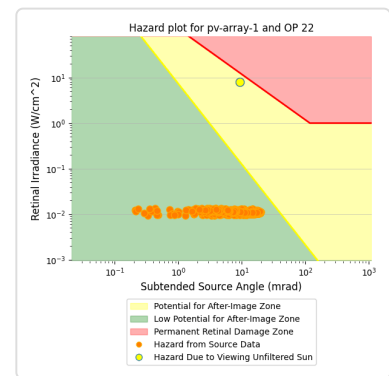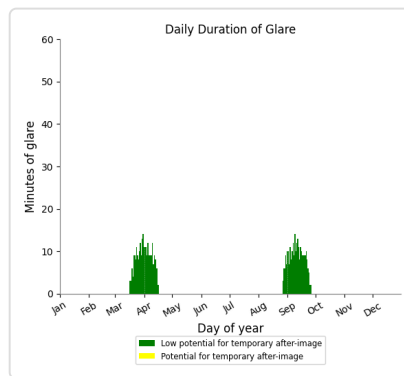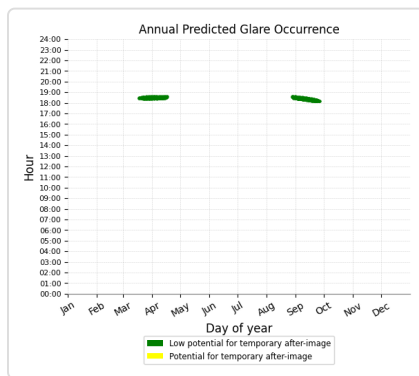
PV array 1: OP 23

PV array is expected to produce the following glare for this receptor:
- 516 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
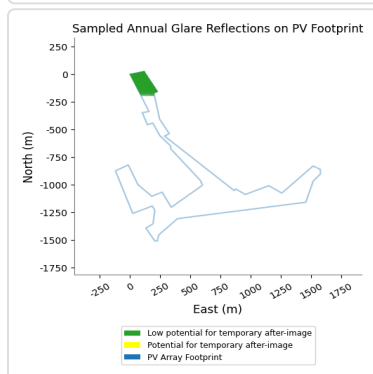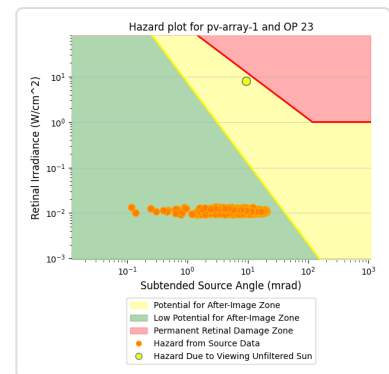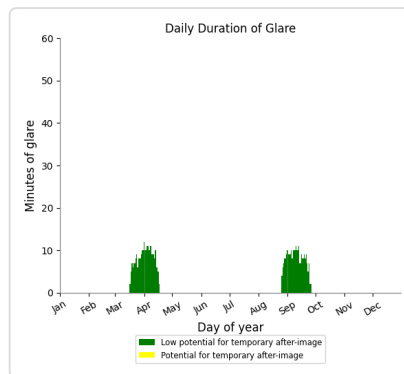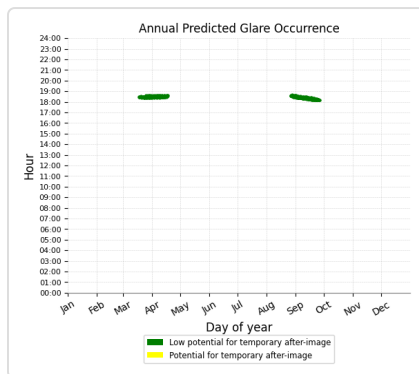
PV array 1: OP 24

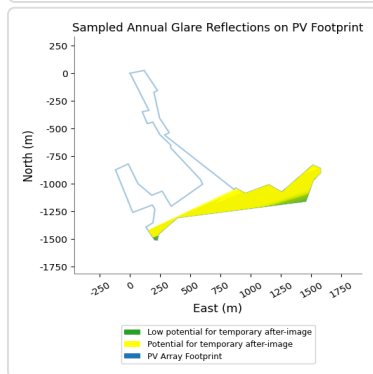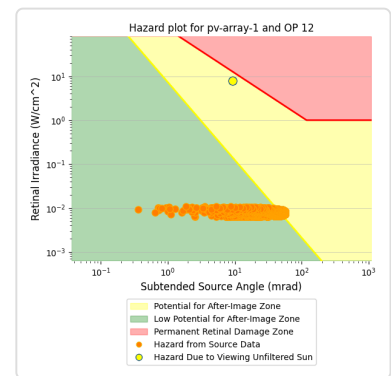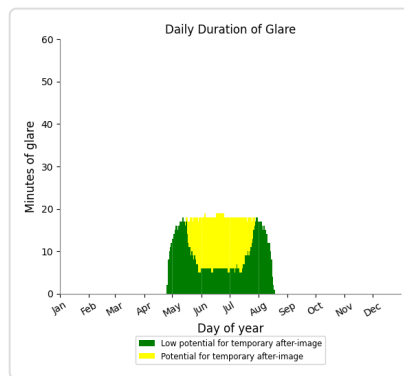PV array is expected to produce the following glare for this receptor:
- 571 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
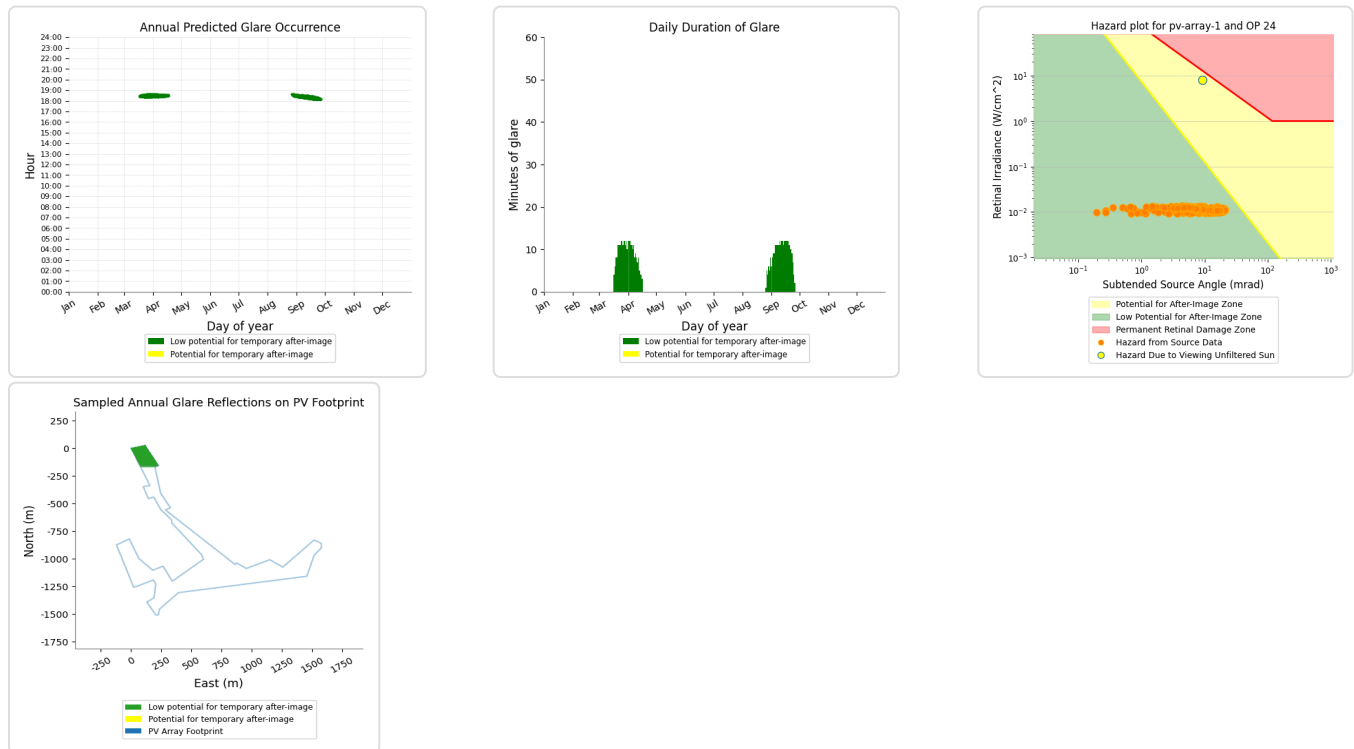
PV array 1: OP 25

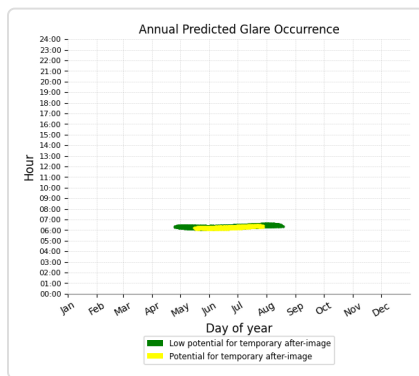PV array is expected to produce the following glare for this receptor:
- 528 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
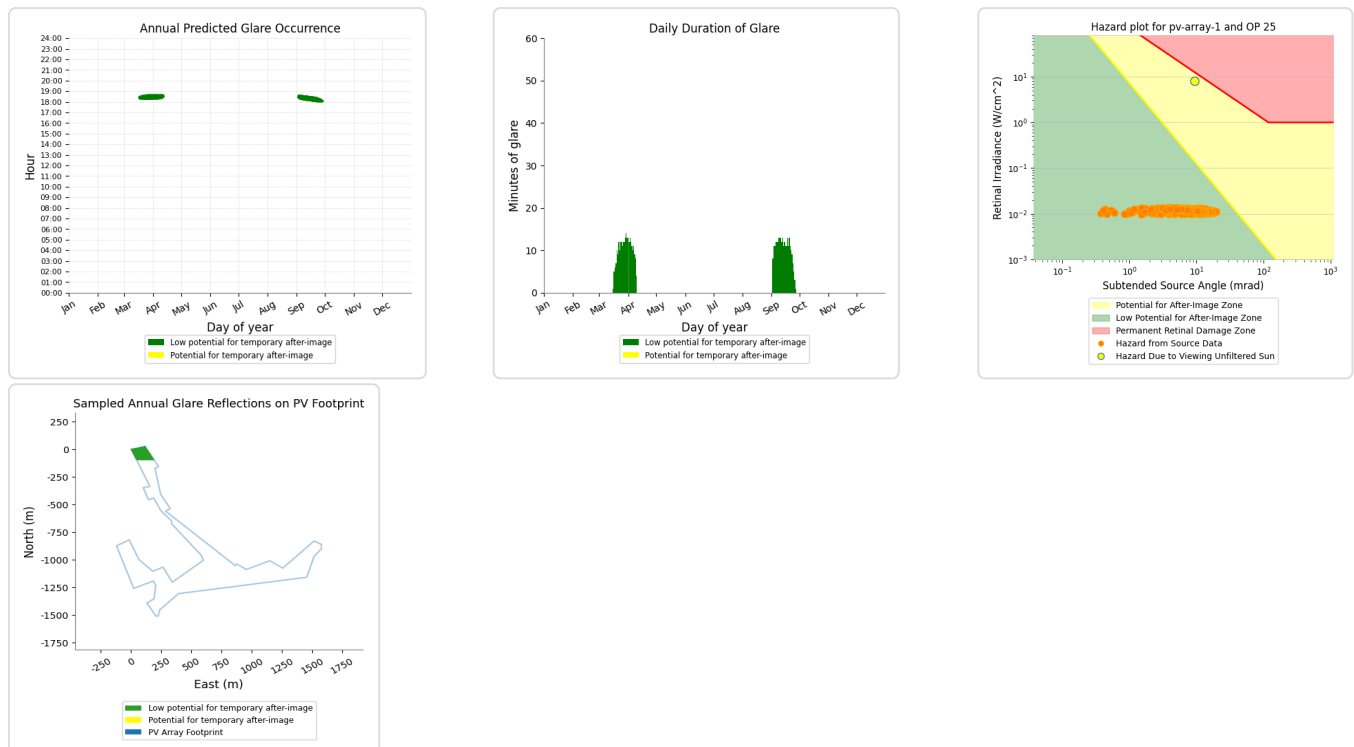
PV array 1: OP 26

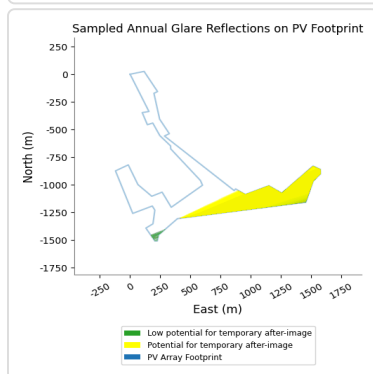PV array is expected to produce the following glare for this receptor:
- 573 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
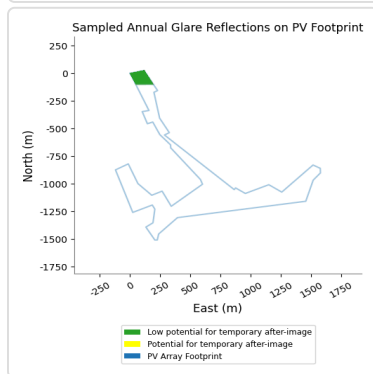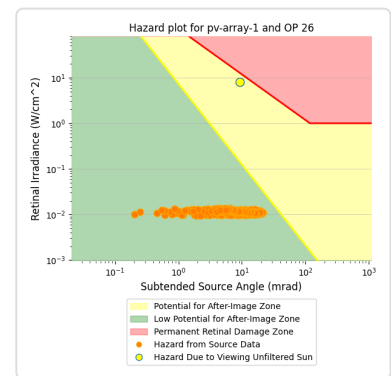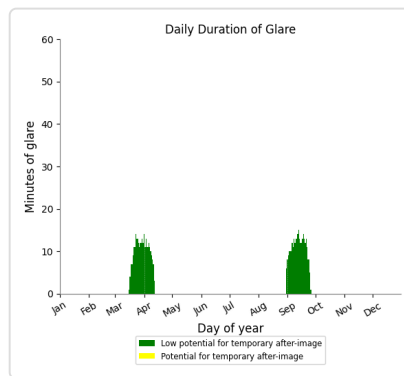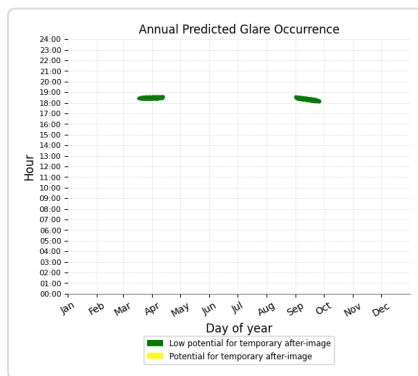
PV array 1: OP 27

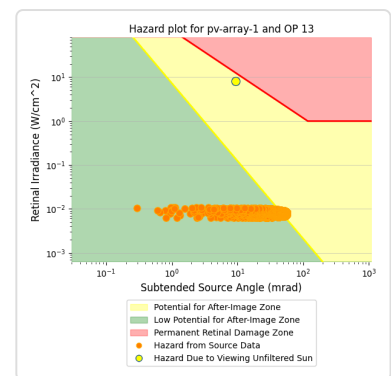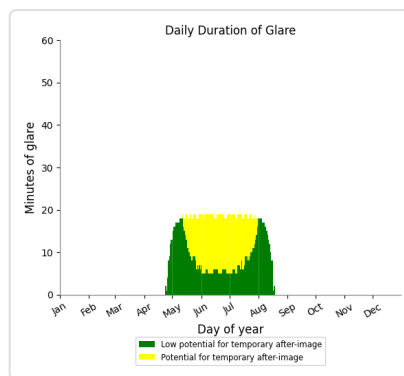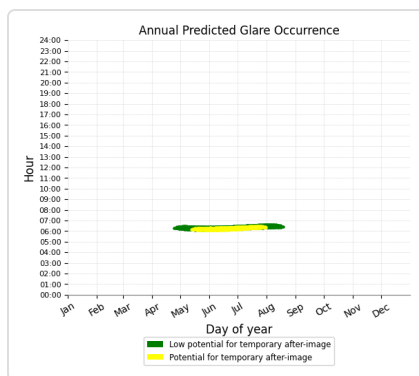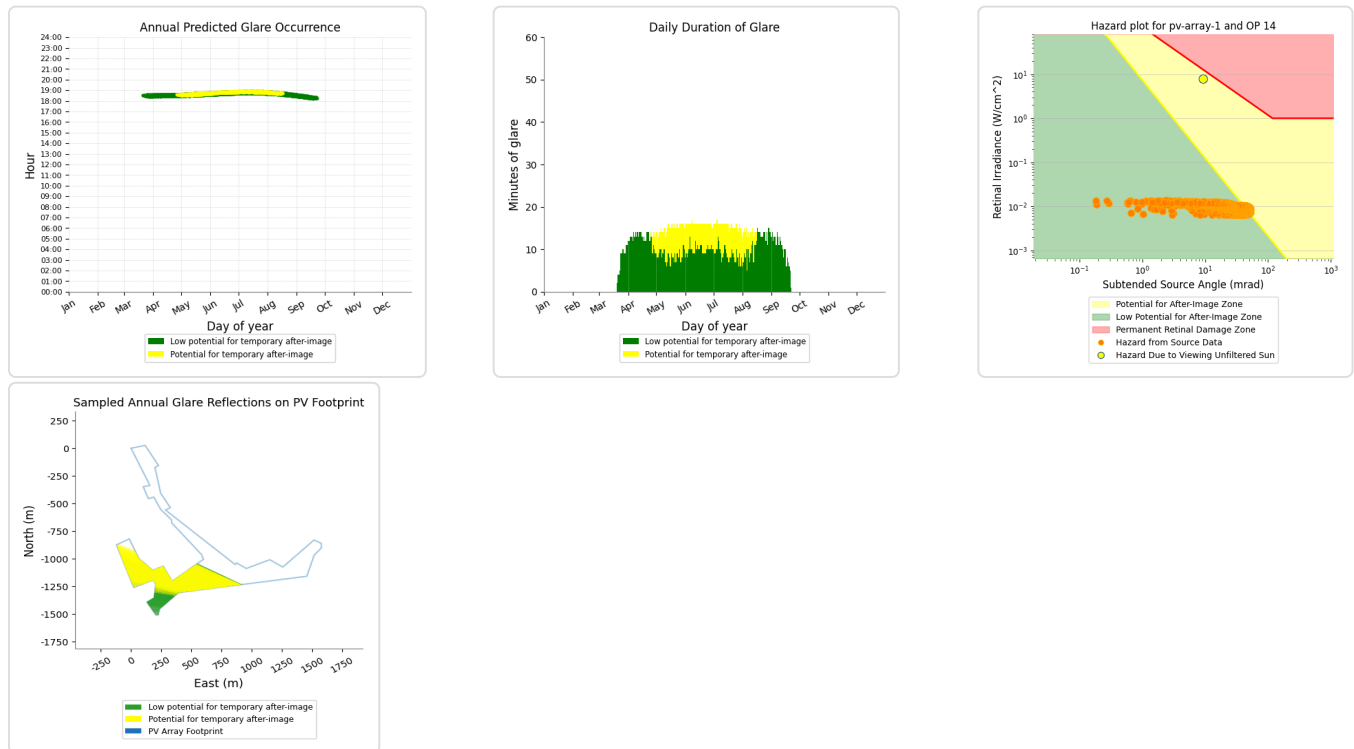PV array is expected to produce the following glare for this receptor:
- 428 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
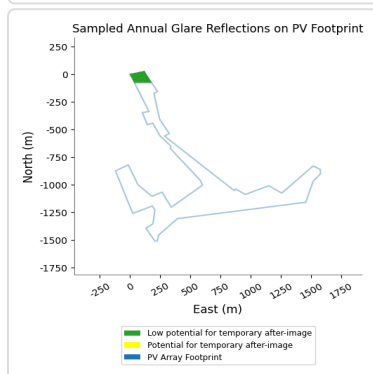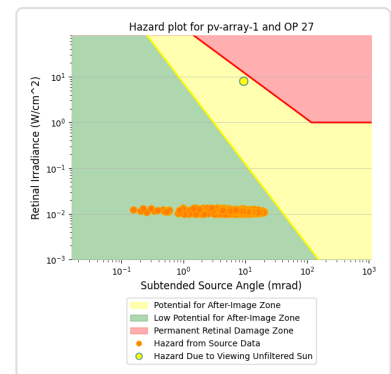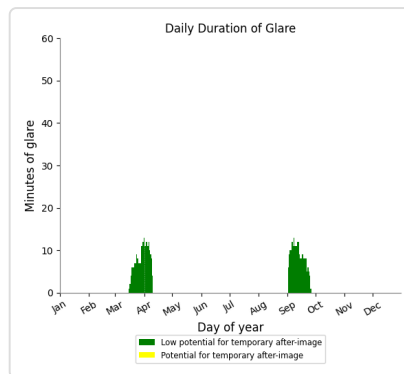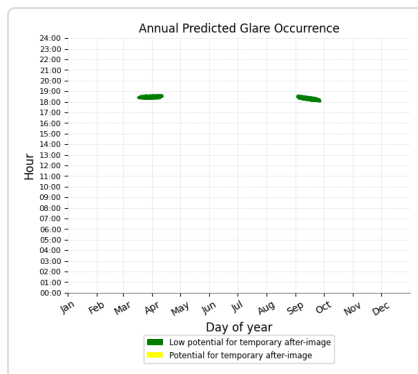
PV array 1: OP 28

No glare found

PV array 1: OP 29

PV array is expected to produce the following glare for this receptor:
- 2,506 minutes of "green" glare with low potential to cause temporary after-image.
- 413 minutes of "yellow" glare with potential to cause temporary after-image.

Annual Predicted Glare Occurrence

Daily Duration of Glare

Hazard plot for pv-array-1 and OP 29

Sampled Annual Glare Reflections on PV Footprint
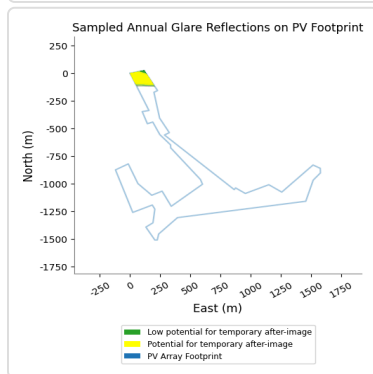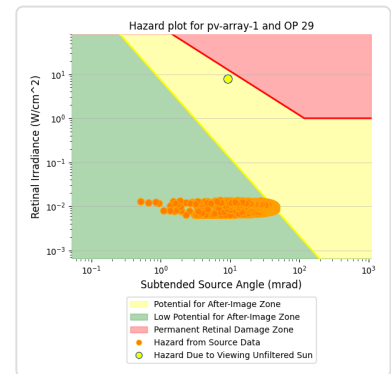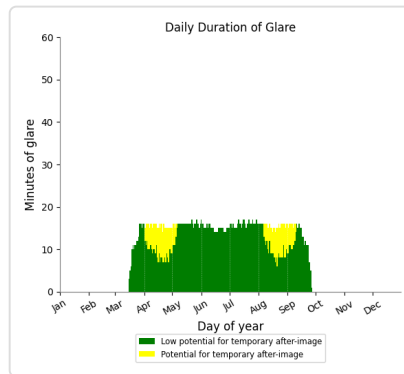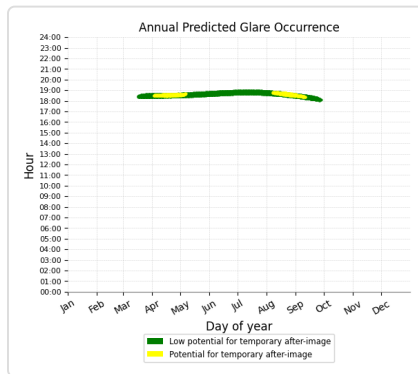
PV array 1: OP 30

PV array is expected to produce the following glare for this receptor:
- 2,120 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

Annual Predicted Glare Occurrence

Daily Duration of Glare

Hazard plot for pv-array-1 and OP 30

Sampled Annual Glare Reflections on PV Footprint
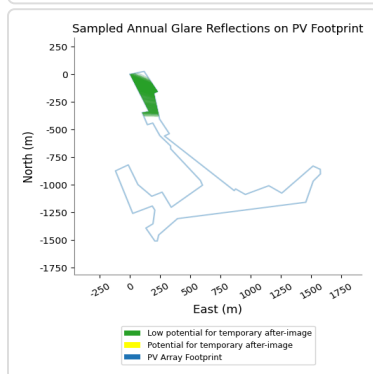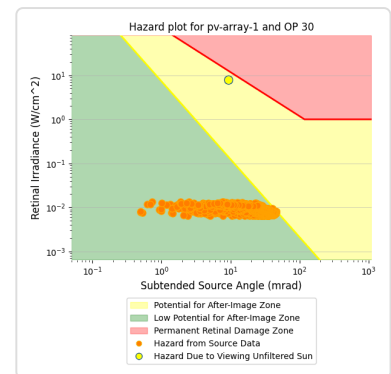
PV array 1: OP 31

PV array is expected to produce the following glare for this receptor:
- 2,754 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 32

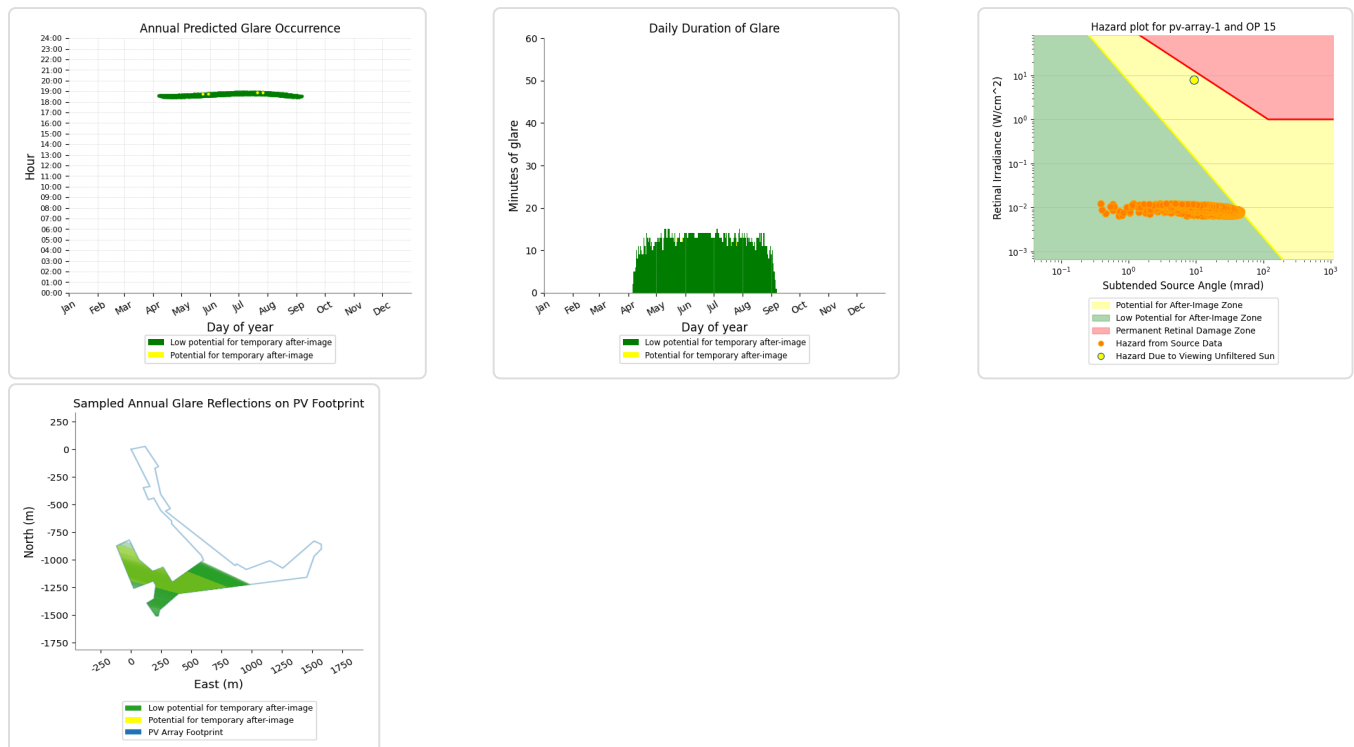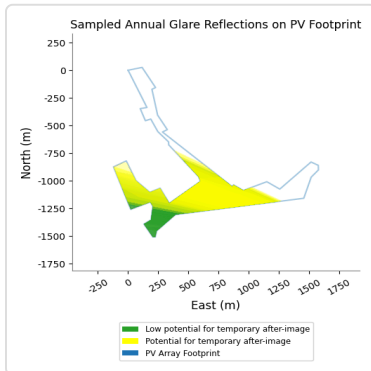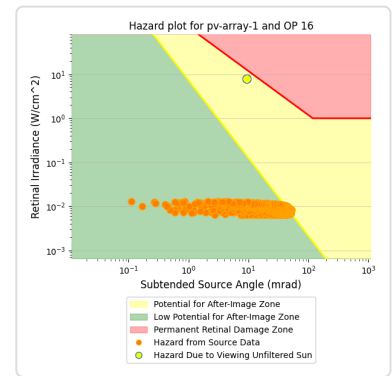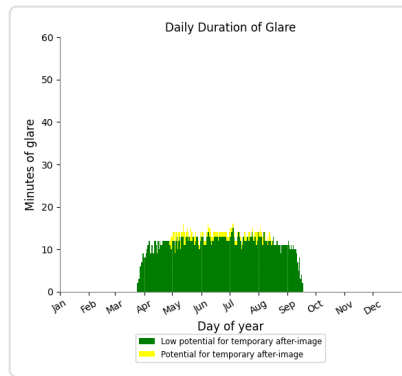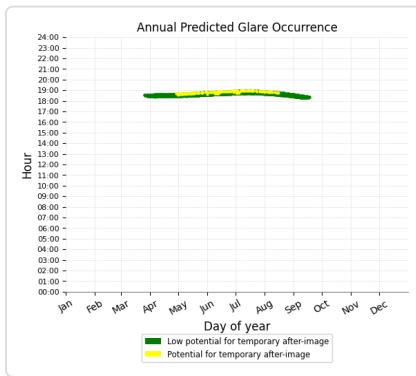PV array is expected to produce the following glare for this receptor:
- 2,852 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 33

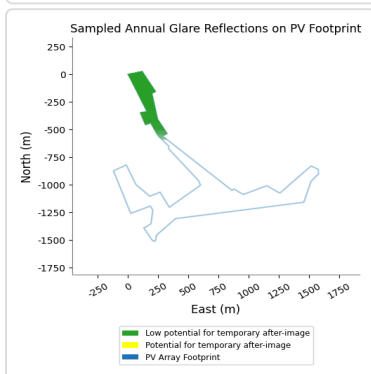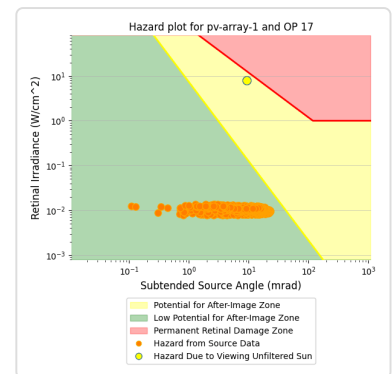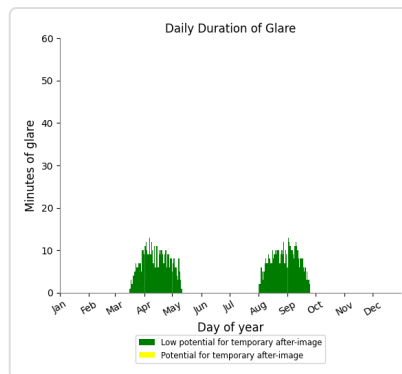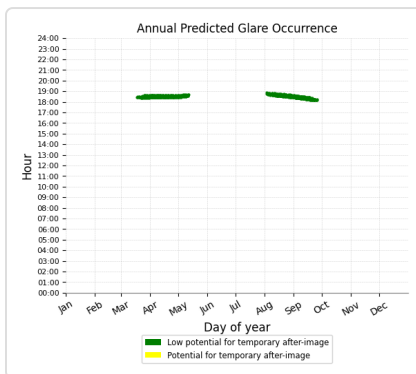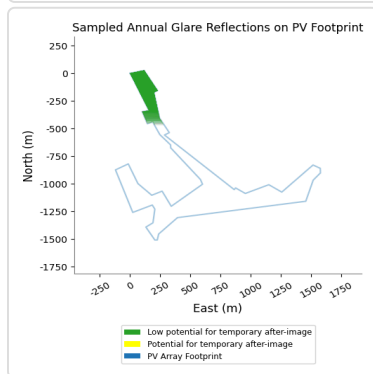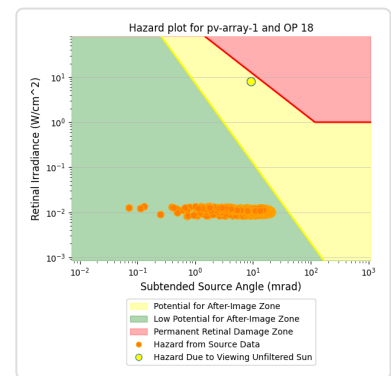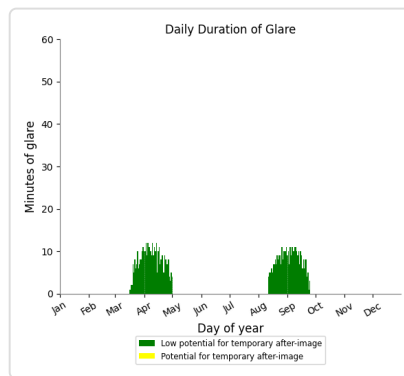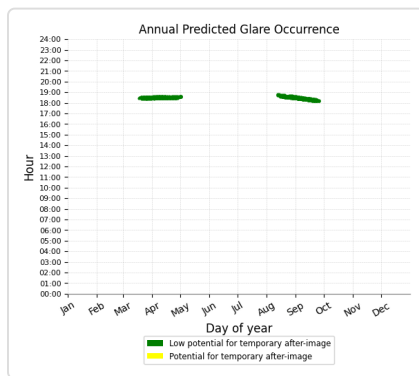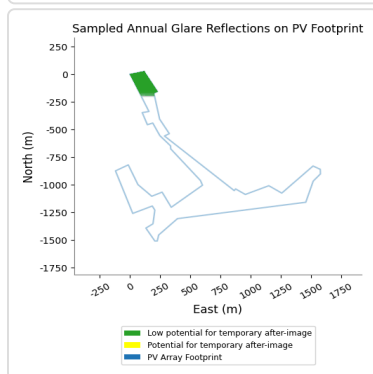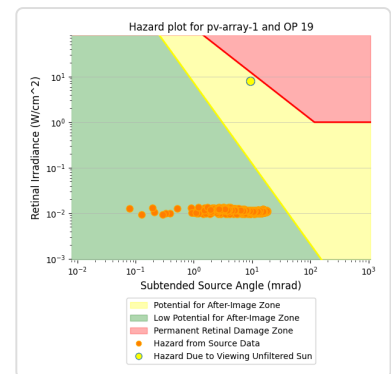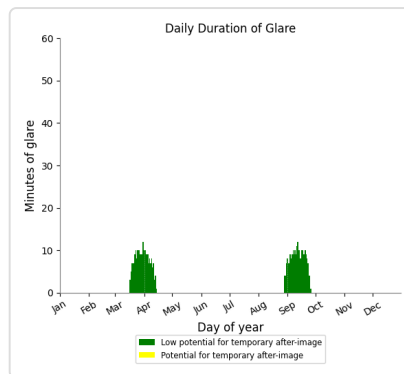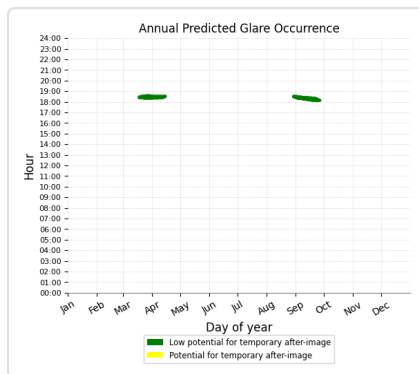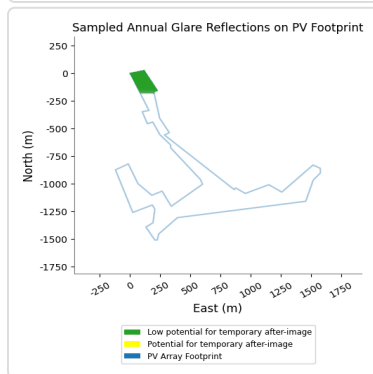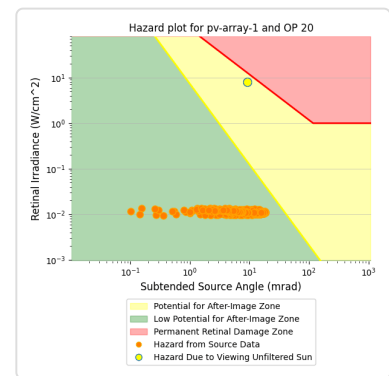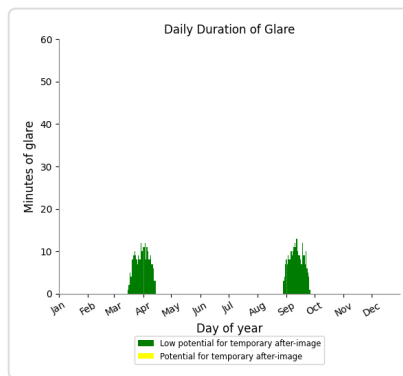PV array is expected to produce the following glare for this receptor:
- 2,793 minutes of "green" glare with low potential to cause temporary after-image.
- 509 minutes of "yellow" glare with potential to cause temporary after-image.

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Ballyteige Solar Farm
Ballyteige Solar Farm Road 10 degrees

Created Jul 25, 2023
Updated Oct 02, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 96019.16825

Project type Advanced
Project status: active
Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results   Glare with low potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	6,185	0	-

Component Data

PV Array(s)

Total PV footprint area: 467,677 m^2

Name: PV array 1
Footprint area: 467,677 m^2
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg

Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.293813	-7.412660	71.00	2.50	73.50
2	53.294044	-7.410922	72.13	2.50	74.63
3	53.292403	-7.409248	74.00	2.50	76.50
4	53.292261	-7.409699	73.92	2.50	76.42
5	53.290158	-7.408990	73.35	2.50	75.85
6	53.288978	-7.407789	72.74	2.50	75.24
7	53.288785	-7.408390	72.32	2.50	74.82
8	53.284343	-7.399724	72.00	2.50	74.50
9	53.284478	-7.399553	72.06	2.50	74.56
10	53.284029	-7.398340	72.00	2.50	74.50
11	53.284741	-7.395422	72.34	2.50	74.84
12	53.284138	-7.393813	72.64	2.50	75.14
13	53.286345	-7.389929	74.71	2.50	77.21
14	53.286075	-7.389028	74.45	2.50	76.95
15	53.285703	-7.389006	73.98	2.50	76.48
16	53.285113	-7.389907	73.93	2.50	76.43
17	53.283394	-7.390830	73.00	2.50	75.50
18	53.282060	-7.406773	67.69	2.50	70.19
19	53.280726	-7.409112	68.00	2.50	70.50
20	53.280238	-7.409284	68.03	2.50	70.53
21	53.280238	-7.409584	68.03	2.50	70.53
22	53.281290	-7.410700	68.11	2.50	70.61
23	53.281637	-7.409820	67.01	2.50	69.51
24	53.282753	-7.409584	68.63	2.50	71.13
25	53.283086	-7.409906	69.12	2.50	71.62
26	53.282483	-7.412331	69.99	2.50	72.49
27	53.285947	-7.414476	71.29	2.50	73.79
28	53.286434	-7.412889	71.00	2.50	73.50
29	53.284831	-7.411687	69.62	2.50	72.12
30	53.283882	-7.409970	70.00	2.50	72.50
31	53.284215	-7.408683	70.25	2.50	72.75
32	53.282984	-7.407546	68.96	2.50	71.46
33	53.284780	-7.403662	70.48	2.50	72.98
34	53.285164	-7.403919	70.91	2.50	73.41
35	53.287740	-7.407613	72.00	2.50	74.50
36	53.287984	-7.407635	72.25	2.50	74.75
37	53.288817	-7.408965	71.53	2.50	74.03
38	53.289843	-7.409845	71.95	2.50	74.45
39	53.289702	-7.410510	71.58	2.50	74.08
40	53.290690	-7.411154	72.00	2.50	74.50
41	53.290780	-7.410317	72.94	2.50	75.44

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.295568	-7.401580	77.30	1.50	78.80
OP 2	53.294490	-7.398941	76.37	1.50	77.87
OP 3	53.293528	-7.396538	77.33	1.50	78.83
OP 4	53.292708	-7.393813	78.12	1.50	79.62
OP 5	53.292041	-7.391238	79.86	1.50	81.36
OP 6	53.292015	-7.388963	81.11	1.50	82.61
OP 7	53.291771	-7.385895	79.53	1.50	81.03
OP 8	53.291925	-7.382912	81.00	1.50	82.50
OP 9	53.291810	-7.379994	82.82	1.50	84.32
OP 10	53.291079	-7.377483	81.58	1.50	83.08
OP 11	53.289539	-7.376153	81.85	1.50	83.35
OP 12	53.288064	-7.374393	80.46	1.50	81.96

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	6,185	0	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	221	441	24	0	0	301	398	0	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1   low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	300	0
OP: OP 4	558	0
OP: OP 5	756	0
OP: OP 6	732	0
OP: OP 7	548	0
OP: OP 8	517	0
OP: OP 9	583	0
OP: OP 10	497	0
OP: OP 11	867	0
OP: OP 12	827	0

PV array 1: OP 1

No glare found

PV array 1: OP 2

No glare found

PV array 1: OP 3

PV array is expected to produce the following glare for this receptor:
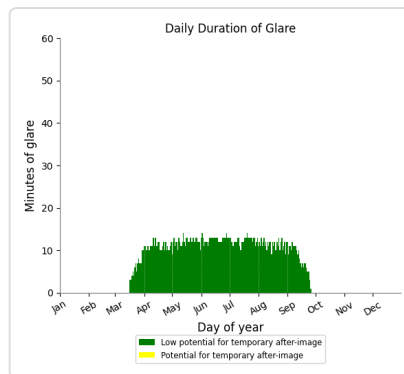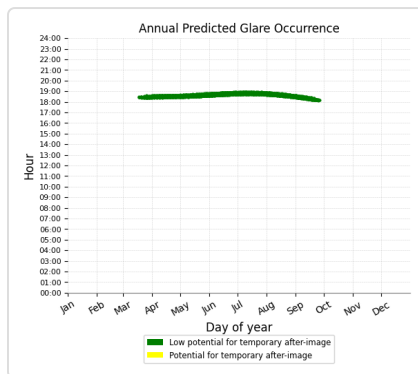- 300 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
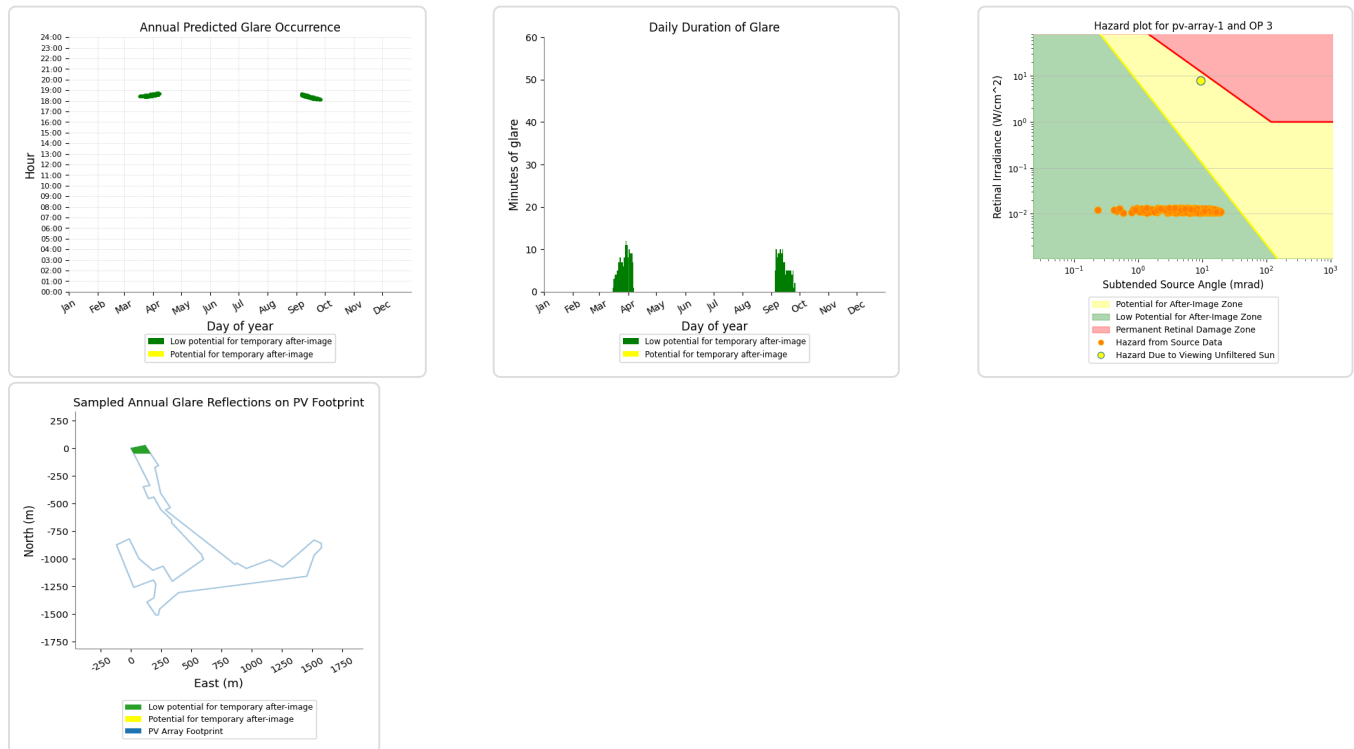
PV array 1: OP 4

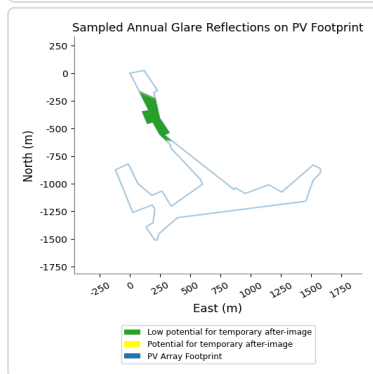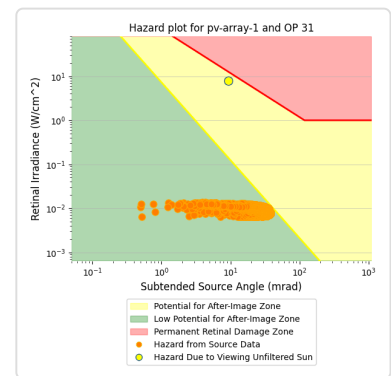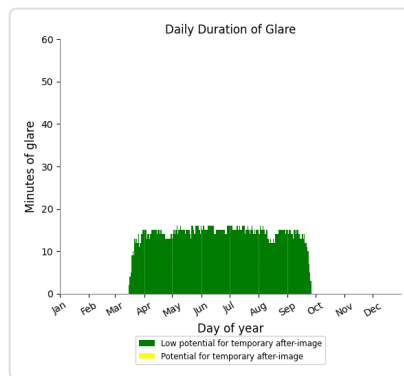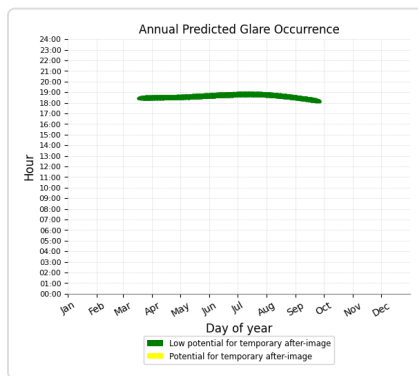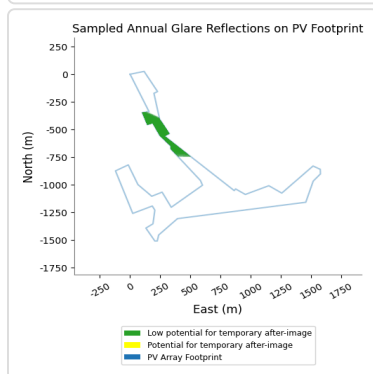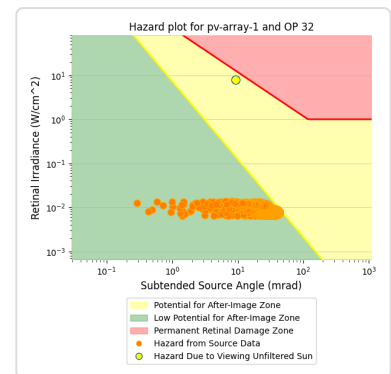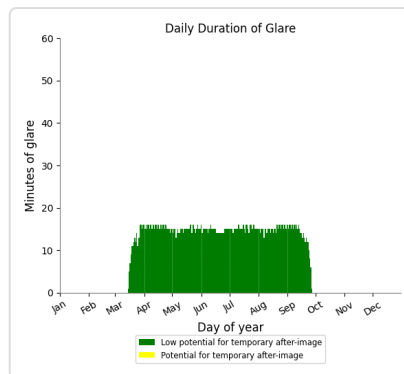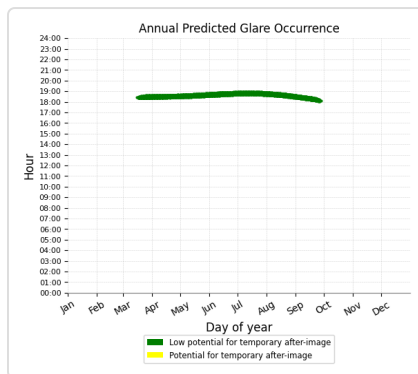PV array is expected to produce the following glare for this receptor:
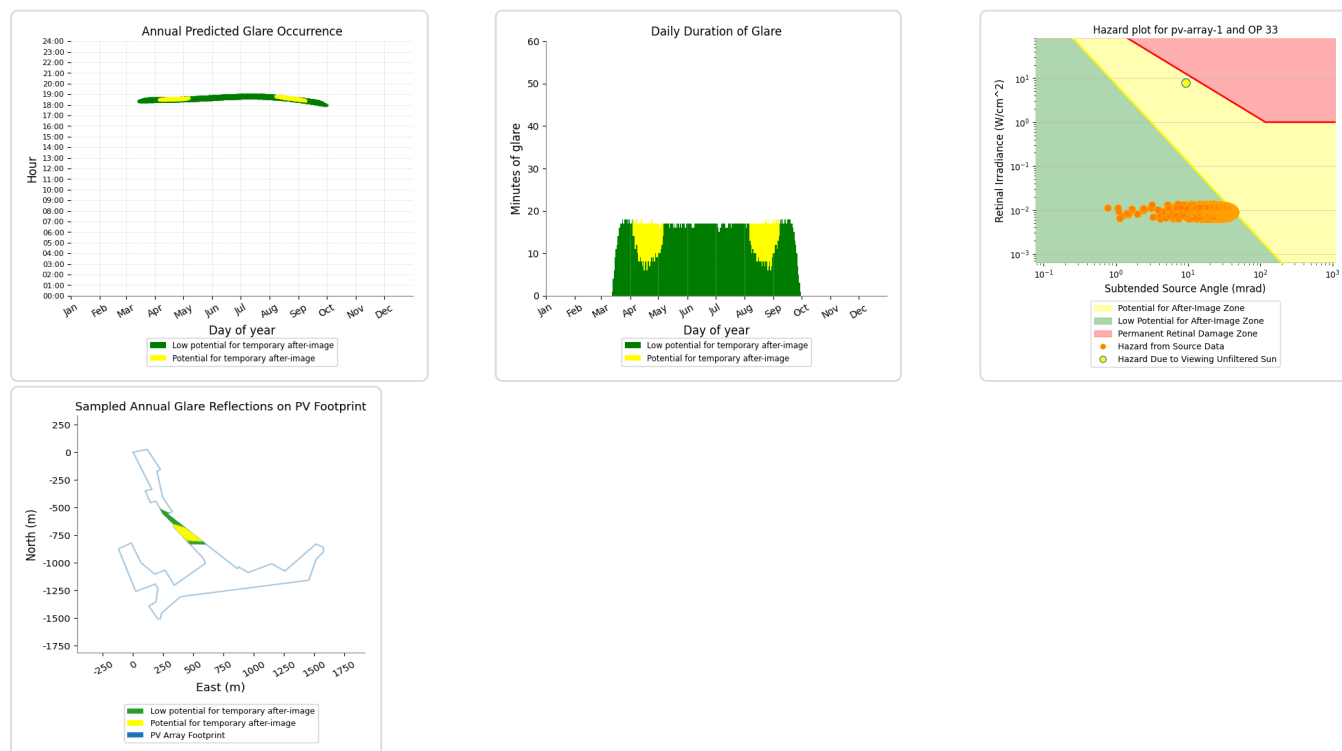- 558 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
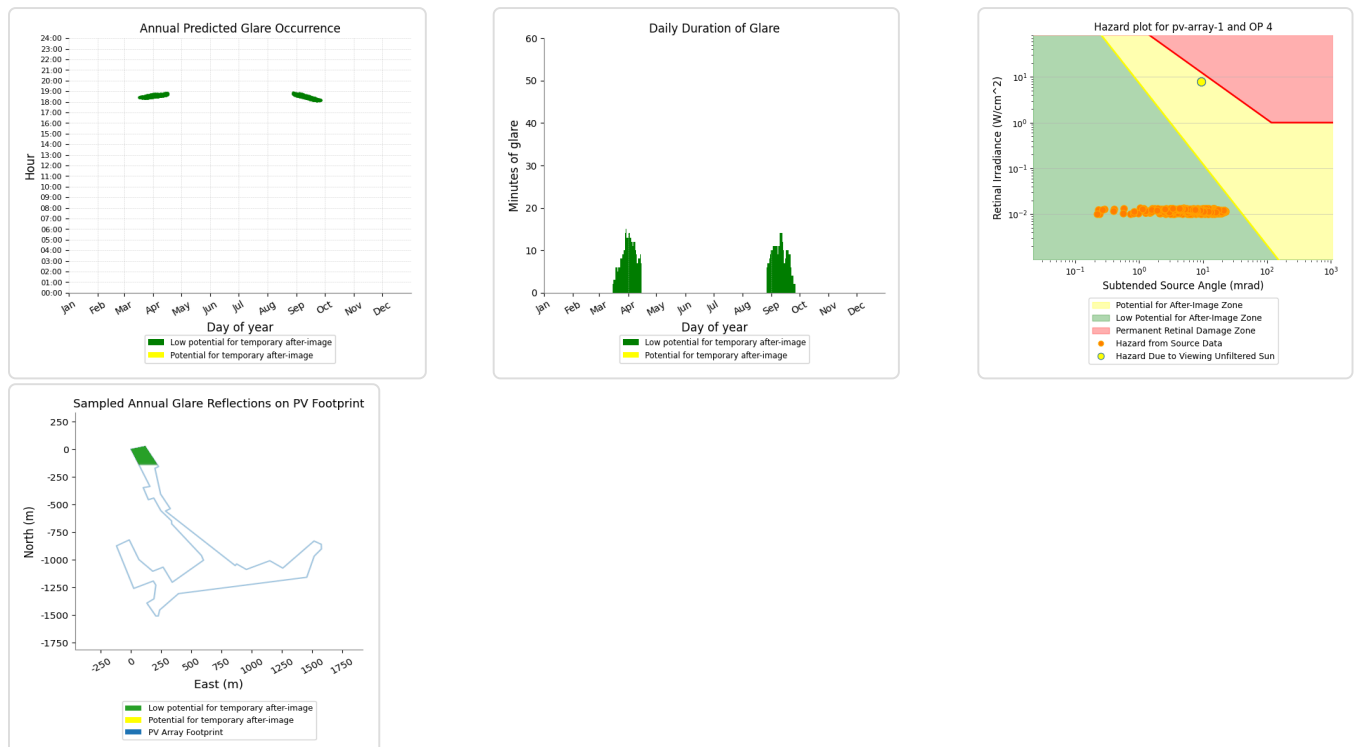
PV array 1: OP 5

PV array is expected to produce the following glare for this receptor:
- 756 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
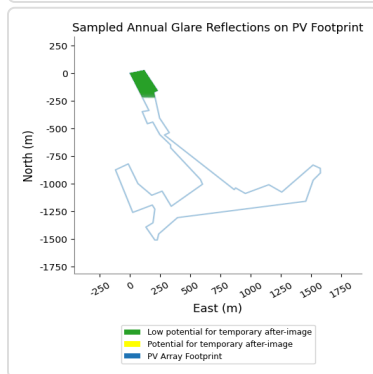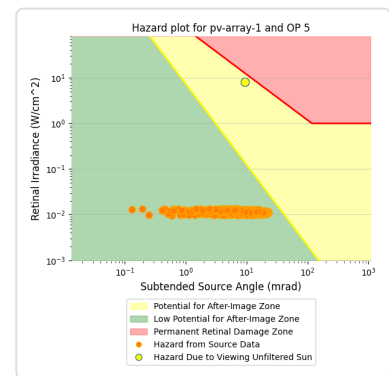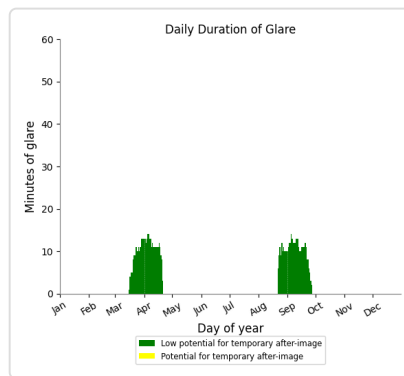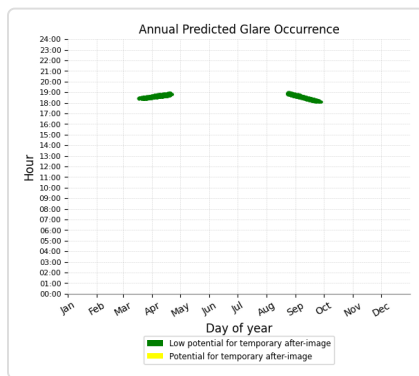
PV array 1: OP 6

PV array is expected to produce the following glare for this receptor:
- 732 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
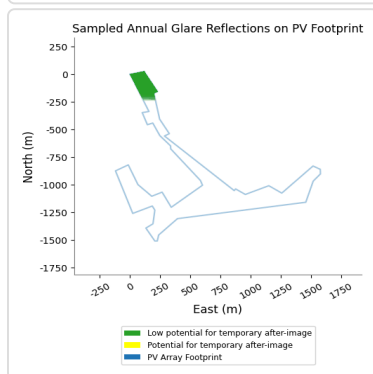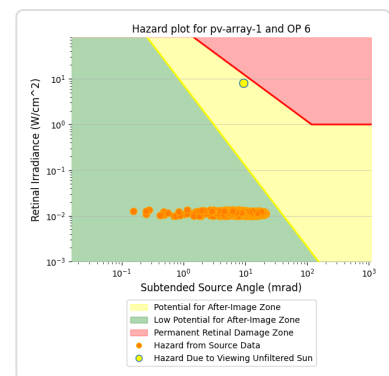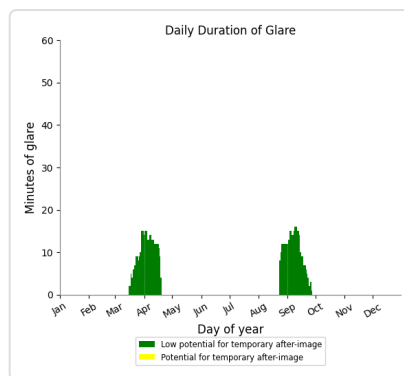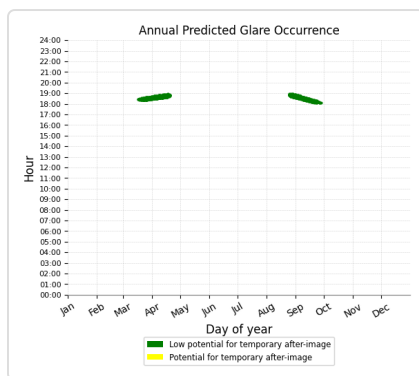
PV array 1: OP 7

PV array is expected to produce the following glare for this receptor:
- 548 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
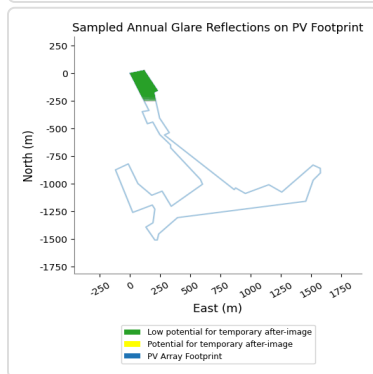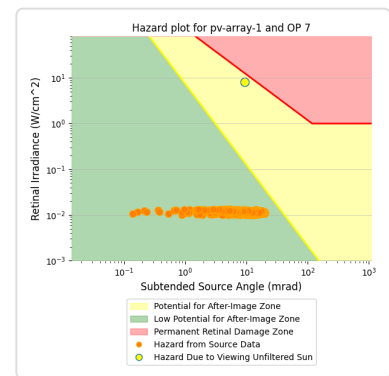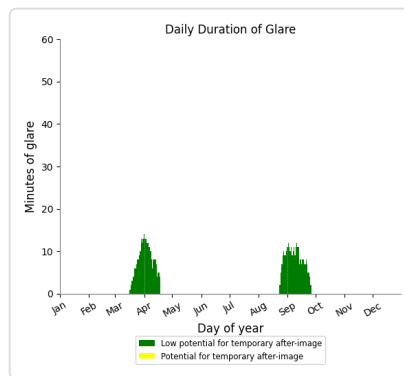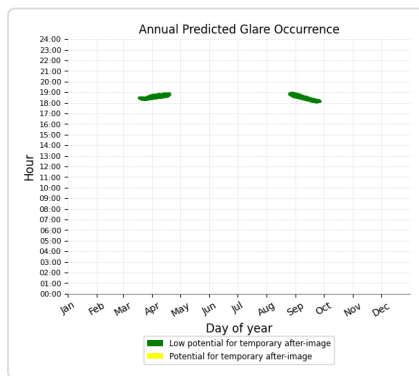
PV array 1: OP 8

PV array is expected to produce the following glare for this receptor:
- 517 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
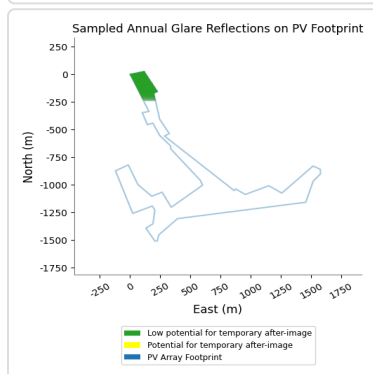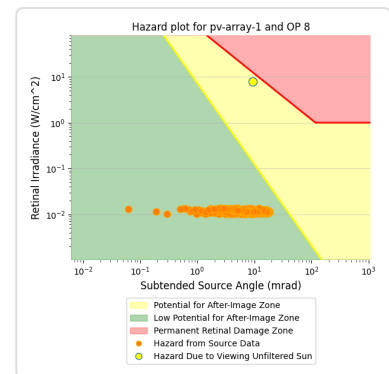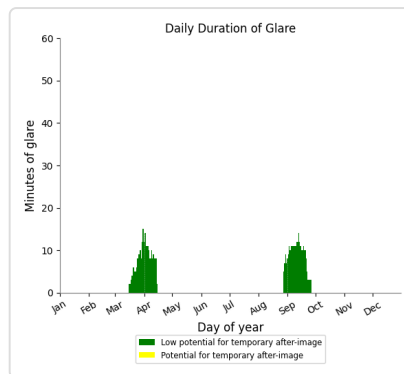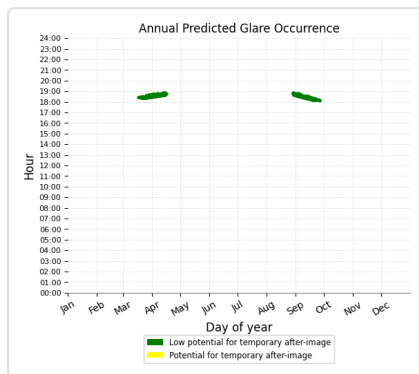
PV array 1: OP 9

PV array is expected to produce the following glare for this receptor:
- 583 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
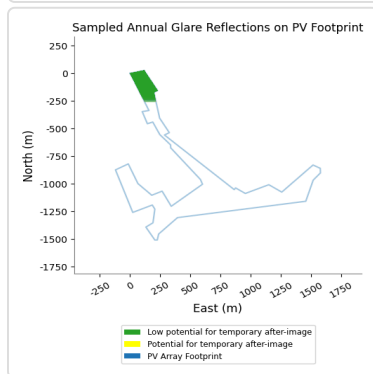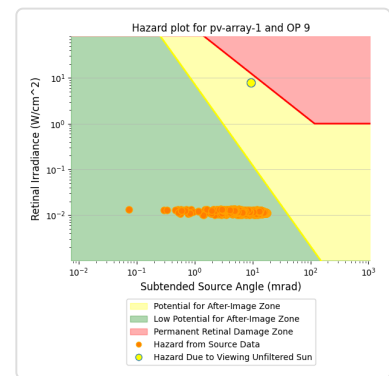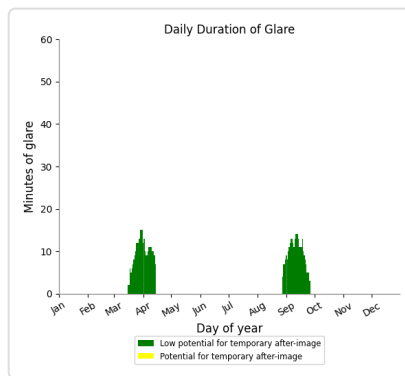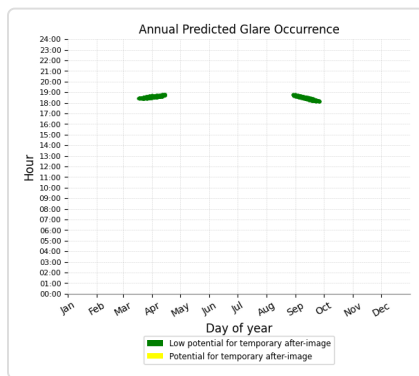
PV array 1: OP 10

PV array is expected to produce the following glare for this receptor:
- 497 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
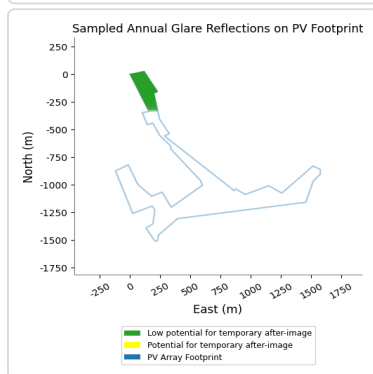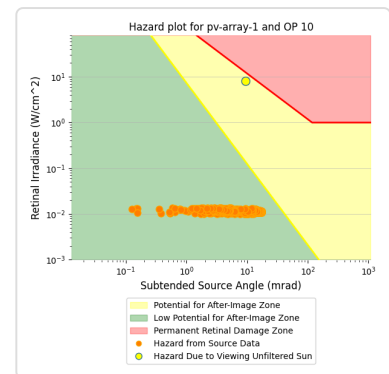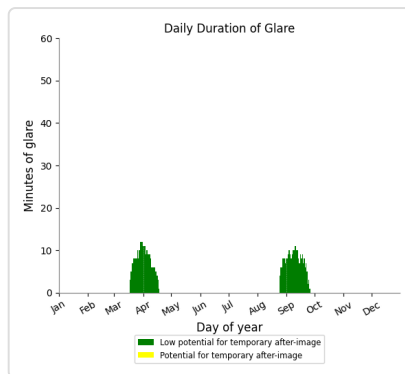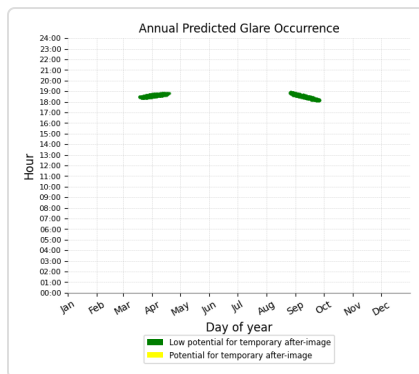
PV array 1: OP 11

PV array is expected to produce the following glare for this receptor:
- 867 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 12

PV array is expected to produce the following glare for this receptor:
- 827 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Ballyteige Solar Farm
Ballyteige Solar Farm Road 20 degrees

Created Jul 25, 2023
Updated Oct 02, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 96019.16825

Project type Advanced
Project status: active
Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results Glare with low potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	20.0	180.0	5,793	0	-

Component Data

PV Array(s)

Total PV footprint area: 467,677 m^2

Name: PV array 1
Footprint area: 467,677 m^2
Axis tracking: Fixed (no rotation)
Tilt: 20.0 deg
Orientation: 180.0 deg

Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.293813	-7.412660	71.00	2.50	73.50
2	53.294044	-7.410922	72.13	2.50	74.63
3	53.292403	-7.409248	74.00	2.50	76.50
4	53.292261	-7.409699	73.92	2.50	76.42
5	53.290158	-7.408990	73.35	2.50	75.85
6	53.288978	-7.407789	72.74	2.50	75.24
7	53.288785	-7.408390	72.32	2.50	74.82
8	53.284343	-7.399724	72.00	2.50	74.50
9	53.284478	-7.399553	72.06	2.50	74.56
10	53.284029	-7.398340	72.00	2.50	74.50
11	53.284741	-7.395422	72.34	2.50	74.84
12	53.284138	-7.393813	72.64	2.50	75.14
13	53.286345	-7.389929	74.71	2.50	77.21
14	53.286075	-7.389028	74.45	2.50	76.95
15	53.285703	-7.389006	73.98	2.50	76.48
16	53.285113	-7.389907	73.93	2.50	76.43
17	53.283394	-7.390830	73.00	2.50	75.50
18	53.282060	-7.406773	67.69	2.50	70.19
19	53.280726	-7.409112	68.00	2.50	70.50
20	53.280238	-7.409284	68.03	2.50	70.53
21	53.280238	-7.409584	68.03	2.50	70.53
22	53.281290	-7.410700	68.11	2.50	70.61
23	53.281637	-7.409820	67.01	2.50	69.51
24	53.282753	-7.409584	68.63	2.50	71.13
25	53.283086	-7.409906	69.12	2.50	71.62
26	53.282483	-7.412331	69.99	2.50	72.49
27	53.285947	-7.414476	71.29	2.50	73.79
28	53.286434	-7.412889	71.00	2.50	73.50
29	53.284831	-7.411687	69.62	2.50	72.12
30	53.283882	-7.409970	70.00	2.50	72.50
31	53.284215	-7.408683	70.25	2.50	72.75
32	53.282984	-7.407546	68.96	2.50	71.46
33	53.284780	-7.403662	70.48	2.50	72.98
34	53.285164	-7.403919	70.91	2.50	73.41
35	53.287740	-7.407613	72.00	2.50	74.50
36	53.287984	-7.407635	72.25	2.50	74.75
37	53.288817	-7.408965	71.53	2.50	74.03
38	53.289843	-7.409845	71.95	2.50	74.45
39	53.289702	-7.410510	71.58	2.50	74.08
40	53.290690	-7.411154	72.00	2.50	74.50
41	53.290780	-7.410317	72.94	2.50	75.44

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	53.295568	-7.401580	77.30	1.50	78.80
OP 2	53.294490	-7.398941	76.37	1.50	77.87
OP 3	53.293528	-7.396538	77.33	1.50	78.83
OP 4	53.292708	-7.393813	78.12	1.50	79.62
OP 5	53.292041	-7.391238	79.86	1.50	81.36
OP 6	53.292015	-7.388963	81.11	1.50	82.61
OP 7	53.291771	-7.385895	79.53	1.50	81.03
OP 8	53.291925	-7.382912	81.00	1.50	82.50
OP 9	53.291810	-7.379994	82.82	1.50	84.32
OP 10	53.291079	-7.377483	81.58	1.50	83.08
OP 11	53.289539	-7.376153	81.85	1.50	83.35
OP 12	53.288064	-7.374393	80.46	1.50	81.96

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	20.0	180.0	5,793	0	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	186	401	76	0	3	332	342	0	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1   low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	245	0
OP: OP 4	509	0
OP: OP 5	699	0
OP: OP 6	680	0
OP: OP 7	519	0
OP: OP 8	473	0
OP: OP 9	534	0
OP: OP 10	462	0
OP: OP 11	834	0
OP: OP 12	838	0

PV array 1: OP 1

No glare found

PV array 1: OP 2

No glare found

PV array 1: OP 3

PV array is expected to produce the following glare for this receptor:
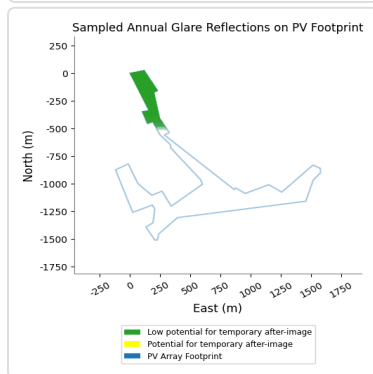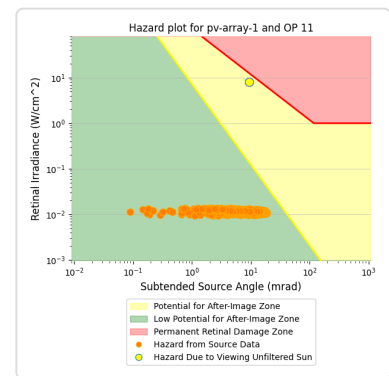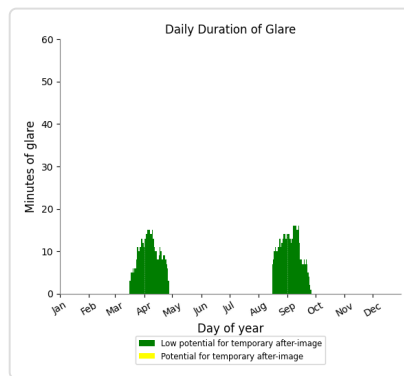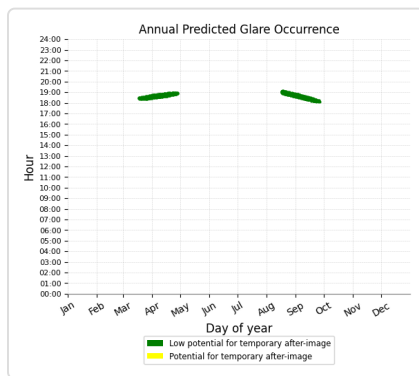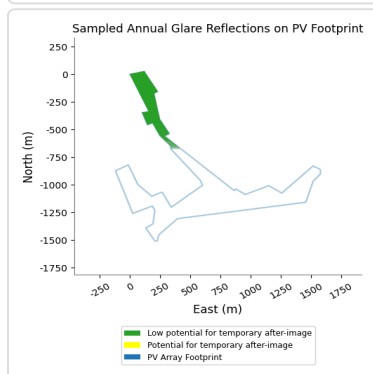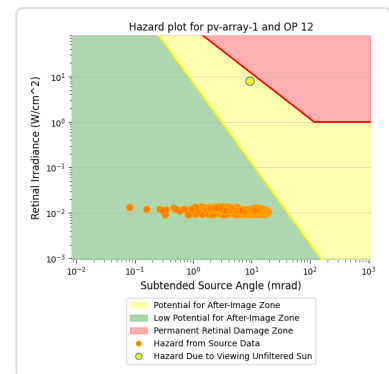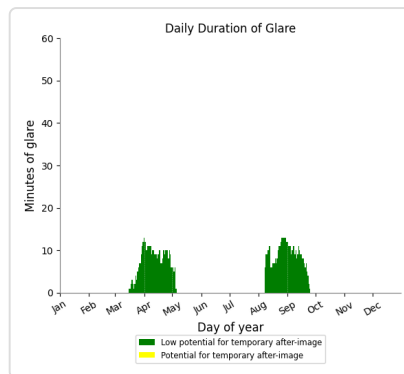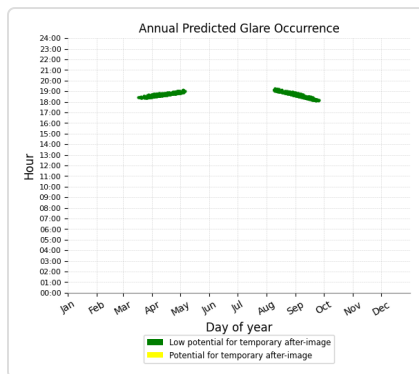- 245 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
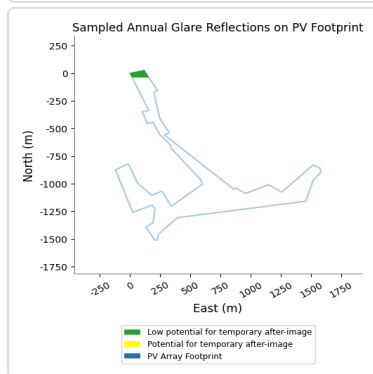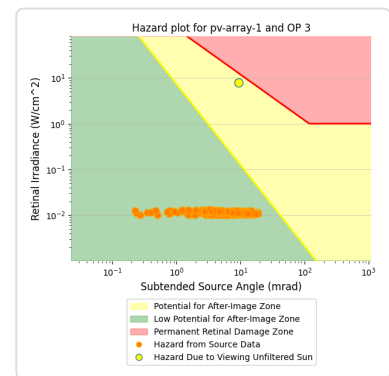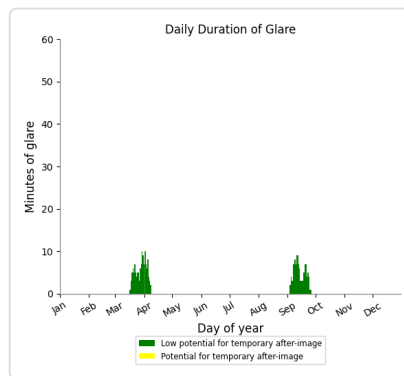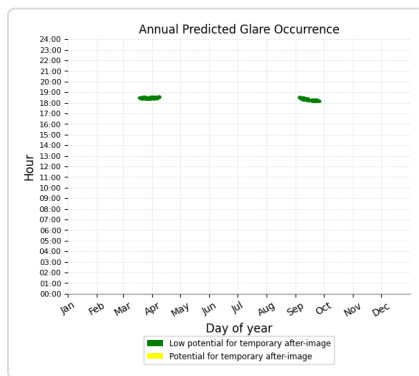
PV array 1: OP 4

PV array is expected to produce the following glare for this receptor:
- 509 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
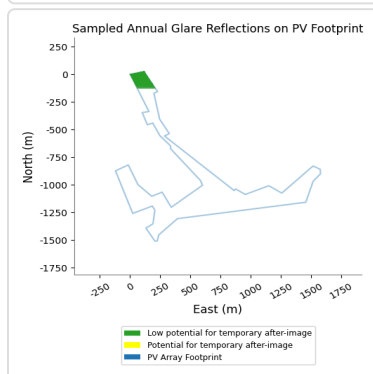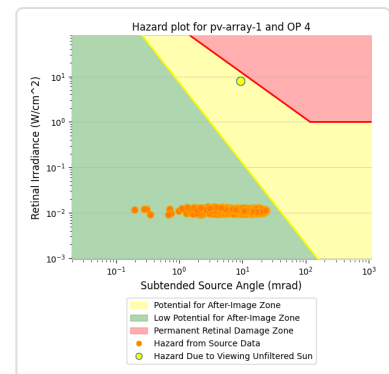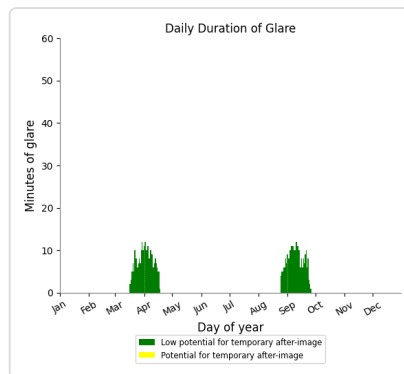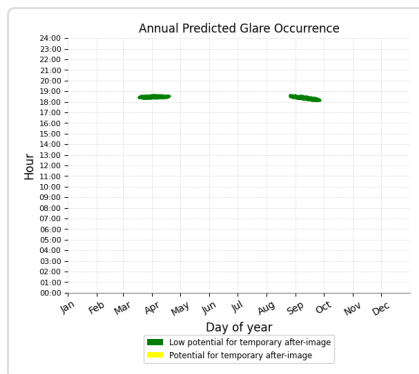
PV array 1: OP 5

PV array is expected to produce the following glare for this receptor:
- 699 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
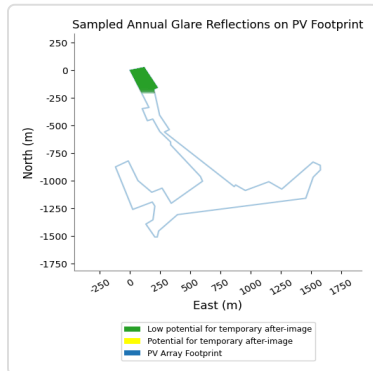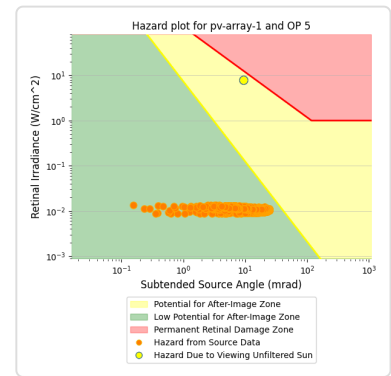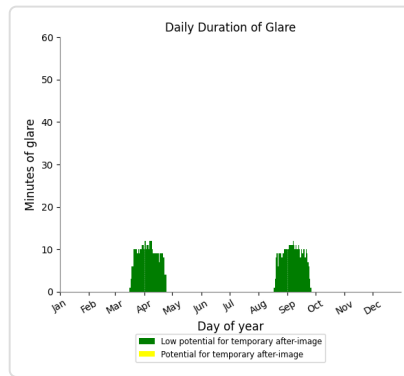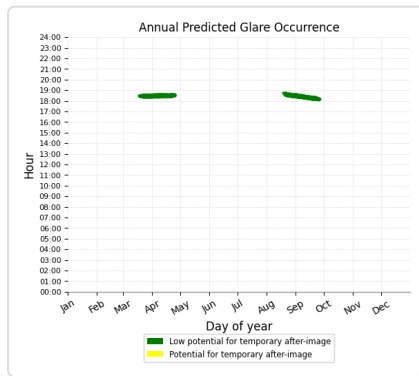
PV array 1: OP 6

PV array is expected to produce the following glare for this receptor:
- 680 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
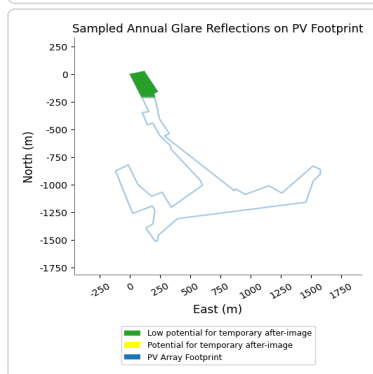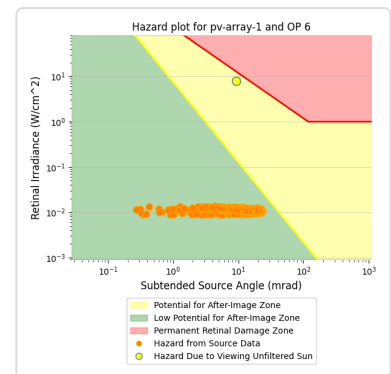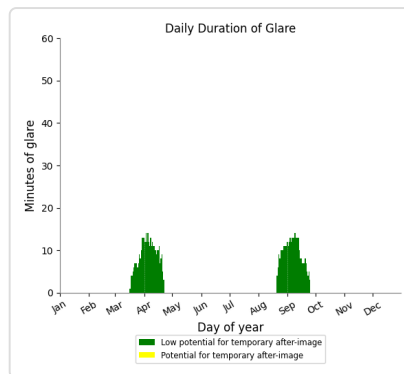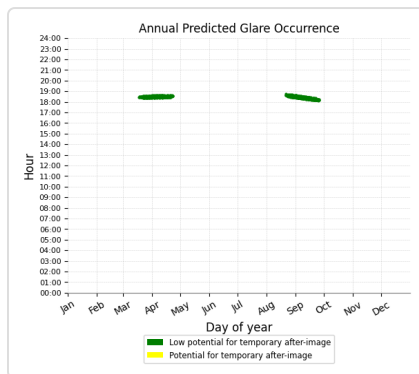
PV array 1: OP 7

PV array is expected to produce the following glare for this receptor:
- 519 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
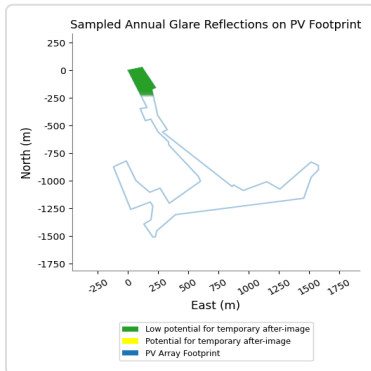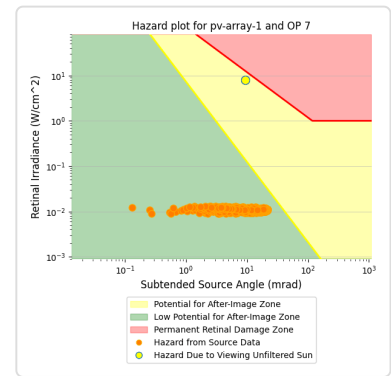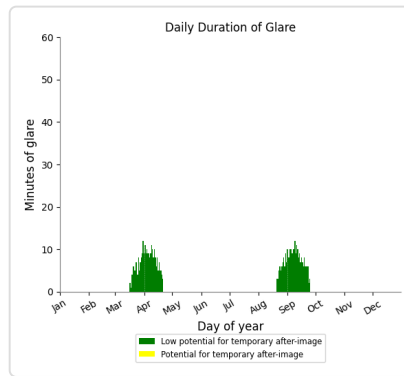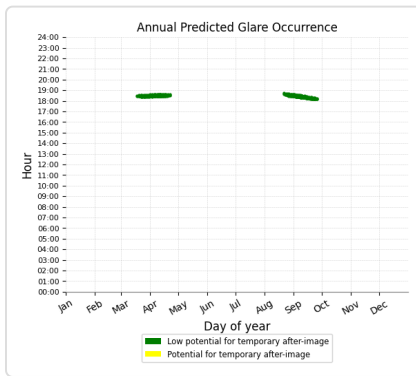
PV array 1: OP 8

PV array is expected to produce the following glare for this receptor:
- 473 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
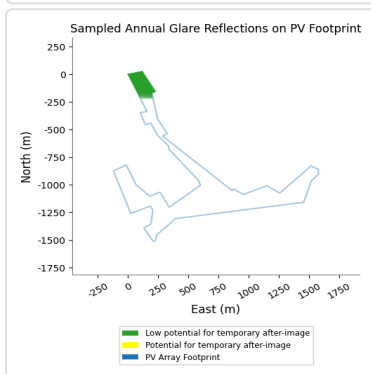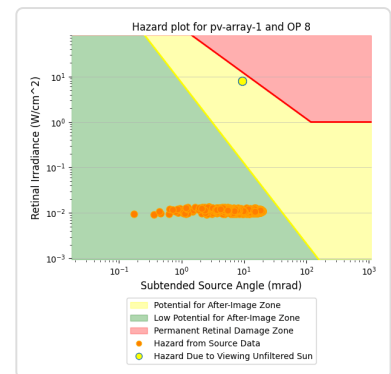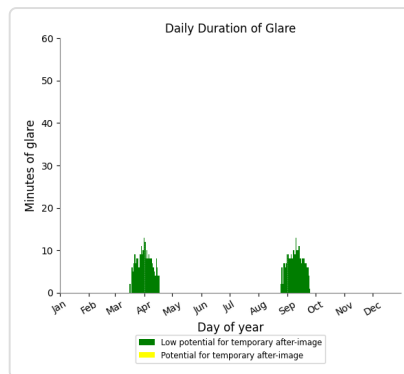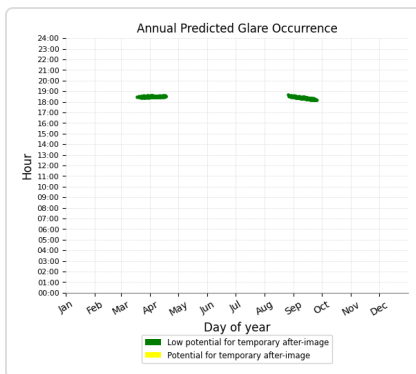
PV array 1: OP 9

PV array is expected to produce the following glare for this receptor:
- 534 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
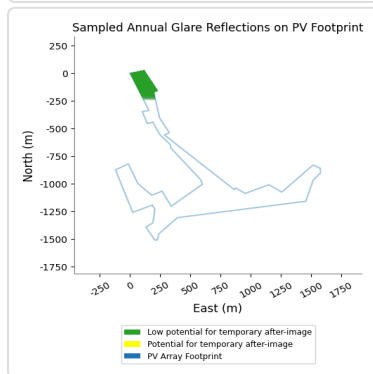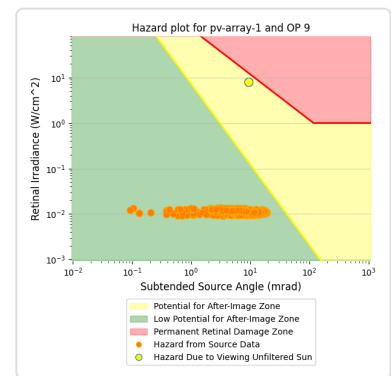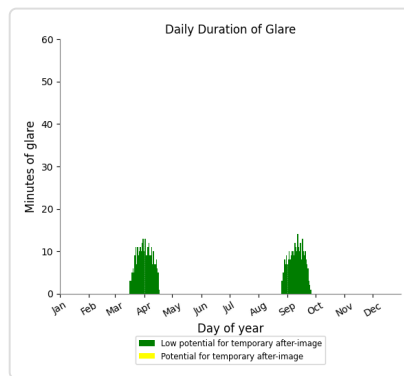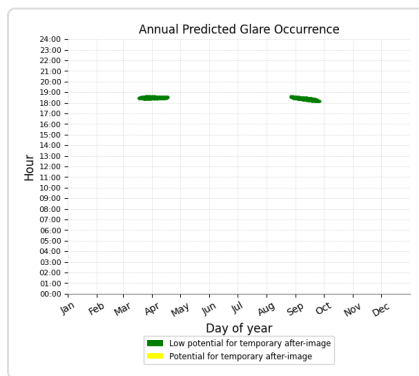
PV array 1: OP 10

PV array is expected to produce the following glare for this receptor:
- 462 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
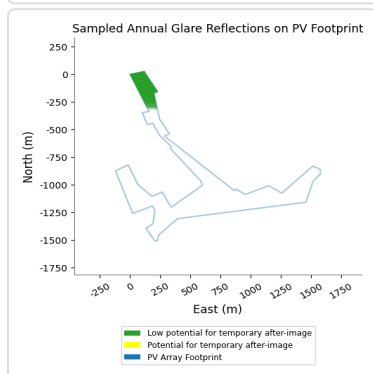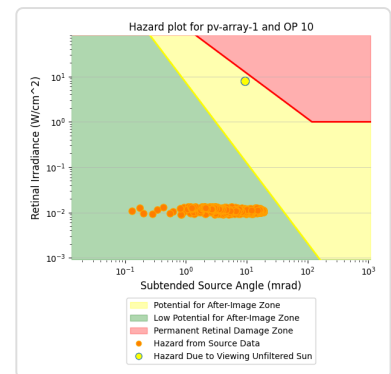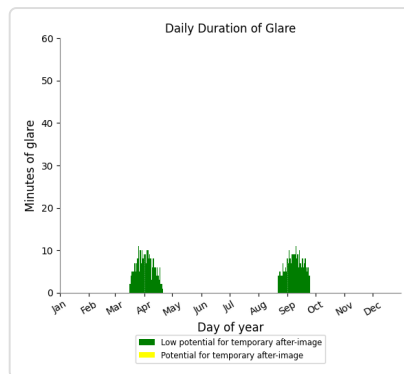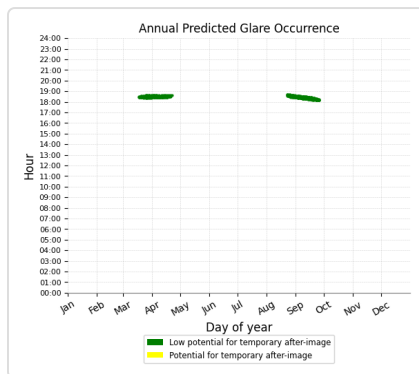
PV array 1: OP 11

PV array is expected to produce the following glare for this receptor:
- 834 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

PV array 1: OP 12

PV array is expected to produce the following glare for this receptor:
- 838 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

![ForgeSolar logo — PV planning & glare analysis]

ForgeSolar

Ballyteige Solar Farm
Ballyteige Solar Farm Aviation 10 degrees

Created Jul 25, 2023
Updated Oct 02, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 160868.16825

Project type Advanced
Project status: active
Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results   Glare with low potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	753	0	-

Component Data

PV Array(s)

Total PV footprint area: 467,677 m^2

Name: PV array 1
Footprint area: 467,677 m^2
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg

Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.293813	-7.412660	71.00	2.50	73.50
2	53.294044	-7.410922	72.13	2.50	74.63
3	53.292403	-7.409248	74.00	2.50	76.50
4	53.292261	-7.409699	73.92	2.50	76.42
5	53.290158	-7.408990	73.35	2.50	75.85
6	53.288978	-7.407789	72.74	2.50	75.24
7	53.288785	-7.408390	72.32	2.50	74.82
8	53.284343	-7.399724	72.00	2.50	74.50
9	53.284478	-7.399553	72.06	2.50	74.56
10	53.284029	-7.398340	72.00	2.50	74.50
11	53.284741	-7.395422	72.34	2.50	74.84
12	53.284138	-7.393813	72.64	2.50	75.14
13	53.286345	-7.389929	74.71	2.50	77.21
14	53.286075	-7.389028	74.45	2.50	76.95
15	53.285703	-7.389006	73.98	2.50	76.48
16	53.285113	-7.389907	73.93	2.50	76.43
17	53.283394	-7.390830	73.00	2.50	75.50
18	53.282060	-7.406773	67.69	2.50	70.19
19	53.280726	-7.409112	68.00	2.50	70.50
20	53.280238	-7.409284	68.03	2.50	70.53
21	53.280238	-7.409584	68.03	2.50	70.53
22	53.281290	-7.410700	68.11	2.50	70.61
23	53.281637	-7.409820	67.01	2.50	69.51
24	53.282753	-7.409584	68.63	2.50	71.13
25	53.283086	-7.409906	69.12	2.50	71.62
26	53.282483	-7.412331	69.99	2.50	72.49
27	53.285947	-7.414476	71.29	2.50	73.79
28	53.286434	-7.412889	71.00	2.50	73.50
29	53.284831	-7.411687	69.62	2.50	72.12
30	53.283882	-7.409970	70.00	2.50	72.50
31	53.284215	-7.408683	70.25	2.50	72.75
32	53.282984	-7.407546	68.96	2.50	71.46
33	53.284780	-7.403662	70.48	2.50	72.98
34	53.285164	-7.403919	70.91	2.50	73.41
35	53.287740	-7.407613	72.00	2.50	74.50
36	53.287984	-7.407635	72.25	2.50	74.75
37	53.288817	-7.408965	71.53	2.50	74.03
38	53.289843	-7.409845	71.95	2.50	74.45
39	53.289702	-7.410510	71.58	2.50	74.08
40	53.290690	-7.411154	72.00	2.50	74.50
41	53.290780	-7.410317	72.94	2.50	75.44

2-Mile Flight Path Receptor(s)

Name: Clonbollogue RWY 09
Description:
Threshold height : 15 m
Direction: 85.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.249200	-7.129687	70.00	15.24	85.24
2-mile point	53.246831	-7.177902	71.00	182.92	253.92

Name: Clonbollogue RWY 27
Description:
Threshold height : 15 m
Direction: 265.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.249932	-7.117699	72.08	15.24	87.32
2-mile point	53.252301	-7.069482	68.28	187.72	256.01

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	753	0	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	370	4	0	0	290	89	0	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1   low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: Clonbollogue RWY 09	0	0
FP: Clonbollogue RWY 27	753	0

PV array 1: Clonbollogue RWY 09

No glare found

PV array 1: Clonbollogue RWY 27

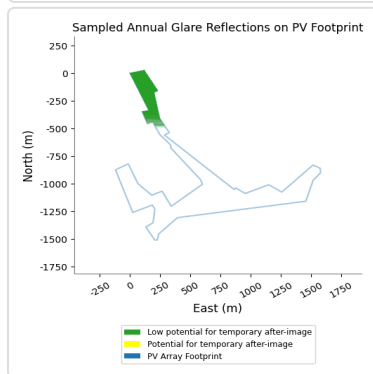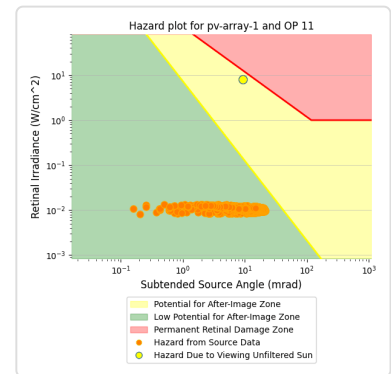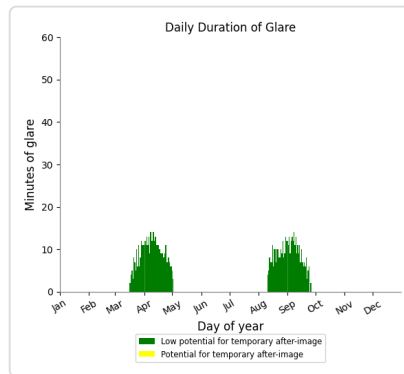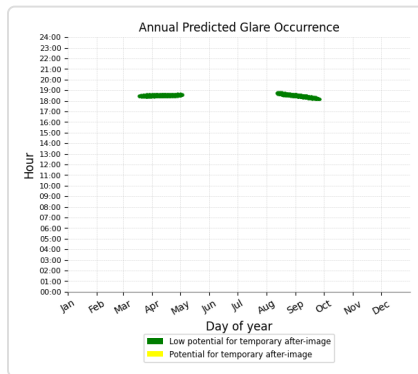PV array is expected to produce the following glare for this receptor:
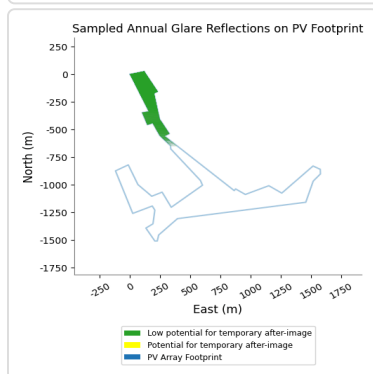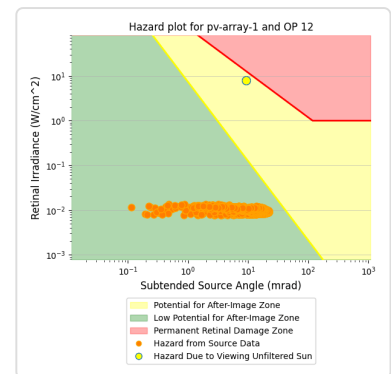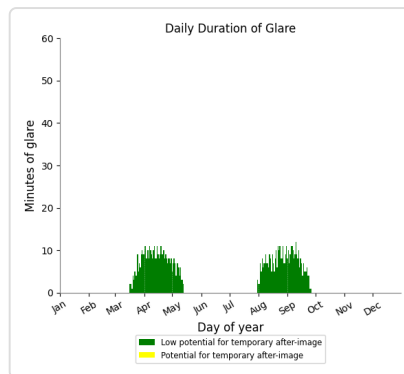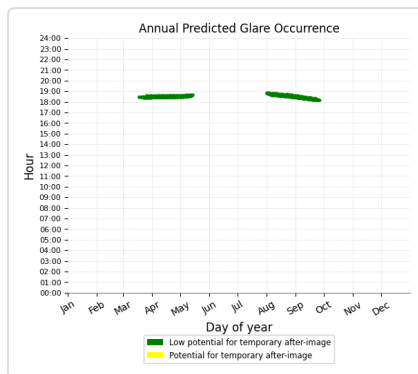- 753 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

Annual Predicted Glare Occurrence

Daily Duration of Glare

Hazard plot for pv-array-1 and clonbo

Sampled Annual Glare Reflections on PV Footprint

Path Location vs. Time of Glare

Positions Along Path Receiving Glare

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Ballyteige Solar Farm
Ballyteige Solar Farm Aviation 20 degrees

Created Jul 25, 2023
Updated Oct 02, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 160868.16825

Project type Advanced
Project status: active
Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results   Glare with low potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	20.0	180.0	775	0	-

Component Data

PV Array(s)

Total PV footprint area: 467,677 m^2

Name: PV array 1
Footprint area: 467,677 m^2
Axis tracking: Fixed (no rotation)
Tilt: 20.0 deg
Orientation: 180.0 deg

Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Imagery ©2025 Airbus, CNES / Airbus, Landsat / Copernicus, Maxar Technologies

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	53.293813	-7.412660	71.00	2.50	73.50
2	53.294044	-7.410922	72.13	2.50	74.63
3	53.292403	-7.409248	74.00	2.50	76.50
4	53.292261	-7.409699	73.92	2.50	76.42
5	53.290158	-7.408990	73.35	2.50	75.85
6	53.288978	-7.407789	72.74	2.50	75.24
7	53.288785	-7.408390	72.32	2.50	74.82
8	53.284343	-7.399724	72.00	2.50	74.50
9	53.284478	-7.399553	72.06	2.50	74.56
10	53.284029	-7.398340	72.00	2.50	74.50
11	53.284741	-7.395422	72.34	2.50	74.84
12	53.284138	-7.393813	72.64	2.50	75.14
13	53.286345	-7.389929	74.71	2.50	77.21
14	53.286075	-7.389028	74.45	2.50	76.95
15	53.285703	-7.389006	73.98	2.50	76.48
16	53.285113	-7.389907	73.93	2.50	76.43
17	53.283394	-7.390830	73.00	2.50	75.50
18	53.282060	-7.406773	67.69	2.50	70.19
19	53.280726	-7.409112	68.00	2.50	70.50
20	53.280238	-7.409284	68.03	2.50	70.53
21	53.280238	-7.409584	68.03	2.50	70.53
22	53.281290	-7.410700	68.11	2.50	70.61
23	53.281637	-7.409820	67.01	2.50	69.51
24	53.282753	-7.409584	68.63	2.50	71.13
25	53.283086	-7.409906	69.12	2.50	71.62
26	53.282483	-7.412331	69.99	2.50	72.49
27	53.285947	-7.414476	71.29	2.50	73.79
28	53.286434	-7.412889	71.00	2.50	73.50
29	53.284831	-7.411687	69.62	2.50	72.12
30	53.283882	-7.409970	70.00	2.50	72.50
31	53.284215	-7.408683	70.25	2.50	72.75
32	53.282984	-7.407546	68.96	2.50	71.46
33	53.284780	-7.403662	70.48	2.50	72.98
34	53.285164	-7.403919	70.91	2.50	73.41
35	53.287740	-7.407613	72.00	2.50	74.50
36	53.287984	-7.407635	72.25	2.50	74.75
37	53.288817	-7.408965	71.53	2.50	74.03
38	53.289843	-7.409845	71.95	2.50	74.45
39	53.289702	-7.410510	71.58	2.50	74.08
40	53.290690	-7.411154	72.00	2.50	74.50
41	53.290780	-7.410317	72.94	2.50	75.44

2-Mile Flight Path Receptor(s)

Name: Clonbollogue RWY 09
Description:
Threshold height : 15 m
Direction: 85.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.249200	-7.129687	70.00	15.24	85.24
2-mile point	53.246831	-7.177902	71.00	182.92	253.92

Name: Clonbollogue RWY 27
Description:
Threshold height : 15 m
Direction: 265.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	53.249932	-7.117699	72.08	15.24	87.32
2-mile point	53.252301	-7.069482	68.28	187.72	256.01

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	20.0	180.0	775	0	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	340	46	0	0	315	74	0	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1   low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: Clonbollogue RWY 09	0	0
FP: Clonbollogue RWY 27	775	0

PV array 1: Clonbollogue RWY 09

No glare found

PV array 1: Clonbollogue RWY 27

PV array is expected to produce the following glare for this receptor:
- 775 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.
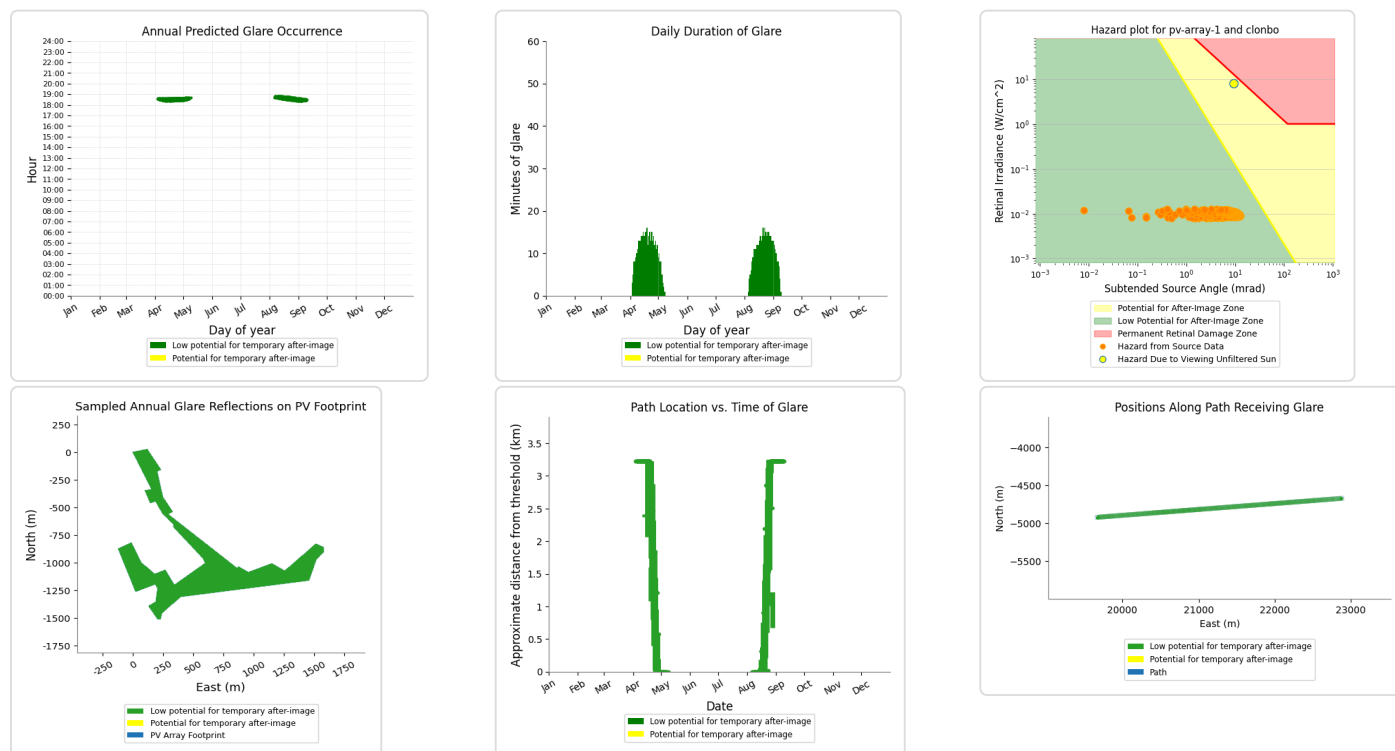

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

Appendix 6H: Visibility Assessment Evidence

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Residential Receptors

Receptor 9

Residential Receptors
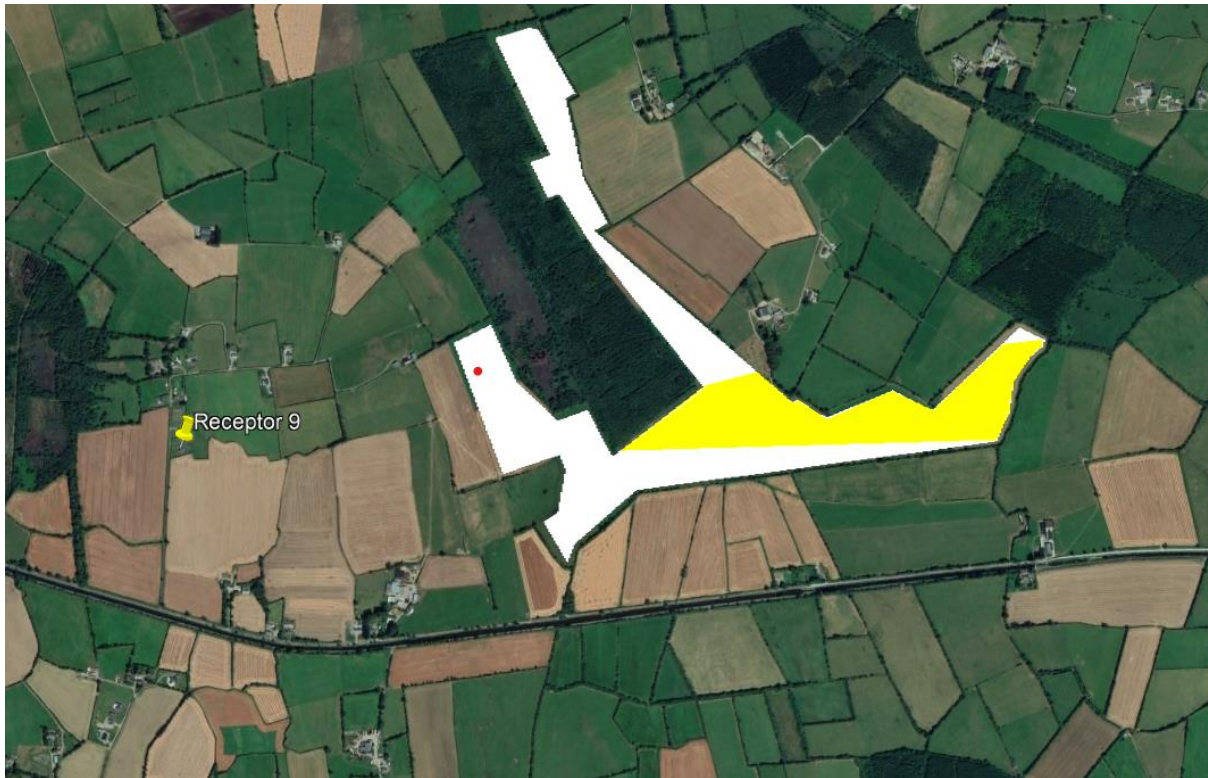
Receptors 10 and 11
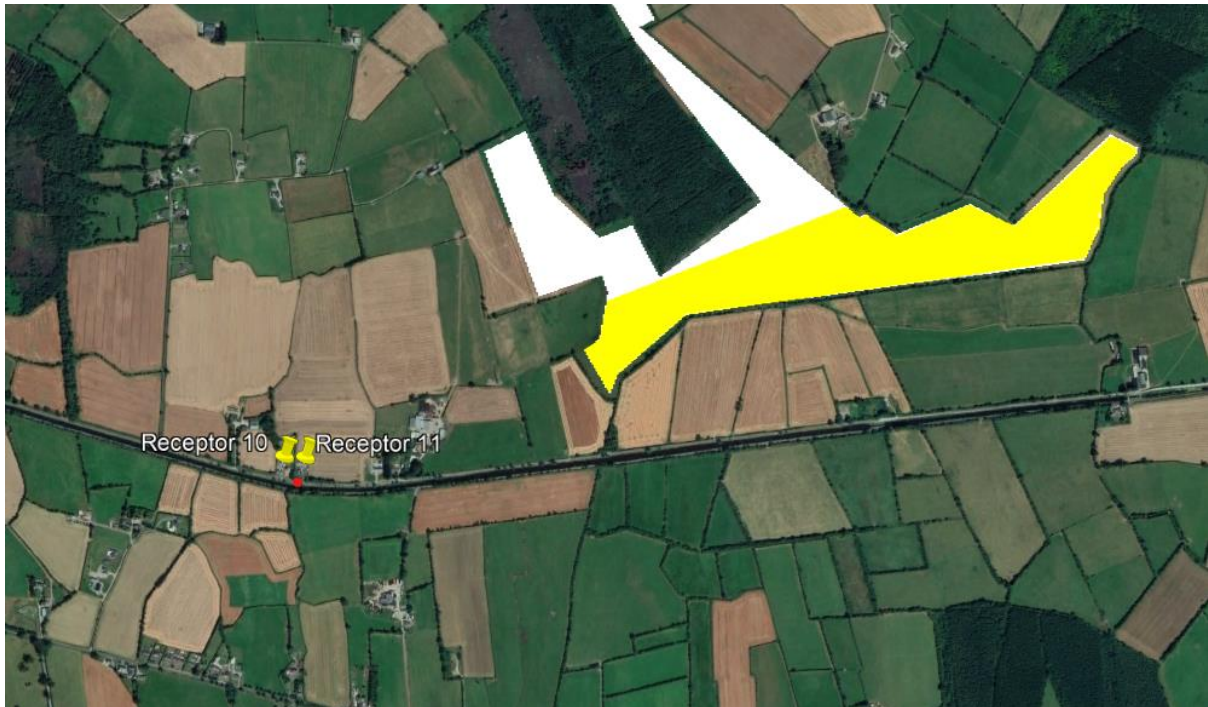
Receptors 12 and 13
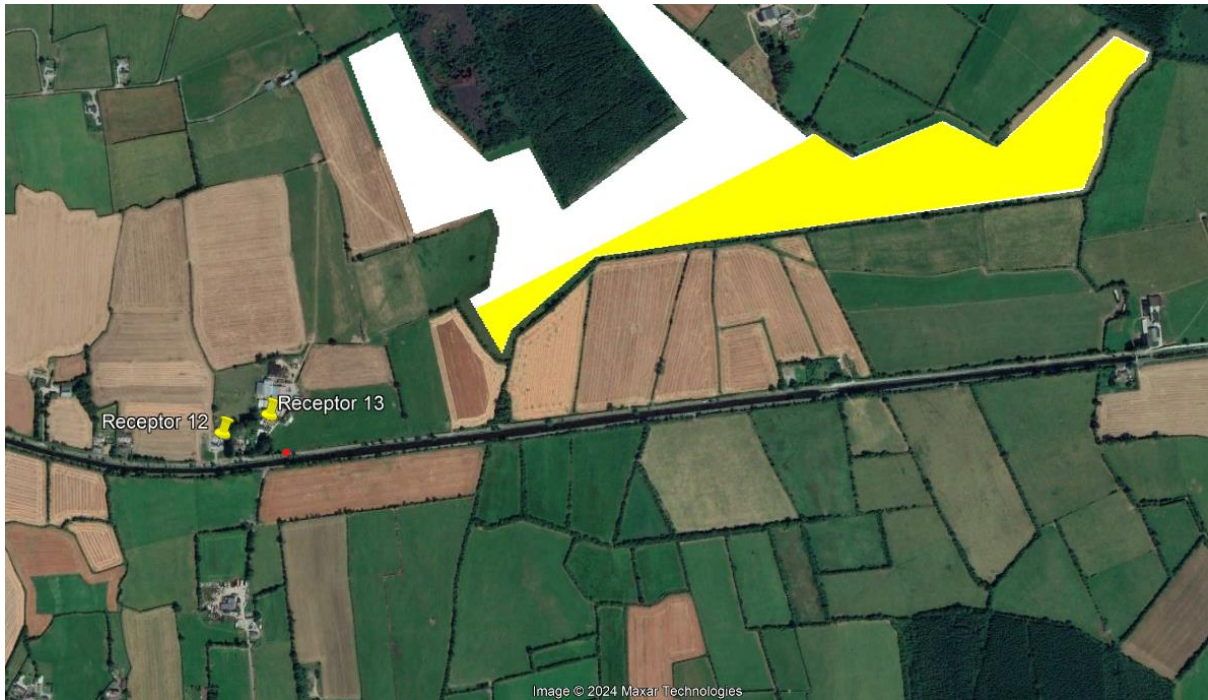
Receptor 14
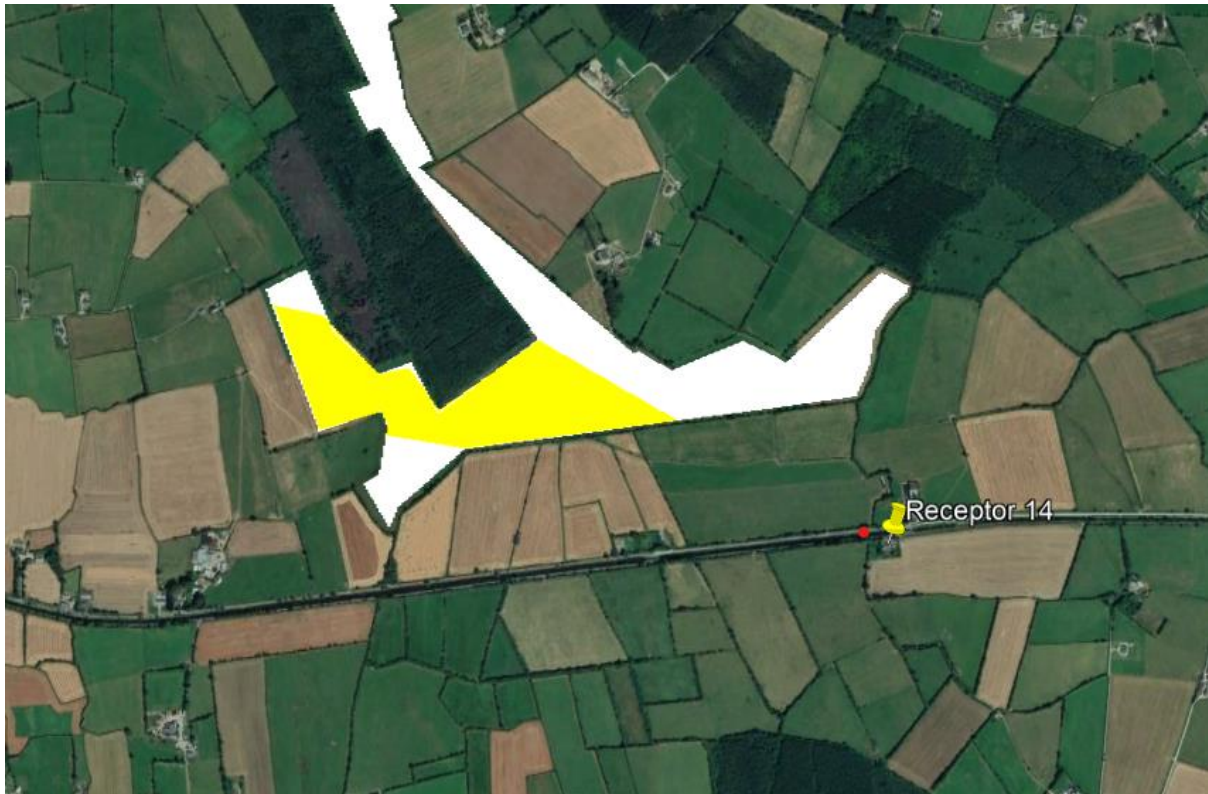
Receptors 15 and 16

Receptor 29
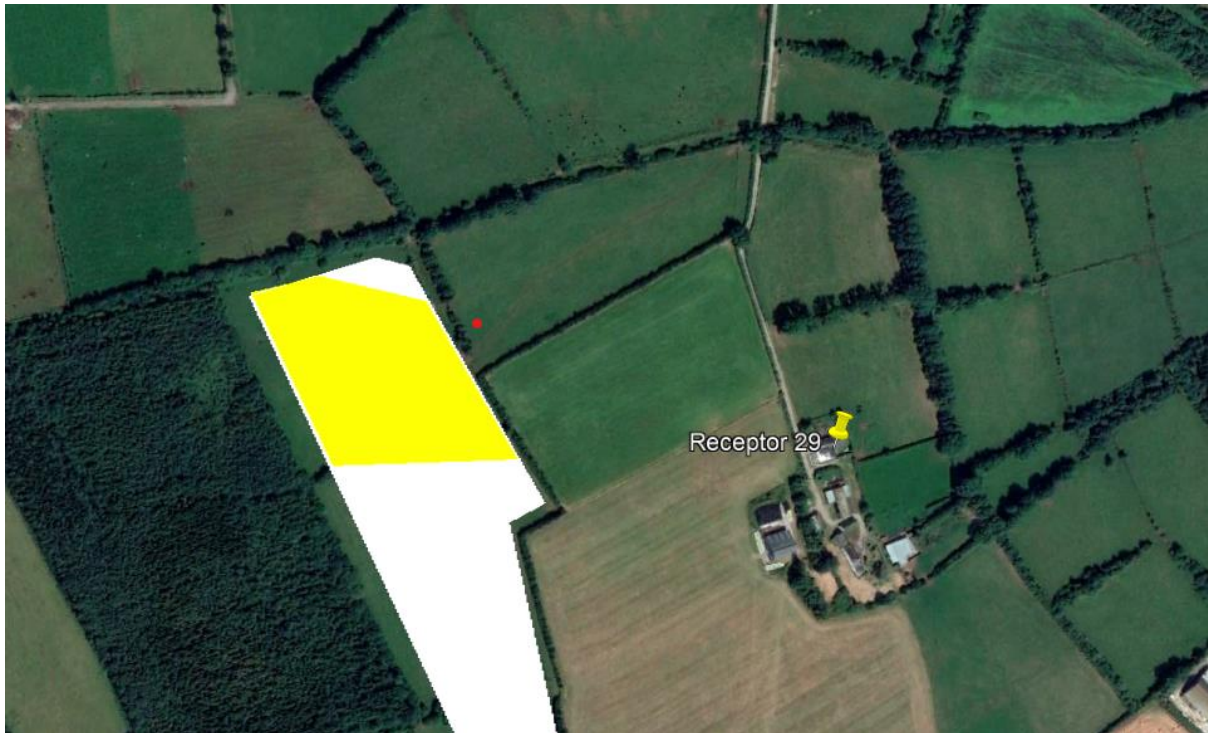
Receptor 33

Road Receptors

Receptor 3

Road Receptors
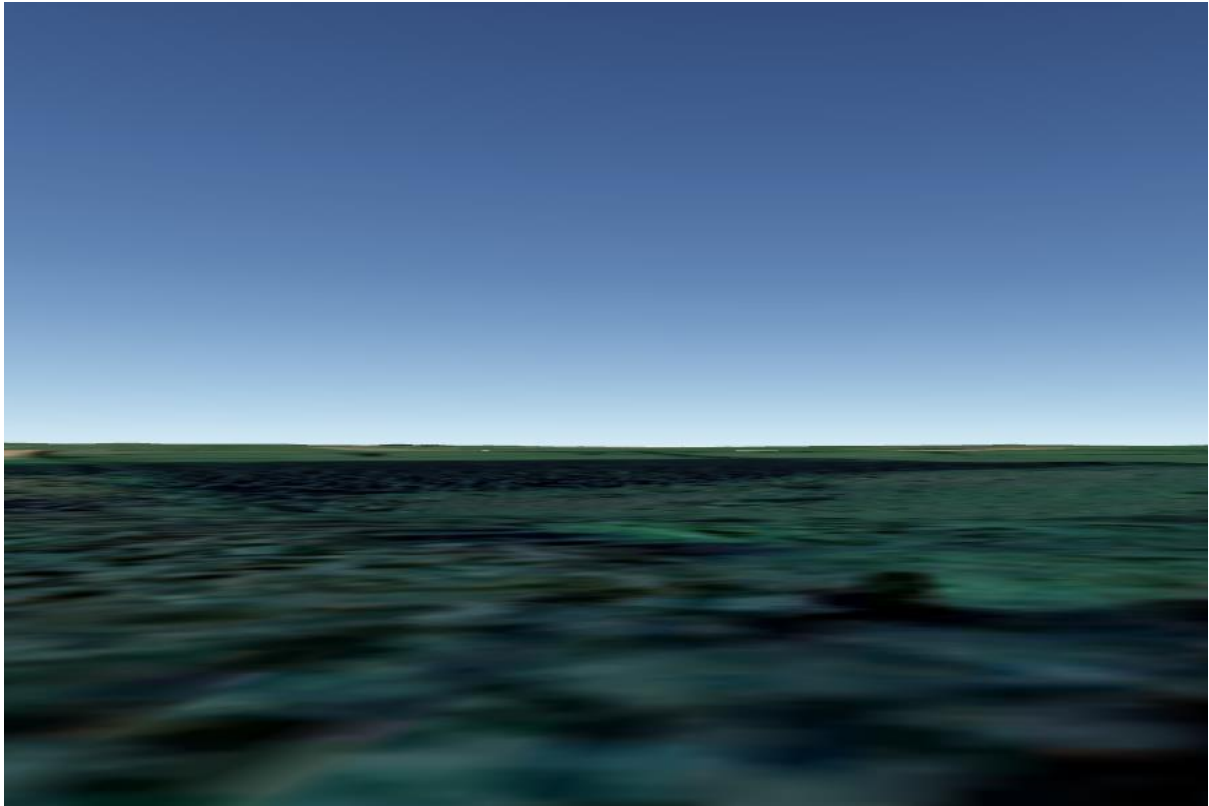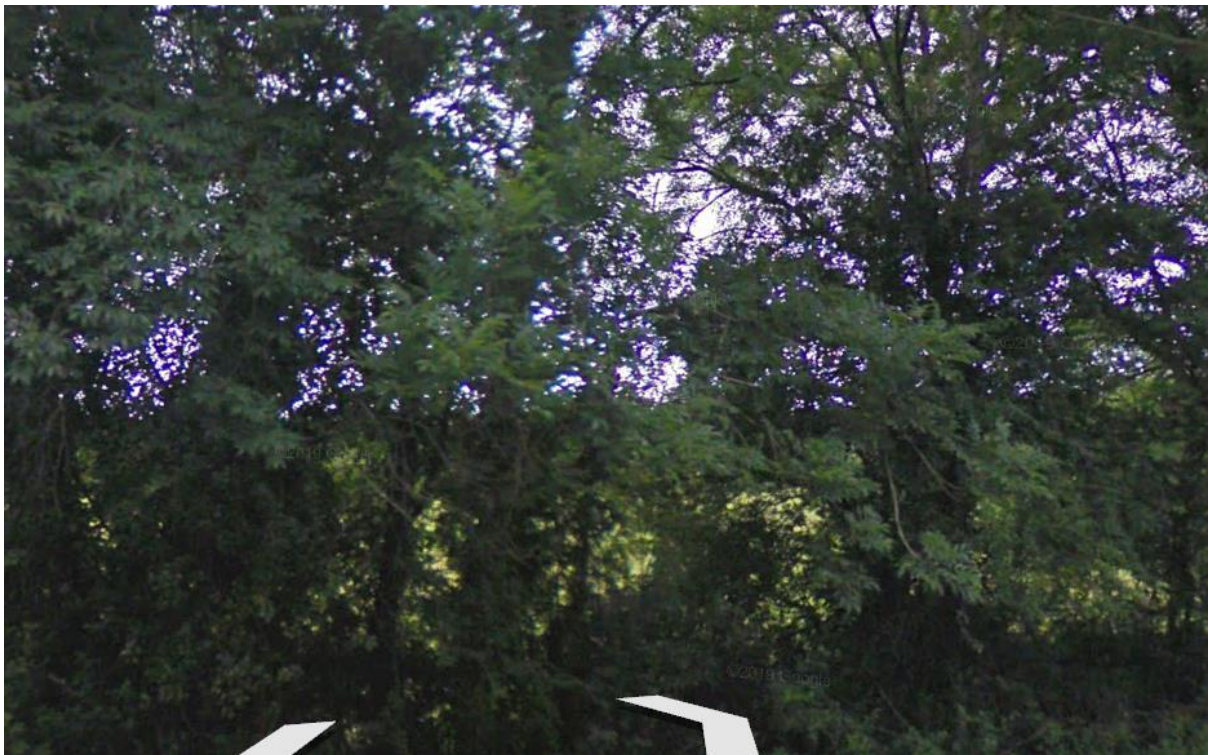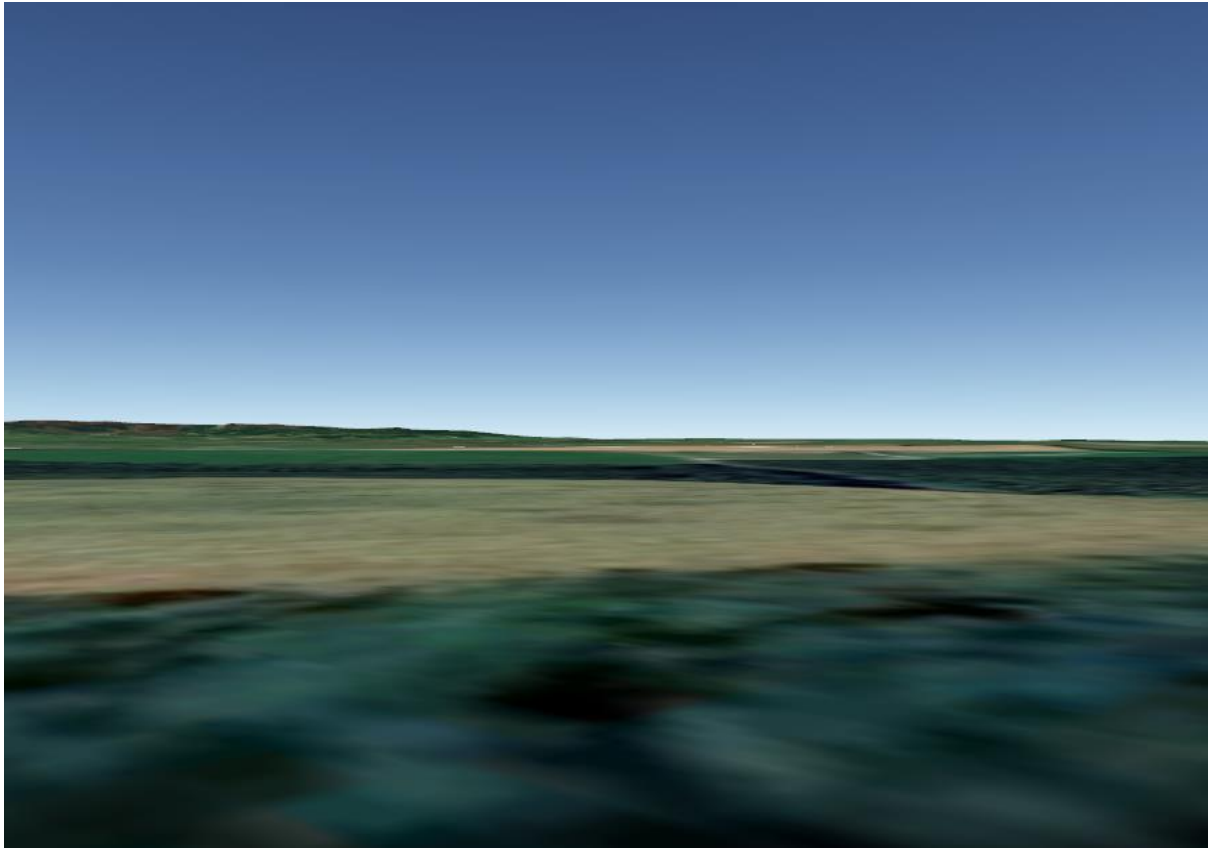
Receptor 4

Receptor 5
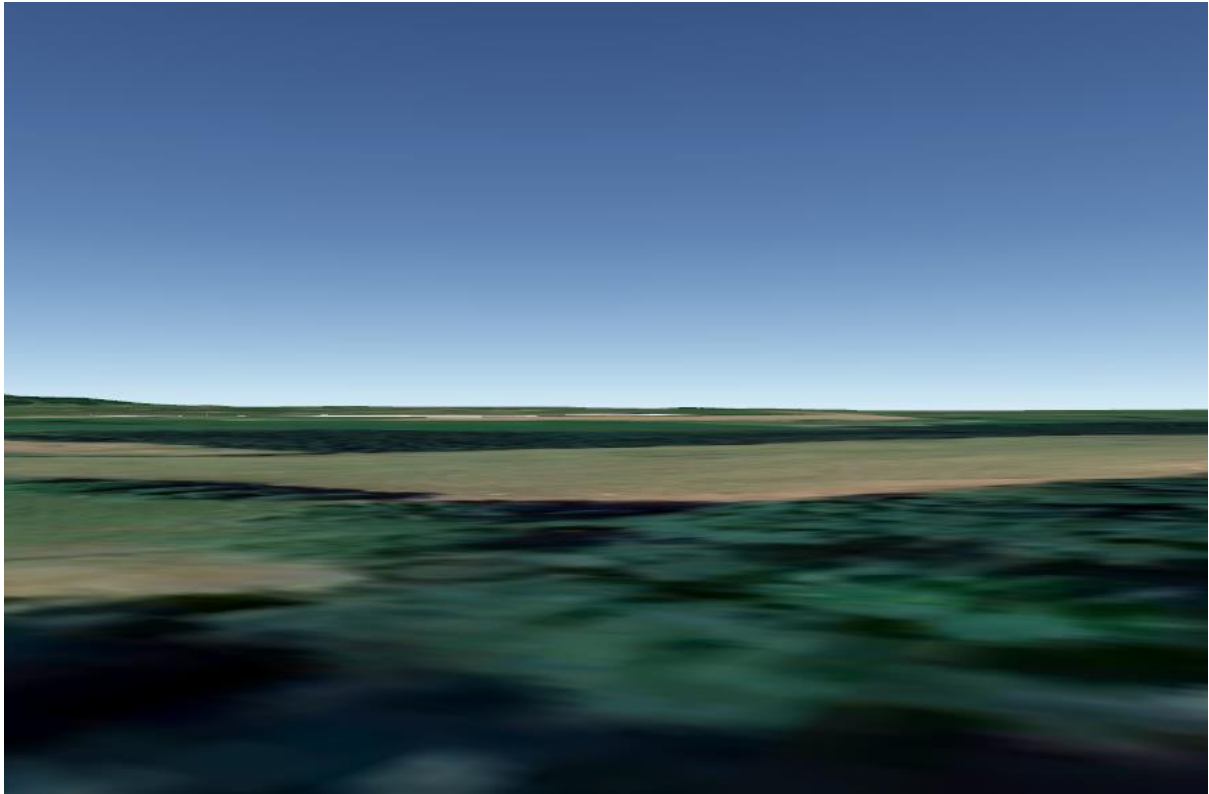
Receptor 6

Receptor 7

Receptor 8

Receptor 9

Receptor 10

Receptor 11
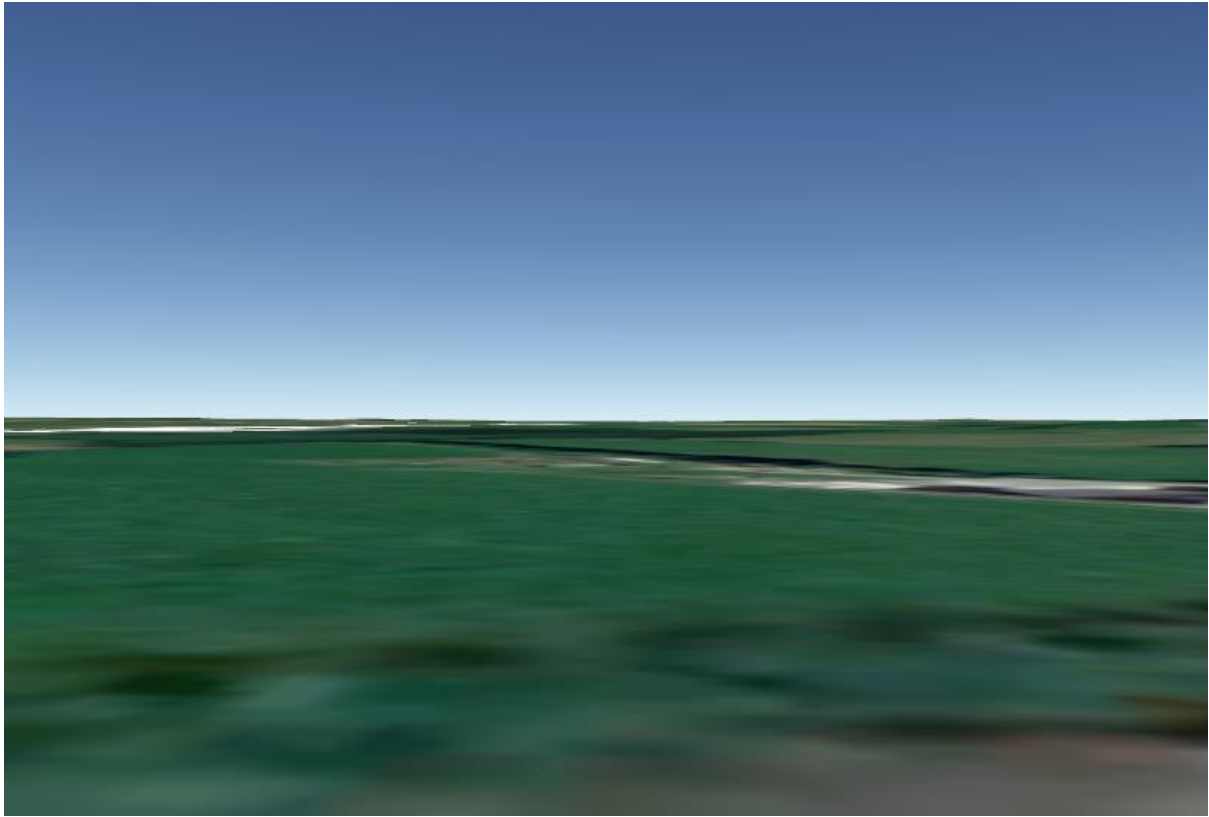
Receptor 12
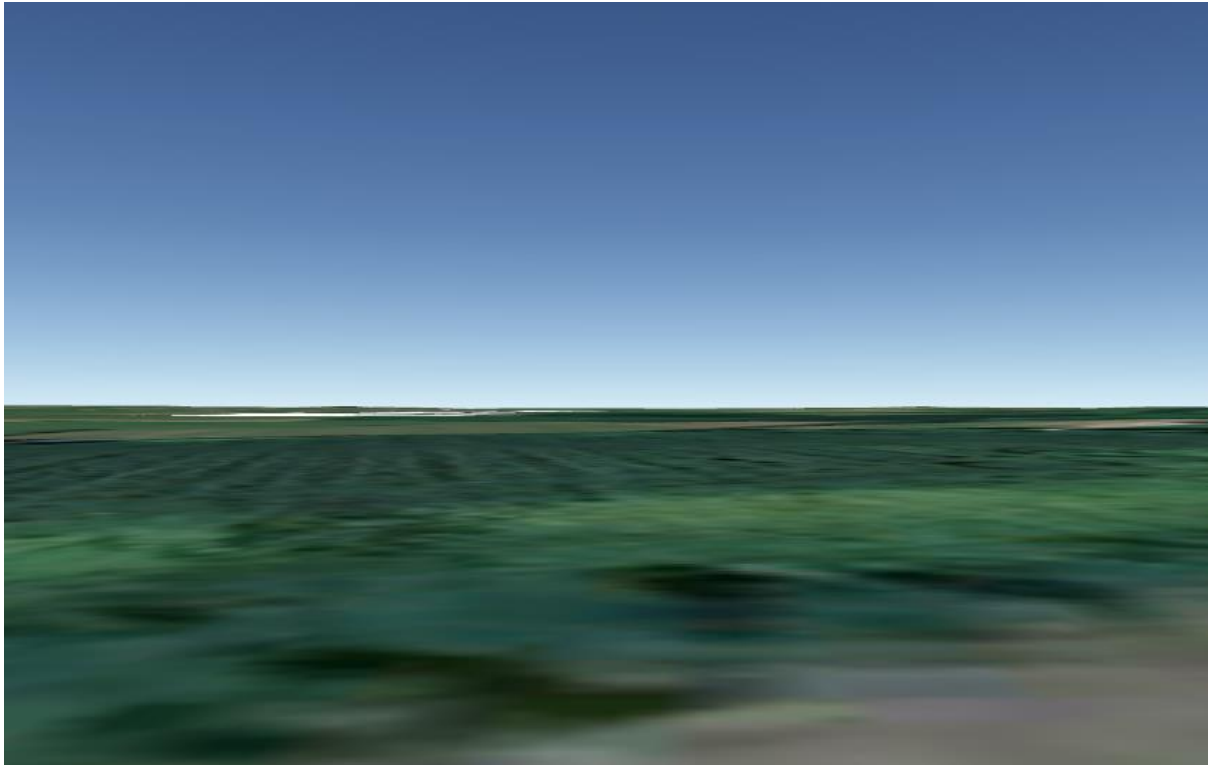
Grand Canal

Position 1

Position 2

Position 3

Position 4

Position 5

Solar Module Glare and Reflectance Technical Memo

SUNPOWER®

Technical Notification

TITLE: SunPower Solar Module Glare and Reflectance
AUTHORS: Technical Support
APPLICATION: Residential/ Commercial
SCOPE: SunPower Modules

SUMMARY:

The objective of this document is to increase awareness concerning the possible glare and reflectance impact of PV Systems on their surrounding environment.

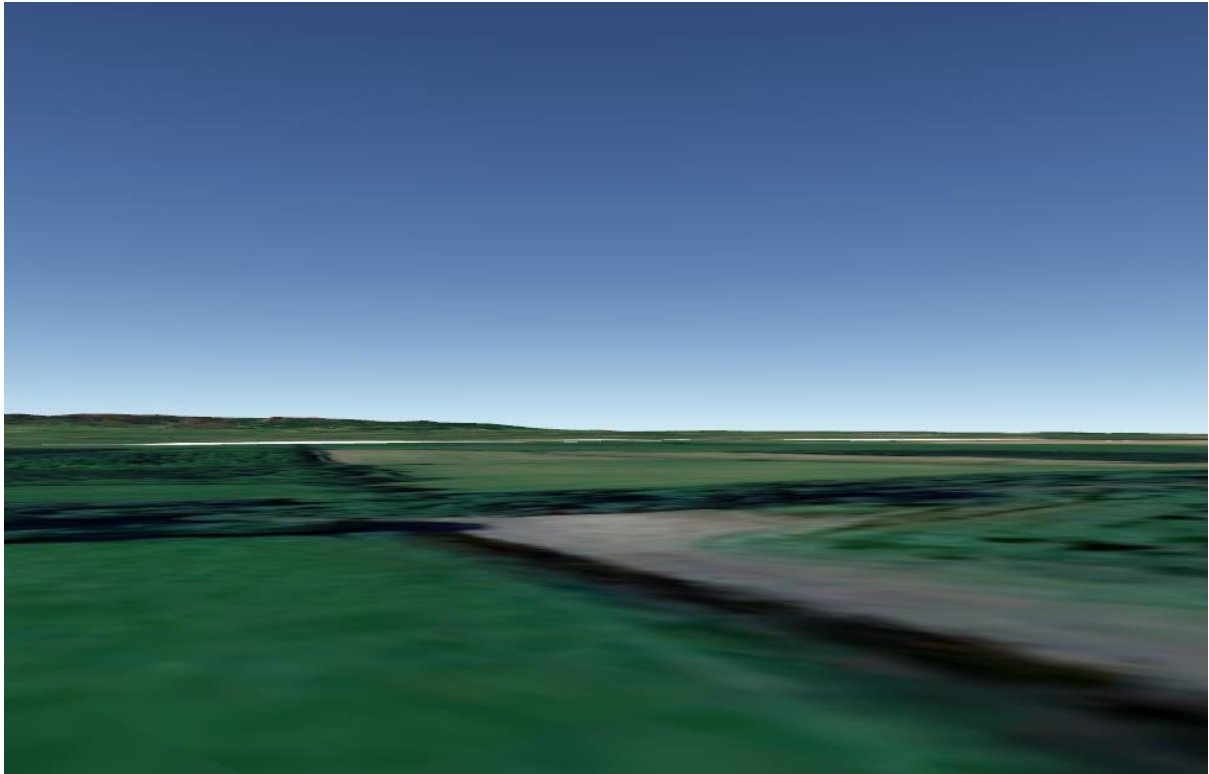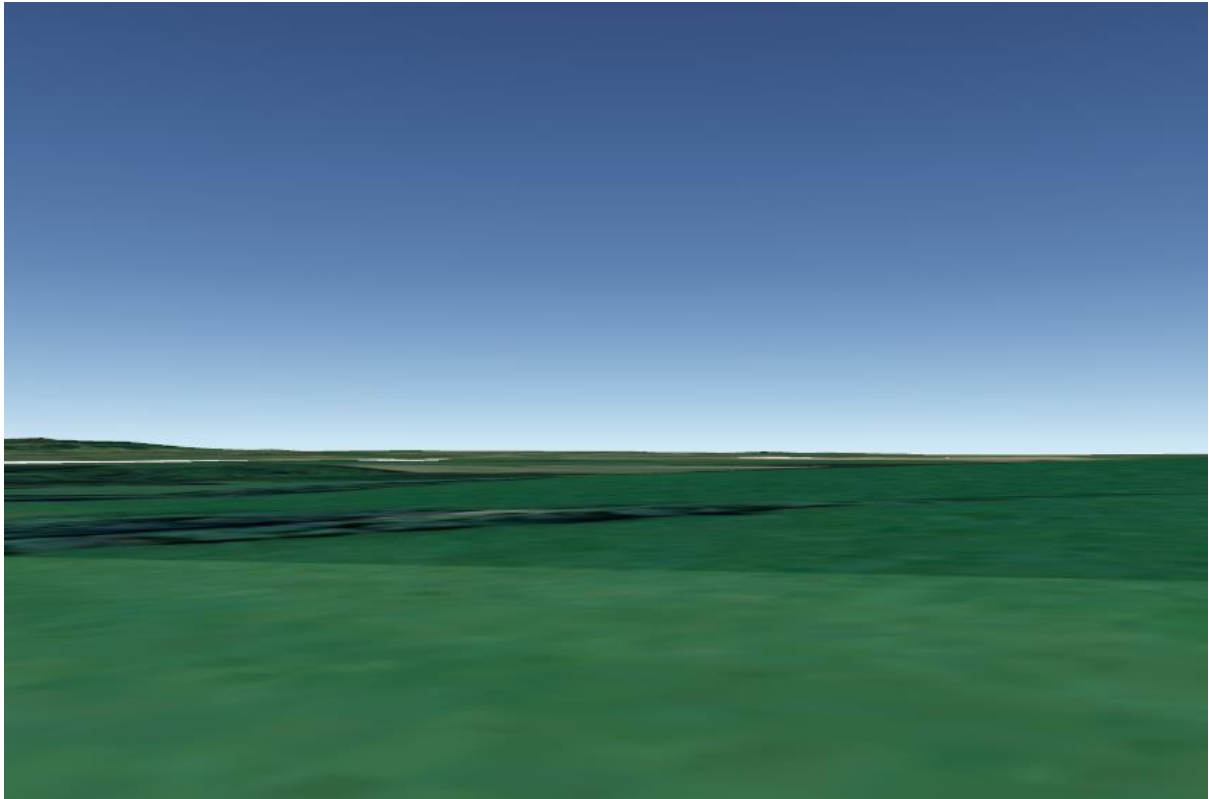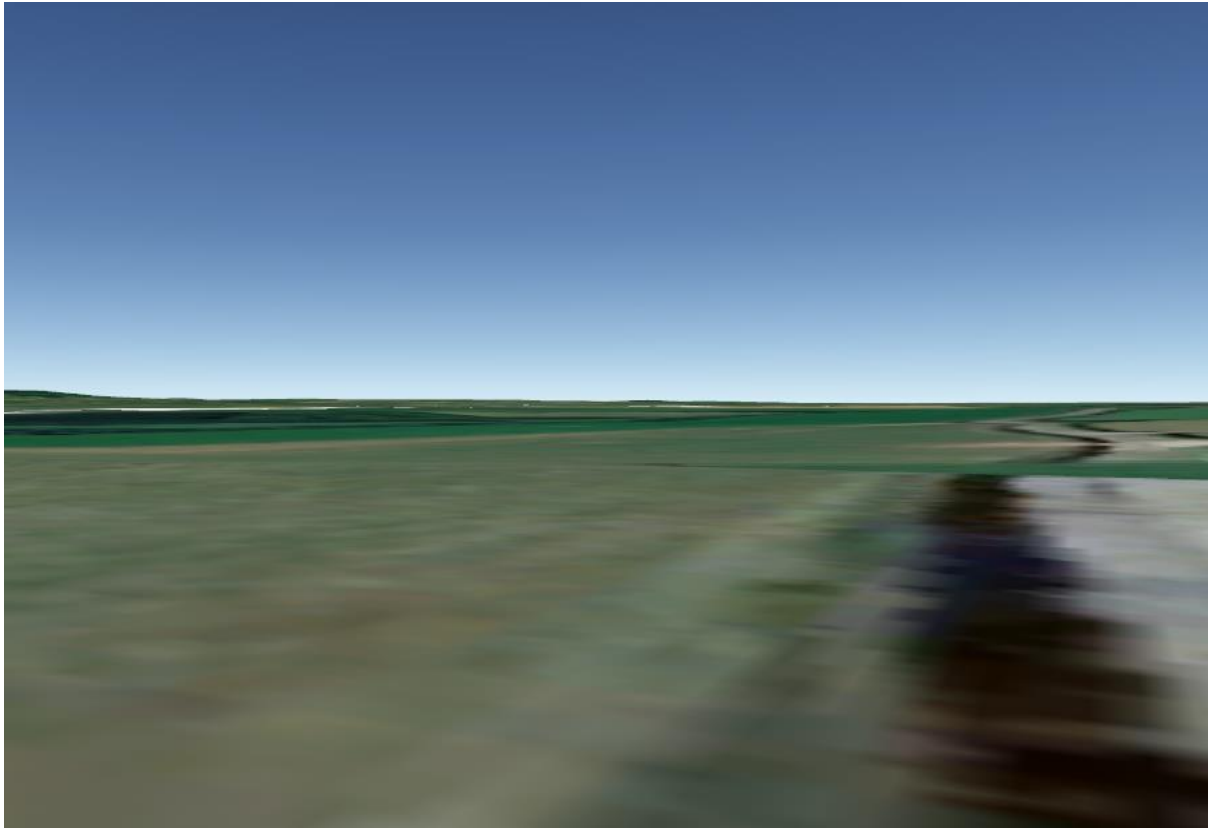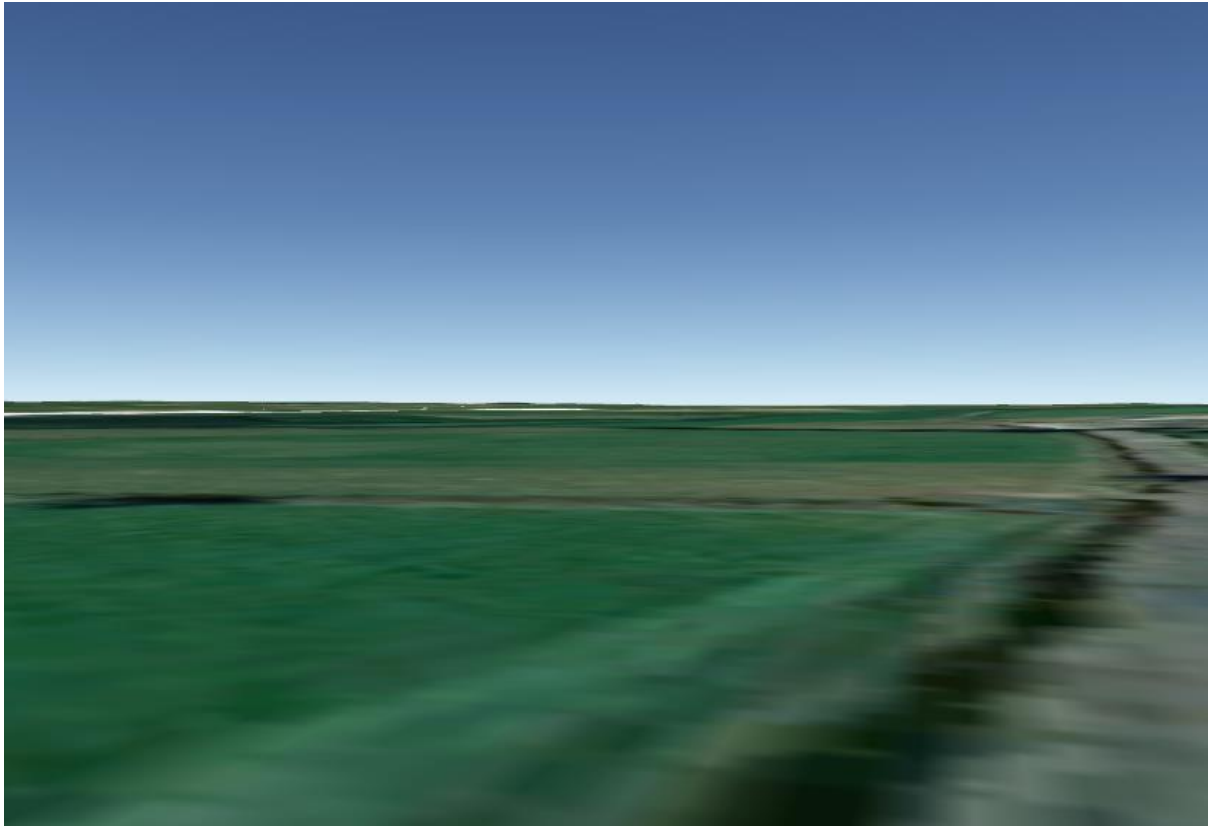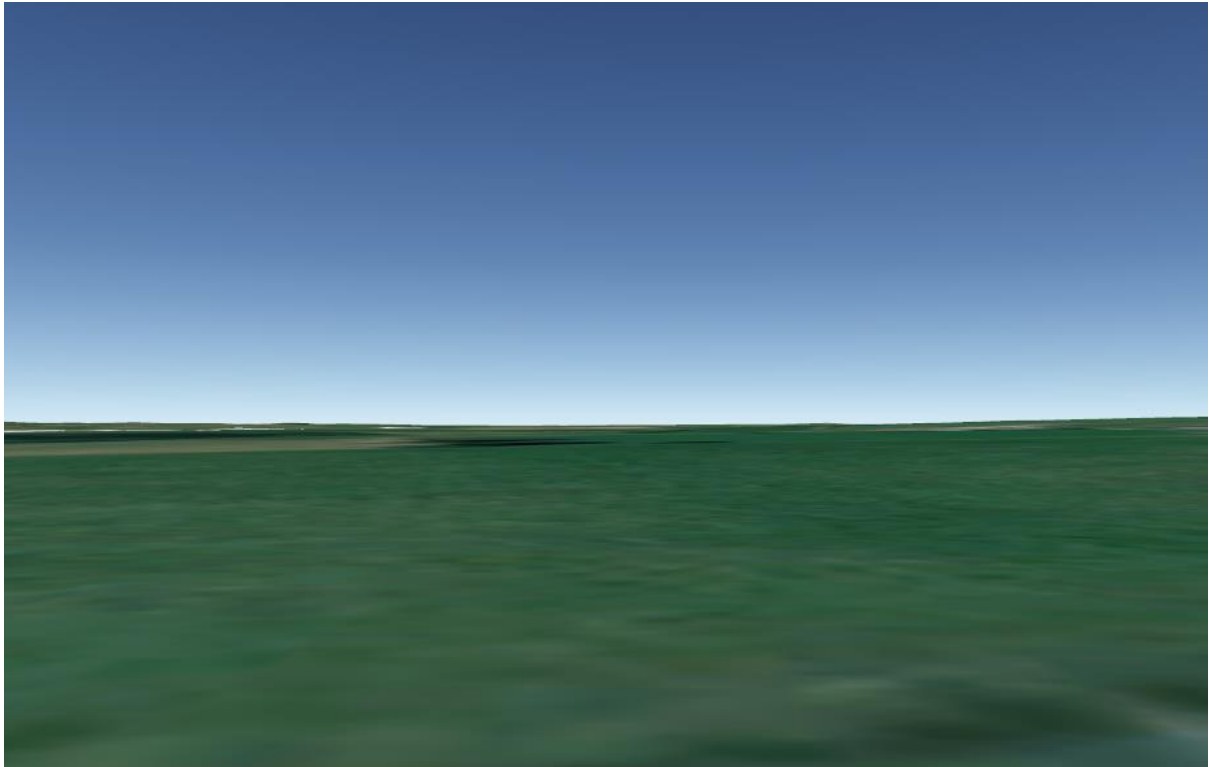The glare and reflectance levels from a given PV system are decisively lower than the glare and reflectance generated by the standard glass and other common reflective surfaces in the environments surrounding the given PV system. Concerning random glare and reflectance observed from the air: SunPower has several large projects installed near airports or on air force bases. Each of these large projects has passed FAA or Air Force standards and all projects have been determined as "No Hazard to Air Navigation". Although the possible glare and reflectance from PV systems are at safe levels and are usually decisively lower than other standard residential and commercial reflective surfaces, SunPower suggests that customers and installers discuss any possible concerns with the neighbors/cohabitants near the planned PV system installation.

DETAILED EXPLANATION:

In general, since the whole concept of efficient solar power is to absorb as much light as possible while reflecting as little light as possible, standard solar module produces less glare and reflectance than standard window glass. This is pointed out very well in US Patent #6359212 which explains the differences in the refraction and reflection of solar module glass versus standard window glass. Solar modules use "high-transmission, low iron glass" which absorbs more light, producing small amounts of glare and reflectance than normal glass.

In the graph below, we show the reflected energy percentages of sunlight, of some common residential and commercial surfaces. The legend and the graph lists the items from top to bottom in order of the highest percentage of reflected energy.
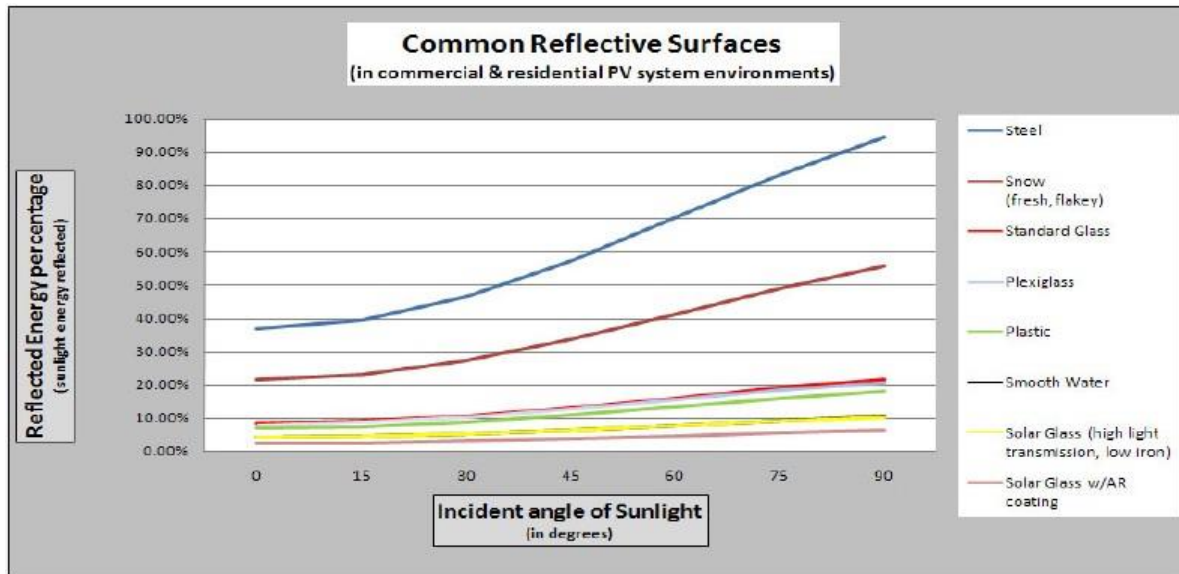
It should be noted that the reflected energy percentage of Solar Glass is far below that of a standard glass and more on the level of smooth water. Also, below are the ratios of the common reflective surfaces:
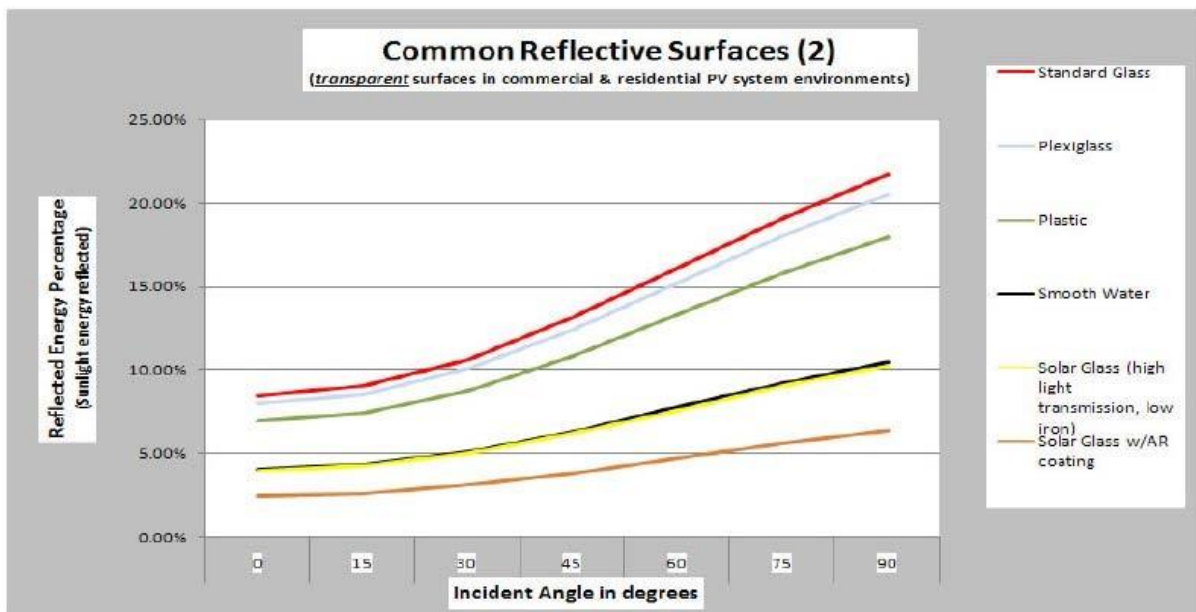
Light beam physics resolves that the least amount of light is reflected when the beam is the normal, in other words, least light energy is reflected when the beam is at 0 degrees to the normal. The chart below is a result of light beam physics calculations:

Common Reflective Surfaces (in surrounding environments for PV systems)		Incident angle in degrees						
		0	15	30	45	60	75	90
Material Reflectivity (percent of incident light reflected)	Steel	36.73%	39.22%	46.34%	57.11%	70.02%	83.15%	94.40%
	Snow (fresh, flakey)	21.63%	23.09%	27.29%	33.63%	41.23%	48.96%	55.59%
	Standard Glass	8.44%	9.01%	10.65%	13.12%	16.09%	19.10%	21.69%
	Plexiglass	8.00%	8.54%	10.09%	12.44%	15.25%	18.11%	20.56%
	Plastic	6.99%	7.46%	8.82%	10.87%	13.33%	15.83%	17.97%
	Smooth Water	4.07%	4.35%	5.14%	6.33%	7.76%	9.22%	10.47%
	Solar Glass (high light transmission, low iron)	3.99%	4.26%	5.03%	6.20%	7.61%	9.03%	10.26%
	Solar Glass w/AR coating	2.47%	2.64%	3.12%	3.84%	4.71%	5.59%	6.35%

(Note: Index of refraction values may vary slightly depending on suppliers and reference documentation. The values for the above calculations are averages or single values obtained from the list of references for this document).

Important reference – "Stipples glass": In addition to the superior refractive/reflective properties of solar glass versus standard glass, SunPower uses stippled solar glass for our modules. Stippled glass is used with high powered telescopes and powerful beacons and lights. The basic concept behind stippling is for the surfaces of the glass to be textured with small types of indentations. As a result, stippling allows more light energy to be channeled/ transmitted through the glass while diffusing the reflected lightenergy. This concept is why the reflection of off a SunPower solar module will look hazy and less-defined than the reflection from standard glass, this occurs because the stippled SunPower glass is transmitting a larger percentage of light to the solar cell while breaking up the intensity of the reflected light energy.

SUMMARY/ACTION REQUIRED:

The studies, data and light beam physics behind the charts and graphs prove beyond a reasonable doubt that solar glass has less glare and reflectance than standard glass. The figures also make it clear that the difference is very decisive between solar glass and other common residential/commercial glasses. In addition, not to be lost in the standard light/glass equations and calculations, the SunPower solar glass is stippled and has a very photon-absorbent solar cell attached to the back side, contributing two additional factors which results in even less light energy being reflected.

REGIONAL CONTACTS:

****

EU Toll Free number: SunPower Technical Support, **00800–SUNPOWER (00800–78676937)**

- **For inquiries by e-mail, please use**:
  - o Spain: SunPower – Soporte Técnico España: soportetecnico@sunpowercorp.com
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REFERENCES:

- Center for Sustainable Building Research. College of Dean – University of Minnesota. All rights Reserved. JDP activity by the University of Minnesota and Lawrence Berkeley National Laboratory
- H.K Pulker, Coatings on Glass, (1999), 2ed, Elsevier, Amsterdam
- C.G Granqvist, Materials Science for Solar Energy Conversion Systems, (1991), Pergamon, G.B
- D. Chen, anti-reflection (AR) coatings made by sol-gel processes: A review, Solar energy Materials and Solar Cells, 68, (2000), 313-336
- P. Nostell, A. Roos, B. Karlsson, Antireflection of glazings for solar energy applications, Solar Energy Materials and Solar Cells, 54, (1998), 23-233
- M. Fukawa, T. Ikeda, T. Yonedaans K. Sato, Antireflective coatings y single layer with refractive index of 1.3, Proceedings of the 3rd International Conference on Coatings on Glass (ICGG), (2000), 257-264
- J. Karlsson and A. Roos, Modeling the angular behavior of the solar energy transmittance of windows, Solar Energy, 69, 4, (2000)
- J. Karlsson, B. Karlsson and A. Roos, A Simple model for assessing the energy efficiency of windows, In Press, Energy and Buildings