ForgeSolar

Dixon Run

Dixon Run R85

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59133.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:
- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
85	15.0	180.0	757	499	-

Component Data

PV Array(s)

Total PV footprint area: 1.6 acres

Name: 85
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.6 acres
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	38.991106	-82.532793	813.20	9.50	822.70
2	38.991191	-82.532441	813.57	9.50	823.07
3	38.990642	-82.530606	805.52	9.50	815.02
4	38.990641	-82.532793	807.70	9.50	817.20

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 85	38.989457	-82.538638	751.87	5.60	757.47

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	
85	15.0	180.0	757	499	-	

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
85 (green)	0	0	0	186	191	0	80	300	0	0	0	0
85 (yellow)	0	0	0	5	245	0	179	70	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

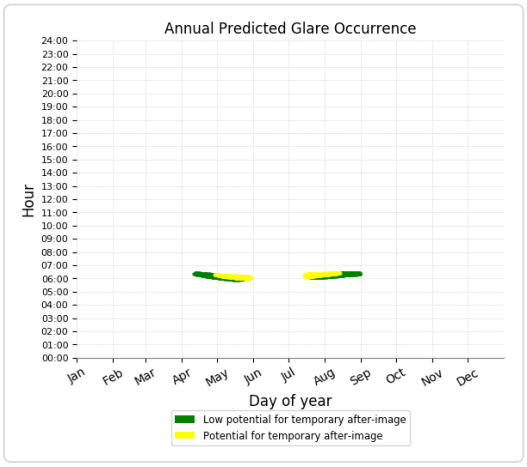
85 potential temporary after-image

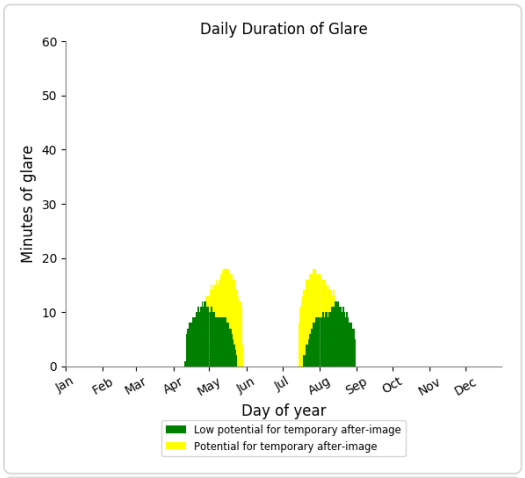
Component	Green glare (min)	Yellow glare (min)
OP: OP 85	757	499

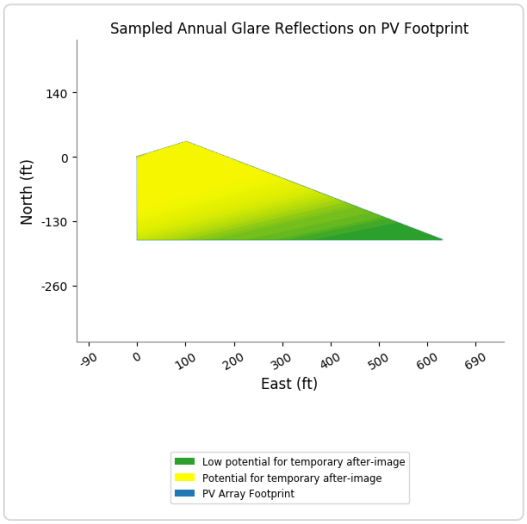
85 - OP Receptor (OP 85)

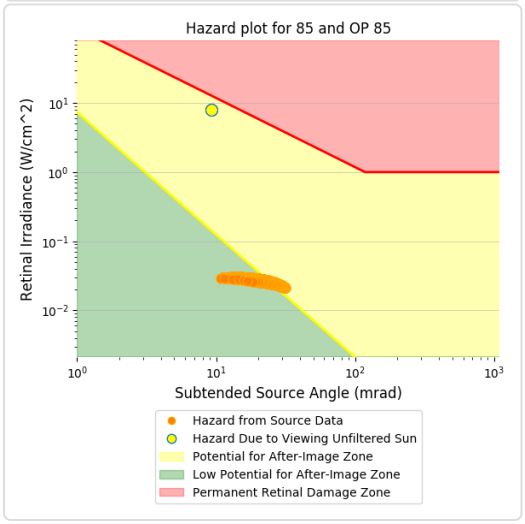
PV array is expected to produce the following glare for receptors at this location:

- 757 minutes of "green" glare with low potential to cause temporary after-image.
- 499 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R86

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59134.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
86	15.0	180.0	743	125	-

Component Data

PV Array(s)

Total PV footprint area: 1.6 acres

Name: 86
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.6 acres
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	38.991106	-82.532793	813.20	9.50	822.70
2	38.991191	-82.532441	813.57	9.50	823.07
3	38.990642	-82.530606	805.52	9.50	815.02
4	38.990641	-82.532793	807.70	9.50	817.20

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 86	38.989532	-82.539240	758.86	5.60	764.46

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	
86	15.0	180.0	743	125	-	

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
86 (green)	0	0	0	211	161	0	23	332	16	0	0	0
86 (yellow)	0	0	0	0	62	0	30	33	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

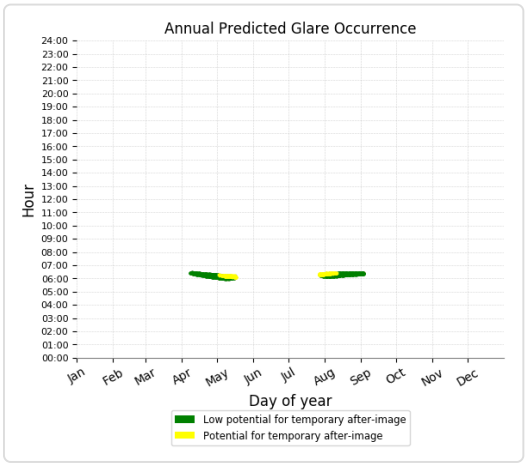
86 potential temporary after-image

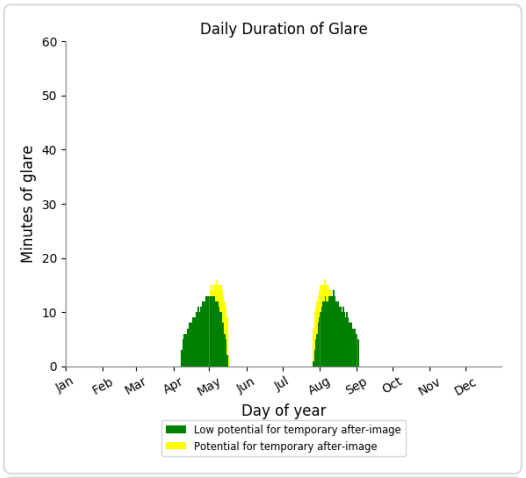
Component	Green glare (min)	Yellow glare (min)
OP: OP 86	743	125

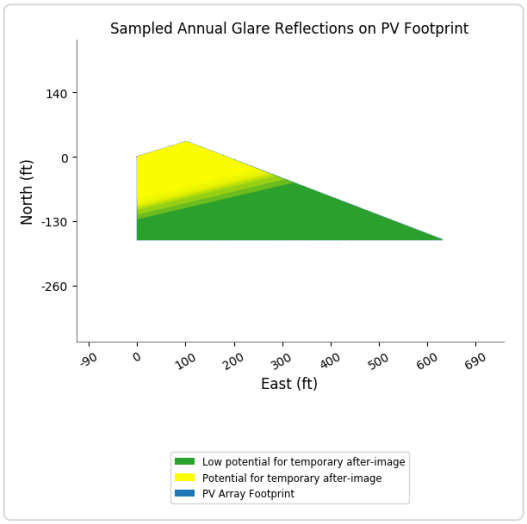
86 - OP Receptor (OP 86)

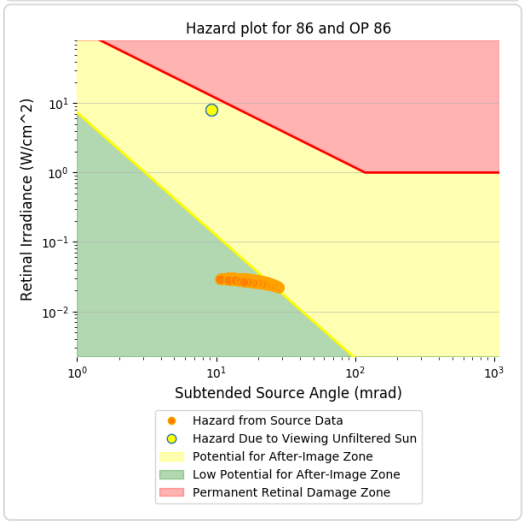
PV array is expected to produce the following glare for receptors at this location:

- 743 minutes of "green" glare with low potential to cause temporary after-image.
- 125 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R87

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59135.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:
- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
87	15.0	180.0	602	60	-

Component Data

PV Array(s)

Total PV footprint area: 1.6 acres

Name: 87
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.6 acres
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	38.991106	-82.532793	813.20	9.50	822.70
2	38.991191	-82.532441	813.57	9.50	823.07
3	38.990642	-82.530606	805.52	9.50	815.02
4	38.990641	-82.532793	807.70	9.50	817.20

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 87	38.989746	-82.539221	763.91	5.60	769.51

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	
87	15.0	180.0	602	60	-	

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
87 (green)	0	0	0	228	75	0	0	265	34	0	0	0
87 (yellow)	0	0	0	2	26	0	0	32	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

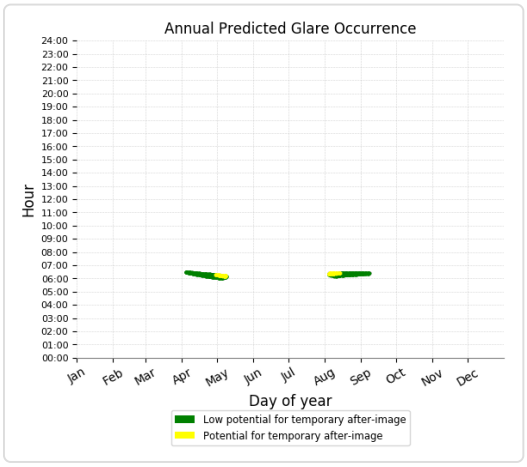
87 potential temporary after-image

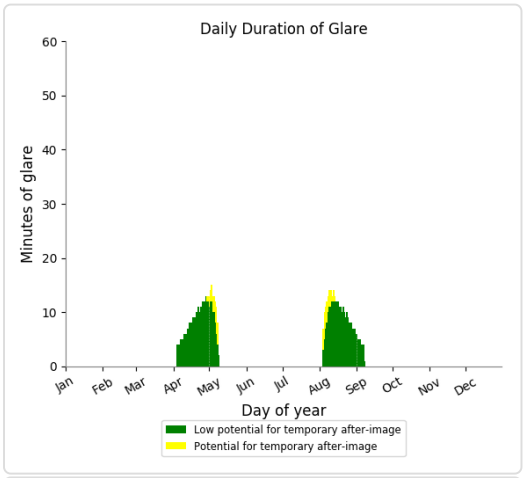
Component	Green glare (min)	Yellow glare (min)
OP: OP 87	602	60

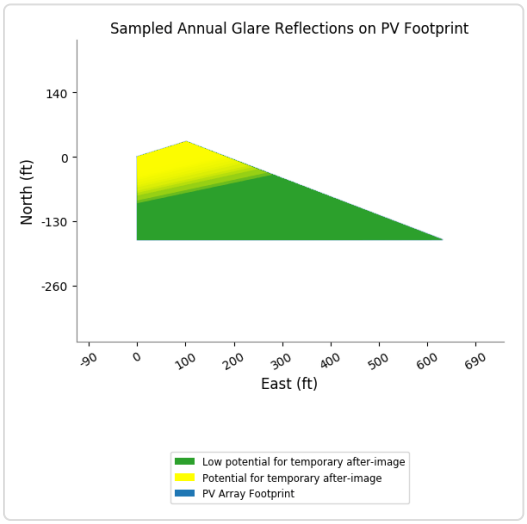
87 - OP Receptor (OP 87)

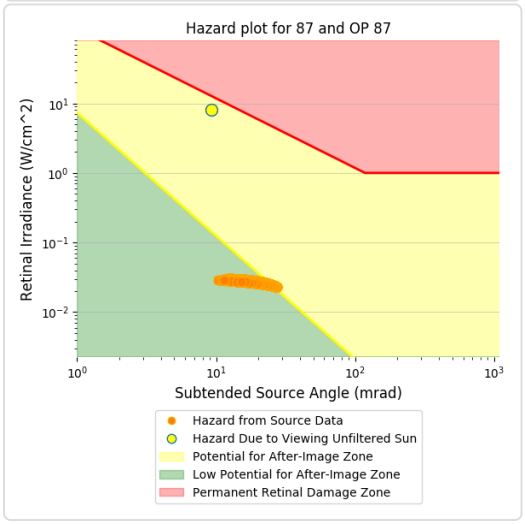
PV array is expected to produce the following glare for receptors at this location:

- 602 minutes of "green" glare with low potential to cause temporary after-image.
- 60 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R142

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59136.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
142	15.0	180.0	0	1,874	-

Component Data

PV Array(s)

Total PV footprint area: 16.3 acres

Name: 142
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 16.3 acres
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	38.990641	-82.532793	807.94	9.50	817.44
2	38.988492	-82.530708	777.11	9.50	786.61
3	38.988047	-82.530708	768.48	9.50	777.98
4	38.988031	-82.529628	765.35	9.50	774.85
5	38.987903	-82.529596	757.56	9.50	767.06
6	38.987887	-82.529259	771.54	9.50	781.05
7	38.987759	-82.529227	765.39	9.50	774.89
8	38.987759	-82.528671	772.79	9.50	782.29
9	38.988149	-82.527281	783.21	9.50	792.71
10	38.989602	-82.528491	808.96	9.50	818.47
11	38.989602	-82.528793	804.01	9.50	813.52

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 142	38.986290	-82.534553	732.30	5.60	737.90

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	
142	15.0	180.0	0	1,874	-	

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
142 (green)	0	0	0	0	0	0	0	0	0	0	0	0
142 (yellow)	0	0	0	0	532	587	586	169	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

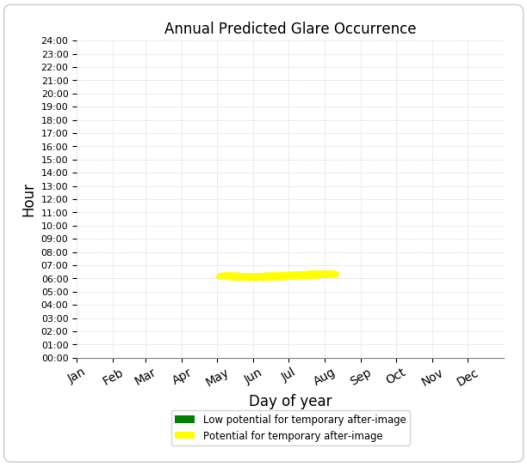
142 potential temporary after-image

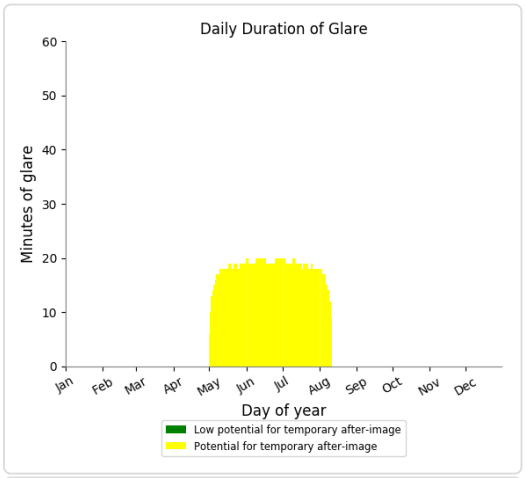
Component	Green glare (min)	Yellow glare (min)
OP: OP 142	0	1874

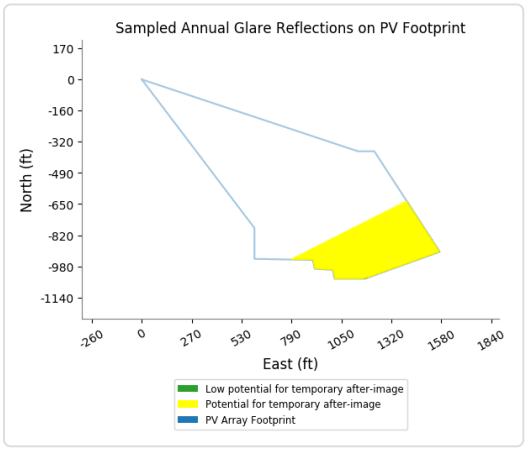
142 - OP Receptor (OP 142)

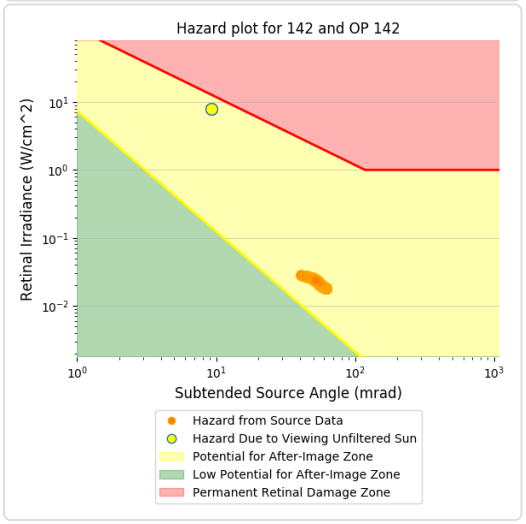
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,874 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R143

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59137.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
143a	15.0	180.0	1,120	0	-
143b	15.0	180.0	0	1,285	-
143c	15.0	180.0	0	0	-

Component Data

PV Array(s)

Total PV footprint area: 8.0 acres

Name: 143a
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 0.27 acre
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	38.987449	-82.527371	761.14	9.50	770.64
2	38.987537	-82.527009	754.54	9.50	764.04
3	38.987756	-82.527145	768.43	9.50	777.93
4	38.987546	-82.527876	766.62	9.50	776.12
5	38.987522	-82.527394	765.26	9.50	774.76

Name: 143b
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 3.3 acres
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	38.988031	-82.529628	765.35	9.50	774.85
2	38.987903	-82.529596	757.56	9.50	767.06
3	38.987887	-82.529259	771.54	9.50	781.05
4	38.987759	-82.529227	765.39	9.50	774.89
5	38.987759	-82.528671	772.79	9.50	782.29
6	38.987751	-82.528530	771.37	9.50	780.87
7	38.987672	-82.528482	767.37	9.50	776.87
8	38.988031	-82.527234	779.28	9.50	788.78
9	38.988796	-82.527861	807.68	9.50	817.18

Name: 143c
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 4.5 acres
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	38.988042	-82.530351	771.03	9.50	780.53
2	38.988999	-82.528259	809.22	9.50	818.73
3	38.989602	-82.528962	797.33	9.50	806.83
4	38.989247	-82.529651	784.85	9.50	794.35
5	38.989079	-82.530338	769.52	9.50	779.02
6	38.988906	-82.530359	777.06	9.50	786.56
7	38.988880	-82.530708	764.22	9.50	773.72
8	38.988047	-82.530708	768.48	9.50	777.98

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 143	38.985601	-82.534865	720.01	5.60	725.61

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	
143a	15.0	180.0	1,120	0	-	
143b	15.0	180.0	0	1,285	-	
143c	15.0	180.0	0	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
143a (green)	0	0	0	0	560	0	335	225	0	0	0	0
143a (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
143b (green)	0	0	0	0	0	0	0	0	0	0	0	0
143b (yellow)	0	0	0	0	233	593	459	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

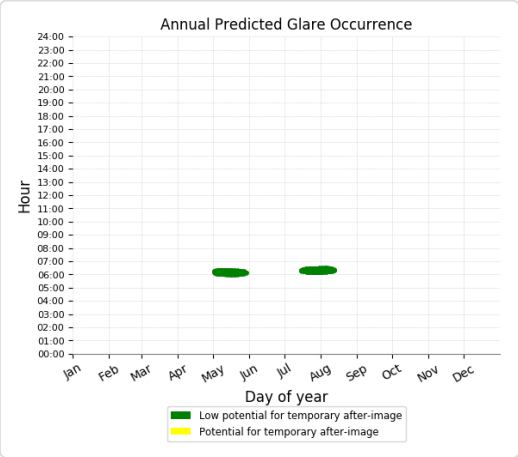
143a low potential for temporary after-image

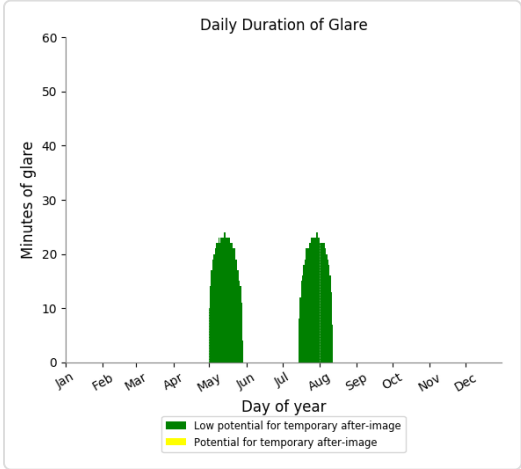
Component	Green glare (min)	Yellow glare (min)
OP: OP 143	1120	0

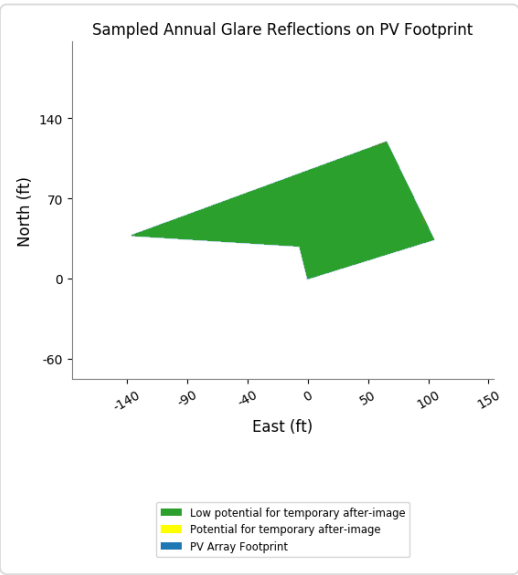
143a - OP Receptor (OP 143)

PV array is expected to produce the following glare for receptors at this location:

- 1,120 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







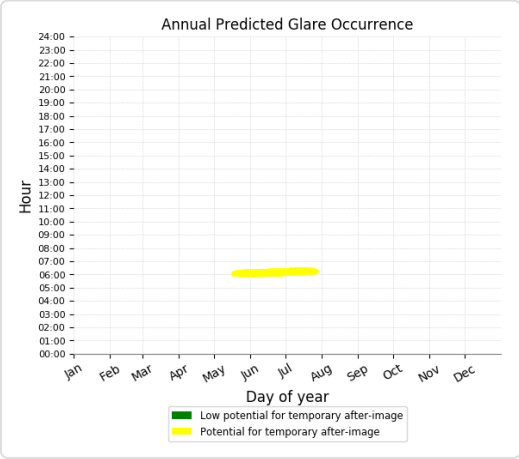
143b potential temporary after-image

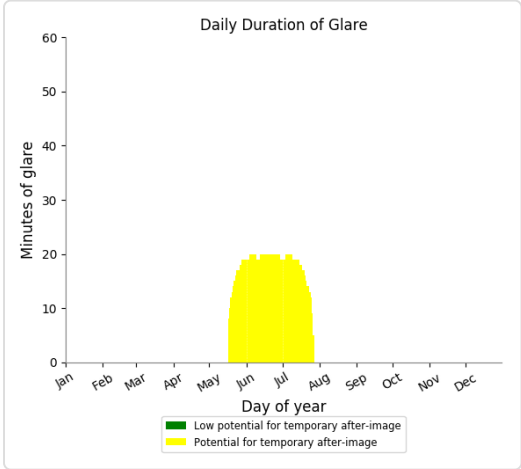
Component	Green glare (min)	Yellow glare (min)
OP: OP 143	0	1285

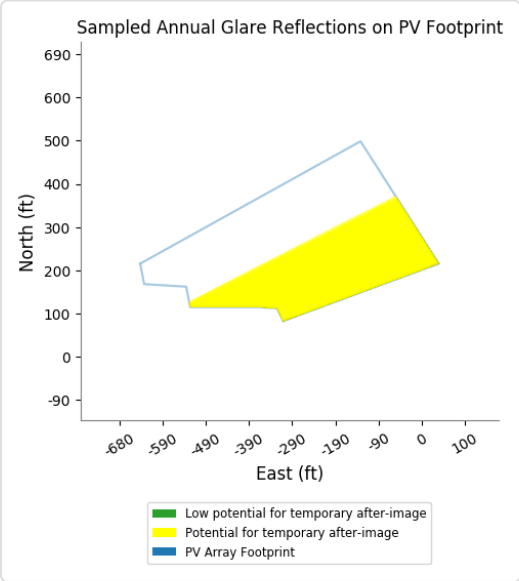
143b - OP Receptor (OP 143)

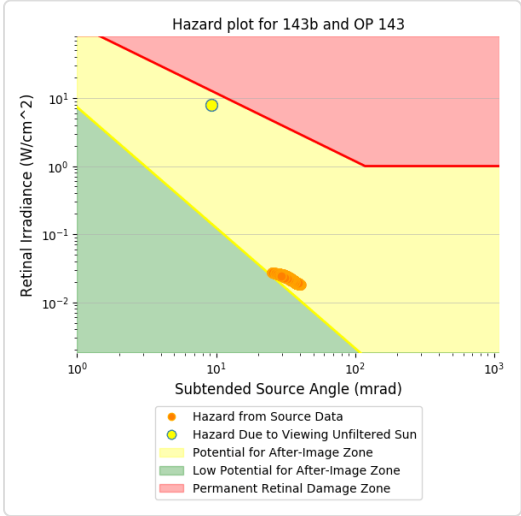
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,285 minutes of "yellow" glare with potential to cause temporary after-image.









143c no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 143	0	0

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R144

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59138.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:
- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
144	15.0	180.0	1,220	254	-

Component Data

PV Array(s)

Total PV footprint area: 1.3 acres

Name: 144
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.3 acres
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	38.988730	-82.527793	806.34	9.50	815.84
2	38.988031	-82.529628	765.35	9.50	774.85
3	38.987903	-82.529596	757.56	9.50	767.06
4	38.987887	-82.529259	771.54	9.50	781.05
5	38.988484	-82.527596	794.10	9.50	803.60

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 144	38.985905	-82.535267	727.63	5.60	733.23

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	
144	15.0	180.0	1,220	254	-	

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
144 (green)	0	0	0	0	173	636	411	0	0	0	0	0
144 (yellow)	0	0	0	0	43	120	91	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

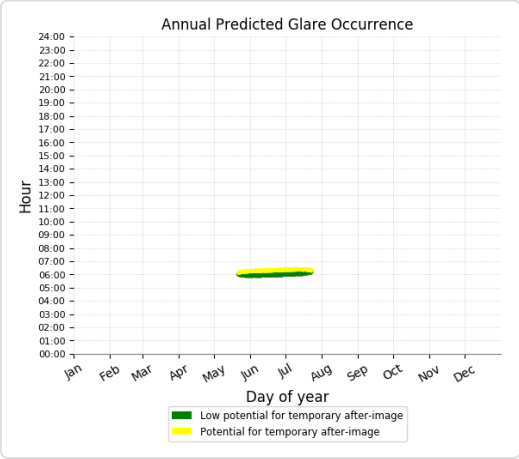
144 potential temporary after-image

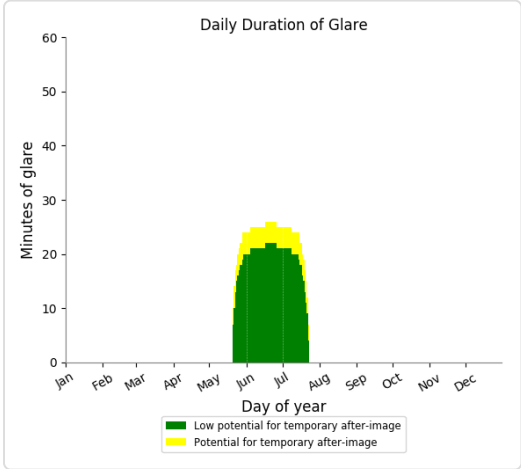
Component	Green glare (min)	Yellow glare (min)
OP: OP 144	1220	254

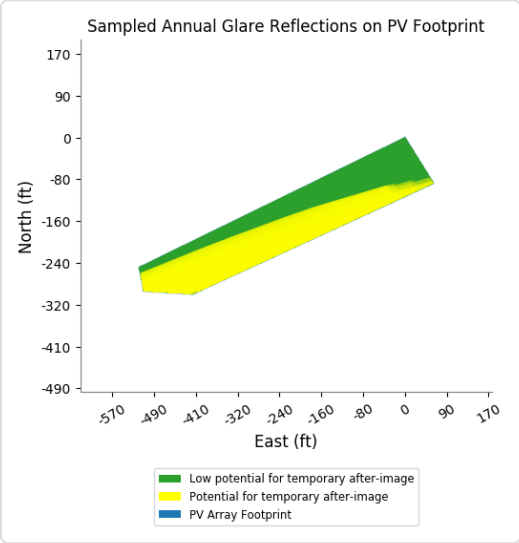
144 - OP Receptor (OP 144)

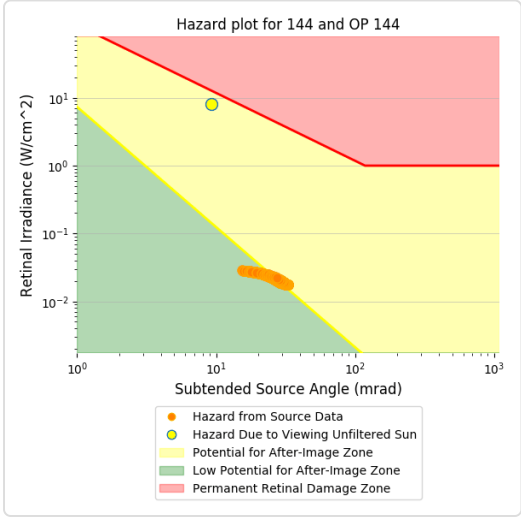
PV array is expected to produce the following glare for receptors at this location:

- 1,220 minutes of "green" glare with low potential to cause temporary after-image.
- 254 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R145

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59139.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:
- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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

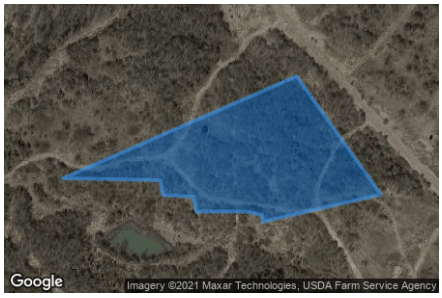
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
145	15.0	180.0	0	1,792	-

Component Data

PV Array(s)

Total PV footprint area: 4.8 acres

Name: 145
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 4.8 acres
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	38.988932	-82.528113	809.17	9.50	818.67
2	38.987907	-82.527177	773.87	9.50	783.37
3	38.987672	-82.528482	767.37	9.50	776.87
4	38.987731	-82.528501	770.69	9.50	780.19
5	38.987759	-82.528671	772.79	9.50	782.29
6	38.987759	-82.529227	765.39	9.50	774.89
7	38.987887	-82.529259	771.54	9.50	781.05
8	38.987903	-82.529596	757.56	9.50	767.06
9	38.988031	-82.529628	765.35	9.50	774.85
10	38.988047	-82.530708	768.48	9.50	777.98

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 145	38.986135	-82.535940	736.86	5.60	742.46

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	
145	15.0	180.0	0	1,792	-	

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
145 (green)	0	0	0	0	0	0	0	0	0	0	0	0
145 (yellow)	0	0	0	101	463	479	480	269	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

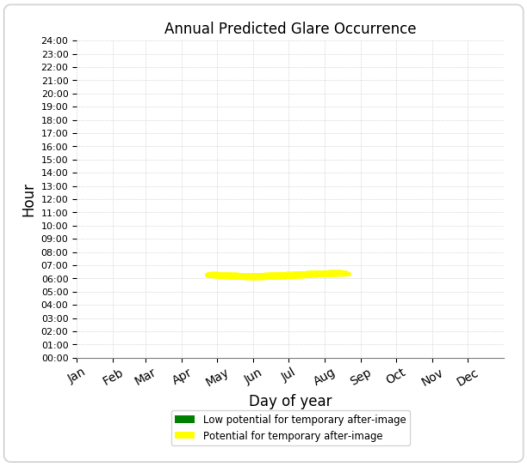
145 potential temporary after-image

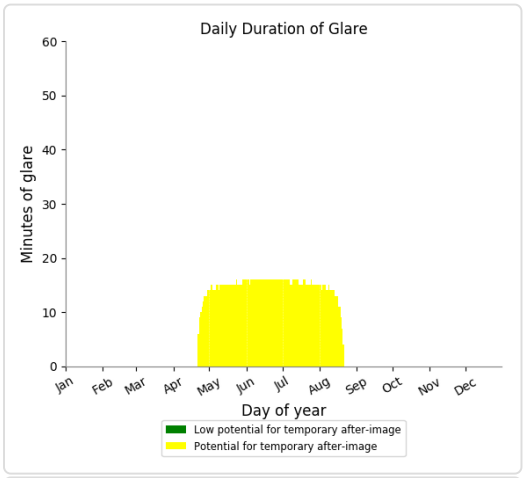
Component	Green glare (min)	Yellow glare (min)
OP: OP 145	0	1792

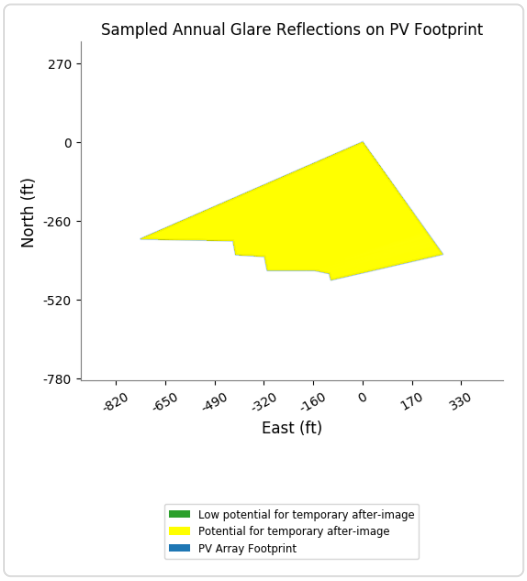
145 - OP Receptor (OP 145)

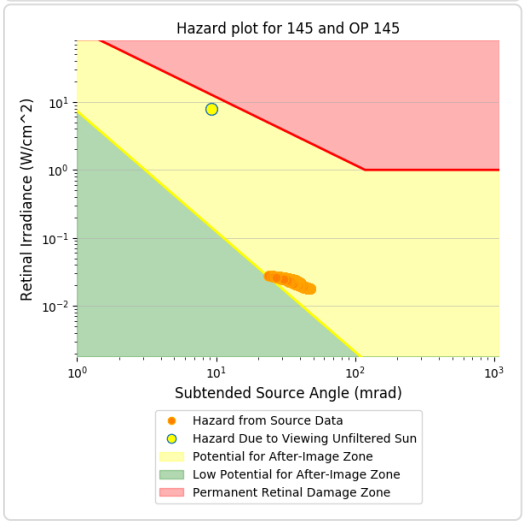
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,792 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R146

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59140.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
146a	15.0	180.0	802	0	-
146b	15.0	180.0	17	2,288	-
146c	15.0	180.0	319	0	-

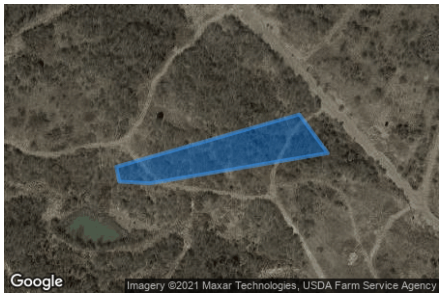
Component Data

PV Array(s)

Total PV footprint area: 7.8 acres

Name: 146a
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.5 acres
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	38.988031	-82.529628	765.35	9.50	774.85
2	38.987903	-82.529596	757.56	9.50	767.06
3	38.987887	-82.529259	771.54	9.50	781.05
4	38.988149	-82.527281	783.21	9.50	792.71
5	38.988484	-82.527596	794.10	9.50	803.60



Name: 146b
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 5.5 acres
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	38.988880	-82.530708	764.22	9.50	773.72
2	38.988126	-82.530708	772.29	9.50	781.79
3	38.988730	-82.527793	806.34	9.50	815.84
4	38.988891	-82.528072	808.70	9.50	818.20
5	38.989169	-82.528116	811.42	9.50	820.92
6	38.989193	-82.528468	809.29	9.50	818.79
7	38.989602	-82.528491	808.96	9.50	818.47
8	38.989602	-82.528962	797.33	9.50	806.83
9	38.989301	-82.529598	784.00	9.50	793.50
10	38.989079	-82.530338	769.52	9.50	779.02
11	38.988906	-82.530359	777.06	9.50	786.56

Name: 146c
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 0.85 acre
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	38.987463	-82.521829	777.82	9.50	787.32
2	38.987327	-82.524293	766.67	9.50	776.18
3	38.987420	-82.524274	767.42	9.50	776.92
4	38.987655	-82.522148	785.87	9.50	795.37

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 146	38.986467	-82.537565	757.12	5.60	762.72

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	
146a	15.0	180.0	802	0	-	
146b	15.0	180.0	17	2,288	-	
146c	15.0	180.0	319	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
146a (green)	0	0	0	295	105	0	0	402	0	0	0	0
146a (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
146b (green)	0	0	0	8	1	0	0	8	0	0	0	0
146b (yellow)	0	0	0	35	652	660	674	267	0	0	0	0
146c (green)	0	0	28	131	0	0	0	0	160	0	0	0
146c (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

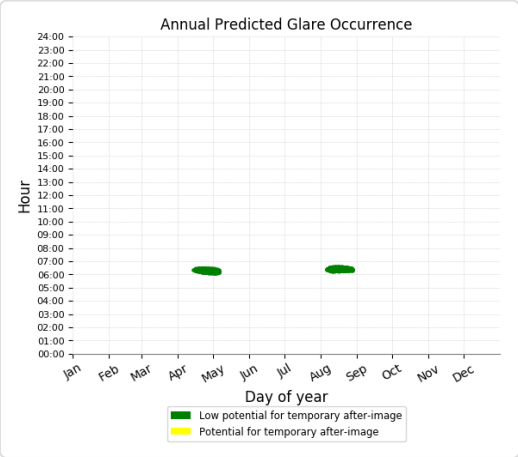
146a low potential for temporary after-image

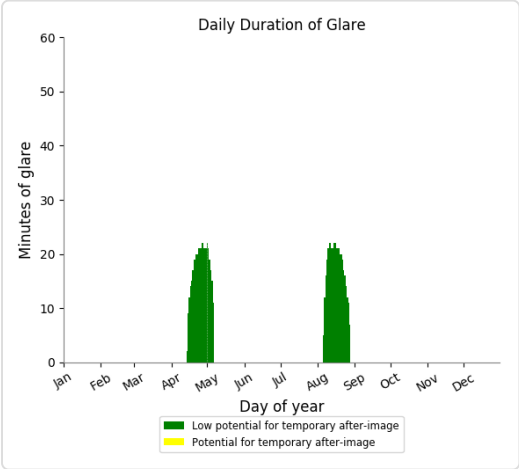
Component	Green glare (min)	Yellow glare (min)
OP: OP 146	802	0

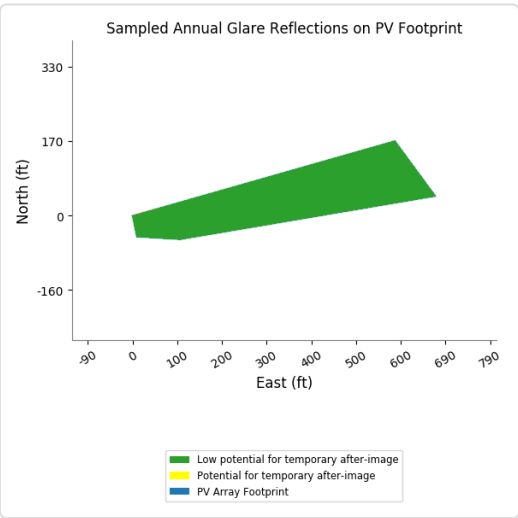
146a - OP Receptor (OP 146)

PV array is expected to produce the following glare for receptors at this location:

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







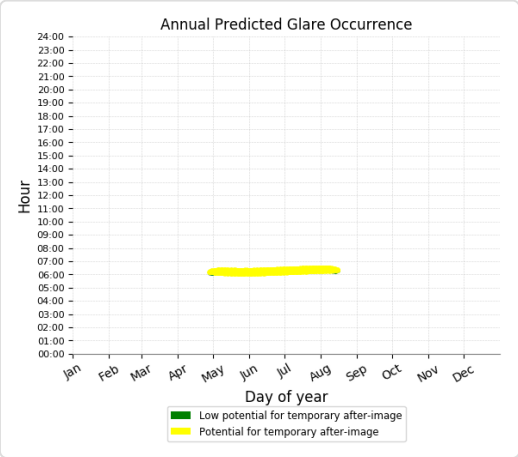
146b potential temporary after-image

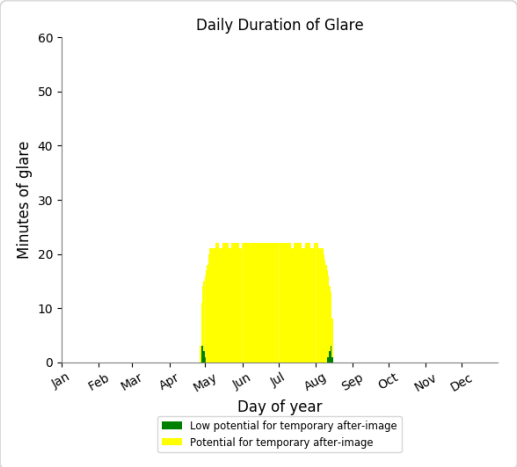
Component	Green glare (min)	Yellow glare (min)
OP: OP 146	17	2288

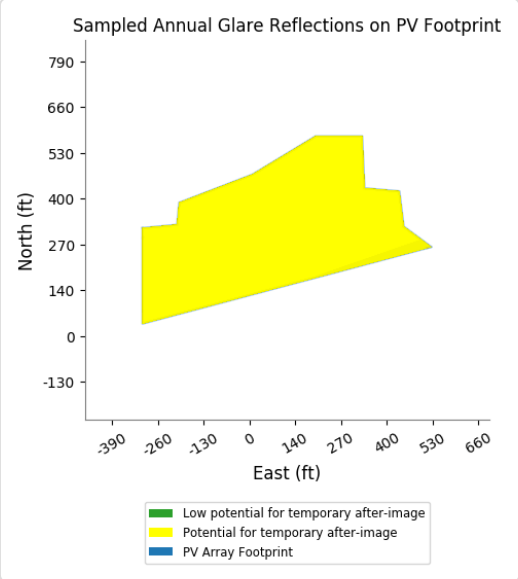
146b - OP Receptor (OP 146)

PV array is expected to produce the following glare for receptors at this location:

- 17 minutes of "green" glare with low potential to cause temporary after-image.
- 2,288 minutes of "yellow" glare with potential to cause temporary after-image.







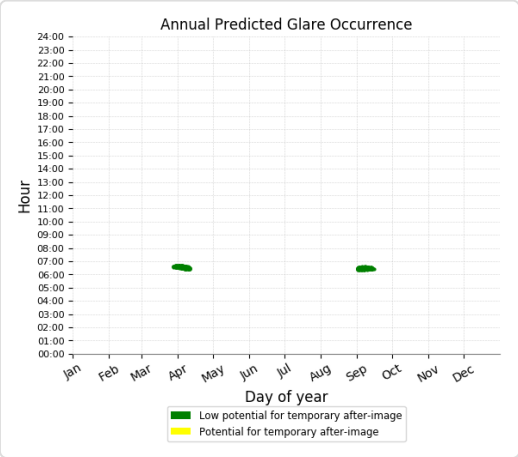
146c low potential for temporary after-image

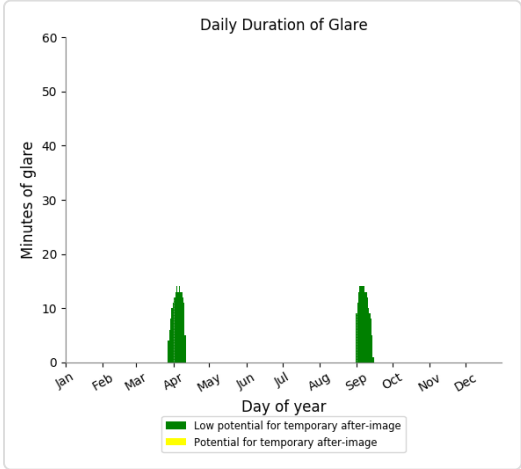
Component	Green glare (min)	Yellow glare (min)
OP: OP 146	319	0

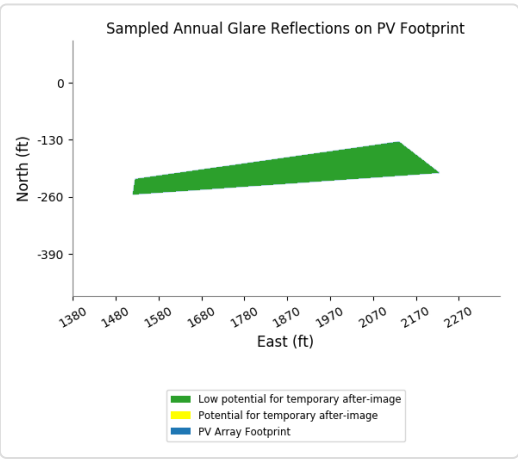
146c - OP Receptor (OP 146)

PV array is expected to produce the following glare for receptors at this location:

- 319 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R148

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59141.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
148	15.0	180.0	203	1,721	-

Component Data

PV Array(s)

Total PV footprint area: 6.1 acres

Name: 148
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 6.1 acres
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	38.988492	-82.530708	777.11	9.50	786.61
2	38.988047	-82.530708	768.48	9.50	777.98
3	38.988031	-82.529628	765.35	9.50	774.85
4	38.987903	-82.529596	757.56	9.50	767.06
5	38.987887	-82.529259	771.54	9.50	781.05
6	38.988149	-82.527281	783.21	9.50	792.71
7	38.989169	-82.528116	811.42	9.50	820.92

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 148	38.986550	-82.538001	764.58	5.60	770.18

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	
148	15.0	180.0	203	1,721	-	

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
148 (green)	0	0	0	64	36	0	4	99	0	0	0	0
148 (yellow)	0	0	0	312	551	0	271	587	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

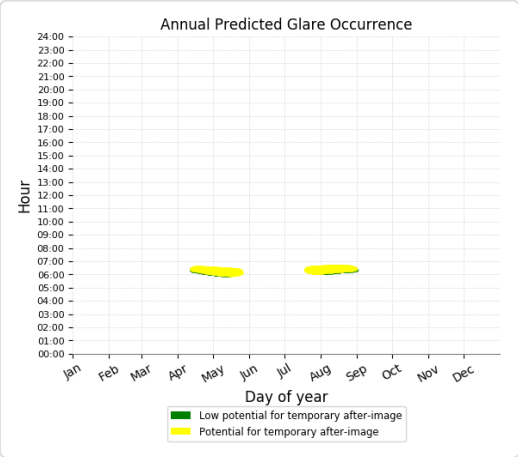
148 potential temporary after-image

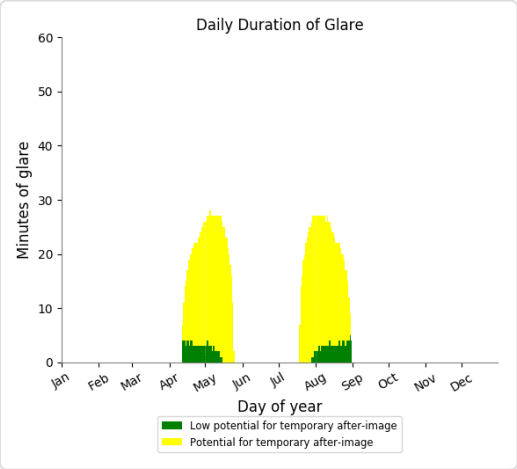
Component	Green glare (min)	Yellow glare (min)
OP: OP 148	203	1721

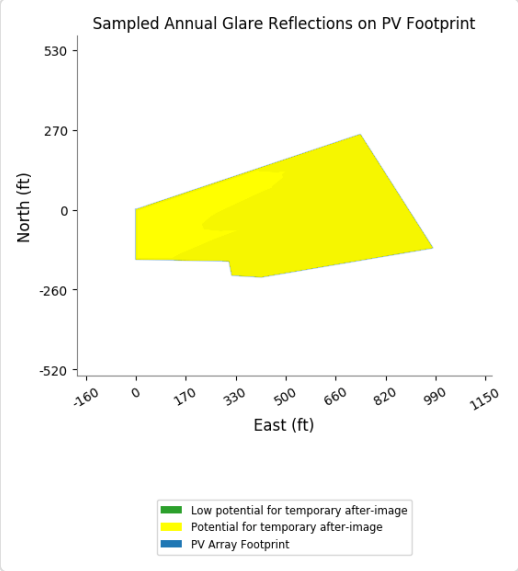
148 - OP Receptor (OP 148)

PV array is expected to produce the following glare for receptors at this location:

- 203 minutes of "green" glare with low potential to cause temporary after-image.
- 1,721 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R151

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59142.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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

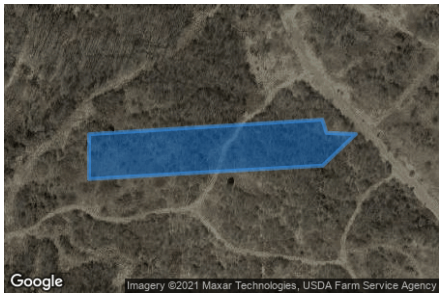
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
151	15.0	180.0	369	109	-

Component Data

PV Array(s)

Total PV footprint area: 2.5 acres

Name: 151
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 2.5 acres
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	38.988880	-82.530708	764.22	9.50	773.72
2	38.988492	-82.530708	777.11	9.50	786.61
3	38.988608	-82.528115	805.16	9.50	814.66
4	38.988881	-82.527747	807.13	9.50	816.63
5	38.988891	-82.528072	808.70	9.50	818.20
6	38.989006	-82.528118	810.12	9.50	819.62

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 151	38.988378	-82.537721	765.91	5.60	771.52

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	
151	15.0	180.0	369	109	-	

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
151 (green)	0	0	93	90	0	0	0	0	186	0	0	0
151 (yellow)	0	0	17	40	0	0	0	0	52	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

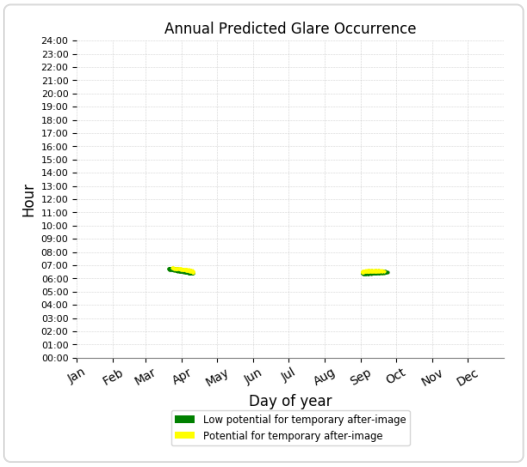
151 potential temporary after-image

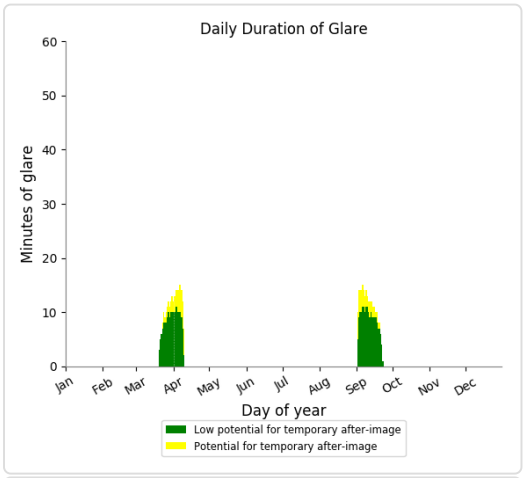
Component	Green glare (min)	Yellow glare (min)
OP: OP 151	369	109

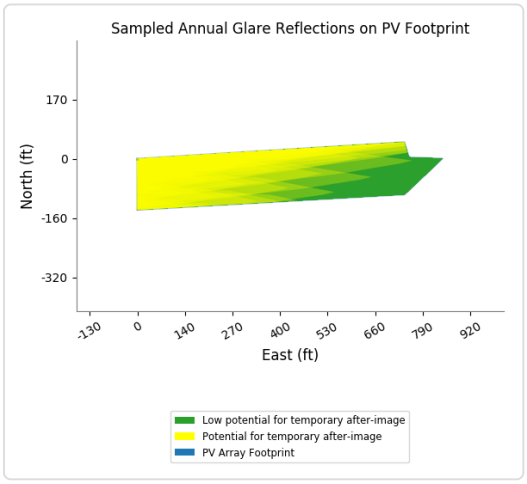
151 - OP Receptor (OP 151)

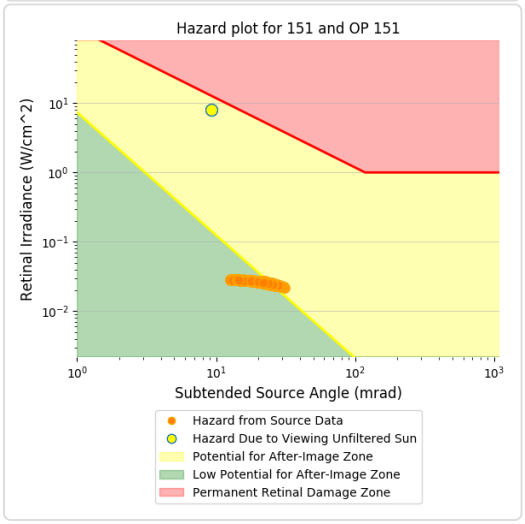
PV array is expected to produce the following glare for receptors at this location:

- 369 minutes of "green" glare with low potential to cause temporary after-image.
- 109 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R153

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59143.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:
- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
153	15.0	180.0	806	0	-

Component Data

PV Array(s)

Total PV footprint area: 0.44 acre

Name: 153
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 0.44 acre
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	38.989268	-82.529615	784.84	9.50	794.34
2	38.989471	-82.528491	809.20	9.50	818.70
3	38.989602	-82.528491	808.96	9.50	818.47
4	38.989468	-82.529597	775.14	9.50	784.64

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 153	38.987319	-82.538810	753.57	5.60	759.17

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	
153	15.0	180.0	806	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
153 (green)	0	0	0	135	267	0	31	373	0	0	0	0
153 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

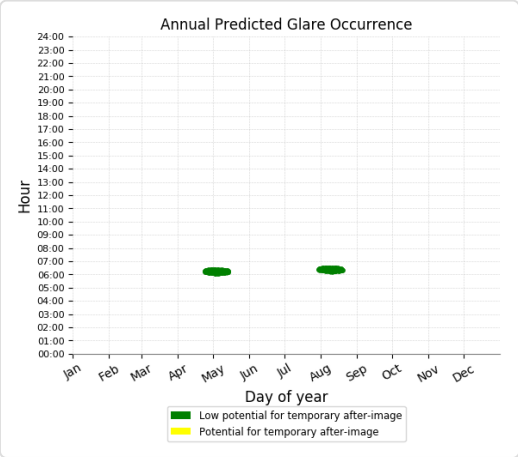
153 low potential for temporary after-image

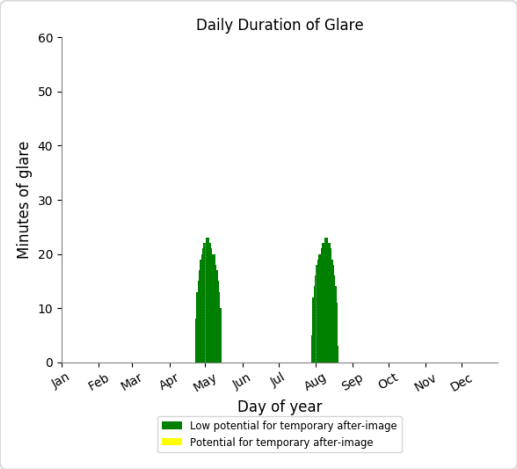
Component	Green glare (min)	Yellow glare (min)
OP: OP 153	806	0

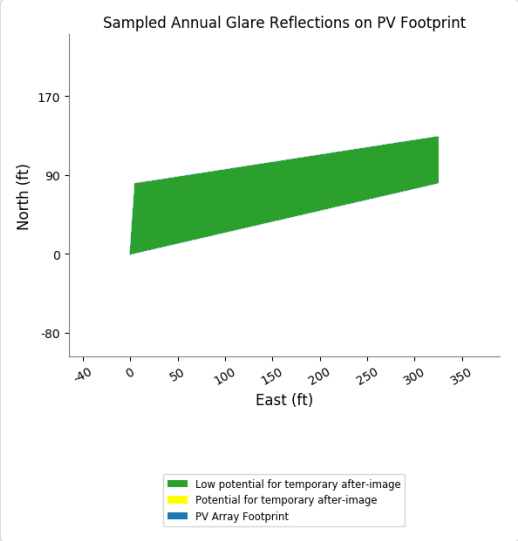
153 - OP Receptor (OP 153)

PV array is expected to produce the following glare for receptors at this location:

- 806 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Dixon Run

Dixon Run R264

Created Sept. 24, 2021
Updated Sept. 24, 2021
Time-step 1 minute
Timezone offset UTC-5
Site ID 59144.10278

Project type Advanced
Project status: active
Category 100 MW to 1 GW

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**

Analysis Methodologies:
- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

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
264a	15.0	180.0	0	0	-
264b	15.0	180.0	452	0	-
264c	15.0	180.0	527	0	-

Component Data

PV Array(s)

Total PV footprint area: 3.5 acres

Name: 264a
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.5 acres
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	38.987759	-82.528843	772.88	9.50	782.38
2	38.988085	-82.527312	782.22	9.50	791.72
3	38.987631	-82.527074	761.32	9.50	770.82
4	38.987445	-82.527097	753.27	9.50	762.77
5	38.987397	-82.527370	758.43	9.50	767.93
6	38.987543	-82.527434	767.07	9.50	776.57
7	38.987546	-82.528484	757.80	9.50	767.30
8	38.987731	-82.528501	770.69	9.50	780.19

Name: 264b
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 1.5 acres
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	38.988161	-82.523527	774.69	9.50	784.19
2	38.987813	-82.523525	779.32	9.50	788.82
3	38.987993	-82.522009	787.33	9.50	796.83
4	38.988306	-82.521823	784.71	9.50	794.21
5	38.988317	-82.522007	787.00	9.50	796.50
6	38.988450	-82.522047	786.38	9.50	795.88
7	38.988378	-82.522783	782.71	9.50	792.21
8	38.988261	-82.522802	786.21	9.50	795.71
9	38.988234	-82.523158	781.13	9.50	790.63
10	38.988171	-82.523203	782.58	9.50	792.08

Name: 264c
Axis tracking: Fixed (no rotation)
Tilt: 15.0 deg
Orientation: 180.0 deg
Footprint area: 0.52 acre
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	38.988122	-82.521169	790.38	9.50	799.88
2	38.988306	-82.521169	793.56	9.50	803.07
3	38.988338	-82.520999	799.88	9.50	809.38
4	38.988523	-82.520985	800.75	9.50	810.25
5	38.988570	-82.520830	800.85	9.50	810.35
6	38.988737	-82.520825	799.66	9.50	809.16
7	38.988696	-82.520616	795.25	9.50	804.75
8	38.988370	-82.520557	789.39	9.50	798.89
9	38.988122	-82.520782	791.30	9.50	800.80

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 264	38.986211	-82.536244	738.74	5.60	744.35

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	
264a	15.0	180.0	0	0	-	
264b	15.0	180.0	452	0	-	
264c	15.0	180.0	527	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
264b (green)	0	0	0	226	0	0	0	200	26	0	0	0
264b (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
264c (green)	0	0	0	265	0	0	0	226	36	0	0	0
264c (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

264a no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 264	0	0

No glare found

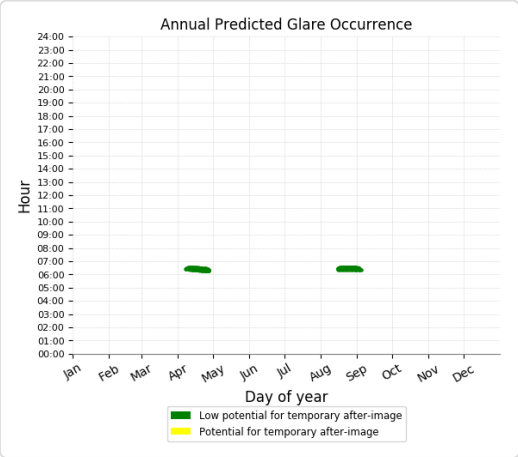
264b low potential for temporary after-image

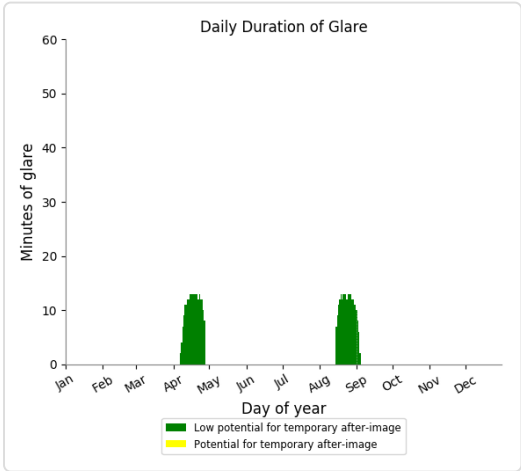
Component	Green glare (min)	Yellow glare (min)
OP: OP 264	452	0

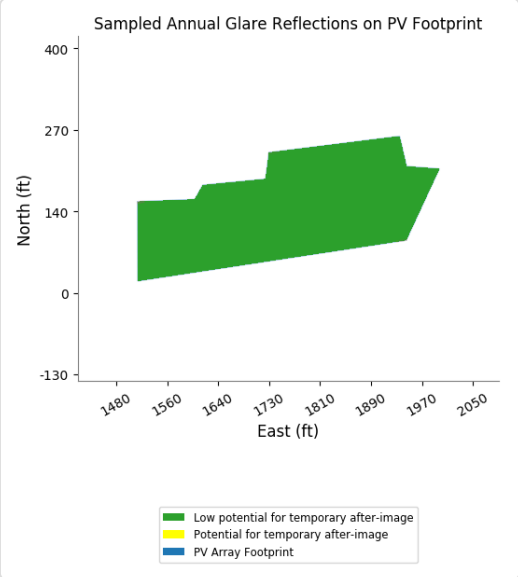
264b - OP Receptor (OP 264)

PV array is expected to produce the following glare for receptors at this location:

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







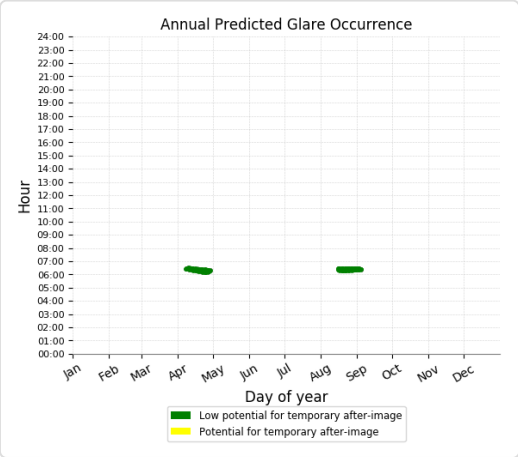
264c low potential for temporary after-image

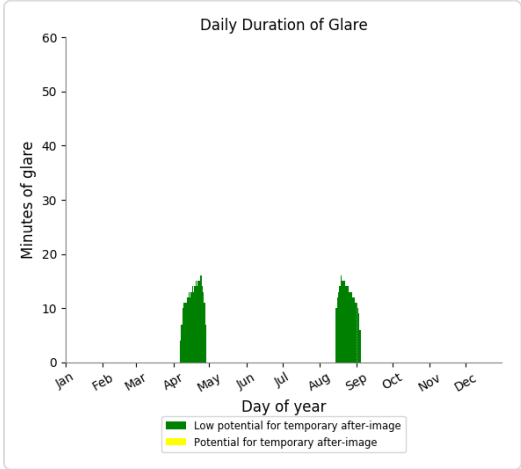
Component	Green glare (min)	Yellow glare (min)
OP: OP 264	527	0

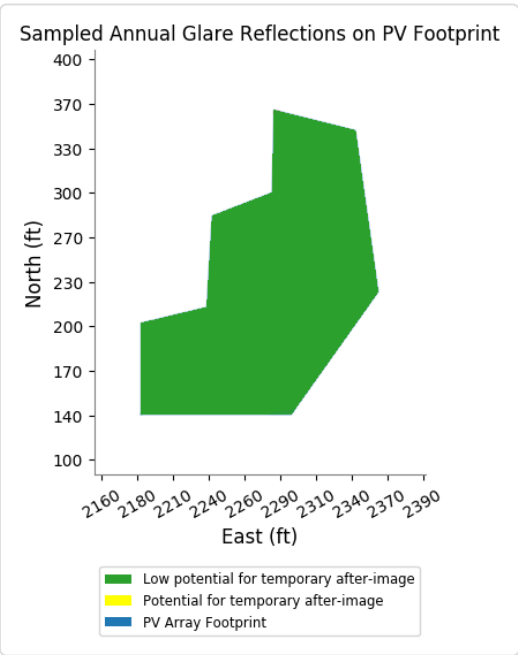
264c - OP Receptor (OP 264)

PV array is expected to produce the following glare for receptors at this location:

- 527 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 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 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.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.