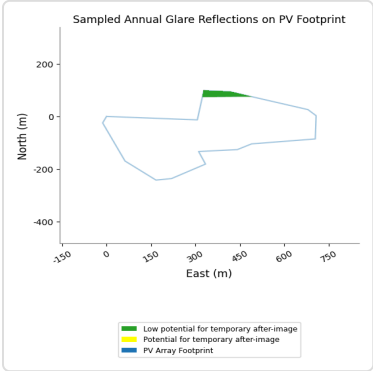
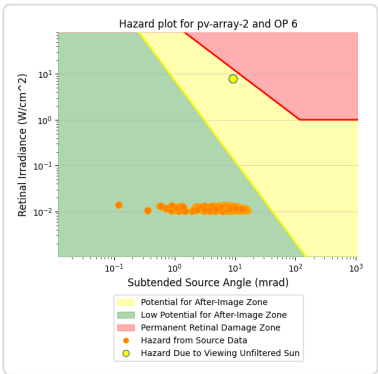
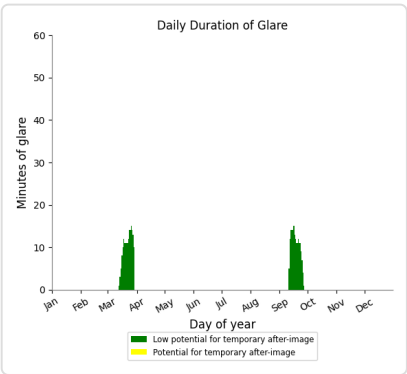
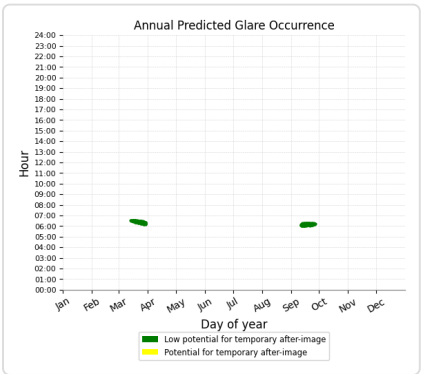


PV array 2: OP 6

PV array is expected to produce the following glare for this receptor:

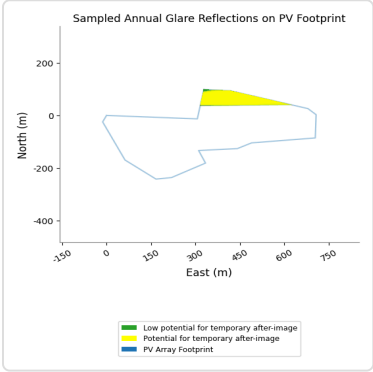
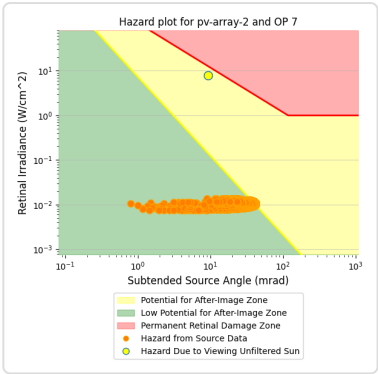
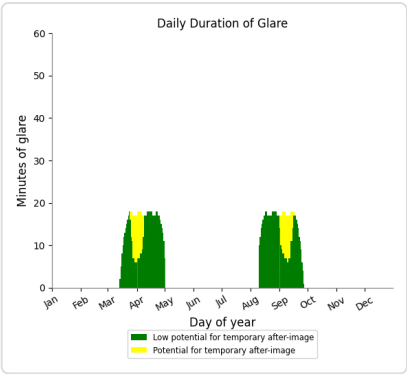
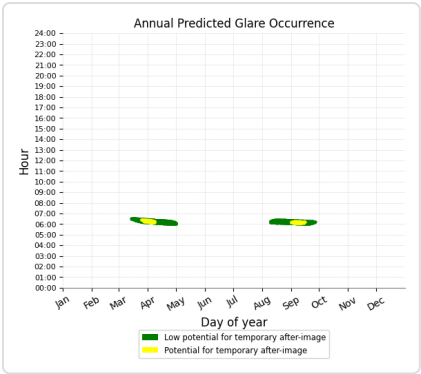
- 351 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 7

PV array is expected to produce the following glare for this receptor:

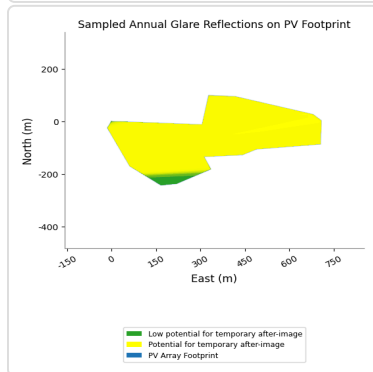
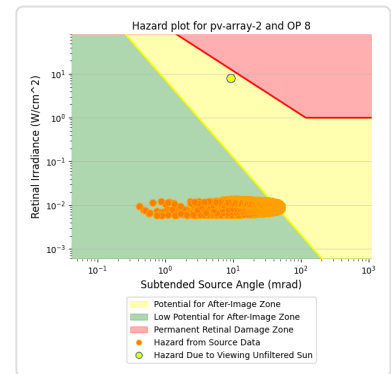
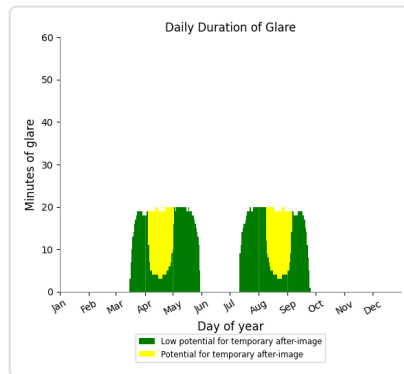
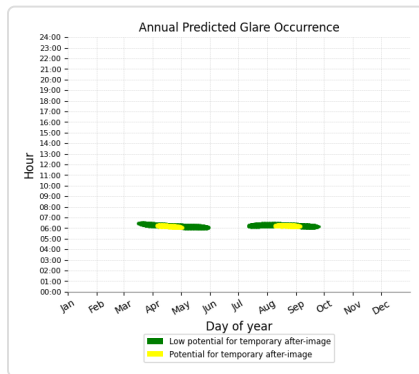
- 1,266 minutes of "green" glare with low potential to cause temporary after-image.
- 265 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 8

PV array is expected to produce the following glare for this receptor:

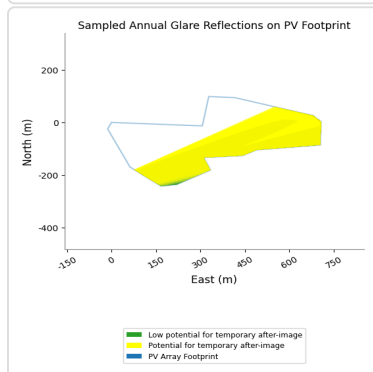
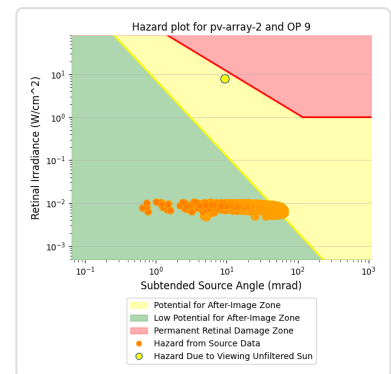
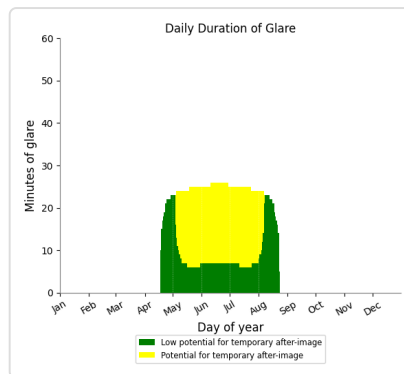
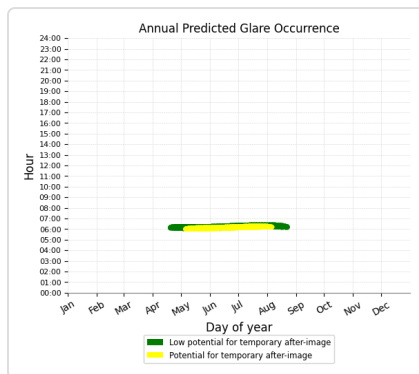
- 1,950 minutes of "green" glare with low potential to cause temporary after-image.
- 785 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 9

PV array is expected to produce the following glare for this receptor:

- 1,341 minutes of "green" glare with low potential to cause temporary after-image.
- 1,682 minutes of "yellow" glare with potential to cause temporary after-image.



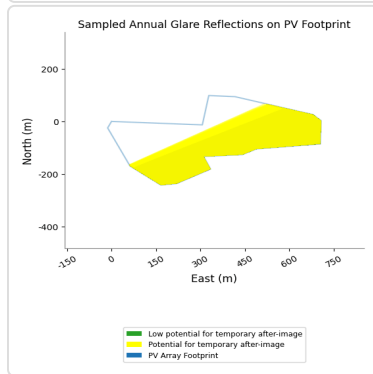
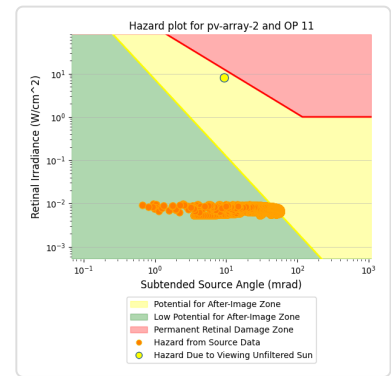
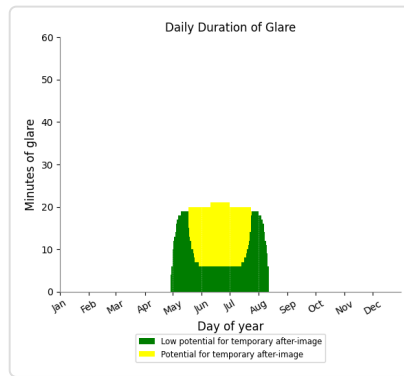
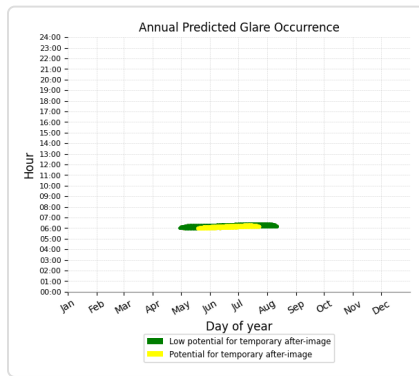
PV array 2: OP 10

No glare found

PV array 2: OP 11

PV array is expected to produce the following glare for this receptor:

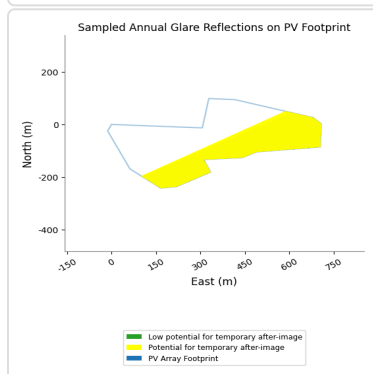
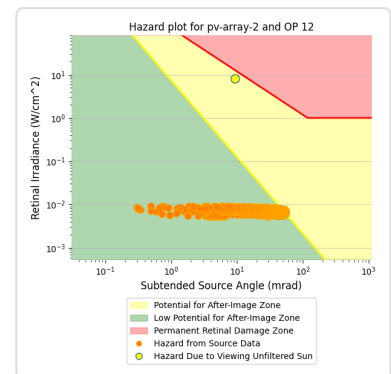
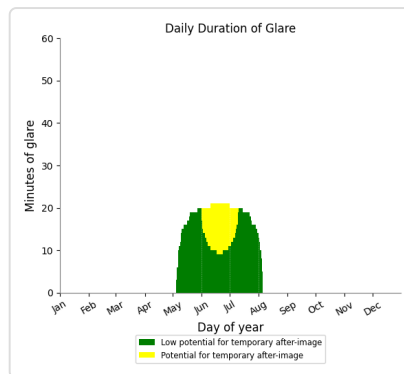
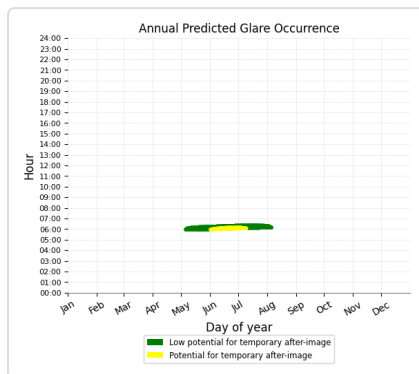
- 1,079 minutes of "green" glare with low potential to cause temporary after-image.
- 887 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 12

PV array is expected to produce the following glare for this receptor:

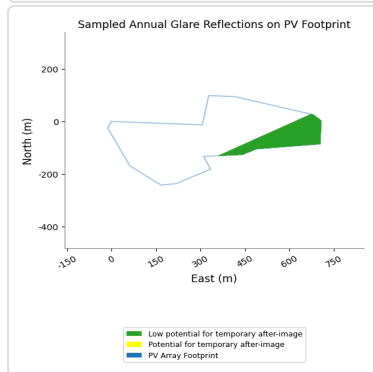
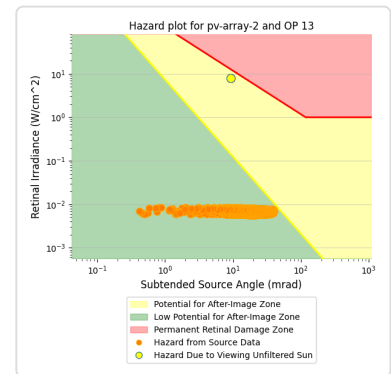
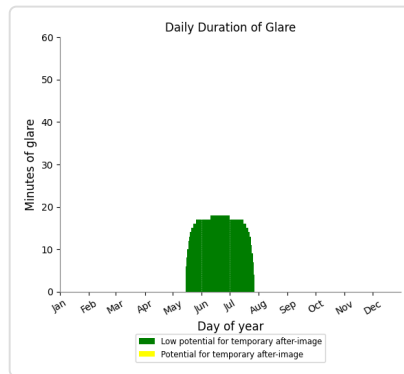
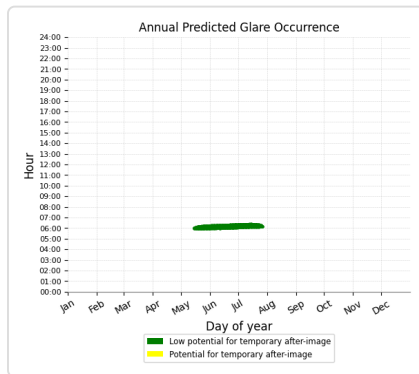
- 1,317 minutes of "green" glare with low potential to cause temporary after-image.
- 360 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 13

PV array is expected to produce the following glare for this receptor:

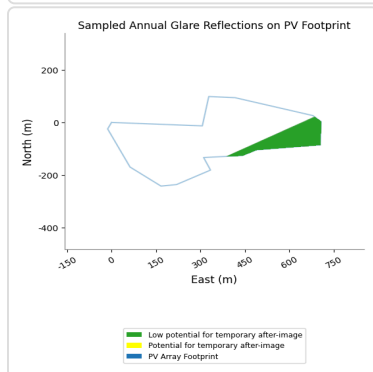
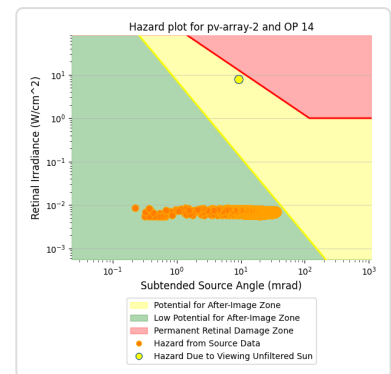
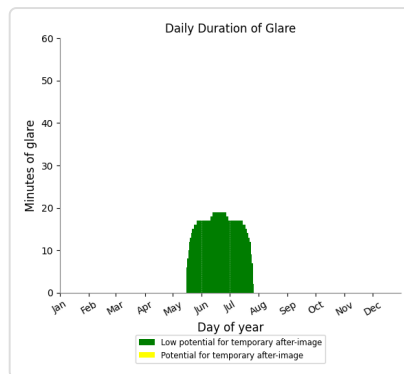
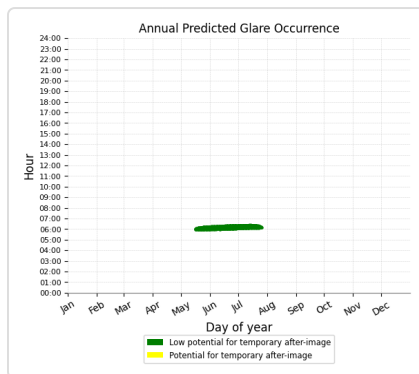
- 1,178 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 14

PV array is expected to produce the following glare for this receptor:

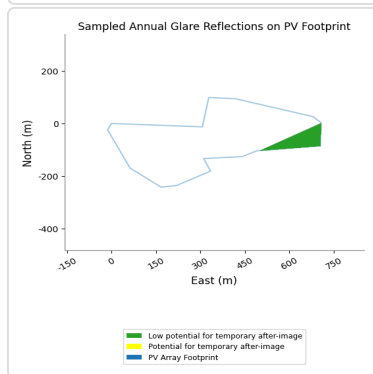
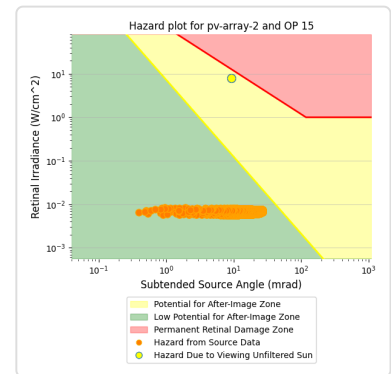
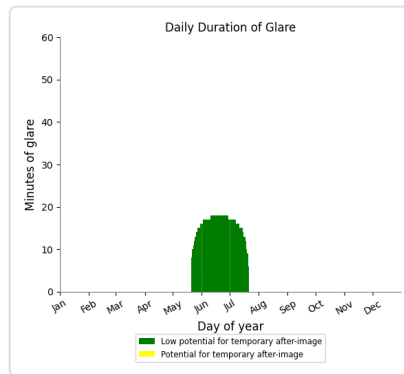
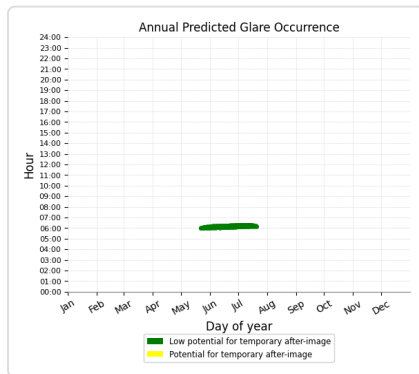
- 1,156 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 15

PV array is expected to produce the following glare for this receptor:

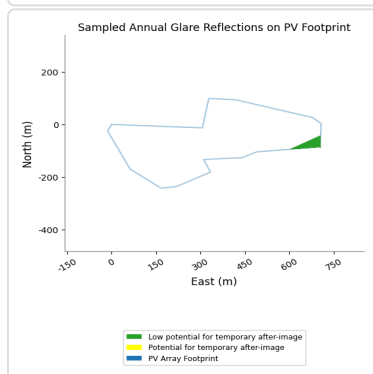
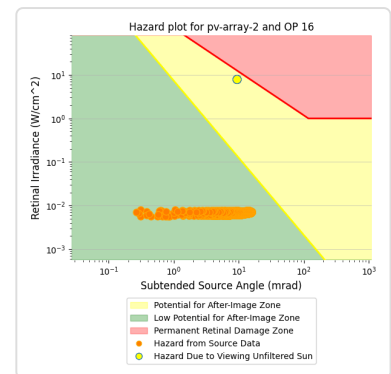
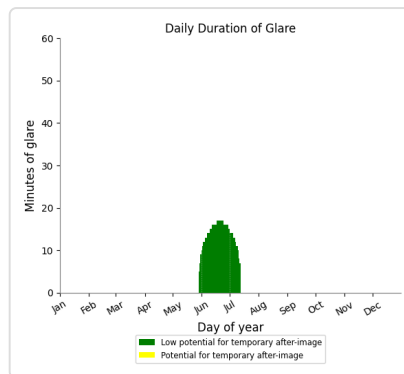
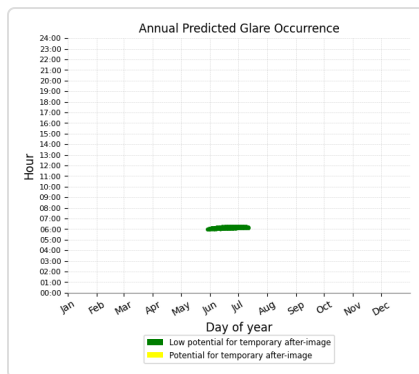
- 975 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 16

PV array is expected to produce the following glare for this receptor:

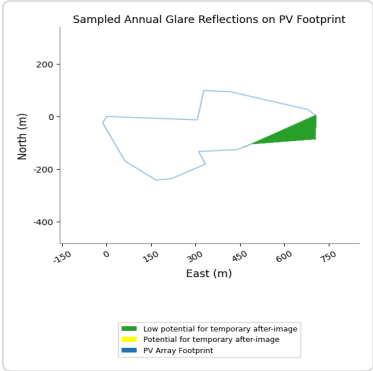
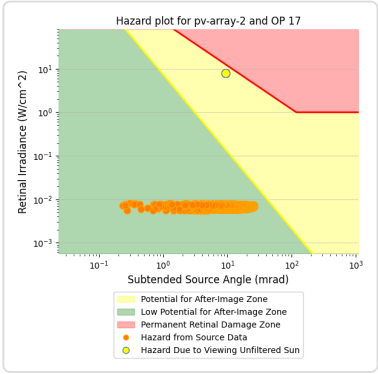
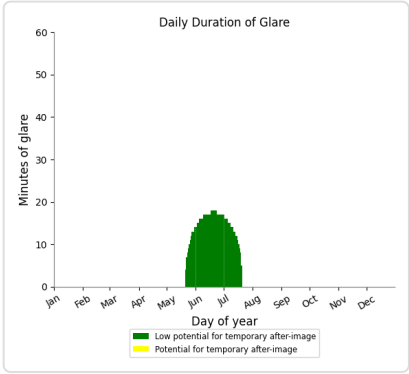
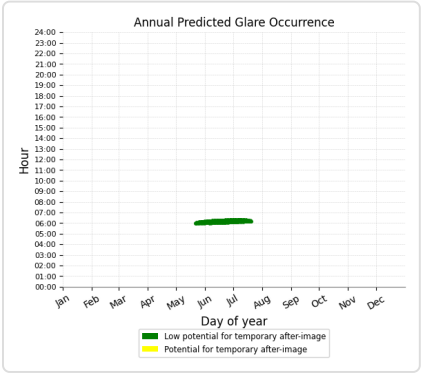
- 616 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 17

PV array is expected to produce the following glare for this receptor:

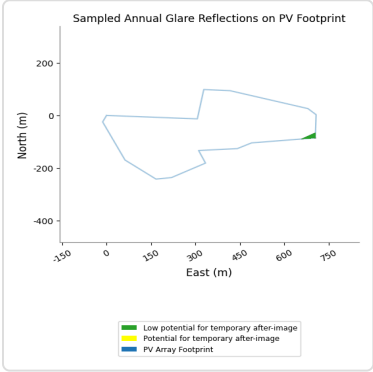
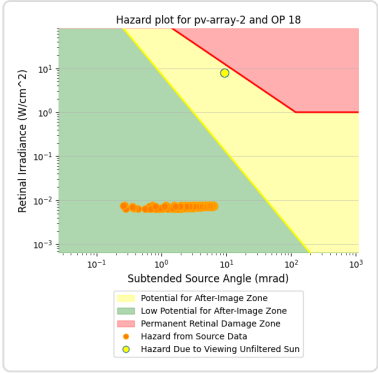
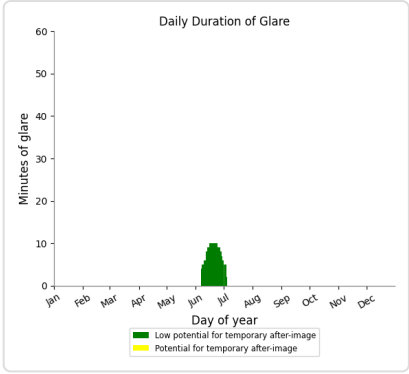
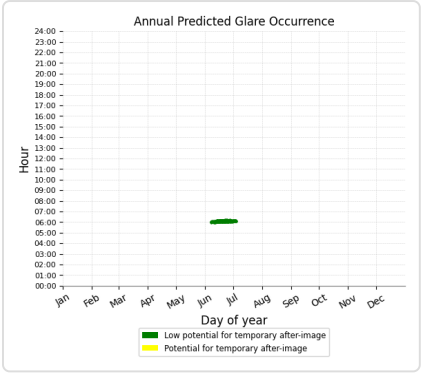
- 878 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 18

PV array is expected to produce the following glare for this receptor:

- 215 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



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.

Heath Road Solar Farm

Heath Road Solar Farm Road Receptors

Created Jun 29, 2023
Updated Aug 22, 2024
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 94236.16328

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



Misc. Analysis Settings

DNI: varies (1,000.0 W/m² 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	25.0	180.0	39,985	0	-
PV array 2	25.0	180.0	18,112	11,269	-

PV Array(s)

Total PV footprint area: 188,451 m²

Name: PV array 1

Footprint area: 63,150 m²

Axis tracking: Fixed (no rotation)

Tilt: 25.0 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	52.651500	-1.330007	139.67	2.80	142.47
2	52.651480	-1.328312	136.60	2.80	139.40
3	52.651298	-1.328141	136.19	2.80	138.99
4	52.649241	-1.329138	1363.98	2.80	1366.78
5	52.649352	-1.330233	139.08	2.80	141.88
6	52.649280	-1.330512	139.13	2.80	141.93
7	52.649391	-1.331434	139.68	2.80	142.48
8	52.651220	-1.330737	141.02	2.80	143.82
9	52.651213	-1.330297	140.28	2.80	143.08

Name: PV array 2

Footprint area: 125,300 m²

Axis tracking: Fixed (no rotation)

Tilt: 25.0 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	52.647712	-1.334703	131.60	2.80	134.40
2	52.647595	-1.330175	138.00	2.80	140.80
3	52.648597	-1.329854	137.84	2.80	140.64
4	52.648558	-1.328545	135.07	2.80	137.87
5	52.647946	-1.324661	131.89	2.80	134.69
6	52.647738	-1.324253	131.75	2.80	134.55
7	52.646944	-1.324296	124.61	2.80	127.41
8	52.646774	-1.327472	133.52	2.80	136.32
9	52.646579	-1.328180	133.95	2.80	136.75
10	52.646514	-1.330111	133.19	2.80	135.99
11	52.646084	-1.329768	130.92	2.80	133.72
12	52.645590	-1.331463	125.28	2.80	128.08
13	52.645538	-1.332235	125.20	2.80	128.00
14	52.646189	-1.333780	128.22	2.80	131.02
15	52.647490	-1.334896	130.74	2.80	133.54

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	52.640559	-1.345238	134.48	1.50	135.98
OP 2	52.642265	-1.344337	139.82	1.50	141.32
OP 3	52.643984	-1.343414	144.08	1.50	145.58
OP 4	52.645702	-1.342728	147.04	1.50	148.54
OP 5	52.647408	-1.342299	148.00	1.50	149.50
OP 6	52.649230	-1.341870	147.14	1.50	148.64
OP 7	52.651014	-1.341397	147.04	1.50	148.54
OP 8	52.652680	-1.341762	146.88	1.50	148.38
OP 9	52.653696	-1.343831	144.63	1.50	146.13
OP 10	52.642103	-1.342426	141.25	1.50	142.75
OP 11	52.642636	-1.339905	141.87	1.50	143.37
OP 12	52.643541	-1.337265	138.85	1.50	140.35
OP 13	52.644381	-1.334712	134.18	1.50	135.68
OP 14	52.645195	-1.332008	123.81	1.50	125.31
OP 15	52.645924	-1.329455	130.28	1.50	131.78
OP 16	52.646516	-1.326783	130.91	1.50	132.41
OP 17	52.646718	-1.324004	125.57	1.50	127.07
OP 18	52.647245	-1.320925	125.21	1.50	126.71
OP 19	52.647584	-1.318071	133.10	1.50	134.60
OP 20	52.647864	-1.315260	133.56	1.50	135.06
OP 21	52.647883	-1.312632	120.49	1.50	121.99
OP 22	52.647903	-1.309392	112.06	1.50	113.56
OP 23	52.648684	-1.316934	136.22	1.50	137.72
OP 24	52.649803	-1.319030	135.73	1.50	137.23
OP 25	52.650955	-1.321444	131.68	1.50	133.18
OP 26	52.651782	-1.324051	132.99	1.50	134.49
OP 27	52.654958	-1.343674	141.35	1.50	142.85

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	25.0	180.0	39,985	0	-	-
PV array 2	25.0	180.0	18,112	11,269	-	-

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	375	1753	2802	2941	2882	2243	726	0	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (green)	0	0	421	572	1203	1445	1382	661	623	0	0	0
pv-array-2 (yellow)	0	0	101	644	1105	1505	1247	893	161	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	0	0
OP: OP 4	1696	0
OP: OP 5	4182	0
OP: OP 6	3026	0
OP: OP 7	793	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	3967	0
OP: OP 19	5242	0
OP: OP 20	5327	0
OP: OP 21	4297	0
OP: OP 22	2595	0
OP: OP 23	5213	0
OP: OP 24	2835	0
OP: OP 25	812	0

OP: OP 26	0	0
OP: OP 27	0	0

PV array 1: OP 1

No glare found

PV array 1: OP 2

No glare found

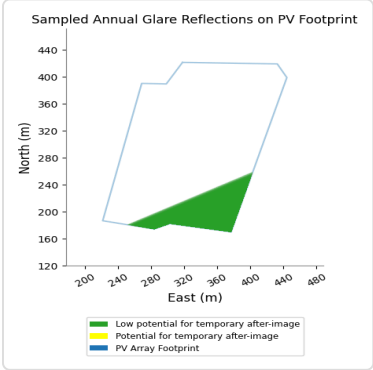
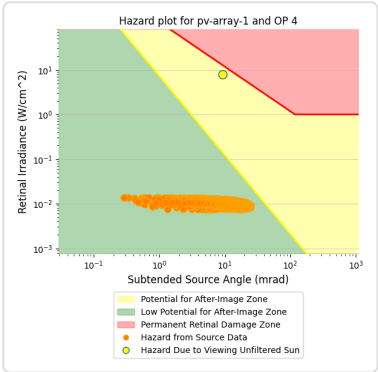
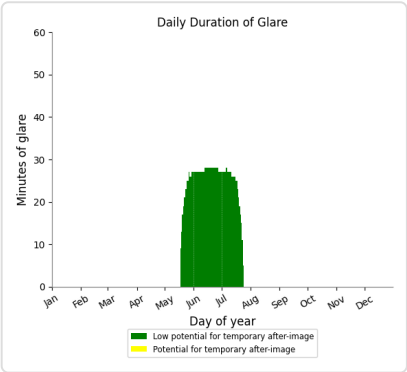
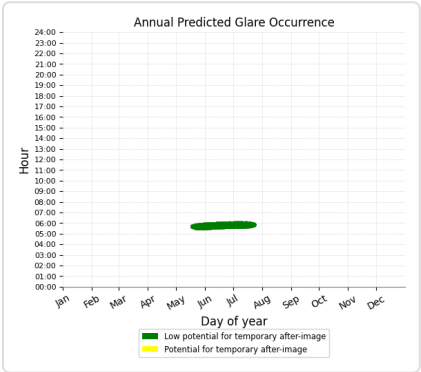
PV array 1: OP 3

No glare found

PV array 1: OP 4

PV array is expected to produce the following glare for this receptor:

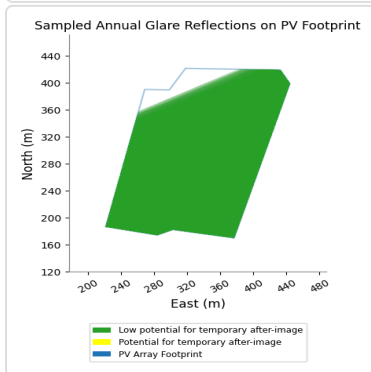
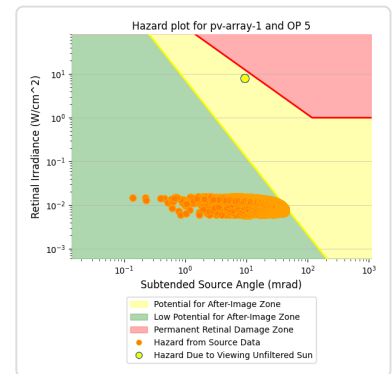
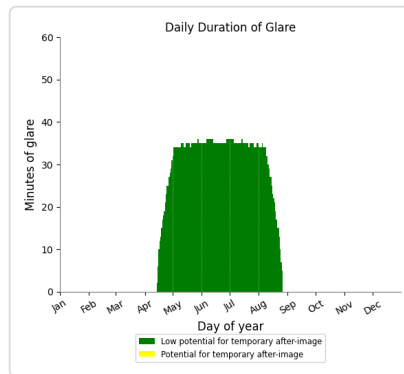
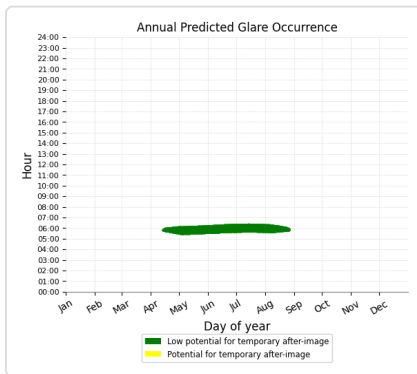
- 1,696 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 5

PV array is expected to produce the following glare for this receptor:

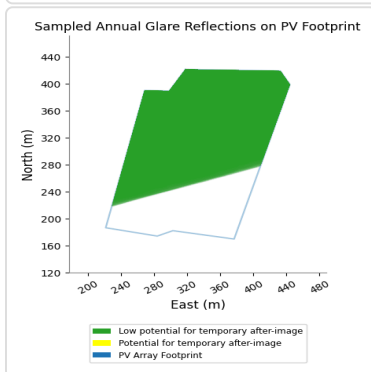
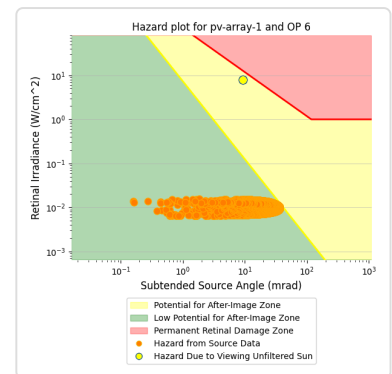
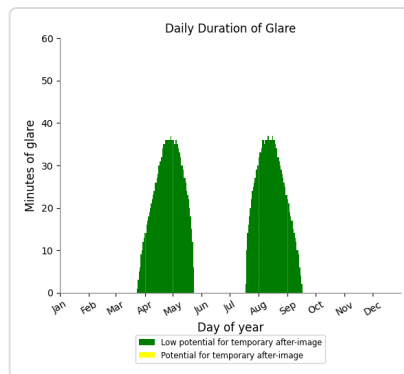
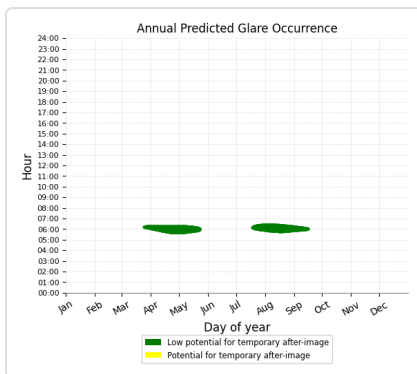
- 4,182 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 6

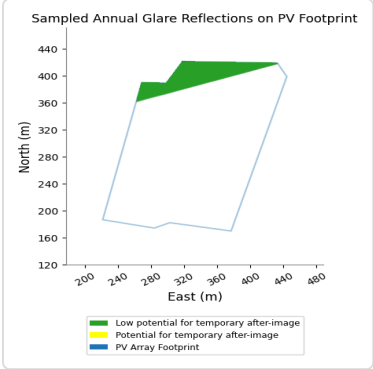
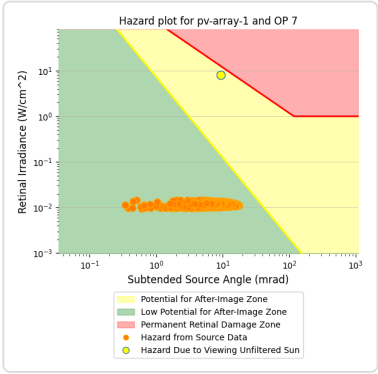
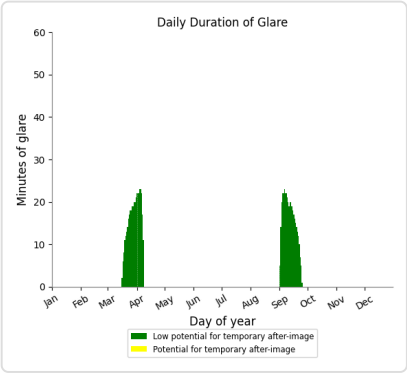
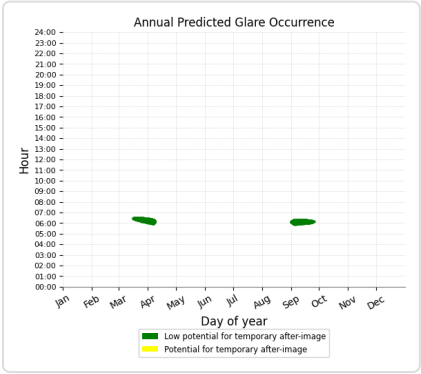
PV array is expected to produce the following glare for this receptor:

- 3,026 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:
- 793 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

No glare found

PV array 1: OP 9

No glare found

PV array 1: OP 10

No glare found

PV array 1: OP 11

No glare found

PV array 1: OP 12

No glare found

PV array 1: OP 13

No glare found

PV array 1: OP 14

No glare found

PV array 1: OP 15

No glare found

PV array 1: OP 16

No glare found

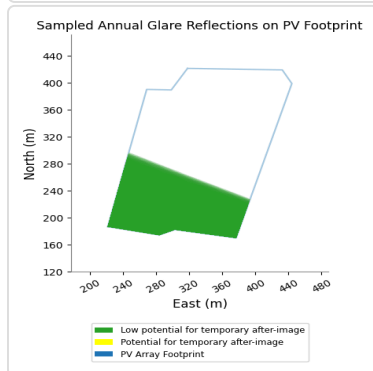
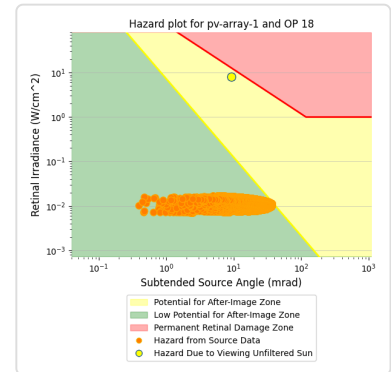
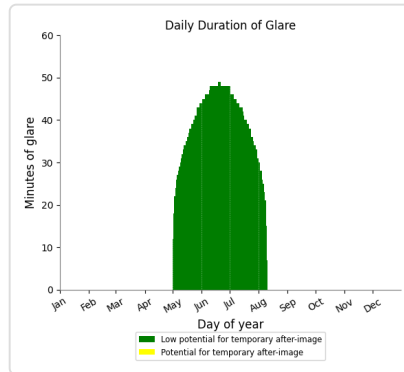
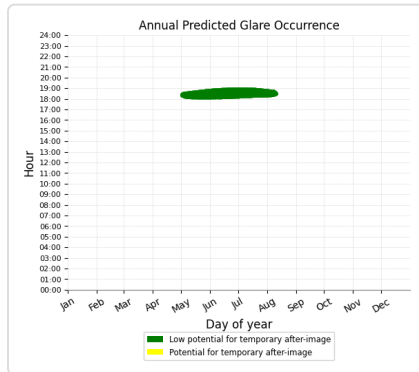
PV array 1: OP 17

No glare found

PV array 1: OP 18

PV array is expected to produce the following glare for this receptor:

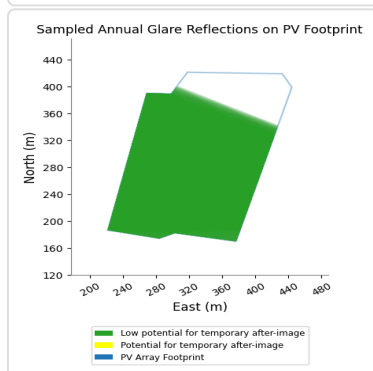
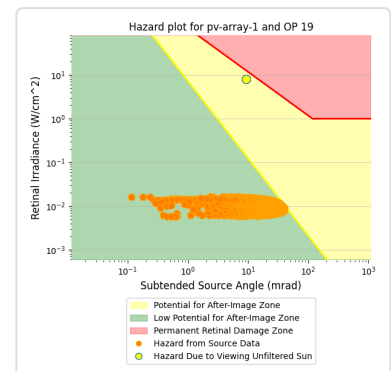
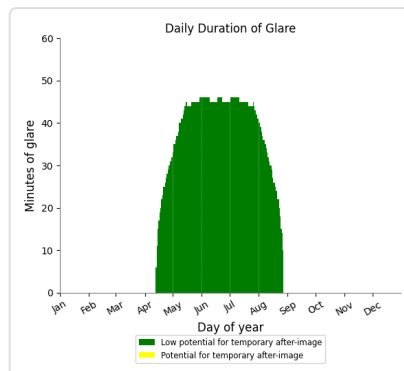
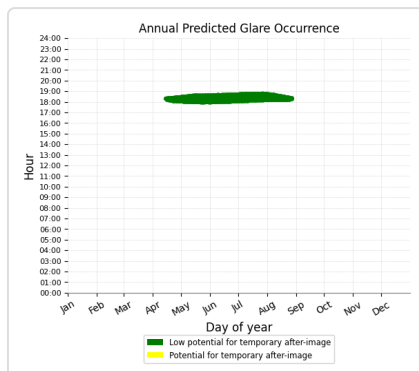
- 3,967 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 19

PV array is expected to produce the following glare for this receptor:

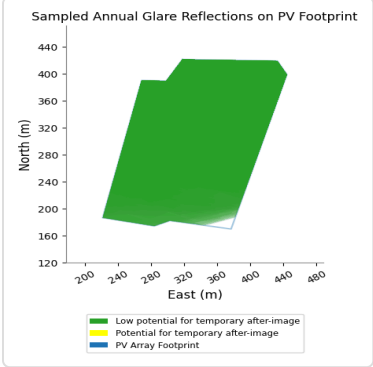
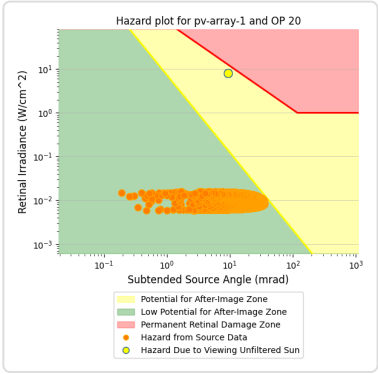
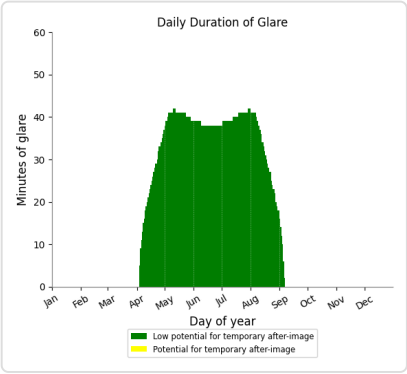
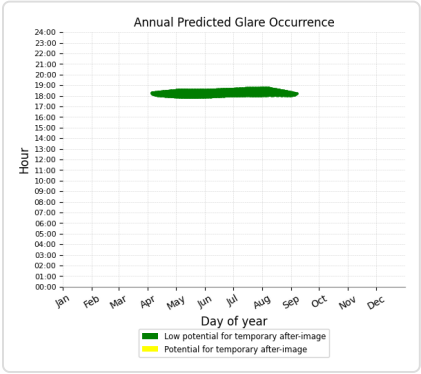
- 5,242 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 20

PV array is expected to produce the following glare for this receptor:

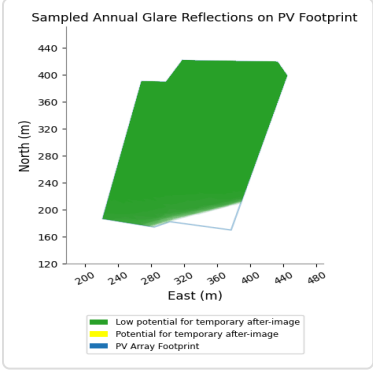
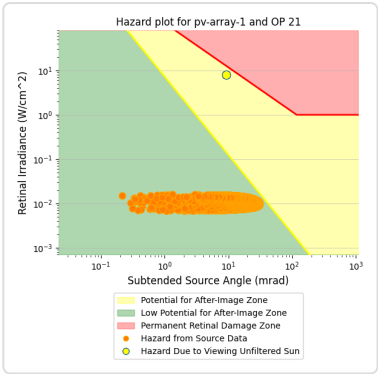
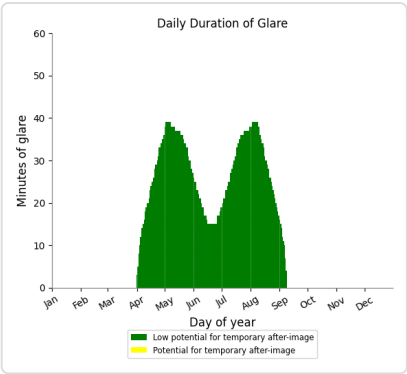
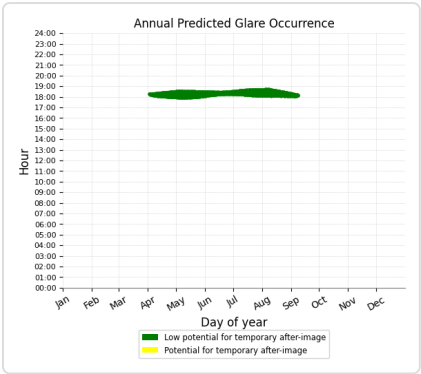
- 5,327 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 21

PV array is expected to produce the following glare for this receptor:

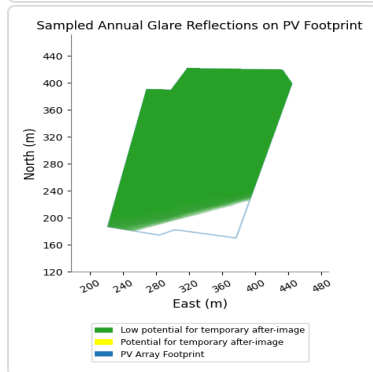
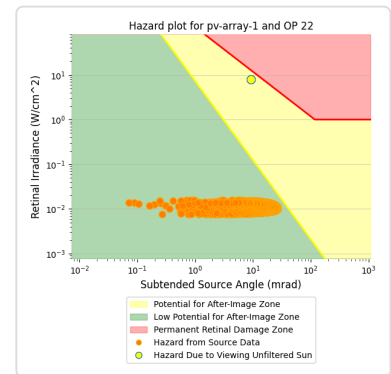
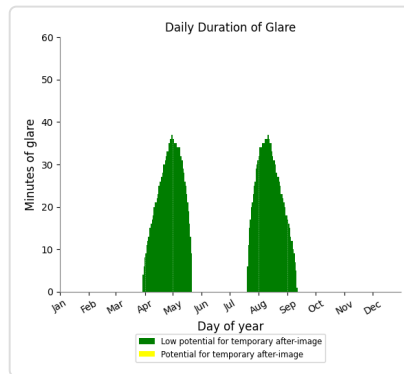
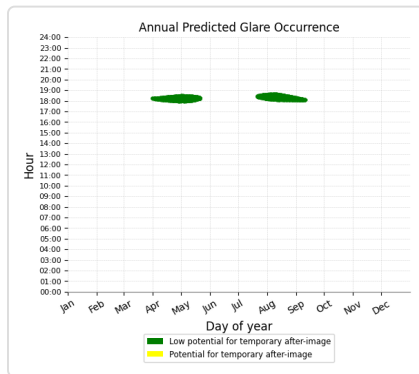
- 4,297 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 22

PV array is expected to produce the following glare for this receptor:

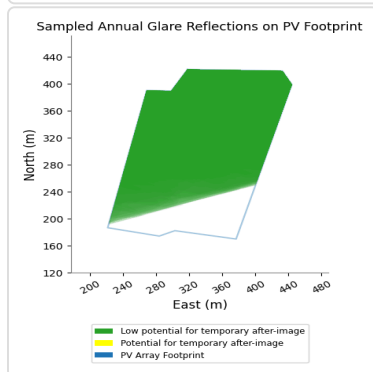
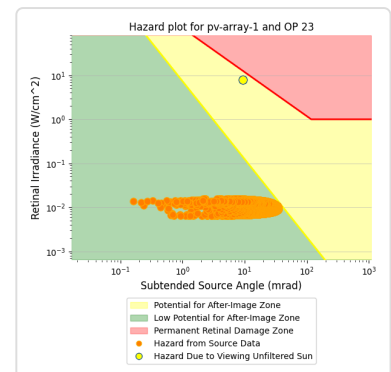
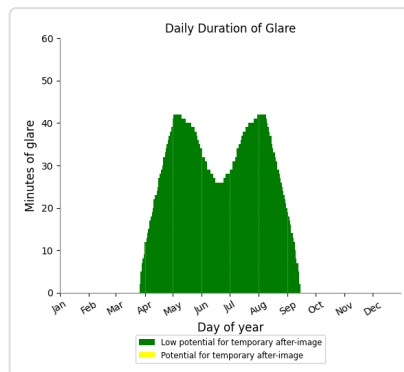
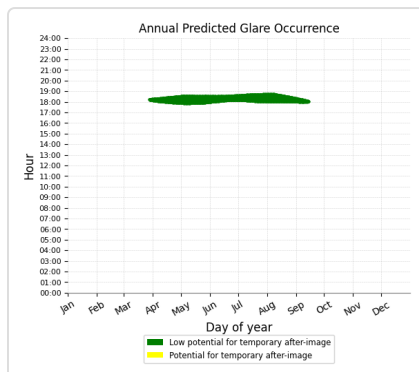
- 2,595 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 23

PV array is expected to produce the following glare for this receptor:

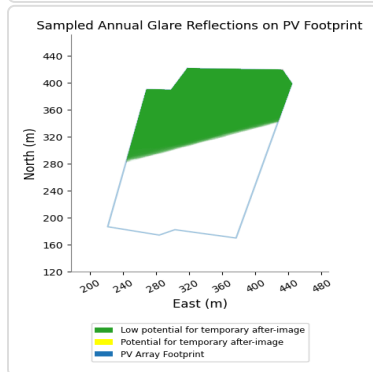
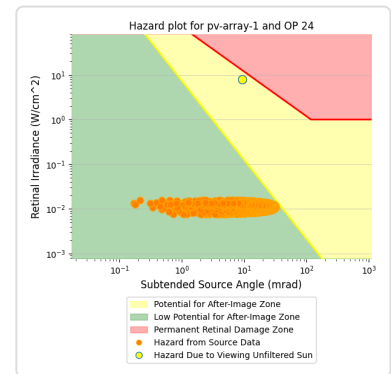
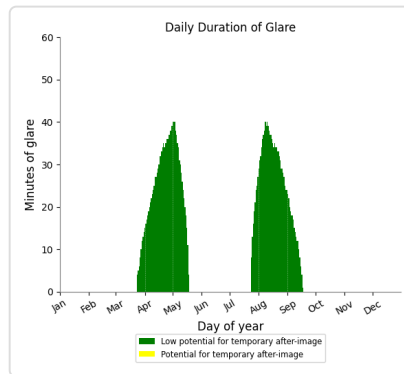
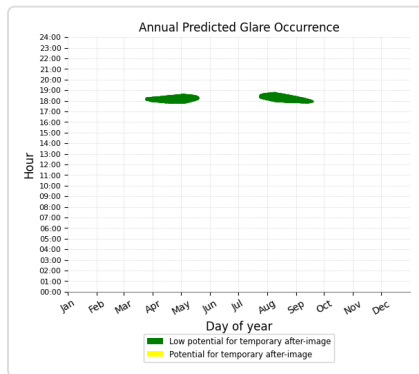
- 5,213 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 24

PV array is expected to produce the following glare for this receptor:

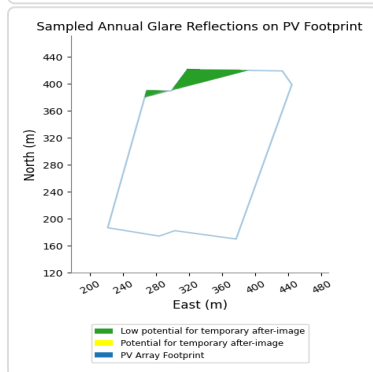
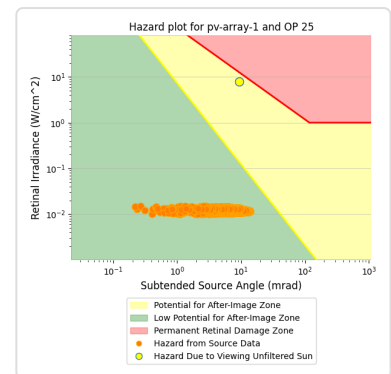
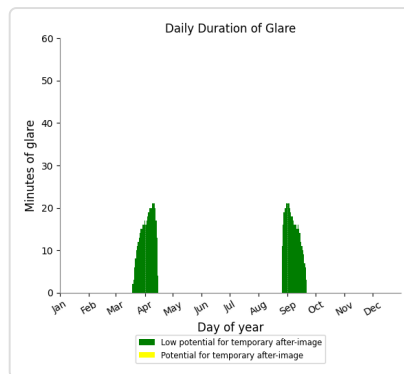
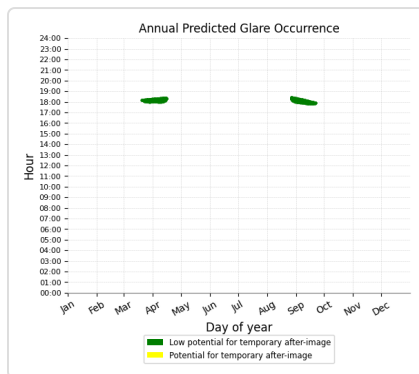
- 2,835 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 1: OP 25

PV array is expected to produce the following glare for this receptor:

- 812 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

No glare found

PV array 1: OP 27

No glare found

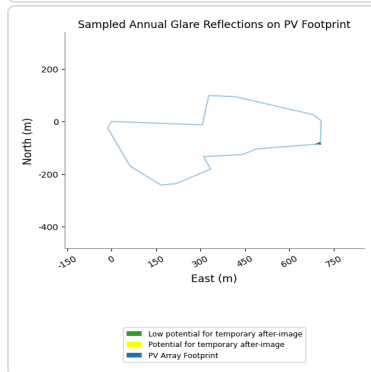
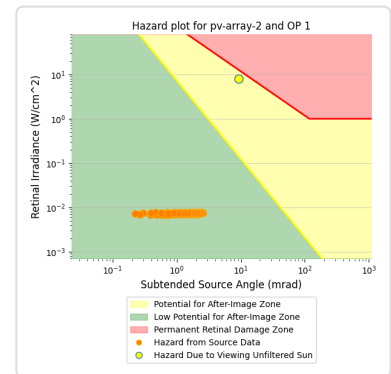
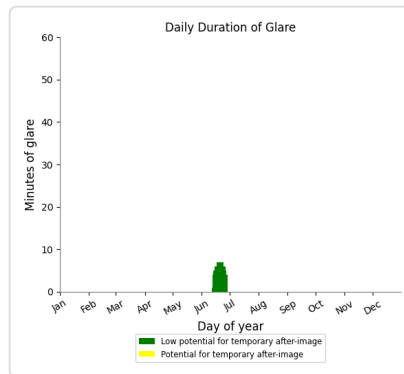
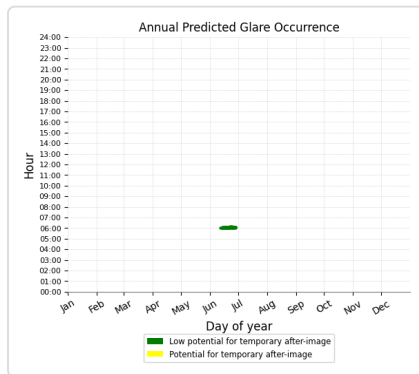
PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	99	0
OP: OP 2	1348	0
OP: OP 3	1121	1591
OP: OP 4	2821	1239
OP: OP 5	1221	148
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	940	0
OP: OP 11	798	0
OP: OP 12	1004	0
OP: OP 13	1140	0
OP: OP 14	1340	0
OP: OP 15	2127	1454
OP: OP 16	1642	2369
OP: OP 17	1097	3669
OP: OP 18	915	799
OP: OP 19	205	0
OP: OP 20	81	0
OP: OP 21	121	0
OP: OP 22	92	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0

PV array 2: OP 1

PV array is expected to produce the following glare for this receptor:

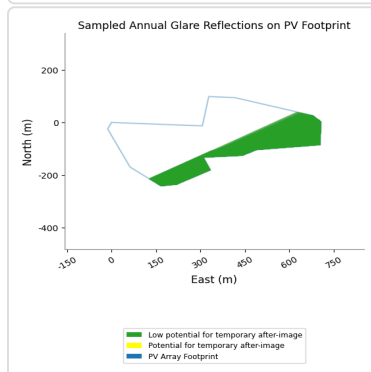
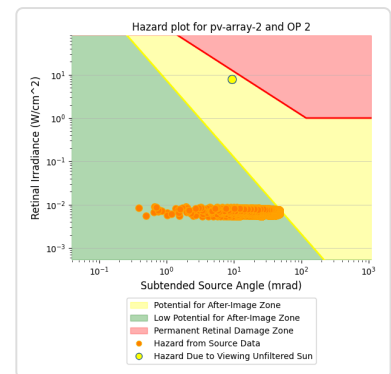
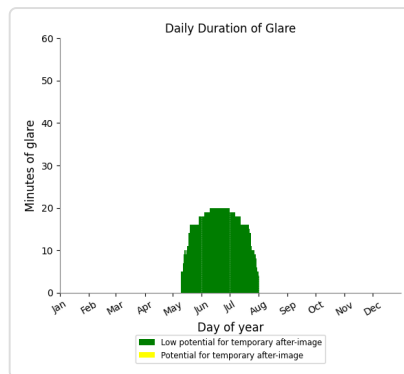
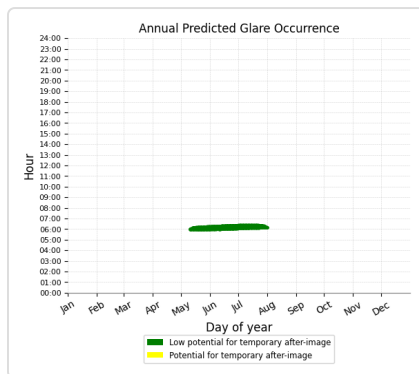
- 99 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 2

PV array is expected to produce the following glare for this receptor:

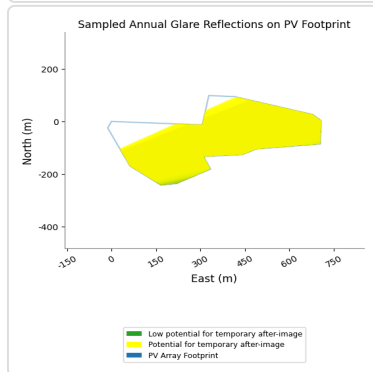
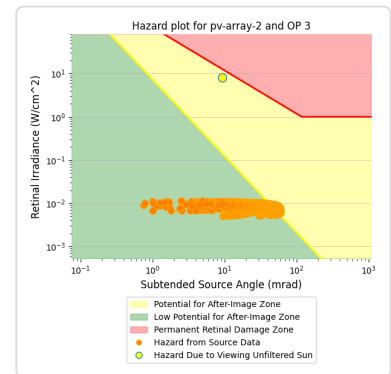
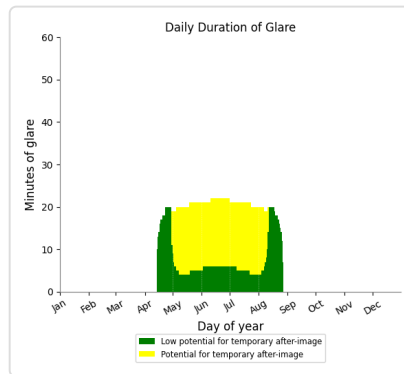
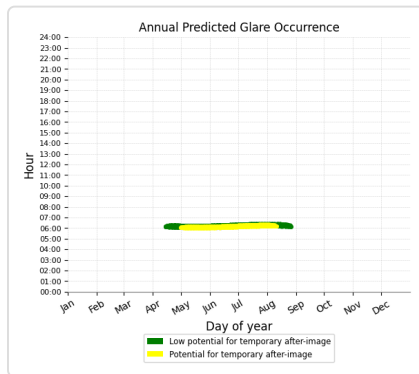
- 1,348 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 3

PV array is expected to produce the following glare for this receptor:

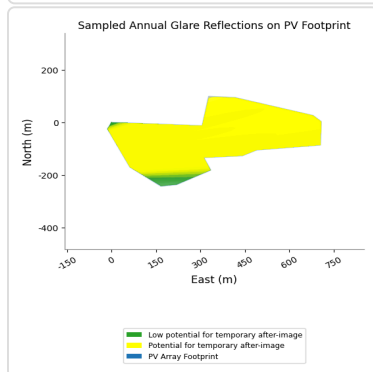
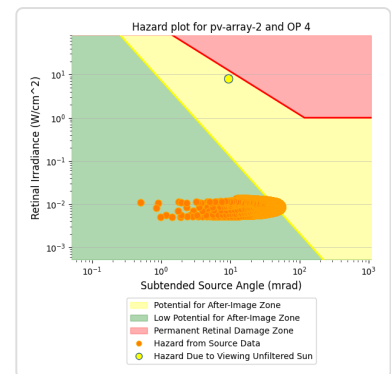
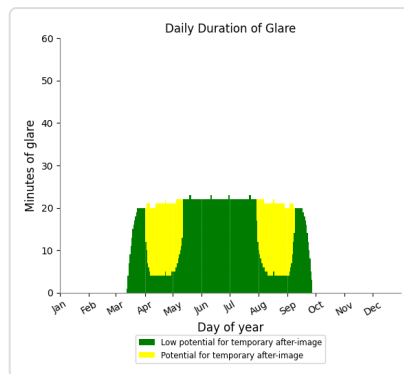
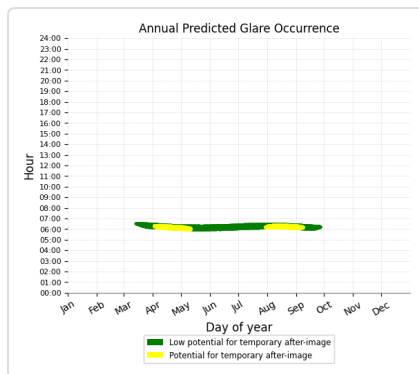
- 1,121 minutes of "green" glare with low potential to cause temporary after-image.
- 1,591 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 4

PV array is expected to produce the following glare for this receptor:

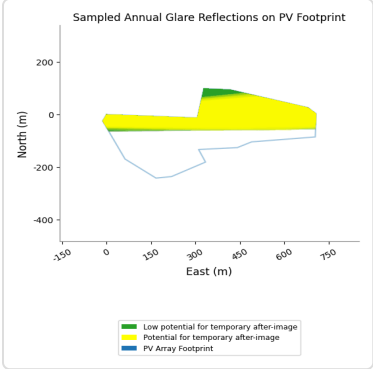
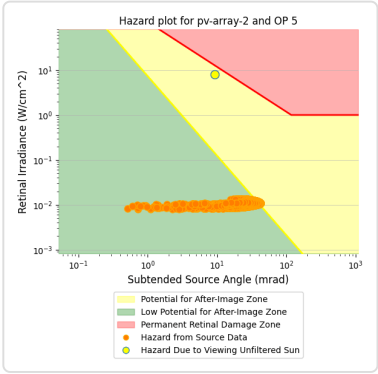
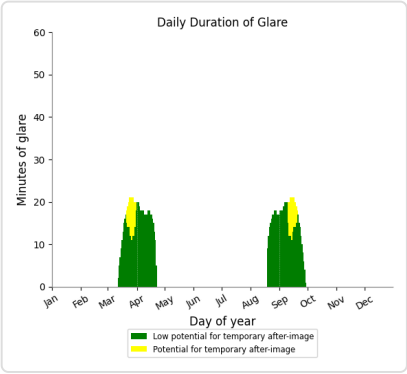
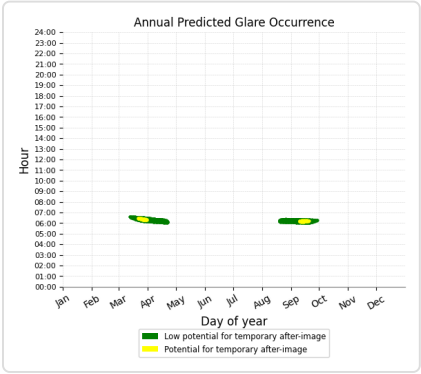
- 2,821 minutes of "green" glare with low potential to cause temporary after-image.
- 1,239 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 5

PV array is expected to produce the following glare for this receptor:

- 1,221 minutes of "green" glare with low potential to cause temporary after-image.
- 148 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 6

No glare found

PV array 2: OP 7

No glare found

PV array 2: OP 8

No glare found

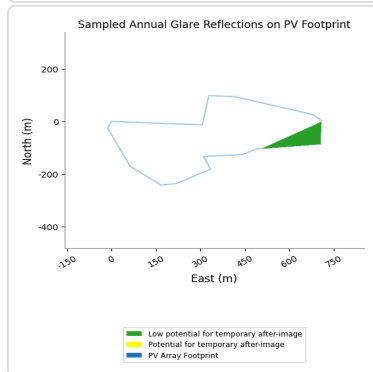
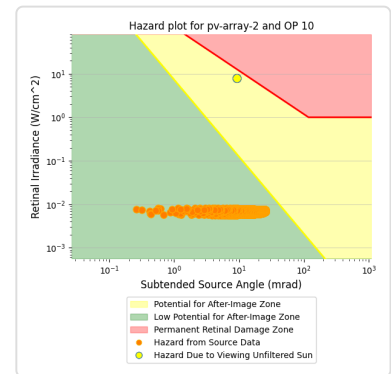
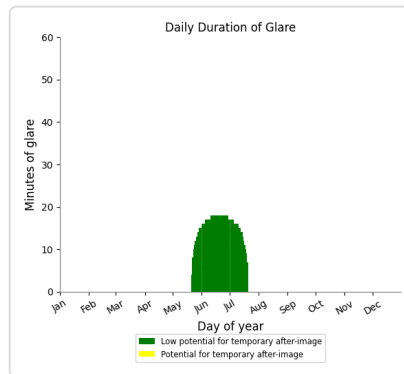
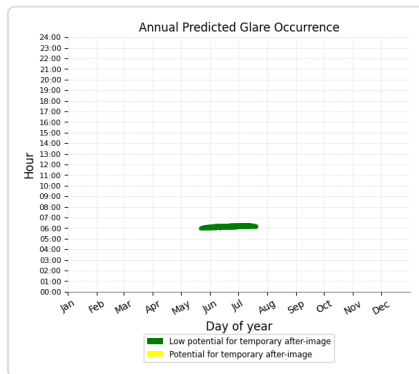
PV array 2: OP 9

No glare found

PV array 2: OP 10

PV array is expected to produce the following glare for this receptor:

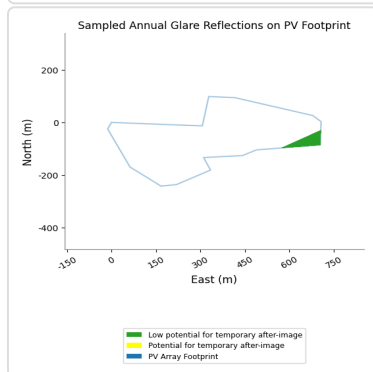
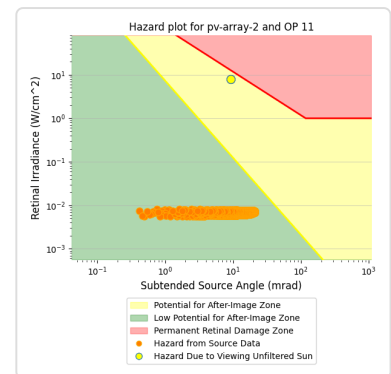
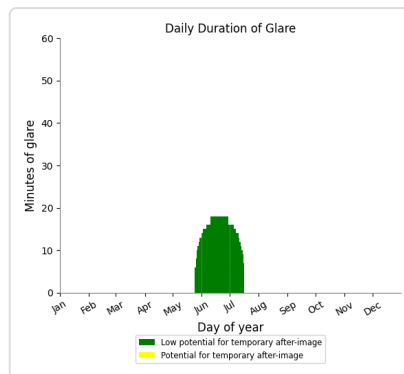
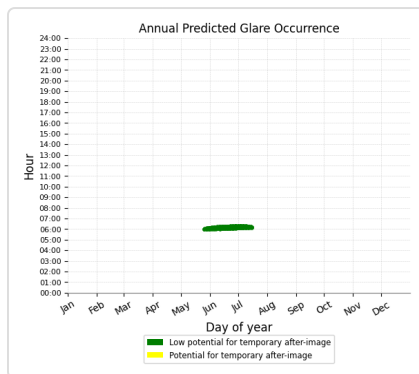
- 940 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 11

PV array is expected to produce the following glare for this receptor:

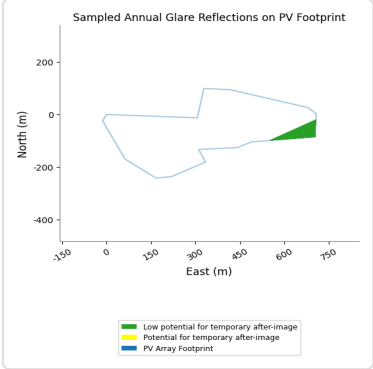
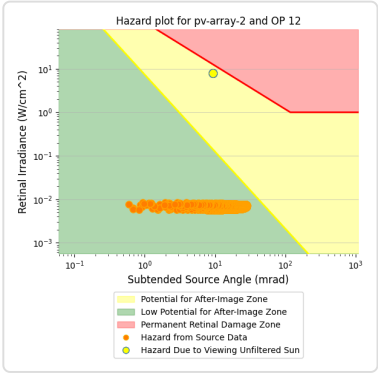
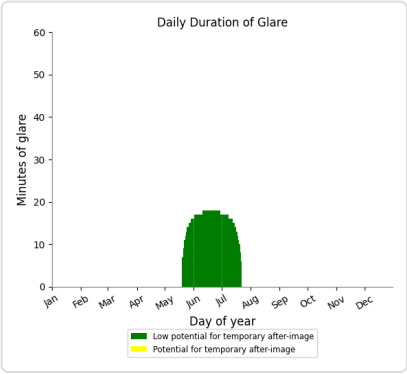
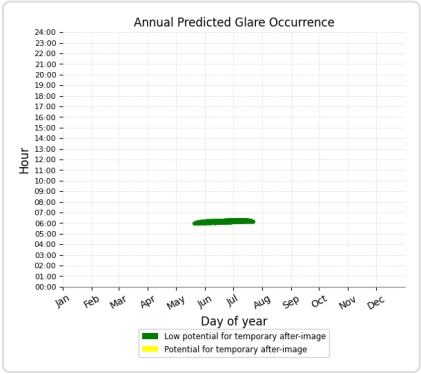
- 798 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 12

PV array is expected to produce the following glare for this receptor:

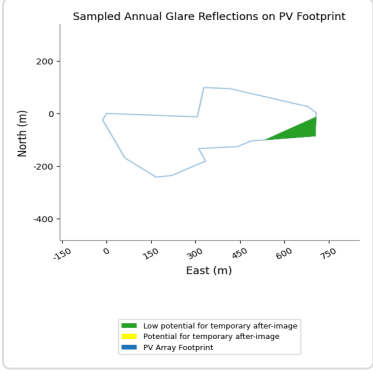
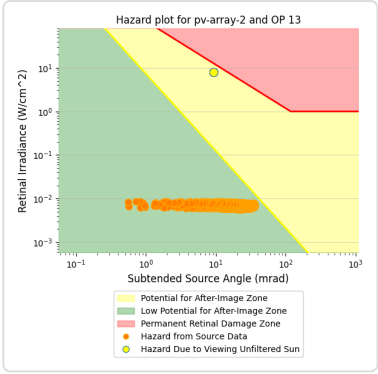
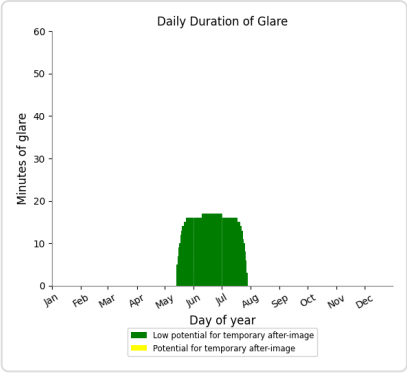
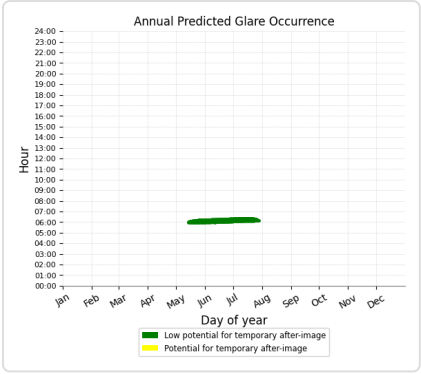
- 1,004 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 13

PV array is expected to produce the following glare for this receptor:

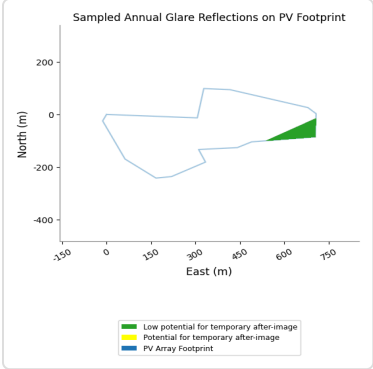
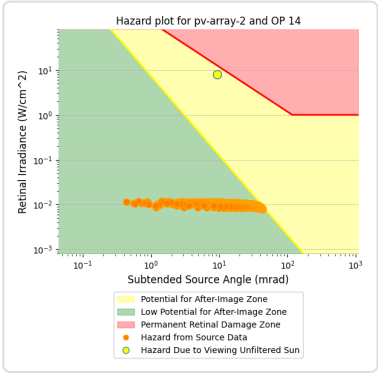
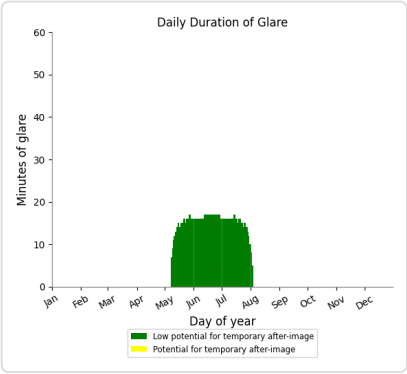
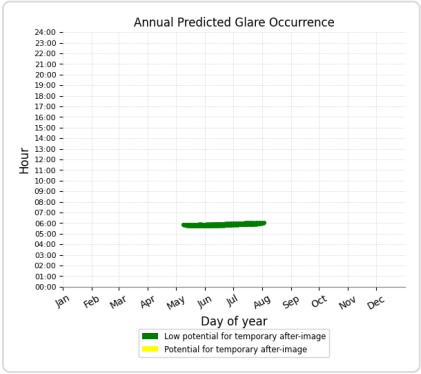
- 1,140 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 14

PV array is expected to produce the following glare for this receptor:

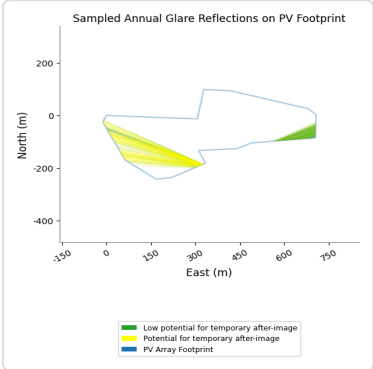
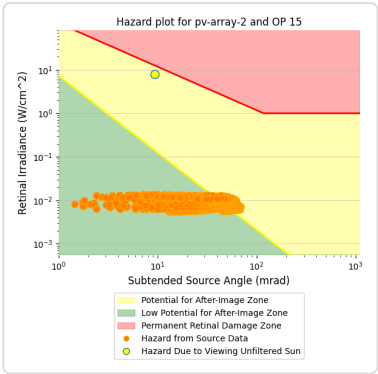
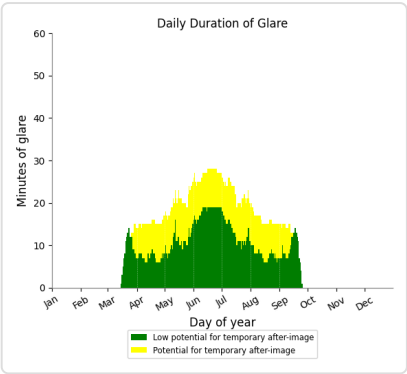
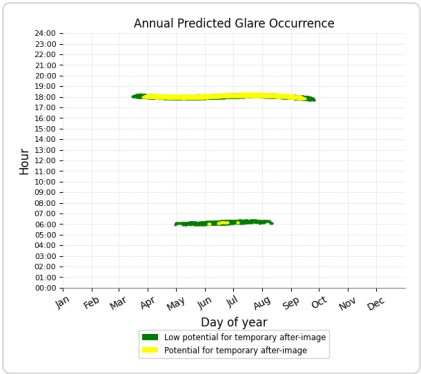
- 1,340 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 15

PV array is expected to produce the following glare for this receptor:

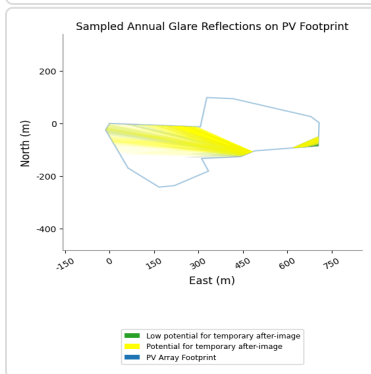
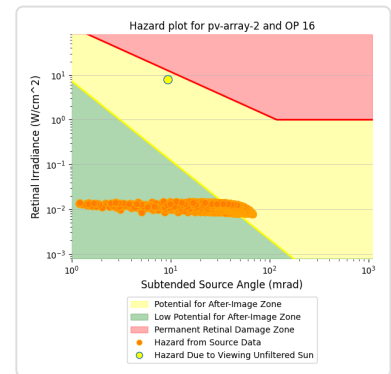
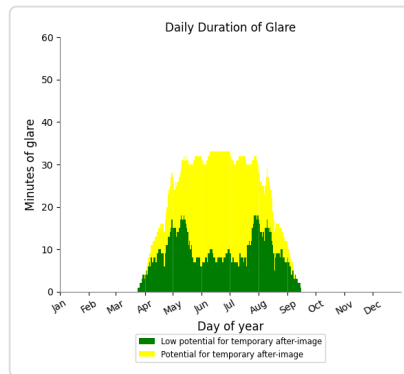
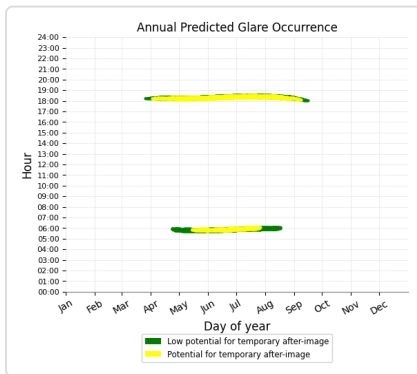
- 2,127 minutes of "green" glare with low potential to cause temporary after-image.
- 1,454 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 16

PV array is expected to produce the following glare for this receptor:

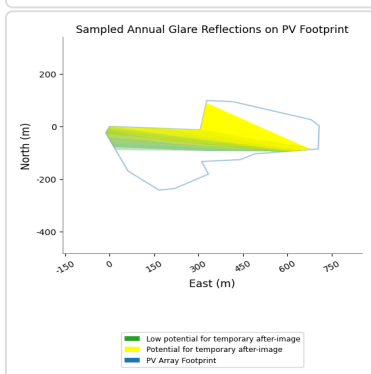
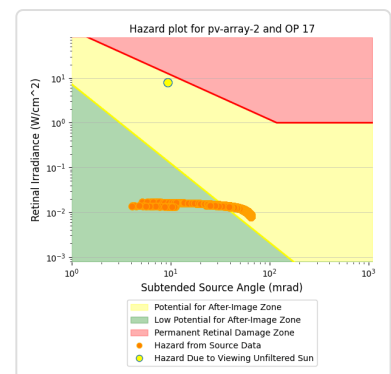
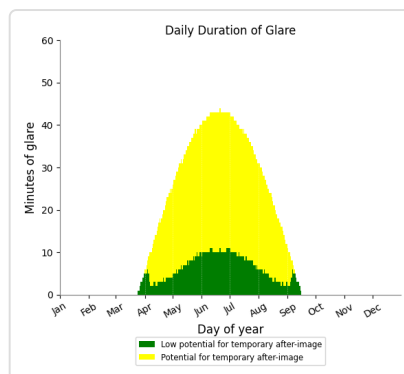
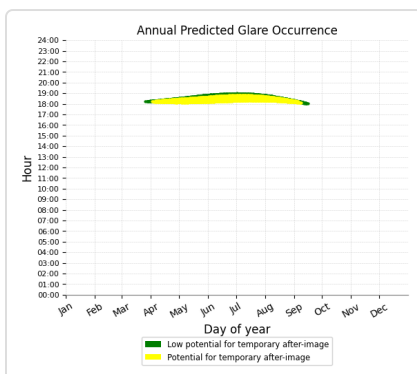
- 1,642 minutes of "green" glare with low potential to cause temporary after-image.
- 2,369 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 17

PV array is expected to produce the following glare for this receptor:

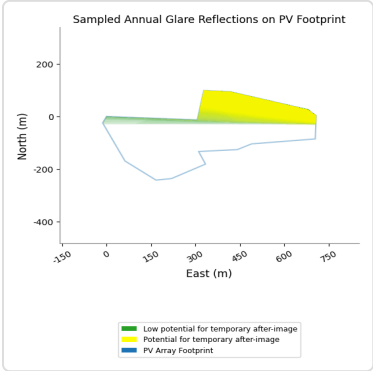
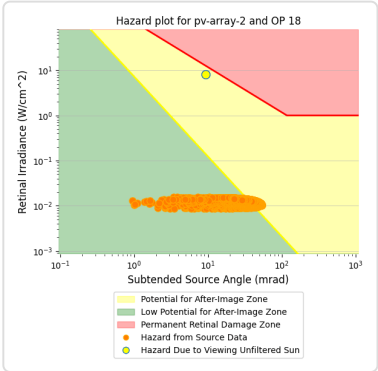
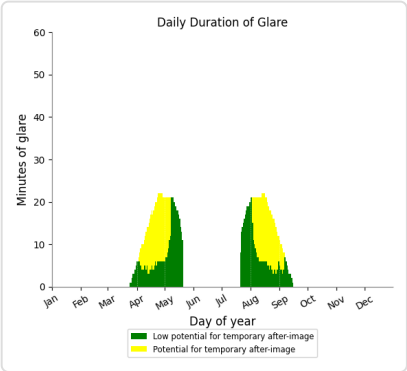
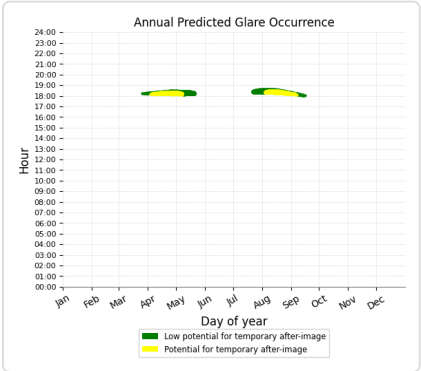
- 1,097 minutes of "green" glare with low potential to cause temporary after-image.
- 3,669 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 18

PV array is expected to produce the following glare for this receptor:

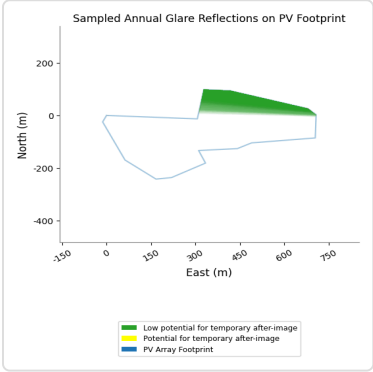
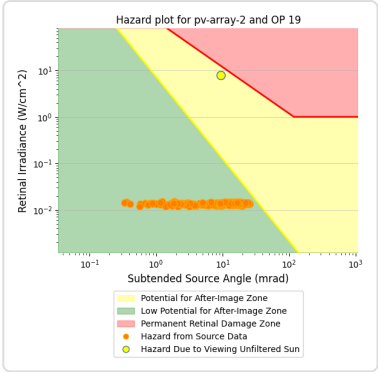
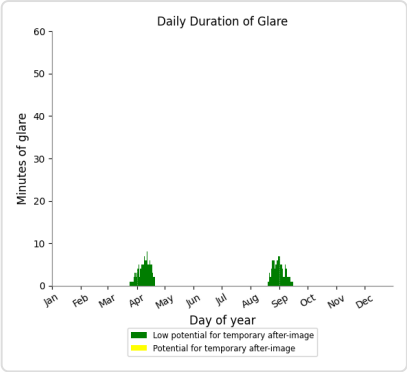
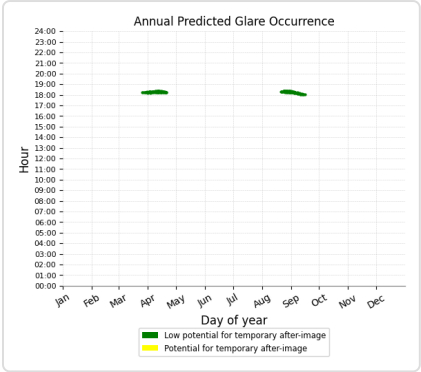
- 915 minutes of "green" glare with low potential to cause temporary after-image.
- 799 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 19

PV array is expected to produce the following glare for this receptor:

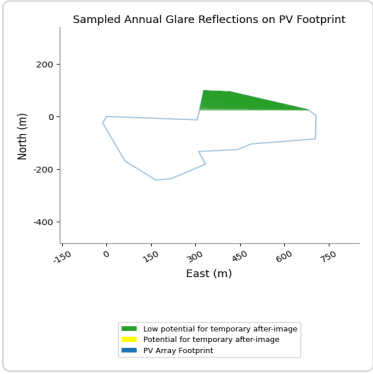
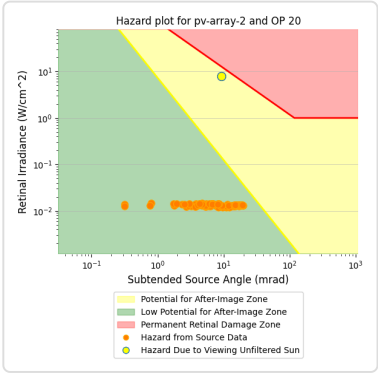
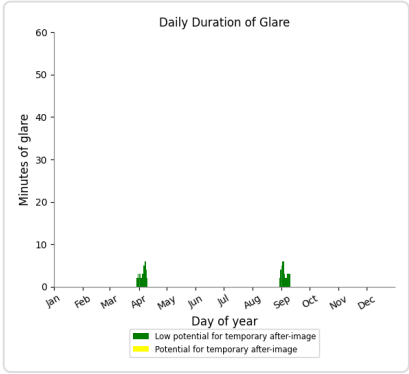
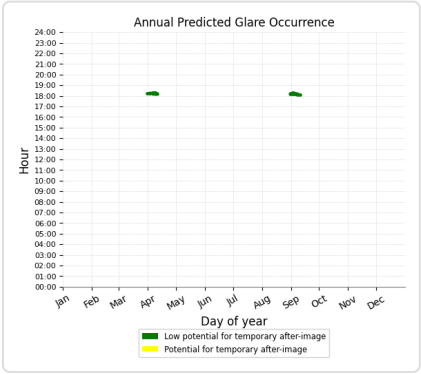
- 205 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 20

PV array is expected to produce the following glare for this receptor:

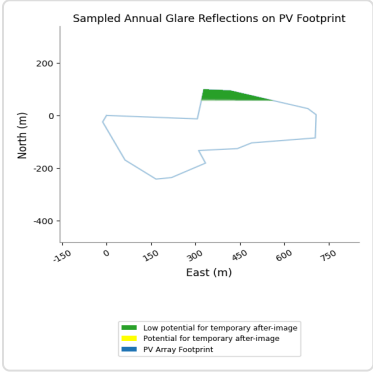
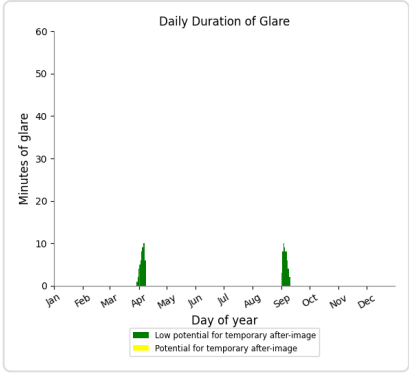
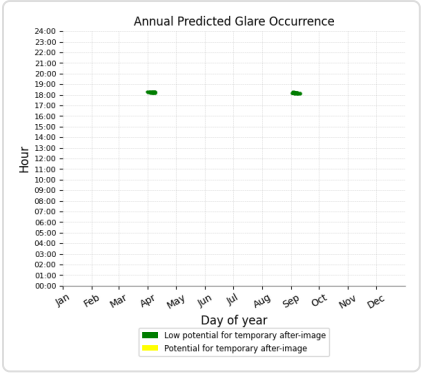
- 81 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 21

PV array is expected to produce the following glare for this receptor:

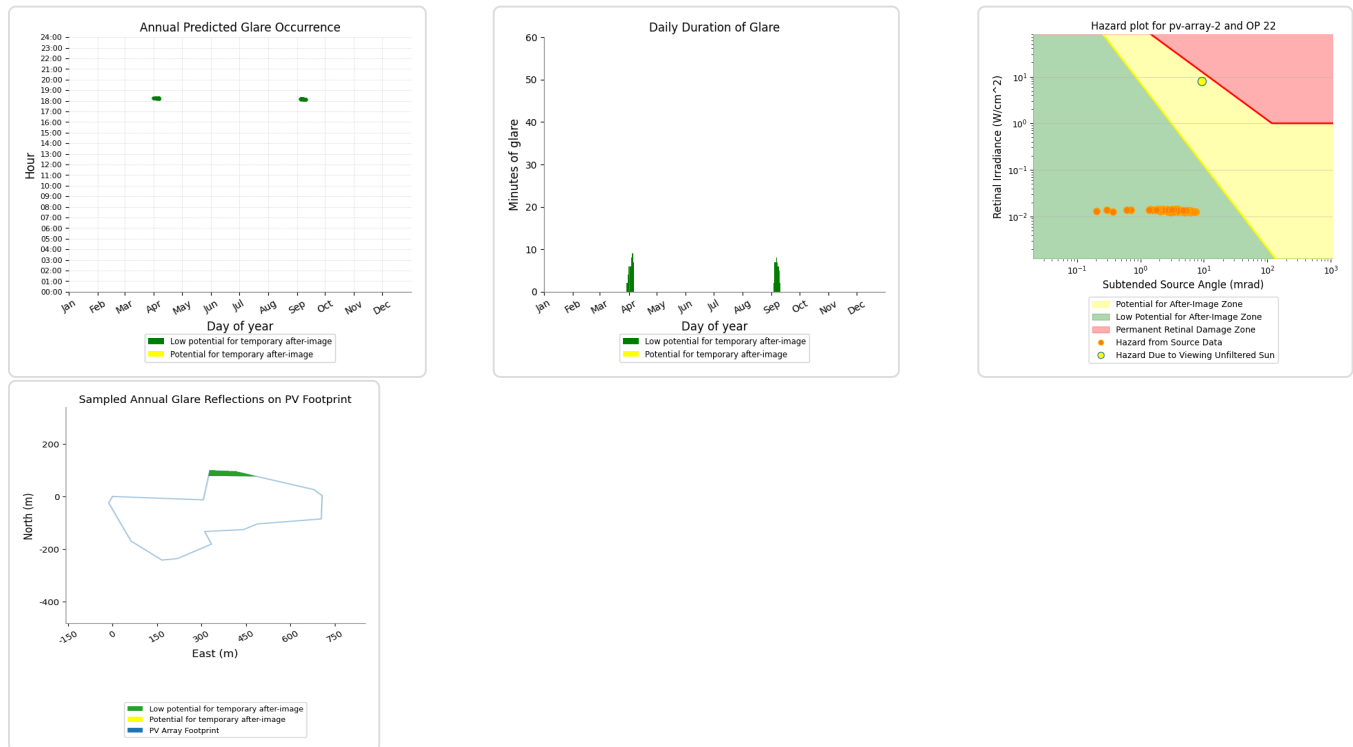
- 121 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



PV array 2: OP 22

PV array is expected to produce the following glare for this receptor:

- 92 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 2: OP 23

No glare found

PV array 2: OP 24

No glare found

PV array 2: OP 25

No glare found

PV array 2: OP 26

No glare found

PV array 2: OP 27

No glare found

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.

Heath Road Solar Farm

Heath Road Solar Farm Aviation Receptors

Created Jun 29, 2023
Updated Aug 22, 2024
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
Site ID 94237.16328

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



Misc. Analysis Settings

DNI: varies (1,000.0 W/m² 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	25.0	180.0	9,612	0	-
PV array 2	25.0	180.0	6,139	0	-

PV Array(s)

Name: PV array 1
Footprint area: 39,249 m²
Axis tracking: Fixed (no rotation)
Tilt: 25.0 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	52.651500	-1.330007	139.67	2.80	142.47
2	52.651480	-1.328312	136.60	2.80	139.40
3	52.651298	-1.328140	136.19	2.80	138.99
4	52.649241	-1.329138	136.98	2.80	139.78
5	52.649352	-1.330233	139.08	2.80	141.88
6	52.649280	-1.330512	139.13	2.80	141.93
7	52.649391	-1.331434	139.68	2.80	142.48
8	52.651220	-1.330737	141.02	2.80	143.82
9	52.651213	-1.330300	140.28	2.80	143.08

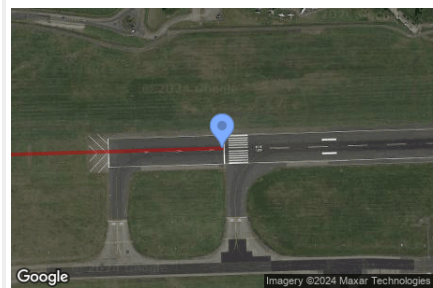
Name: PV array 2
Footprint area: 125,300 m²
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	52.647712	-1.334703	131.60	2.80	134.40
2	52.647595	-1.330175	138.00	2.80	140.80
3	52.648597	-1.329854	137.84	2.80	140.64
4	52.648558	-1.328545	135.07	2.80	137.87
5	52.647946	-1.324661	131.89	2.80	134.69
6	52.647738	-1.324253	131.75	2.80	134.55
7	52.646944	-1.324296	124.61	2.80	127.41
8	52.646774	-1.327472	133.52	2.80	136.32
9	52.646579	-1.328180	133.95	2.80	136.75
10	52.646514	-1.330111	133.19	2.80	135.99
11	52.646084	-1.329768	130.92	2.80	133.72
12	52.645590	-1.331463	125.28	2.80	128.08
13	52.645538	-1.332235	125.20	2.80	128.00
14	52.646189	-1.333780	128.22	2.80	131.02
15	52.647490	-1.334896	130.74	2.80	133.54

2-Mile Flight Path Receptor(s)

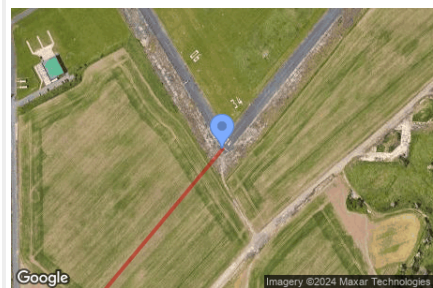
Name: East Midlands RWY 09 Description: Threshold height : 15 m Direction: 88.3 deg Glide slope: 3.0 deg Pilot view restricted? Yes Vertical view restriction: 30.0 deg Azimuthal view restriction: 50.0 deg	Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
		deg	deg	m	m	m
	Threshold	52.830684	-1.346973	92.45	15.24	107.69
	2-mile point	52.829826	-1.394862	68.97	207.40	276.37



Name: East Midlands RWY 27 Description: Threshold height : 15 m Direction: 268.3 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	52.831370	-1.308587	84.98	15.24	100.22
	2-mile point	52.832228	-1.260696	30.38	238.52	268.90



Name: Leicester RWY 04 Description: Threshold height : 15 m Direction: 39.8 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	52.603803	-1.030223	139.34	15.24	154.58
	2-mile point	52.581590	-1.060732	114.77	208.49	323.26



Name: Leicester RWY 06
Description:
Threshold height : 15 m
Direction: 49.2 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	52.604995	-1.030995	142.60	15.24	157.84
2-mile point	52.586103	-1.067076	119.77	206.75	326.53

Name: Leicester RWY 10
Description:
Threshold height : 15 m
Direction: 96.2 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	52.608304	-1.038870	135.99	15.24	151.23
2-mile point	52.611426	-1.086258	96.15	223.77	319.92

Name: Leicester RWY 15
Description:
Threshold height : 15 m
Direction: 149.2 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	52.607782	-1.033978	139.51	15.24	154.75
2-mile point	52.632617	-1.058385	87.78	235.66	323.44

Name: Leicester RWY 16
Description:
Threshold height : 15 m
Direction: 149.9 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	52.607567	-1.033001	140.84	15.24	156.08
2-mile point	52.632581	-1.056907	82.80	241.97	324.77

Name: Leicester RWY 22
Description:
Threshold height : 15 m
Direction: 219.8 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	52.607246	-1.025623	141.43	15.24	156.67
2-mile point	52.629459	-0.995112	163.34	162.02	325.36

Name: Leicester RWY 24
Description:
Threshold height : 15 m
Direction: 229.2 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	52.607142	-1.027115	141.50	15.24	156.74
2-mile point	52.626034	-0.991032	173.49	151.94	325.43

Name: Leicester RWY 28
Description:
Threshold height : 15 m
Direction: 276.2 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	52.607435	-1.025173	140.93	15.24	156.17
2-mile point	52.604312	-0.977785	164.66	160.20	324.86

Name: Leicester RWY 33
Description:
Threshold height : 15 m
Direction: 329.2 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	52.603972	-1.030244	139.21	15.24	154.45
2-mile point	52.579137	-1.005839	119.43	203.70	323.13

Name: Leicester RWY 34
Description:
Threshold height : 15 m
Direction: 329.9 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	52.604350	-1.029772	139.57	15.24	154.81
2-mile point	52.579336	-1.005868	120.12	203.38	323.50

Name: Lodge Farm RWY 08
Description:
Threshold height : 15 m
Direction: 82.3 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	52.636510	-1.392746	108.79	15.24	124.03
2-mile point	52.632636	-1.440014	89.16	203.55	292.71

Name: Lodge Farm RWY 26
Description:
Threshold height : 15 m
Direction: 262.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

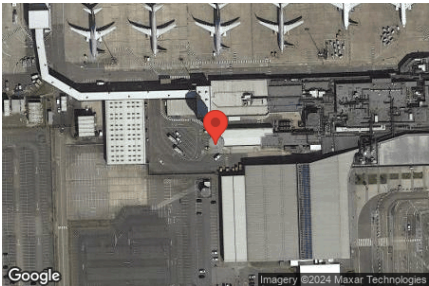


Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	52.636946	-1.387660	109.15	15.24	124.39
2-mile point	52.640819	-1.340392	137.99	155.09	293.08

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
1-ATCT	52.826324	-1.332115	86.48	52.00	138.48
2-ATCT	52.606206	-1.034509	140.65	10.00	150.65

1-ATCT map image



2-ATCT map image



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	25.0	180.0	9,612	0	-	-
PV array 2	25.0	180.0	6,139	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	63	741	1256	987	1240	947	230	0	0	0
pv-array-1 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (green)	0	0	71	839	807	89	580	1026	203	0	0	0
pv-array-2 (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: East Midlands RWY 09	0	0
FP: East Midlands RWY 27	0	0
FP: Leicester RWY 04	0	0
FP: Leicester RWY 06	0	0
FP: Leicester RWY 10	0	0
FP: Leicester RWY 15	0	0
FP: Leicester RWY 16	0	0
FP: Leicester RWY 22	69	0
FP: Leicester RWY 24	997	0
FP: Leicester RWY 28	886	0
FP: Leicester RWY 33	2386	0
FP: Leicester RWY 34	2314	0
FP: Lodge Farm RWY 08	2171	0
FP: Lodge Farm RWY 26	0	0
OP: 1-ATCT	0	0
OP: 2-ATCT	789	0

PV array 1: East Midlands RWY 09

No glare found

PV array 1: East Midlands RWY 27

No glare found