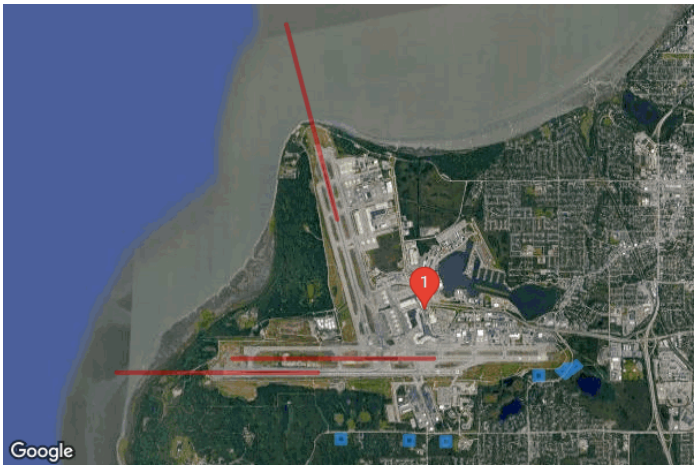
ForgeSolar

ANC Potential Solar Sites

ANC2

Created May 11, 2024
Updated May 13, 2024
Time-step 1 minute
Timezone offset UTC-9
Minimum sun altitude 0.0 deg
Site ID 118934.20416

Project type Advanced
Project status: active
Category 1 MW to 5 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
Site A	56.0	194.0	22	0	-
Site B	56.0	194.0	315	0	-
Site C	56.0	193.0	330	0	-
Site D	56.0	194.0	1,913	0	-
Site E	56.0	194.0	1,288	0	-
Site F	56.0	194.0	1,282	0	-

Component Data

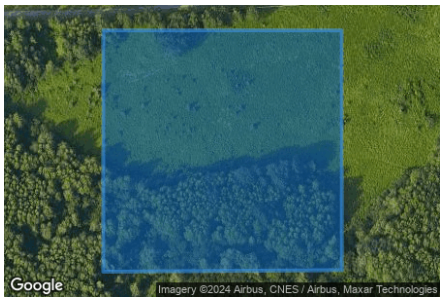
PV Array(s)

Total PV footprint area: 28.7 acres

Name: Site A
Description: PV Array Site A
Footprint area: 5.0 acres
Axis tracking: Fixed (no rotation)
Tilt: 56.0 deg
Orientation: 194.0 deg

Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

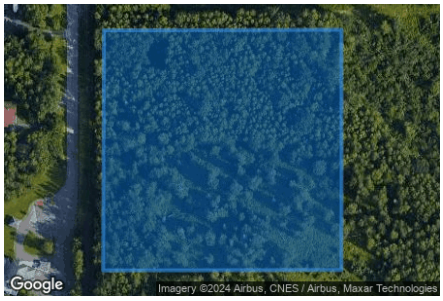
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	61.158969	-150.009353	126.00	10.00	136.00
2	61.158969	-150.006711	121.00	10.00	131.00
3	61.157694	-150.006710	148.00	10.00	158.00
4	61.157686	-150.009353	146.00	10.00	156.00



Name: Site B
Description: PV Array Site B
Footprint area: 5.0 acres
Axis tracking: Fixed (no rotation)
Tilt: 56.0 deg
Orientation: 194.0 deg

Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

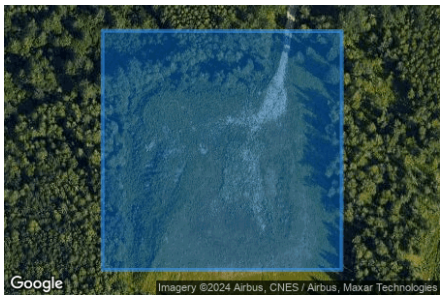
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	61.158747	-149.988972	128.00	10.00	138.00
2	61.158750	-149.986339	150.00	10.00	160.00
3	61.157472	-149.986340	162.00	10.00	172.00
4	61.157470	-149.988980	136.00	10.00	146.00



Name: Site C
Description: PV Array Site C
Footprint area: 5.0 acres
Axis tracking: Fixed (no rotation)
Tilt: 56.0 deg
Orientation: 193.0 deg

Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

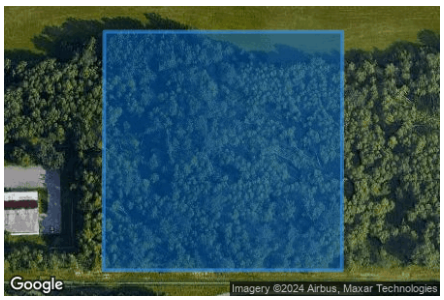
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	61.158589	-149.978075	120.00	10.00	130.00
2	61.158586	-149.975425	138.00	10.00	148.00
3	61.157308	-149.975428	110.00	10.00	120.00
4	61.157308	-149.978075	100.00	10.00	110.00



Name: Site D
Description: PV Array Site D
Footprint area: 5.0 acres
Axis tracking: Fixed (no rotation)
Tilt: 56.0 deg
Orientation: 194.0 deg

Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	61.168064	-149.950364	82.00	10.00	92.00
2	61.168064	-149.947728	85.00	10.00	95.00
3	61.166786	-149.947733	104.00	10.00	114.00
4	61.166786	-149.950375	90.00	10.00	100.00



Name: Site E
Description: PV Site E
Footprint area: 4.2 acres
Axis tracking: Fixed (no rotation)
Tilt: 56.0 deg
Orientation: 194.0 deg

Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	61.168164	-149.943714	75.00	10.00	85.00
2	61.168447	-149.942072	76.00	10.00	86.00
3	61.169031	-149.941372	76.00	10.00	86.00
4	61.169030	-149.939517	77.00	10.00	87.00
5	61.167378	-149.941956	77.00	10.00	87.00

Name: Site F
Description: PV Array Site F
Footprint area: 4.5 acres
Axis tracking: Fixed (no rotation)
Tilt: 56.0 deg
Orientation: 194.0 deg

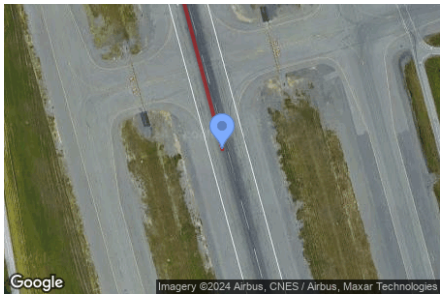
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	61.167103	-149.941136	80.00	10.00	90.00
2	61.169503	-149.937908	78.00	10.00	88.00
3	61.168733	-149.936422	78.00	10.00	88.00

2-Mile Flight Path Receptor(s)

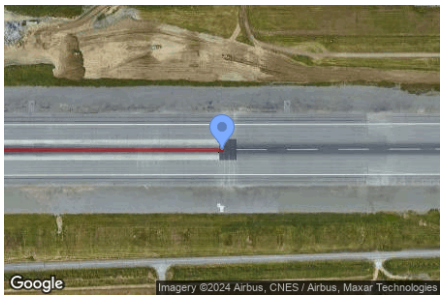
Name: 15-33
Description:
Threshold height : 50 ft
Direction: 165.4 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	61.189856	-150.009127	122.82	50.00	172.82
2-mile point	61.217829	-150.024319	-19.64	745.89	726.25



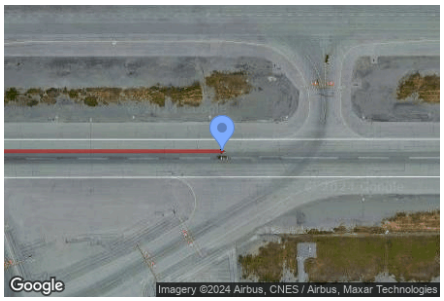
Name: 25L-7R
Description:
Threshold height : 50 ft
Direction: 90.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	61.167844	-150.014878	120.21	50.00	170.21
2-mile point	61.167844	-150.074902	0.00	723.64	723.64



Name: 25R-7L
Description:
Threshold height : 50 ft
Direction: 90.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

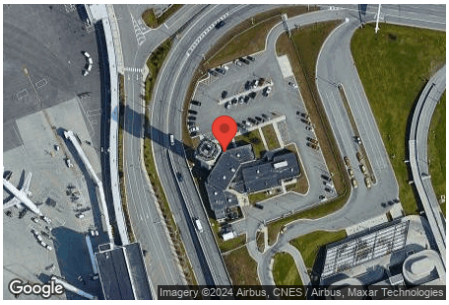
Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	61.169872	-149.980288	95.02	50.00	145.02
2-mile point	61.169882	-150.040317	99.31	599.14	698.45



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
1-ATCT	61.176783	-149.982777	88.74	100.00	188.74

1-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	
Site A	56.0	194.0	22	0	-	-
Site B	56.0	194.0	315	0	-	-
Site C	56.0	193.0	330	0	-	-
Site D	56.0	194.0	1,913	0	-	-
Site E	56.0	194.0	1,288	0	-	-
Site F	56.0	194.0	1,282	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
site-a (green)	0	1	11	0	0	0	0	0	0	10	0	0
site-a (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
site-b (green)	0	12	145	0	0	0	0	0	0	158	0	0
site-b (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
site-c (green)	0	2	166	0	0	0	0	0	13	149	0	0
site-c (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
site-d (green)	0	0	794	3	0	0	0	0	595	202	0	0
site-d (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
site-e (green)	0	0	525	8	0	0	0	0	498	35	0	0
site-e (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
site-f (green)	0	0	514	10	0	0	0	0	476	52	0	0
site-f (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

Site A low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: 15-33	0	0
FP: 25L-7R	22	0
FP: 25R-7L	0	0
OP: 1-ATCT	0	0

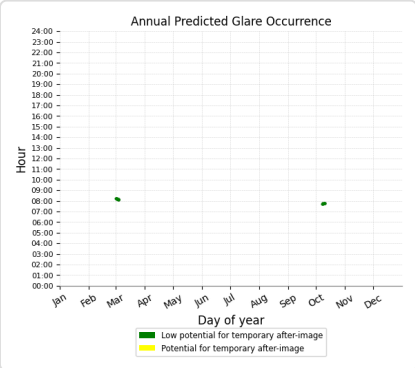
Site A: 15-33

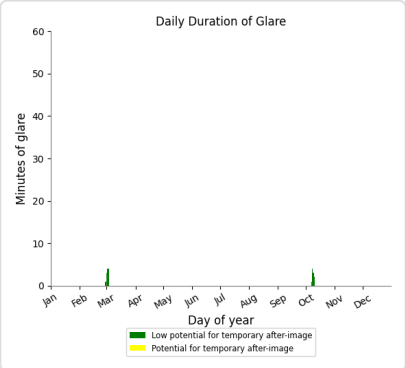
No glare found

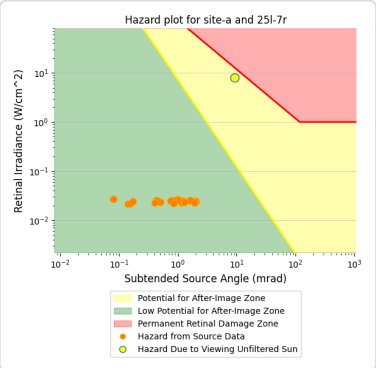
Site A: 25L-7R

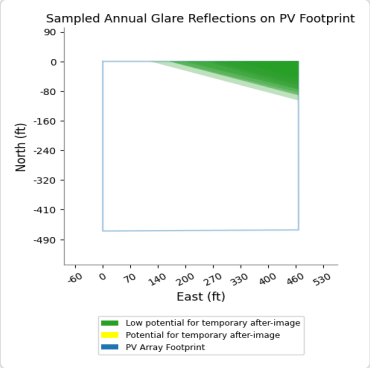
PV array is expected to produce the following glare for this receptor:

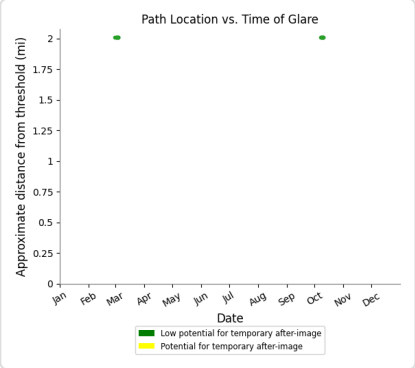
- 22 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

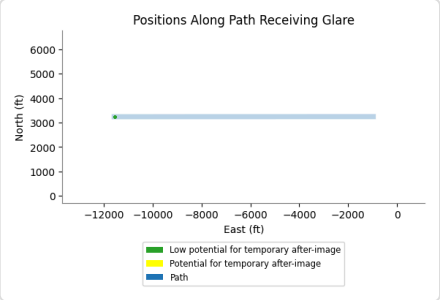












Site A: 25R-7L

No glare found

Site A: 1-ATCT

No glare found

Site B low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: 15-33	0	0
FP: 25L-7R	315	0
FP: 25R-7L	0	0
OP: 1-ATCT	0	0

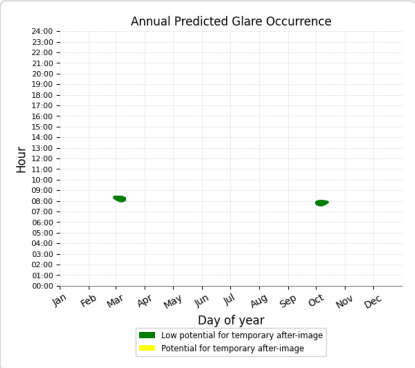
Site B: 15-33

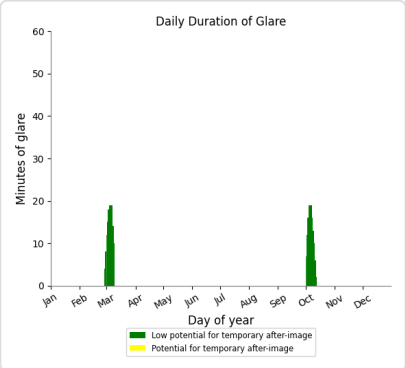
No glare found

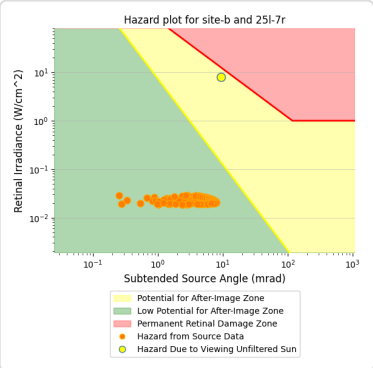
Site B: 25L-7R

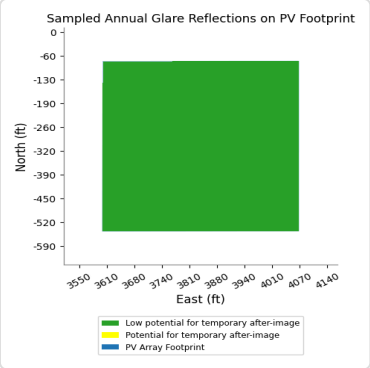
PV array is expected to produce the following glare for this receptor:

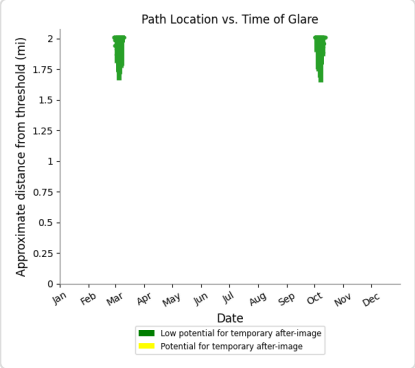
- 315 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

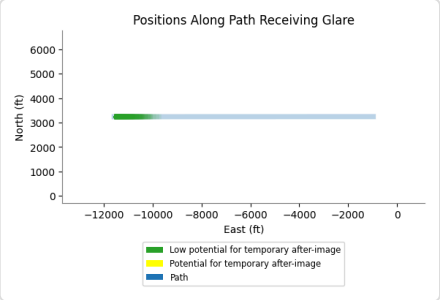












Site B: 25R-7L

No glare found

Site B: 1-ATCT

No glare found

Site C low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: 15-33	0	0
FP: 25L-7R	330	0
FP: 25R-7L	0	0
OP: 1-ATCT	0	0

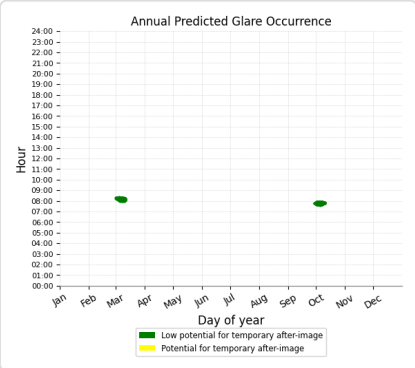
Site C: 15-33

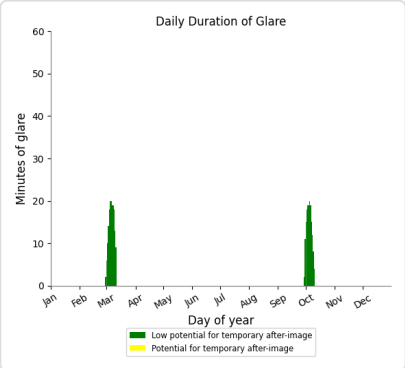
No glare found

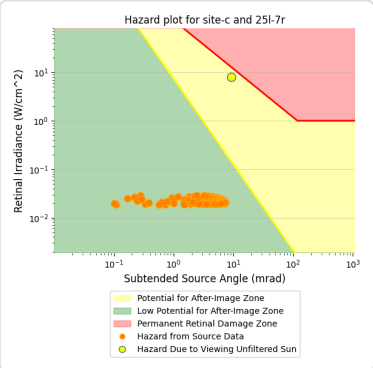
Site C: 25L-7R

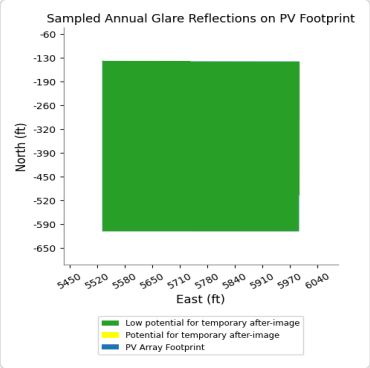
PV array is expected to produce the following glare for this receptor:

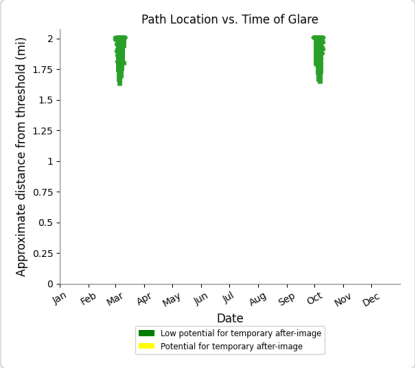
- 330 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

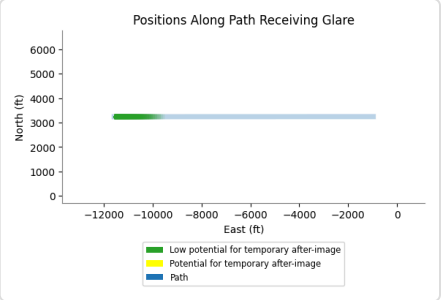












Site C: 25R-7L

No glare found

Site C: 1-ATCT

No glare found

Site D low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: 15-33	0	0
FP: 25L-7R	626	0
FP: 25R-7L	1287	0
OP: 1-ATCT	0	0

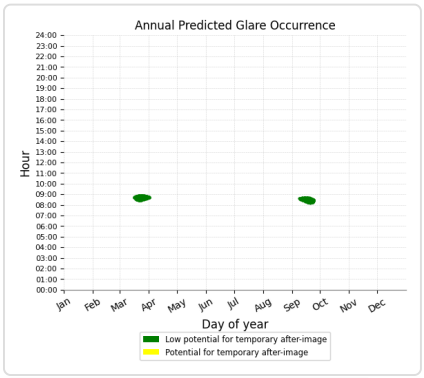
Site D: 15-33

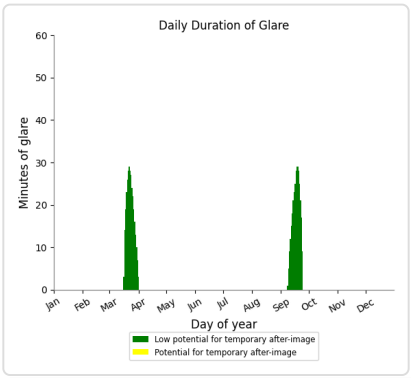
No glare found

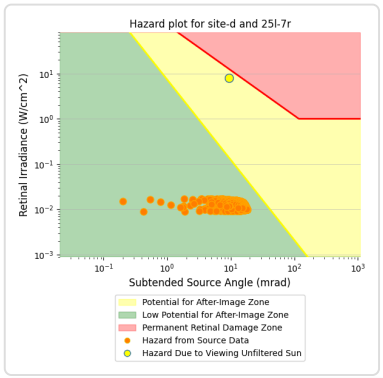
Site D: 25L-7R

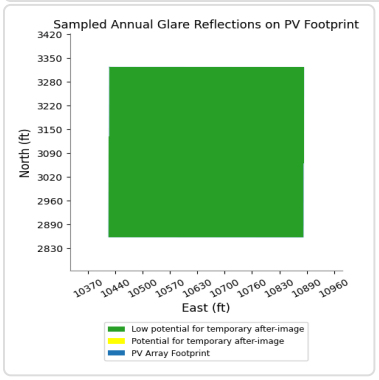
PV array is expected to produce the following glare for this receptor:

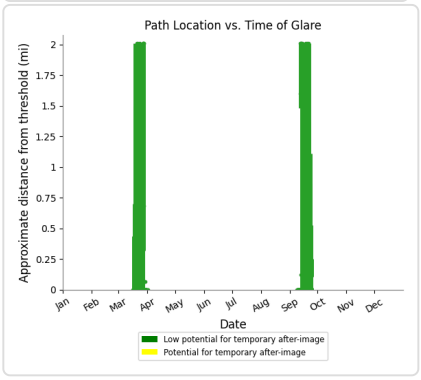
- 626 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

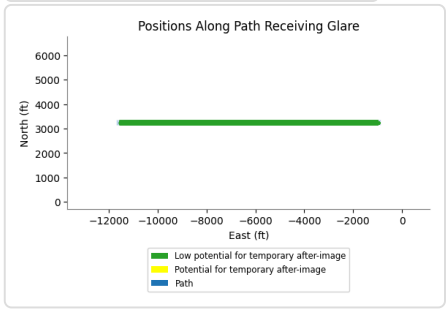








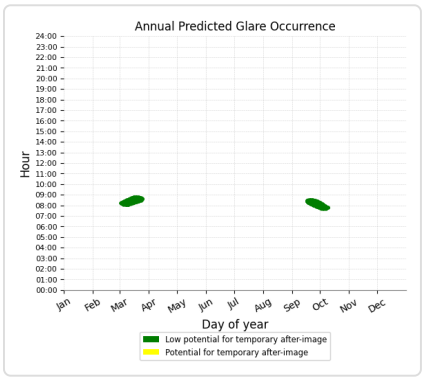


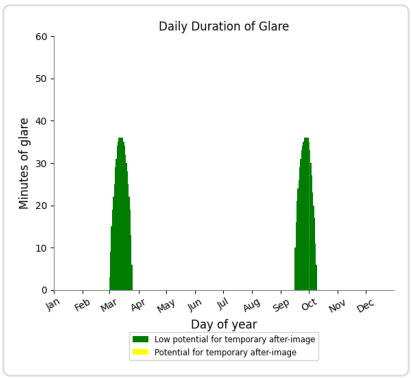


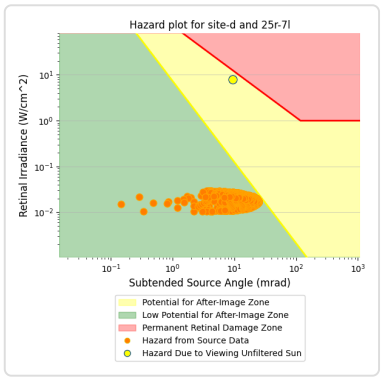
Site D: 25R-7L

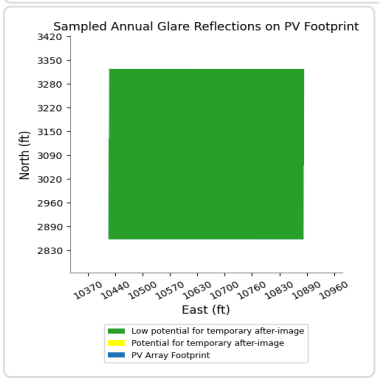
PV array is expected to produce the following glare for this receptor:

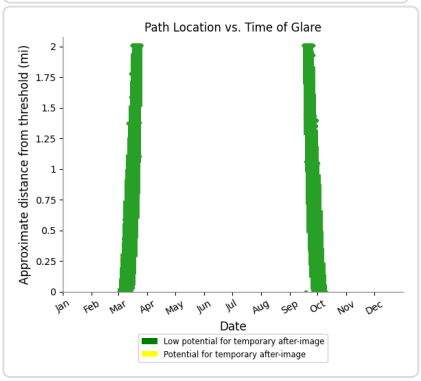
- 1,287 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

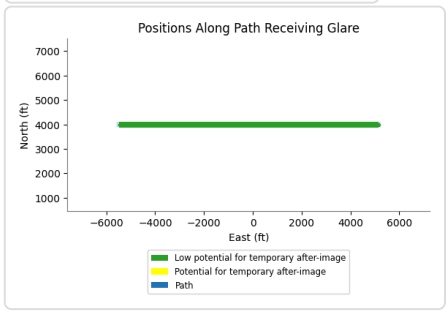












Site D: 1-ATCT

No glare found

Site E low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: 15-33	0	0
FP: 25L-7R	516	0
FP: 25R-7L	772	0
OP: 1-ATCT	0	0

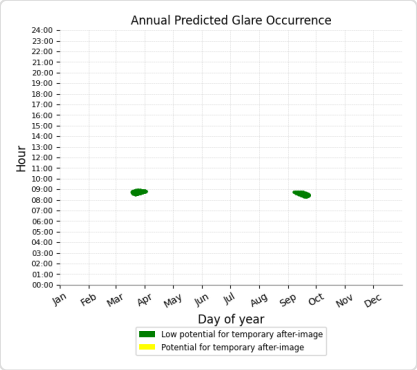
Site E: 15-33

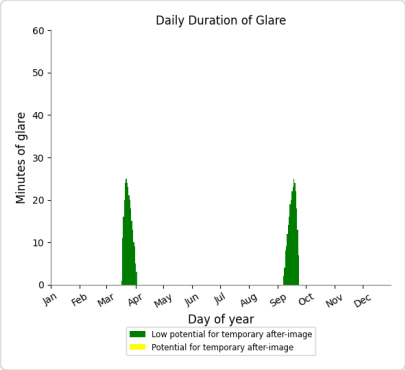
No glare found

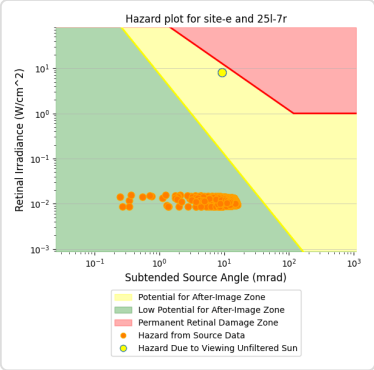
Site E: 25L-7R

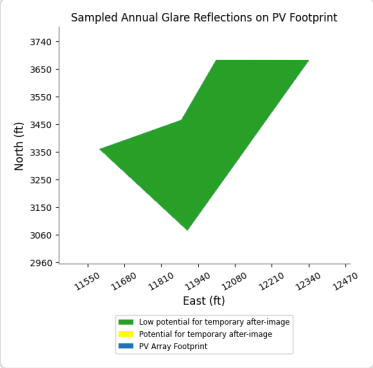
PV array is expected to produce the following glare for this receptor:

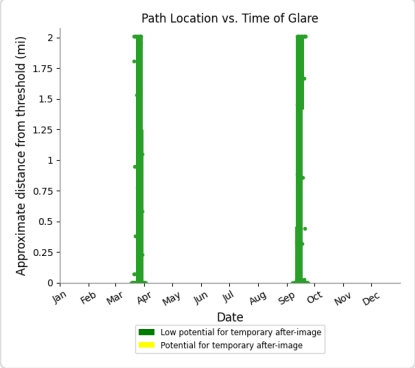
- 516 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

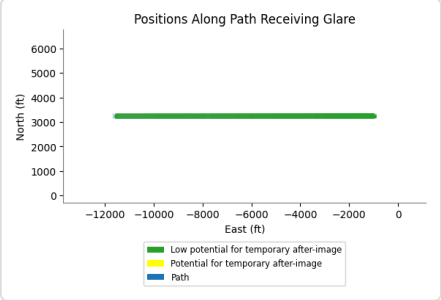








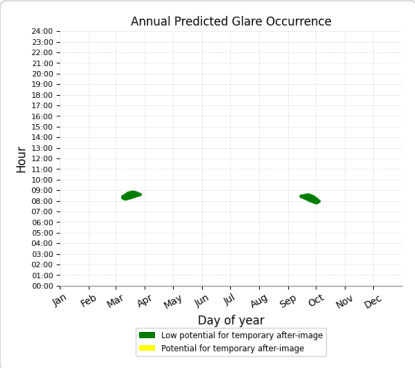


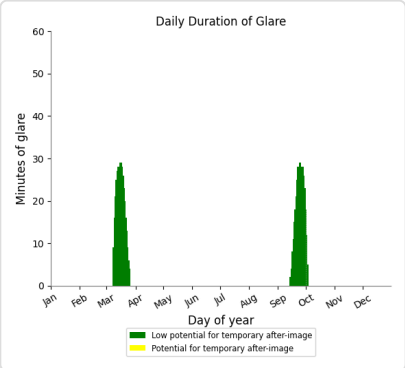


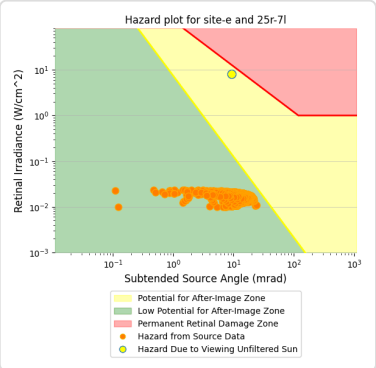
Site E: 25R-7L

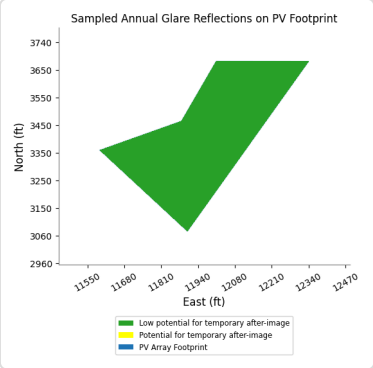
PV array is expected to produce the following glare for this receptor:

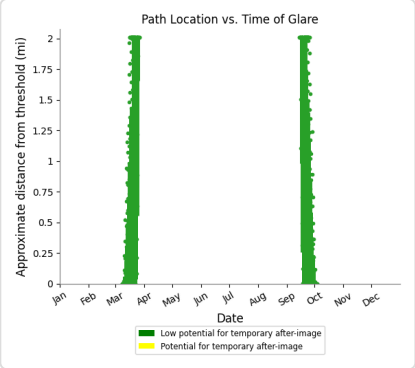
- 772 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

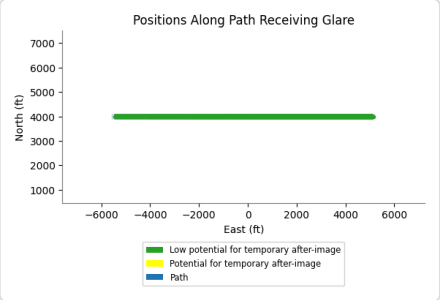












Site E: 1-ATCT

No glare found

Site F low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: 15-33	0	0
FP: 25L-7R	534	0
FP: 25R-7L	748	0
OP: 1-ATCT	0	0

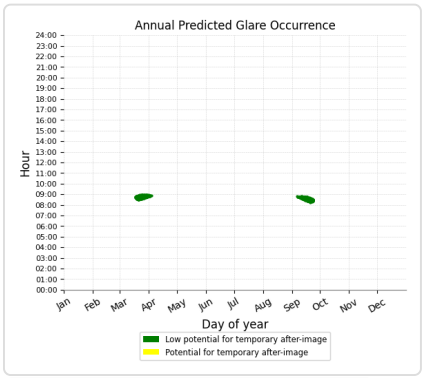
Site F: 15-33

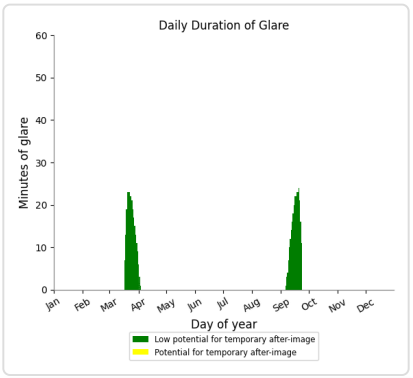
No glare found

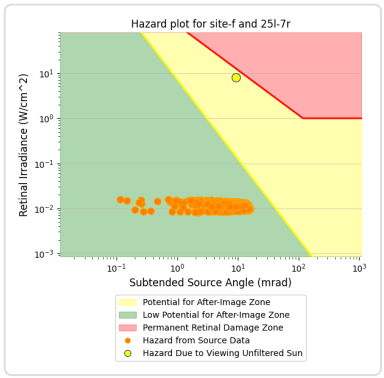
Site F: 25L-7R

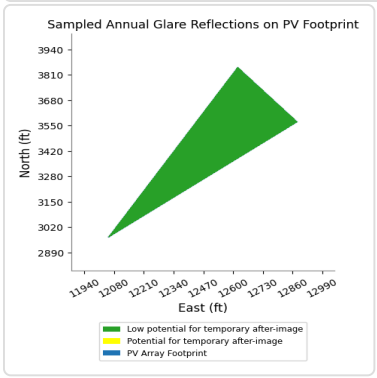
PV array is expected to produce the following glare for this receptor:

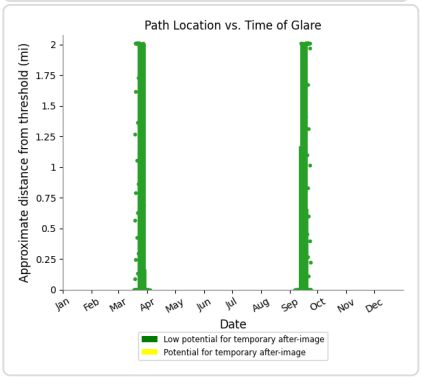
- 534 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

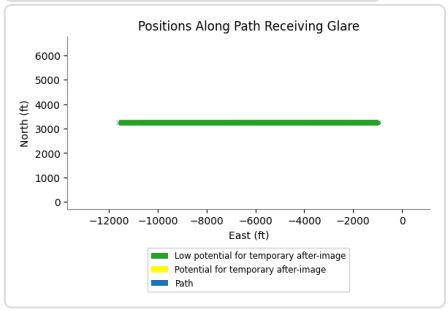








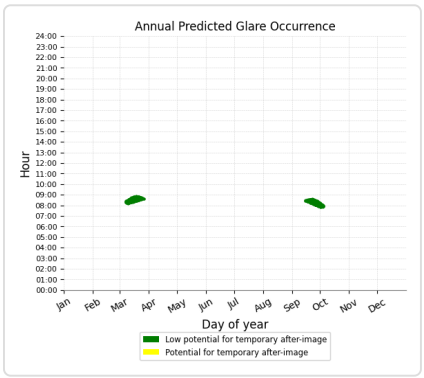


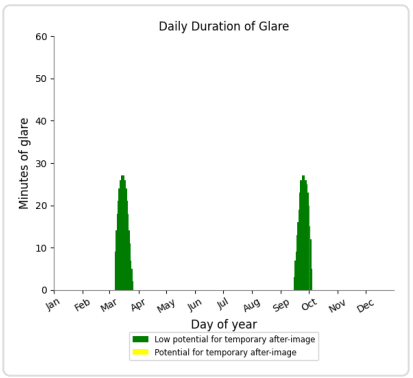


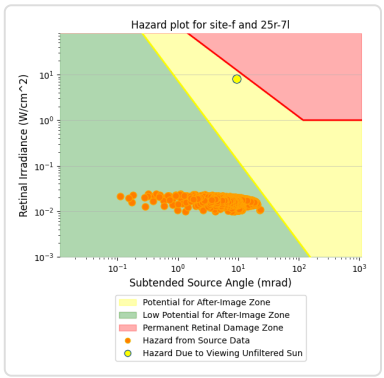
Site F: 25R-7L

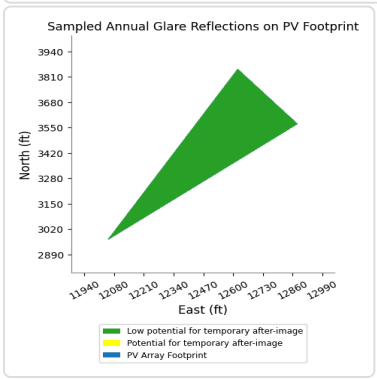
PV array is expected to produce the following glare for this receptor:

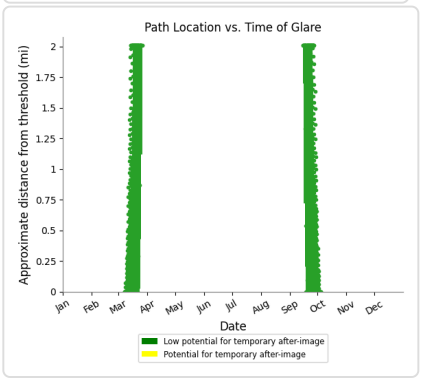
- 748 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.

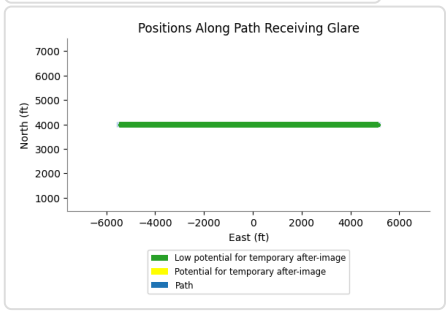












Site F: 1-ATCT

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 geographi 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 larg 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, nc 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.