Trelina Solar Energy Center

Glint and Glare Analysis

1.0 GLARE

1.1 INTRODUCTION

The Project is not predicted to emit significant glare into the existing environment. Panels are designed to absorb sunlight and will be treated with anti-reflective coatings that will absorb and transmit light rather than reflect it. In general, solar panels are less reflective than window glass or water surfaces (NYSERDA, 2019) and any reflected light from solar panels will have a significantly lower intensity than glare from direct sunlight (Mass. Department of Energy Resources, 2015).

The Applicant has prepared this Glint and Glare Analysis to identify any potential glint/glare impacts on nearby residences and roads and the need for any necessary mitigation. The analysis was prepared by Capitol Airspace Group utilizing the Solar Glare Hazard Analysis Tool (SGHAT). The results of the analysis conform to, and are in accordance with, the FAA's interim policy for Solar Energy System Projects on Federally Obligated Airports (78 FR 63271, October 2013), although this policy is only applicable for projects proposing to install solar panels at federally funded airports. SGHAT is a very conservative tool in that:

- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover, and geographic obstructions;
- The glare analysis assumes clear, sunny skies for 365 days of the year and does not take into account meteorological conditions that would nullify predicted glare such as clouds, rain or snow; and,
- Although only a portion of a modeled array may have the potential to produce glare, the results are provided as if the receptor has visibility of the entire array.

As described in Exhibit 2 of the Article 10 Application, the Project proposes to install either fixed or tracking solar racking systems. Therefore, a glare analysis has been performed on each type of racking system.

1.2 REGULATORY THRESHOLDS

There are no applicable quantitative standards for glare, but scientific literature suggests that doubling shadow flicker standards could be used as a benchmark (Pager Power, 2018). The New York State Siting Board has adopted a 30-hour shadow flicker standard; therefore, the benchmark for glare would be 60 hours per year. Additionally, if glint and glare is predicted for a surrounding dwelling for longer than 60 minutes per day, for three or more months of the year, then the impact should be considered significant with respect to residential amenity and, in this scenario, mitigation should be implemented (Pager Power, 2018).

1.3 GLARE ANALYSIS

Based on the viewshed analysis included as Figure 2 'Viewshed Analysis' in the *Visual Impact Assessment* included as Appendix 24-1 of the Article 10 Application filing, non-participating residential receptors within 1,500 feet of the arrays (referred to herein as "observation points") and roadways/railroads identified as having visibility of the Project were assessed for glare. The proposed array was divided into 24 separate sub areas identified as arrays A1-A7, B1-B8, C1-C5 and D1-D4. An additional viewshed analysis was then performed to determine which of these separate 24 array areas are visible from each observation point and roadway/railroad with predicted visibility. In addition to the three factors that overestimate potential glare noted above, proposed landscaping was not accounted for in the viewshed analysis and, therefore, the predicted visibility is overestimated.

The analysis conservatively assumes that all residential receptors are from a second story height (16 feet) and roadway/railroad receptors are from a truck height (8 feet) which would result in greater views of the solar arrays than single-story and car heights, respectively. Thirty-nine (39) residential observation points, three roadways and a railroad were assessed.

Figure 1 – Array Areas Assessed

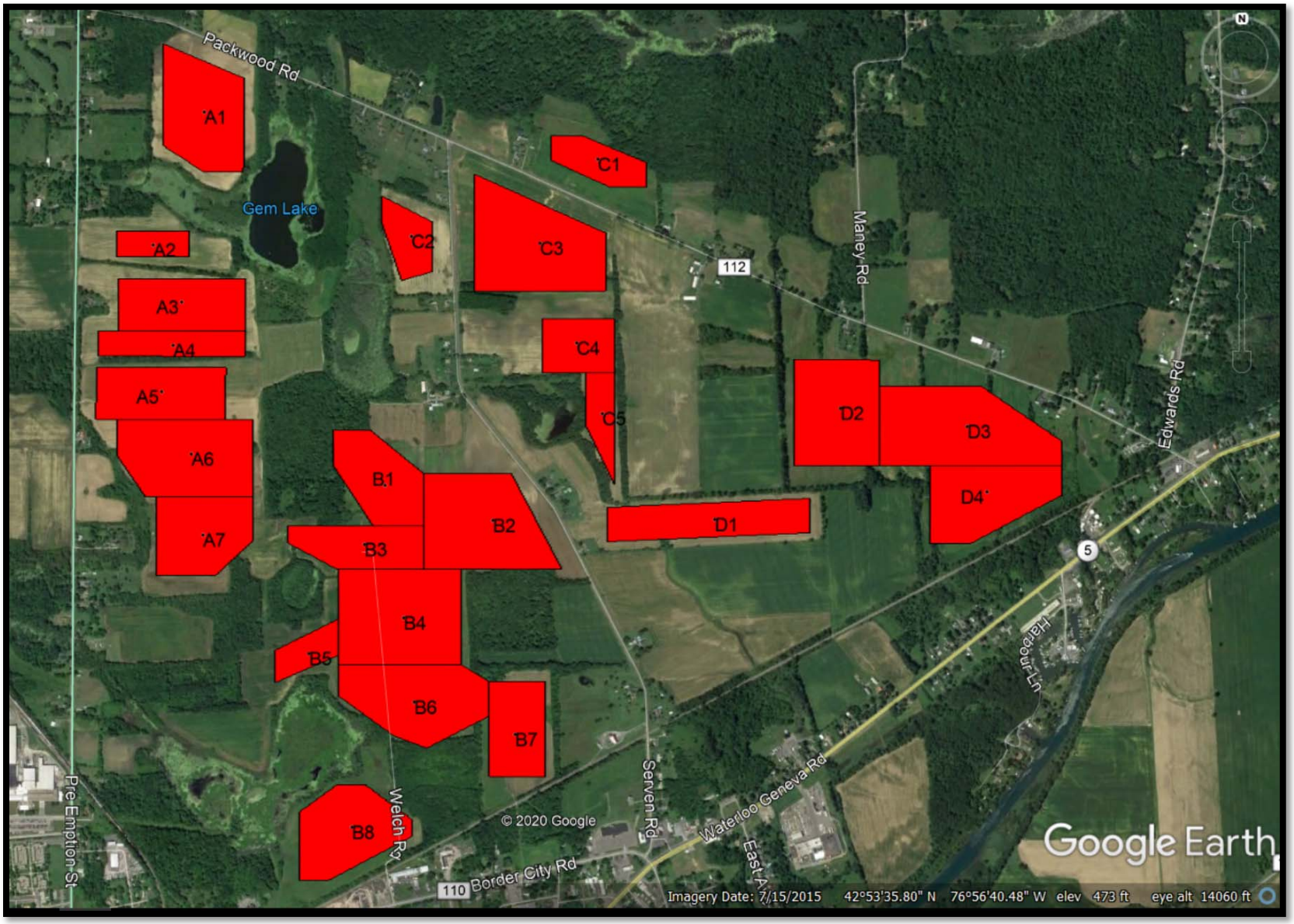
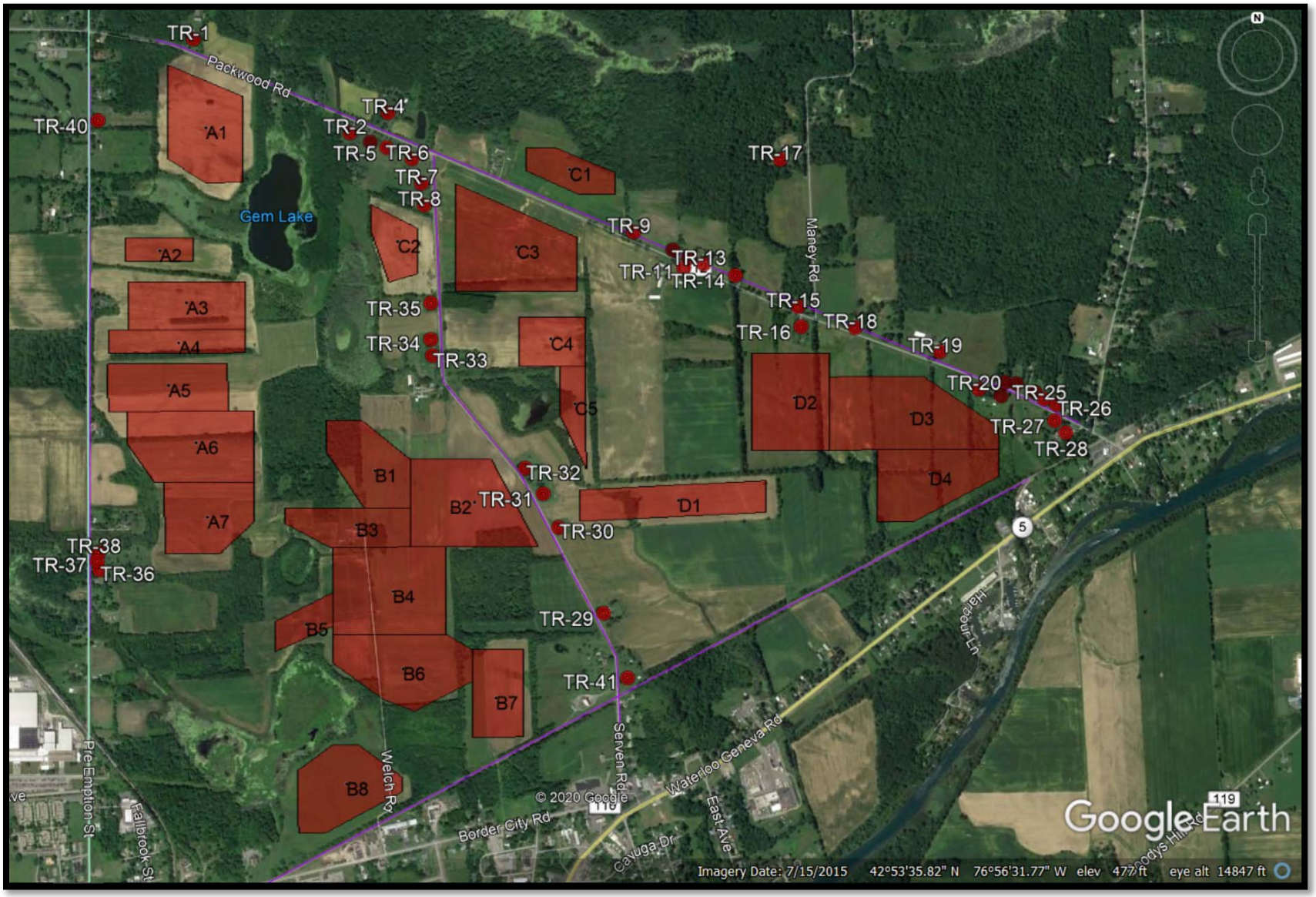


Figure 2 – Residential Observation Points and Roadways/Railroad Assessed



The glare analysis was then conducted to determine the potential duration of glare that could occur at each observation point/roadway/railroad and to determine the portion of each array area to have the potential to result in glare. The results of this analysis for tracker arrays are included in the attached glare report prepared by Capitol Airspace included as Appendix 1 and are summarized for each of the 24 assessed arrays in Table 1 below.

Table 1
Summary of Glare Analysis Results for Residences, Roads and Railroad – Tracker Arrays

Array Number	Annual Glare Potential* (hours)
A1	0
A2	0
A3	0
A4	0
A5	0
A6	0
A7	0
B1	0
B2	0
B3	0
B4	0
B5	0
B6	0
B7	0
B8	0
C1	0
C2	0
C3	0
C4	0
C5	0
D1	0
D2	0
D3	0
D4	0

**Indicates maximum annual glare potential identified for individual observation points assessed for each array; refer to SGHAT PV Array Results tables entitled 'PV & Receptor Analysis Results' for each array in Appendix 1.*

As indicated in Table 1 above, there is no predicted glare from any of the proposed tracker arrays for residential, road or railroad observation points.

The same analysis was performed to determine the potential for glare for fixed arrays. The results of this analysis for the potential for glare at residential observation points from fixed arrays are included in the attached glare report prepared by Capitol Airspace included as Appendix 1 and are summarized for each of the 24 assessed arrays in Table 2 below.

Table 2 – Summary of Glare Analysis Results for Residences – Fixed Arrays

Array Number	Annual Glare Potential* (hours)	>60 Hours Annually?	Mitigation Required?
A1	52	No	No
A2	4	No	No
A3	0	N/A	N/A
A4	0	N/A	N/A
A5	0	N/A	N/A
A6	0	N/A	N/A
A7	32	No	No
B1	5	No	No
B2	50	No	No
B3	0	N/A	N/A
B4	0.1	No	No
B5	0	N/A	N/A
B6	0	N/A	N/A
B7	0	N/A	N/A
B8	0	N/A	N/A
C1	31	No	No
C2	3	No	No
C3	57	No	No
C4	29	No	No
C5	0	N/A	N/A
D1	59	No	No
D2	3	No	No
D3	27	No	No
D4	0	N/A	N/A

**Indicates maximum annual glare potential identified for individual observation points assessed for each array; refer to SGHAT PV Array Results tables entitled 'PV & Receptor Analysis Results' for each array in Appendix 1.*

As indicated in Table 2 above, no arrays have potential for glare greater than 60 hours annually. Furthermore, 18 of the 24 arrays assessed have either no potential for glare or the potential for glare less than 30 hours (1,800 minutes) annually.

Table 3 – Summary of Glare Analysis Results for Roads and Railroad – Fixed Arrays

Array Number	Annual Glare Potential* (hours)	>60 Hours Annually?	Mitigation Required?
Railroad (Route 1)	7 (less than 5 minutes daily at peak at sunset)	No	No
Serven Road (Route 2)	14 (less than 15 minutes daily at peak at sunrise)	No	No
Packwood Road (Route 3)	2 (less than 2 minutes daily at peak at sunset)	No	No
Pre-Emption Road (Route 4)	24 (less than 15 minutes daily at peak at sunrise)	No	No

As indicated in Table 3 above, all routes assessed have the potential for glare less than 60 hours annually. Additionally, on a daily basis, no routes are predicted to have glare for greater than 15 minutes when the potential for glare is greatest.

1.3.1 Areas with Potential for Greater Than 60 Hours Annually

As indicated in Tables 2 and 3 above, no arrays have potential for glare greater than 60 hours annually.

1.3.2 Areas with Potential for Greater Than 30 Hours and Less Than 60 Hours Annually

Six of the 24 arrays assessed were determined to have the potential for glare for greater than 30 hours and less than 60 hours annually. Table 4 below provides a summary of each of these array areas and the observation points assessed along with an indication of the predicted duration of potential glare.

Table 4 – Glare Potential >30 Hours but <60 Hours Annually

Array	Observation Point	Type	Glare Potential Annually	Potential Glare Duration*
A1	OP-40	Residence	3,120 minutes (52 hours)	<15 minutes daily possible from March to October at approximately 6:00 AM
A7	OP-36	Residence	1,900 minutes (31.7 hours)	<15 minutes daily possible from April to September at approximately 6:00 AM
A7	OP-37	Residence	1,921 minutes (32.0 hours)	<15 minutes daily possible from April to September at approximately 6:00 AM
B2	OP-30	Residence	3,000 minutes (50 hours)	<15 minutes daily possible from March to October at approximately 6:00 PM
B2	OP-31	Residence	2,034 minutes (33.9 hours)	<15 minutes daily possible from March to October at approximately 6:00 PM
C1	OP-8	Residence	1,834 minutes (30.6 hours)	<15 minutes daily possible from April to September at approximately 6:00 AM
C3	OP-8	Residence	3,422 minutes (57.0 hours)	<20 minutes daily possible from March to October at approximately 6:00 AM
C3	OP-35	Residence	2,815 minutes (46.9 hours)	<20 minutes daily possible from April to mid-September at approximately 6:00 AM
D1	OP-30	Residence	3,558 minutes (59.3 hours)	<25 minutes daily possible from April to mid-September at approximately 6:00 AM

* *Potential for glare analysis assumes clear, sunny skies for 365 days of the year and does not take into account meteorological conditions that would nullify predicted glare such as clouds, rain or snow. Therefore, potential for glare is overestimated*.

As indicated in Table 4 above, there are no instances of predicted glare for longer than 60 minutes per day for three or more months. Additionally, there are no instances of glare for greater than 60 hours annually. Accordingly, there is no significant glare impacts as a result of the Project. For each of the observation points with the potential for glare at approximately 6:00 AM, the array is located east of the observation point, (in the same direction of the sun). Likewise, for each of

the observation points with the potential for glare at approximately 6:00 PM, the array is located west of the observation point (in the same direction of the sun). A solar reflection is less significant when a receptor is already facing directly at the sun (Pager Power, 2018). Most instances of potential glare for these observation points are for less than 15 to 25 minutes during the summer months either near the time of sunrise or sunset when the sun is low in the sky and glare from the sun itself is most prevalent. Additionally, the SGHAT model assumes clear, sunny skies for 365 days of the year, no vegetation, building or geographic obstructions and therefore the results are overestimated.

1.3.3 Areas with Potential for Less Than 30 Hours or No Glare

Eighteen (18) of the 24 arrays assessed have either no potential for glare or the potential for glare less than 30 hours (1,800 minutes) annually. Accordingly, the remaining observation points assessed either have no predicted glare or less than 30 hours annually with the maximum duration of potential glare less than minutes per day during select summer months.

1.4 VISUAL MITIGATION

As a conservative measure, in order to further reduce any potential impacts as a result of glare, visual mitigation in the form of landscape screening is proposed as follows:

- Landscaping along southwestern portion of Array A7
- Landscaping along eastern portion of Array B2
- Landscaping along southern portion of Array C1
- Landscaping along western portion of Array C3
- Landscaping along western portion of Array D1

1.5 CONCLUSION

Based on the results of the analysis and the proposed mitigation measures, no significant impacts from glare are expected as a result of the Project. Predicted impacts have been minimized to the maximum extent practicable.

Refer to Appendix 1 to see the Glint and Glare report and associated SGHAT data sheets prepared by Capitol Airspace Group.

References:

Massachusetts Department of Energy Resources. "Clean Energy Results, Questions and Answers, Ground Mounted Solar Photovoltaic Systems." Energy Center, June 2015.

http://www.mass.gov/eea/docs/doer/renewables/solar/solar-pv-guide.pdf

NYSERDA. New York Solar Guidebook for Local Governments. January 2019. Available at: https://www.nyserda.ny.gov/All%20Programs/Programs/Clean%20Energy%20Siting/Solar%20Guidebook

Pager Power, *Solar Photovoltaic Development – Glint Glare Guidance*, October, 2018 Second Edition

Appendix 1

Glint and Glare Report by Capitol Airspace Group

Trelina Energy Center

NextEra Energy Resources, LLC

Seneca County, New York

Glint & Glare Analysis

July 2, 2020

Capitol Airspace Group

capitolairspace.com

(703) 256 - 2485

Capitol Airspace Group
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Alexandria, VA 22312
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Summary

NextEra Energy Resources, LLC is proposing to construct solar arrays near the town of Trelina in Seneca County, New York (***Figure 1***). On behalf of NextEra Energy Resources, LLC, Capitol Airspace performed a Glint and Glare Analysis utilizing the Solar Glare Hazard Analysis Tool (SGHAT) in order to identify the potential for glare impacts. Specifically, this analysis considered the potential for glare impacts on nearby residences, roadways, and railroads.

There is no predicted glare for residences, roadways, or railroads as a result of single-axis tracking arrays. However, glare is predicted for residences, roadways, and railroads as a result of fixed solar arrays. These results are based on the application of FAA glint and glare standards in the absence of non-aviation regulatory guidelines.

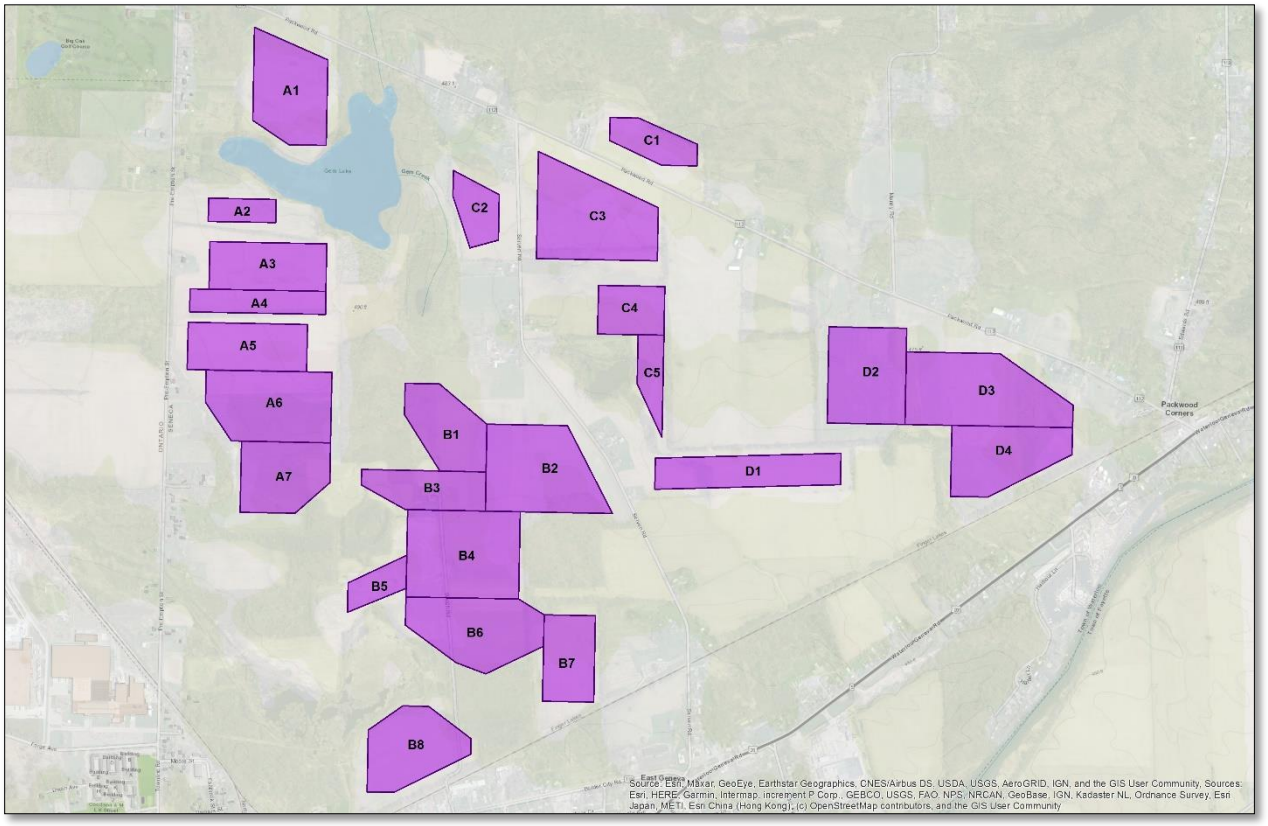


Figure 1: Location and identification of Trelina Solar project arrays

Methodology

In cooperation with the Department of Energy (DOE), the Federal Aviation Administration (FAA) developed and validated the Sandia National Laboratories Solar Glare Hazard Analysis Tool (SGHAT), now licensed through ForgeSolar. The FAA requires the use of the SGHAT in order to enhance safety by providing standards for measuring the ocular impact of proposed solar energy systems on pilots and air traffic controllers. ForgeSolar has enhanced the SGHAT for glare hazard analysis beyond the aviation environment. These enhancements include a route module for analyzing roadways as well as an observation point module for analyzing residences.

The SGHAT analyzes potential for glare over the entire calendar year in one-minute intervals from when the sun rises above the horizon until the sun sets below the horizon. The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. The SGHAT does not account for physical obstructions between reflectors and receptors. When glare is found, SGHAT classifies the ocular impact into three categories:

Green: Low potential for temporary after-image
Yellow: Potential for temporary after-image
Red: Potential for permanent eye damage

Currently, there are no defined standards for acceptable ocular impact on residences or roadways.

Data

Solar array specifications (***Table 1*** & ***Table 2***) as well as location and height information were provided by NextEra Energy Resources, LLC. The SGHAT determines site elevations unless entered manually. NextEra Energy Resources, LLC specified that the analysis be conducted for both single-axis tracking and fixed arrays.

Table 1: Trelina single-axis tracking solar array specifications

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180 degrees
Tracking axis tilt:	0 degrees
Max tracking angle:	60 degrees
Resting angle:	5 degrees
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 2: Trelina fixed solar array specifications

Parameter	Value
Axis tracking:	Fixed
Orientation:	180 degrees
Tilt:	14 degrees
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Results

Residences

The SGHAT assessed the potential for glare occurrences at 40 discrete observation point receptors (points, ***Figure 2***). Each observation point was assessed at a 16-foot second story viewing height. The SGHAT results do not predict glare occurrences for any of the 40 observation points as a result of single-axis tracking arrays. However, glare is predicted for up to 27 observation points (orange points, ***Figure 2***) as a result of 12 fixed arrays (orange polygons, ***Figure 2***).

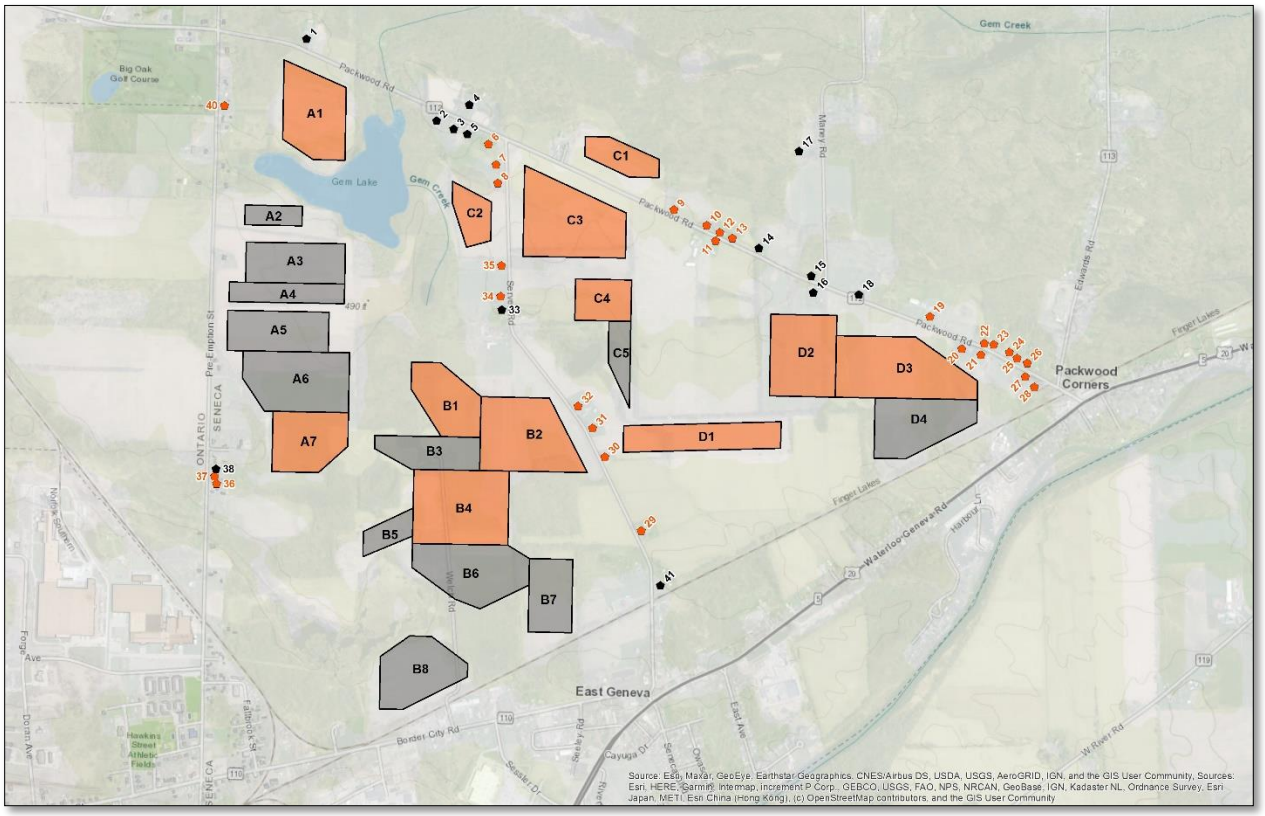


Figure 2: Residential discrete observation point receptors (black and orange points)

Routes

The SGHAT assessed the potential for glare occurrences along four route receptors (lines, ***Figure 3***). Each roadway was assessed at an eight-foot truck viewing height. The railroad was assessed at a 10-foot train cab viewing height. The SGHAT results do not predict glare occurrences for any of the roadways or railroad as a result of single-axis tracking arrays. However, glare is predicted for all three roadways as well as the railroad as a result of 15 fixed solar arrays (orange polygons, ***Figure 3***).

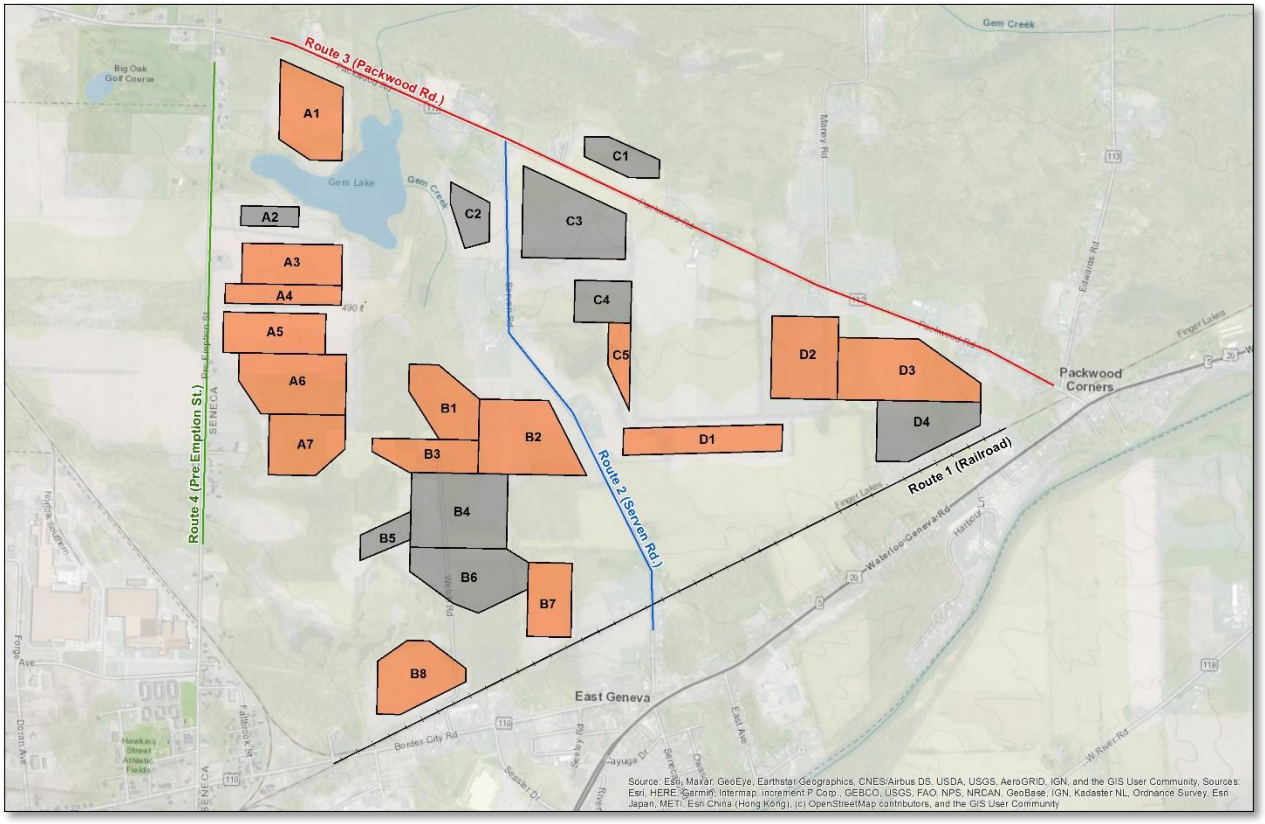


Figure 3: Roadway and railroad receptors

Conclusion

The SGHAT does not predict any glare occurrences for nearby residences at second story viewing heights, trucks on nearby roadways, or trains on nearby railroads as a result of single-axis tracking arrays (***Table 3***). However, SGHAT does predict glare occurrences for up to 27 residences as well as nearby roadways and railroads as a result of fixed arrays (***Table 4***). As noted in the assumptions, the SGHAT does not consider vegetation, fencing, or other natural obstructions. This glint and glare analysis takes the most conservative approach in assessing the possibility of glare occurrences.

If you have any questions regarding the findings in this analysis, please contact ***Rick Coles*** or ***Jason Auger*** at (703) 256-2485.

Table 3: Single-axis tracking solar array annual glare occurrence summary

Receptor	Green Glare (Hours:Minutes)	Yellow Glare (Hours:Minutes)	Red Glare (Hours:Minutes)
OP 1	0:00	0:00	0:00
OP 2	0:00	0:00	0:00
OP 3	0:00	0:00	0:00
OP 4	0:00	0:00	0:00
OP 5	0:00	0:00	0:00
OP 6	0:00	0:00	0:00
OP 7	0:00	0:00	0:00
OP 8	0:00	0:00	0:00
OP 9	0:00	0:00	0:00
OP 10	0:00	0:00	0:00
OP 11	0:00	0:00	0:00
OP 12	0:00	0:00	0:00
OP 13	0:00	0:00	0:00
OP 14	0:00	0:00	0:00
OP 15	0:00	0:00	0:00
OP 16	0:00	0:00	0:00
OP 17	0:00	0:00	0:00
OP 18	0:00	0:00	0:00
OP 19	0:00	0:00	0:00
OP 20	0:00	0:00	0:00
OP 21	0:00	0:00	0:00
OP 22	0:00	0:00	0:00
OP 23	0:00	0:00	0:00
OP 24	0:00	0:00	0:00
OP 25	0:00	0:00	0:00
OP 26	0:00	0:00	0:00
OP 27	0:00	0:00	0:00
OP 28	0:00	0:00	0:00
OP 29	0:00	0:00	0:00
OP 30	0:00	0:00	0:00
OP 31	0:00	0:00	0:00
OP 32	0:00	0:00	0:00
OP 33	0:00	0:00	0:00
OP 34	0:00	0:00	0:00
OP 35	0:00	0:00	0:00
OP 36	0:00	0:00	0:00
OP 37	0:00	0:00	0:00
OP 38	0:00	0:00	0:00
OP 40	0:00	0:00	0:00
OP 41	0:00	0:00	0:00
Route 1 (trains)	0:00	0:00	0:00
Route 2 (trucks)	0:00	0:00	0:00
Route 3 (trucks)	0:00	0:00	0:00
Route 4 (trucks)	0:00	0:00	0:00

Table 4: Fixed solar array annual glare occurrence summary

Receptor	Green Glare (Hours:Minutes)	Yellow Glare (Hours:Minutes)	Red Glare (Hours:Minutes)
OP 1	0:00	0:00	0:00
OP 2	0:00	0:00	0:00
OP 3	0:00	0:00	0:00
OP 4	0:00	0:00	0:00
OP 5	0:00	0:00	0:00
OP 6	0:19	9:44	0:00
OP 7	0:25	29:33	0:00
OP 8	0:11	90:05	0:00
OP 9	0:00	21:21	0:00
OP 10	0:00	21:26	0:00
OP 11	0:00	25:28	0:00
OP 12	0:00	21:02	0:00
OP 13	0:00	20:24	0:00
OP 14	0:00	0:00	0:00
OP 15	0:00	0:00	0:00
OP 16	0:00	0:00	0:00
OP 17	0:00	0:00	0:00
OP 18	0:00	0:00	0:00
OP 19	0:00	2:29	0:00
OP 20	0:00	20:32	0:00
OP 21	0:00	22:10	0:00
OP 22	0:00	9:59	0:00
OP 23	0:00	8:59	0:00
OP 24	0:00	12:41	0:00
OP 25	0:00	14:55	0:00
OP 26	0:00	17:48	0:00
OP 27	0:00	27:12	0:00
OP 28	0:00	17:34	0:00
OP 29	0:00	6:32	0:00
OP 30	0:09	109:26	0:00
OP 31	0:10	58:38	0:00
OP 32	0:00	18:41	0:00
OP 33	0:00	0:00	0:00
OP 34	0:03	29:28	0:00
OP 35	0:00	47:59	0:00
OP 36	0:17	32:12	0:00
OP 37	0:00	32:10	0:00
OP 38	0:00	0:00	0:00
OP 40	0:00	52:00	0:00
OP 41	0:00	0:00	0:00
Route 1 (trains)	0:00	12:48	0:00
Route 2 (trucks)	0:00	25:16	0:00
Route 3 (trucks)	0:02	2:07	0:00
Route 4 (trucks)	0:00	28:56	0:00

ForgeSolar

Site Configuration: Tracking A1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:42 p.m.**
Updated **June 22, 2020 6:25 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40287.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: A1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 945,265 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.904208	-76.956774	480.39	13.00	493.39
2	42.901486	-76.956758	476.81	13.00	489.81
3	42.901481	-76.958367	475.65	13.00	488.65
4	42.902228	-76.959956	480.67	13.00	493.67
5	42.905188	-76.959974	485.75	13.00	498.75

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	42.905995	-76.958851	483.03	16.00	499.03
OP 40	42.903431	-76.962955	482.05	16.00	498.06

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A1	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 40	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking A7 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:49 p.m.**
Updated **June 22, 2020 6:18 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40289.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A7	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: A7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 0.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 776,828 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892049	-76.956273	472.19	13.00	485.19
2	42.890788	-76.956265	469.66	13.00	482.66
3	42.889787	-76.957734	467.04	13.00	480.04
4	42.889779	-76.960108	464.29	13.00	477.29
5	42.892036	-76.960122	467.80	13.00	480.80

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 36	42.889275	-76.962907	460.75	16.00	476.75
OP 37	42.889553	-76.963024	460.43	16.00	476.43

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A7	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A7 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 36	0	0
OP: OP 37	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking B1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:50 p.m.**
Updated **June 22, 2020 6:28 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40290.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
B1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: B1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 702,437 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893999	-76.951634	478.47	13.00	491.47
2	42.892760	-76.949540	477.12	13.00	490.12
3	42.891241	-76.949531	472.23	13.00	485.23
4	42.891235	-76.951527	473.69	13.00	486.69
5	42.892995	-76.953116	478.75	13.00	491.75
6	42.893995	-76.953122	479.47	13.00	492.47

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 31	42.891684	-76.943814	473.62	16.00	489.62
OP 32	42.892493	-76.944576	476.23	16.00	492.23

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B1	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 31	0	0
OP: OP 32	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking B2 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:52 p.m.**
Updated **June 22, 2020 6:29 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40291.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
B2	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: B2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,211,216 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892772	-76.946056	479.18	13.00	492.18
2	42.890014	-76.944034	471.62	13.00	484.62
3	42.889997	-76.949524	468.93	13.00	481.93
4	42.892760	-76.949540	477.12	13.00	490.12

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 29	42.887894	-76.941215	464.38	16.00	480.38
OP 30	42.890618	-76.943150	471.90	16.00	487.90
OP 31	42.891684	-76.943814	473.62	16.00	489.62
OP 32	42.892493	-76.944576	476.23	16.00	492.23
OP 33	42.896032	-76.948574	480.02	16.00	496.02
OP 34	42.896537	-76.948651	480.95	16.00	496.95
OP 35	42.897691	-76.948642	481.21	16.00	497.21
OP 36	42.889275	-76.962907	460.75	16.00	476.75

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B2	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B2 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking B3 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:53 p.m.**
Updated **June 22, 2020 6:29 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40292.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
B3	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: B3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 583,079 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.891241	-76.949531	472.23	13.00	485.23
2	42.889997	-76.949524	468.93	13.00	481.93
3	42.889986	-76.952989	469.71	13.00	482.71
4	42.890732	-76.954905	470.59	13.00	483.59
5	42.891224	-76.954908	471.96	13.00	484.96

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 32	42.892493	-76.944576	476.23	16.00	492.23

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B3	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B3 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 32	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking B4 Second Story Houses

Project site configuration details and results.

Created **June 22, 2020 9:22 a.m.**
Updated **June 22, 2020 9:24 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40356.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
B4	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: B4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,316,797 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.890002	-76.948020	468.96	13.00	481.96
2	42.887228	-76.948004	465.87	13.00	478.88
3	42.887212	-76.952863	460.08	13.00	473.08
4	42.889986	-76.952880	469.80	13.00	482.80

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 30	42.890618	-76.943150	471.90	16.00	487.90
OP 31	42.891684	-76.943814	473.62	16.00	489.62
OP 32	42.892493	-76.944576	476.23	16.00	492.23

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B4	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B4 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking C1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:53 p.m.**
Updated **June 22, 2020 6:35 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40294.7248

Summary of Results No glare predicted!

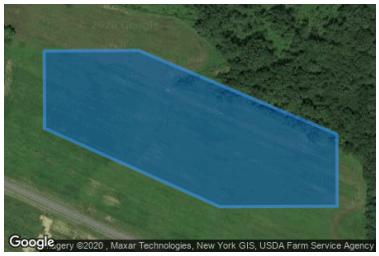
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: C1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 367,540 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902590	-76.943302	471.39	13.00	484.39
2	42.901795	-76.940729	472.92	13.00	485.92
3	42.901110	-76.940725	477.37	13.00	490.37
4	42.901105	-76.942254	475.26	13.00	488.26
5	42.901850	-76.944524	476.97	13.00	489.97
6	42.902586	-76.944529	475.11	13.00	488.11



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 6	42.902223	-76.949457	479.46	16.00	495.46
OP 7	42.901458	-76.949049	481.49	16.00	497.49
OP 8	42.900769	-76.948931	479.56	16.00	495.56

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C1	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking C2 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:55 p.m.**
Updated **June 22, 2020 6:36 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40295.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C2	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: C2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 326,973 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.900054	-76.949244	479.35	13.00	492.36
2	42.898607	-76.949235	480.41	13.00	493.41
3	42.898343	-76.950453	474.58	13.00	487.58
4	42.899977	-76.951235	473.10	13.00	486.10
5	42.900789	-76.951240	479.41	13.00	492.41

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 7	42.901458	-76.949049	481.49	16.00	497.49
OP 8	42.900769	-76.948931	479.56	16.00	495.56
OP 35	42.897691	-76.948642	481.21	16.00	497.21

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C2	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C2 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 35	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking C3 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:55 p.m.**
Updated **June 22, 2020 6:38 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40296.7248

Summary of Results No glare predicted!

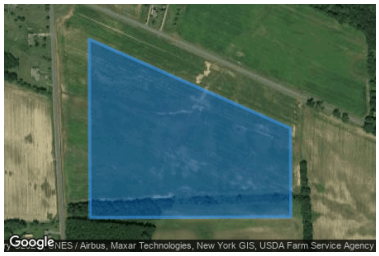
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C3	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: C3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,294,046 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899755	-76.942360	479.49	13.00	492.49
2	42.898069	-76.942351	481.42	13.00	494.42
3	42.898052	-76.947566	481.14	13.00	494.14
4	42.901448	-76.947586	480.32	13.00	493.32



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 2	42.903047	-76.952127	481.78	16.00	497.78
OP 3	42.902759	-76.951248	480.35	16.00	496.35
OP 4	42.903677	-76.950482	482.93	16.00	498.93
OP 5	42.902581	-76.950543	479.60	16.00	495.60
OP 6	42.902223	-76.949457	479.46	16.00	495.46
OP 7	42.901458	-76.949049	481.49	16.00	497.49
OP 8	42.900769	-76.948931	479.56	16.00	495.56
OP 9	42.899926	-76.939928	482.14	16.00	498.14
OP 10	42.899365	-76.938233	480.65	16.00	496.65
OP 11	42.898797	-76.937767	481.80	16.00	497.80
OP 12	42.899114	-76.937564	480.36	16.00	496.37
OP 13	42.898914	-76.936913	480.56	16.00	496.57
OP 35	42.897691	-76.948642	481.21	16.00	497.21

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C3	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C3 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 35	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking C4 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:55 p.m.**
Updated **June 22, 2020 7:30 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40297.7248

Summary of Results No glare predicted!

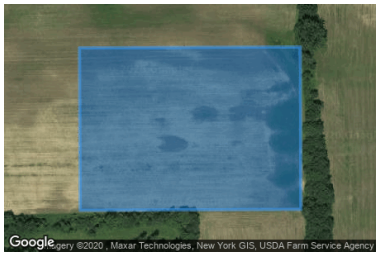
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C4	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: C4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 432,374 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.897256	-76.941999	482.96	13.00	495.96
2	42.895712	-76.941990	481.48	13.00	494.48
3	42.895703	-76.944856	474.57	13.00	487.57
4	42.897247	-76.944865	480.76	13.00	493.76



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 14	42.898563	-76.935548	479.63	16.00	495.63
OP 34	42.896537	-76.948651	480.95	16.00	496.95
OP 35	42.897691	-76.948642	481.21	16.00	497.21

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C4	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C4 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 14	0	0
OP: OP 34	0	0
OP: OP 35	0	0

No glare found

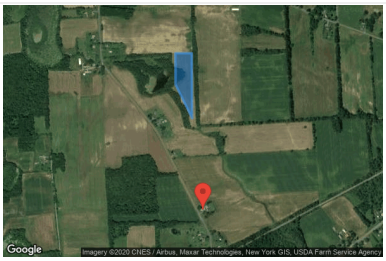
Assumptions

- 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking C5 Second Story Houses

Project site configuration details and results.



Created **June 18, 2020 6:56 p.m.**
Updated **June 22, 2020 7:30 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40298.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C5	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: C5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 262,355 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895712	-76.941990	481.48	13.00	494.48
2	42.892466	-76.941971	469.39	13.00	482.39
3	42.894147	-76.943098	471.67	13.00	484.67
4	42.895708	-76.943107	478.62	13.00	491.62

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 29	42.887894	-76.941215	464.38	16.00	480.38

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C5	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C5 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 29	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking D1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:59 p.m.**
Updated **June 22, 2020 7:31 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40299.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: D1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,818 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	13.00	481.03
2	42.891096	-76.934219	465.92	13.00	478.92
3	42.890809	-76.942230	470.17	13.00	483.17
4	42.891802	-76.942236	469.34	13.00	482.34

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 29	42.887894	-76.941215	464.38	16.00	480.38
OP 30	42.890618	-76.943150	471.90	16.00	487.90
OP 31	42.891684	-76.943814	473.62	16.00	489.62

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D1	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking D2 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 7:01 p.m.**
Updated **June 22, 2020 7:32 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40300.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D2	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: D2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,002,986 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.896111	-76.931505	476.29	13.00	489.29
2	42.893053	-76.931488	470.58	13.00	483.58
3	42.893043	-76.934845	470.52	13.00	483.52
4	42.896101	-76.934863	479.01	13.00	492.01

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 14	42.898563	-76.935548	479.63	16.00	495.63
OP 15	42.897576	-76.932857	473.81	16.00	489.81
OP 16	42.896943	-76.932726	475.86	16.00	491.86
OP 18	42.896913	-76.930401	475.51	16.00	491.51
OP 19	42.896154	-76.926756	474.88	16.00	490.88

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D2	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D2 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 18	0	0
OP: OP 19	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking D3 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 7:02 p.m.**
Updated **June 22, 2020 7:34 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40301.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D3	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: D3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,381,442 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895371	-76.927455	473.89	13.00	486.89
2	42.893783	-76.924251	470.89	13.00	483.89
3	42.893075	-76.924247	469.60	13.00	482.60
4	42.893053	-76.931488	470.58	13.00	483.58
5	42.895359	-76.931501	475.65	13.00	488.65

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 15	42.897576	-76.932857	473.81	16.00	489.81
OP 16	42.896943	-76.932726	475.86	16.00	491.86
OP 18	42.896913	-76.930401	475.51	16.00	491.51
OP 19	42.896154	-76.926756	474.88	16.00	490.88
OP 20	42.894974	-76.925084	473.15	16.00	489.15
OP 21	42.894760	-76.924116	473.40	16.00	489.40
OP 22	42.895190	-76.923948	474.68	16.00	490.68
OP 23	42.895153	-76.923467	474.71	16.00	490.71
OP 24	42.894883	-76.922660	475.27	16.00	491.27
OP 25	42.894667	-76.922268	475.55	16.00	491.55
OP 26	42.894492	-76.921740	477.05	16.00	493.05
OP 27	42.893980	-76.921820	474.63	16.00	490.63
OP 28	42.893602	-76.921349	469.89	16.00	485.89

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D3	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D3 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking D4 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 7:03 p.m.**
Updated **June 22, 2020 7:37 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40302.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D4	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: D4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 903,186 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893075	-76.924247	469.60	13.00	482.60
2	42.892217	-76.924242	469.29	13.00	482.29
3	42.890807	-76.927840	467.75	13.00	480.75
4	42.890802	-76.929449	460.50	13.00	473.50
5	42.893059	-76.929462	470.20	13.00	483.20

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 18	42.896913	-76.930401	475.51	16.00	491.51
OP 19	42.896154	-76.926756	474.88	16.00	490.88
OP 20	42.894974	-76.925084	473.15	16.00	489.15
OP 21	42.894760	-76.924116	473.40	16.00	489.40
OP 22	42.895190	-76.923948	474.68	16.00	490.68
OP 23	42.895153	-76.923467	474.71	16.00	490.71
OP 24	42.894883	-76.922660	475.27	16.00	491.27
OP 25	42.894667	-76.922268	475.55	16.00	491.55
OP 26	42.894492	-76.921740	477.05	16.00	493.05

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D4	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D4 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0

No glare found

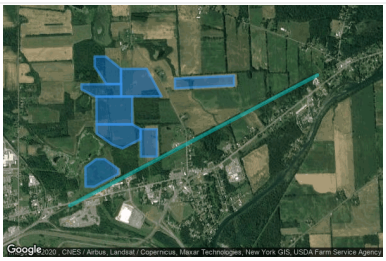
Assumptions

- 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 1 Tracking - Railroad Jun18

Project site configuration details and results.



Created **June 18, 2020 7:05 p.m.**
Updated **June 22, 2020 7:47 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40307.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
B1	SA tracking	SA tracking	0	0	-
B2	SA tracking	SA tracking	0	0	-
B3	SA tracking	SA tracking	0	0	-
B4	SA tracking	SA tracking	0	0	-
B6	SA tracking	SA tracking	0	0	-
B7	SA tracking	SA tracking	0	0	-
B8	SA tracking	SA tracking	0	0	-
D1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: B1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 702,437 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893999	-76.951634	478.47	13.00	491.47
2	42.892760	-76.949540	477.12	13.00	490.12
3	42.891241	-76.949531	472.23	13.00	485.23
4	42.891235	-76.951527	473.69	13.00	486.69
5	42.892995	-76.953116	478.75	13.00	491.75
6	42.893995	-76.953122	479.47	13.00	492.47

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,211,062 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892772	-76.946056	479.18	13.00	492.18
2	42.890014	-76.944034	471.62	13.00	484.62
3	42.889997	-76.949524	468.93	13.00	481.93
4	42.892760	-76.949540	477.12	13.00	490.12

Name: B3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 582,971 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.891241	-76.949531	472.23	13.00	485.23
2	42.889997	-76.949524	468.93	13.00	481.93
3	42.889986	-76.952989	469.71	13.00	482.71
4	42.890732	-76.954905	470.59	13.00	483.59
5	42.891224	-76.954908	471.96	13.00	484.96

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,316,797 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.890002	-76.948020	468.96	13.00	481.96
2	42.887228	-76.948004	465.87	13.00	478.88
3	42.887212	-76.952863	460.08	13.00	473.08
4	42.889986	-76.952880	469.80	13.00	482.80

Name: B6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,043,287 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.887228	-76.948004	465.87	13.00	478.88
2	42.886750	-76.946879	465.68	13.00	478.68
3	42.885750	-76.946873	464.68	13.00	477.68
4	42.884827	-76.949341	463.42	13.00	476.42
5	42.885163	-76.950637	461.30	13.00	474.30
6	42.886310	-76.952858	459.90	13.00	472.90
7	42.887212	-76.952863	460.08	13.00	473.08

Name: B7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 593,204 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.886757	-76.944669	465.67	13.00	478.67
2	42.884008	-76.944653	461.01	13.00	474.01
3	42.884001	-76.946863	462.45	13.00	475.45
4	42.886750	-76.946879	465.68	13.00	478.68

Name: B8
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 846,055 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.883752	-76.951775	460.35	13.00	473.35
2	42.882761	-76.949911	462.41	13.00	475.41
3	42.882270	-76.949909	462.39	13.00	475.39
4	42.880999	-76.953178	462.81	13.00	475.81
5	42.880995	-76.954350	465.30	13.00	478.30
6	42.882962	-76.954362	460.64	13.00	473.65
7	42.883749	-76.952892	459.77	13.00	472.77

Name: D1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,037 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	13.00	481.03
2	42.891096	-76.934219	465.92	13.00	478.92
3	42.890809	-76.942230	470.17	13.00	483.17
4	42.891802	-76.942236	469.34	13.00	482.34

Route Receptor(s)

Name: Route 1
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.879117	-76.956477	461.96	11.00	472.96
2	42.885627	-76.939709	460.69	11.00	471.69
3	42.892135	-76.922939	460.65	11.00	471.65

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B1	SA tracking	SA tracking	0	0	-	-
B2	SA tracking	SA tracking	0	0	-	-
B3	SA tracking	SA tracking	0	0	-	-
B4	SA tracking	SA tracking	0	0	-	-
B6	SA tracking	SA tracking	0	0	-	-
B7	SA tracking	SA tracking	0	0	-	-
B8	SA tracking	SA tracking	0	0	-	-
D1	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B6 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B7 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B8 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

D1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 2 Tracking - trucks Jun18

Project site configuration details and results.

Created **June 18, 2020 7:05 p.m.**
Updated **June 22, 2020 7:51 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40308.7248

Summary of Results No glare predicted!

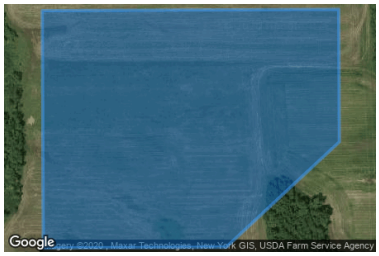
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A7	SA tracking	SA tracking	0	0	-
B1	SA tracking	SA tracking	0	0	-
B2	SA tracking	SA tracking	0	0	-
B3	SA tracking	SA tracking	0	0	-
B4	SA tracking	SA tracking	0	0	-
B5	SA tracking	SA tracking	0	0	-
B6	SA tracking	SA tracking	0	0	-
C1	SA tracking	SA tracking	0	0	-
C2	SA tracking	SA tracking	0	0	-
C3	SA tracking	SA tracking	0	0	-
C4	SA tracking	SA tracking	0	0	-
C5	SA tracking	SA tracking	0	0	-
D1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: A7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 776,828 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892049	-76.956273	472.19	13.00	485.19
2	42.890788	-76.956265	469.66	13.00	482.66
3	42.889787	-76.957734	467.04	13.00	480.04
4	42.889779	-76.960108	464.29	13.00	477.29
5	42.892036	-76.960122	467.80	13.00	480.80



Name: B1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 702,437 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893999	-76.951634	478.47	13.00	491.47
2	42.892760	-76.949540	477.12	13.00	490.12
3	42.891241	-76.949531	472.23	13.00	485.23
4	42.891235	-76.951527	473.69	13.00	486.69
5	42.892995	-76.953116	478.75	13.00	491.75
6	42.893995	-76.953122	479.47	13.00	492.47

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,211,217 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892772	-76.946056	479.18	13.00	492.18
2	42.890014	-76.944034	471.62	13.00	484.62
3	42.889997	-76.949524	468.93	13.00	481.93
4	42.892760	-76.949540	477.12	13.00	490.12

Name: B3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 583,076 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.891241	-76.949531	472.23	13.00	485.23
2	42.889997	-76.949524	468.93	13.00	481.93
3	42.889986	-76.952989	469.71	13.00	482.71
4	42.890732	-76.954905	470.59	13.00	483.59
5	42.891224	-76.954908	471.96	13.00	484.96

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,316,799 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.890002	-76.948020	468.96	13.00	481.96
2	42.887228	-76.948004	465.87	13.00	478.88
3	42.887212	-76.952863	460.08	13.00	473.08
4	42.889986	-76.952880	469.80	13.00	482.80

Name: B5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 244,025 sq-ft

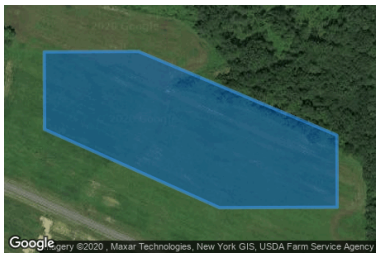
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.888538	-76.952871	465.28	13.00	478.28
2	42.887485	-76.952865	459.47	13.00	472.47
3	42.886682	-76.955373	461.69	13.00	474.69
4	42.887618	-76.955378	461.91	13.00	474.91

Name: B6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,043,490 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.887228	-76.948004	465.87	13.00	478.88
2	42.886750	-76.946879	465.68	13.00	478.68
3	42.885750	-76.946873	464.68	13.00	477.68
4	42.884827	-76.949341	463.42	13.00	476.42
5	42.885163	-76.950637	461.30	13.00	474.30
6	42.886310	-76.952858	459.90	13.00	472.90
7	42.887212	-76.952863	460.08	13.00	473.08

Name: C1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 367,736 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902590	-76.943302	471.39	13.00	484.39
2	42.901795	-76.940729	472.92	13.00	485.92
3	42.901110	-76.940725	477.37	13.00	490.37
4	42.901105	-76.942254	475.26	13.00	488.26
5	42.901850	-76.944524	476.97	13.00	489.97
6	42.902586	-76.944529	475.11	13.00	488.11



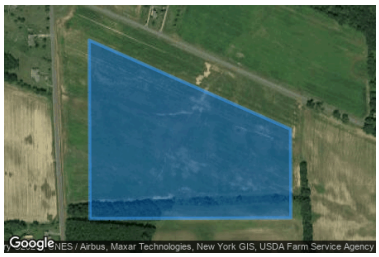
Name: C2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 327,159 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.900054	-76.949244	479.35	13.00	492.36
2	42.898607	-76.949235	480.41	13.00	493.41
3	42.898343	-76.950453	474.58	13.00	487.58
4	42.899977	-76.951235	473.10	13.00	486.10
5	42.900789	-76.951240	479.41	13.00	492.41

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

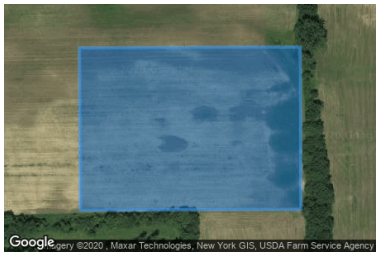
Name: C3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,294,578 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899755	-76.942360	479.49	13.00	492.49
2	42.898069	-76.942351	481.42	13.00	494.42
3	42.898052	-76.947566	481.14	13.00	494.14
4	42.901448	-76.947586	480.32	13.00	493.32



Name: C4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 432,340 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.897256	-76.941999	482.96	13.00	495.96
2	42.895712	-76.941990	481.48	13.00	494.48
3	42.895703	-76.944856	474.57	13.00	487.57
4	42.897247	-76.944865	480.76	13.00	493.76



Name: C5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 262,354 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895712	-76.941990	481.48	13.00	494.48
2	42.892466	-76.941971	469.39	13.00	482.39
3	42.894147	-76.943098	471.67	13.00	484.67
4	42.895708	-76.943107	478.62	13.00	491.62

Name: D1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,818 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	13.00	481.03
2	42.891096	-76.934219	465.92	13.00	478.92
3	42.890809	-76.942230	470.17	13.00	483.17
4	42.891802	-76.942236	469.34	13.00	482.34

Route Receptor(s)

Name: Route 2
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902349	-76.948534	481.78	8.00	489.78
2	42.895229	-76.948127	477.84	8.00	485.84
3	42.892337	-76.944828	477.54	8.00	485.54
4	42.889742	-76.942974	470.56	8.00	478.56
5	42.886543	-76.940667	460.63	8.00	468.63
6	42.884362	-76.940513	461.94	8.00	469.94

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A7	SA tracking	SA tracking	0	0	-	-
B1	SA tracking	SA tracking	0	0	-	-
B2	SA tracking	SA tracking	0	0	-	-
B3	SA tracking	SA tracking	0	0	-	-
B4	SA tracking	SA tracking	0	0	-	-
B5	SA tracking	SA tracking	0	0	-	-
B6	SA tracking	SA tracking	0	0	-	-
C1	SA tracking	SA tracking	0	0	-	-
C2	SA tracking	SA tracking	0	0	-	-
C3	SA tracking	SA tracking	0	0	-	-
C4	SA tracking	SA tracking	0	0	-	-
C5	SA tracking	SA tracking	0	0	-	-
D1	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A7 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B5 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B6 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C5 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

D1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 3 Tracking - trucks Jun18

Project site configuration details and results.

Created **June 18, 2020 7:06 p.m.**
Updated **June 22, 2020 7:51 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40309.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A1	SA tracking	SA tracking	0	0	-
C1	SA tracking	SA tracking	0	0	-
C2	SA tracking	SA tracking	0	0	-
C3	SA tracking	SA tracking	0	0	-
C4	SA tracking	SA tracking	0	0	-
C5	SA tracking	SA tracking	0	0	-
D1	SA tracking	SA tracking	0	0	-
D2	SA tracking	SA tracking	0	0	-
D3	SA tracking	SA tracking	0	0	-
D4	SA tracking	SA tracking	0	0	-

Component Data

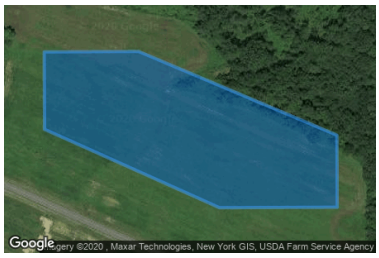
PV Array(s)

Name: A1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 945,265 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.904208	-76.956774	480.39	13.00	493.39
2	42.901486	-76.956758	476.81	13.00	489.81
3	42.901481	-76.958367	475.65	13.00	488.65
4	42.902228	-76.959956	480.67	13.00	493.67
5	42.905188	-76.959974	485.75	13.00	498.75

Name: C1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 367,525 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902590	-76.943302	471.39	13.00	484.39
2	42.901795	-76.940729	472.92	13.00	485.92
3	42.901110	-76.940725	477.37	13.00	490.37
4	42.901105	-76.942254	475.26	13.00	488.26
5	42.901850	-76.944524	476.97	13.00	489.97
6	42.902586	-76.944529	475.11	13.00	488.11



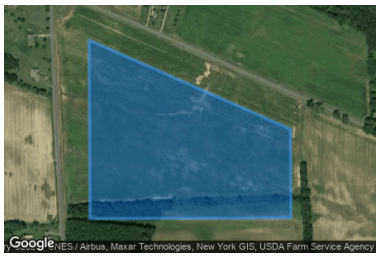
Name: C2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 327,060 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.900054	-76.949244	479.35	13.00	492.36
2	42.898607	-76.949235	480.41	13.00	493.41
3	42.898343	-76.950453	474.58	13.00	487.58
4	42.899977	-76.951235	473.10	13.00	486.10
5	42.900789	-76.951240	479.41	13.00	492.41

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

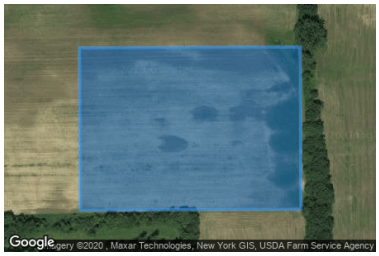
Name: C3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,294,247 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899755	-76.942360	479.49	13.00	492.49
2	42.898069	-76.942351	481.42	13.00	494.42
3	42.898052	-76.947566	481.14	13.00	494.14
4	42.901448	-76.947586	480.32	13.00	493.32



Name: C4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 432,372 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.897256	-76.941999	482.96	13.00	495.96
2	42.895712	-76.941990	481.48	13.00	494.48
3	42.895703	-76.944856	474.57	13.00	487.57
4	42.897247	-76.944865	480.76	13.00	493.76



Name: C5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 262,356 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895712	-76.941990	481.48	13.00	494.48
2	42.892466	-76.941971	469.39	13.00	482.39
3	42.894147	-76.943098	471.67	13.00	484.67
4	42.895708	-76.943107	478.62	13.00	491.62

Name: D1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,347 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	13.00	481.03
2	42.891096	-76.934219	465.92	13.00	478.92
3	42.890809	-76.942230	470.17	13.00	483.17
4	42.891802	-76.942236	469.34	13.00	482.34

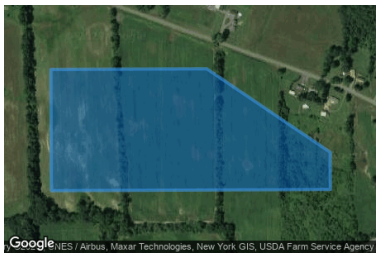
Name: D2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,002,984 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.896111	-76.931505	476.29	13.00	489.29
2	42.893053	-76.931488	470.58	13.00	483.58
3	42.893043	-76.934845	470.52	13.00	483.52
4	42.896101	-76.934863	479.01	13.00	492.01

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: D3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,381,423 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895371	-76.927455	473.89	13.00	486.89
2	42.893783	-76.924251	470.89	13.00	483.89
3	42.893075	-76.924247	469.60	13.00	482.60
4	42.893053	-76.931488	470.58	13.00	483.58
5	42.895359	-76.931501	475.65	13.00	488.65



Name: D4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 902,755 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893075	-76.924247	469.60	13.00	482.60
2	42.892217	-76.924242	469.29	13.00	482.29
3	42.890807	-76.927840	467.75	13.00	480.75
4	42.890802	-76.929449	460.50	13.00	473.50
5	42.893059	-76.929462	470.20	13.00	483.20

Route Receptor(s)

Name: Route 3
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.905981	-76.960467	486.83	8.00	494.83
2	42.905765	-76.959407	484.44	8.00	492.44
3	42.902418	-76.948371	481.87	8.00	489.87
4	42.897278	-76.932621	475.04	8.00	483.04
5	42.895540	-76.925946	474.13	8.00	482.13
6	42.895004	-76.923918	474.17	8.00	482.17
7	42.893768	-76.920600	475.47	8.00	483.47

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A1	SA tracking	SA tracking	0	0	-	-
C1	SA tracking	SA tracking	0	0	-	-
C2	SA tracking	SA tracking	0	0	-	-
C3	SA tracking	SA tracking	0	0	-	-
C4	SA tracking	SA tracking	0	0	-	-
C5	SA tracking	SA tracking	0	0	-	-
D1	SA tracking	SA tracking	0	0	-	-
D2	SA tracking	SA tracking	0	0	-	-
D3	SA tracking	SA tracking	0	0	-	-
D4	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C5 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

D1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

D2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

D3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

D4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

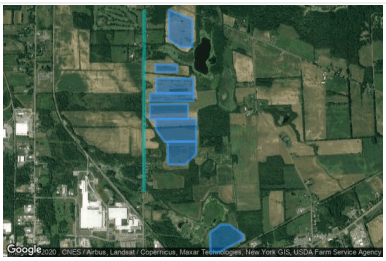
Assumptions

- 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 4 Tracking - trucks Jun18

Project site configuration details and results.



Created **June 18, 2020 7:06 p.m.**
Updated **June 22, 2020 7:49 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40310.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A1	SA tracking	SA tracking	0	0	-
A2	SA tracking	SA tracking	0	0	-
A3	SA tracking	SA tracking	0	0	-
A4	SA tracking	SA tracking	0	0	-
A5	SA tracking	SA tracking	0	0	-
A6	SA tracking	SA tracking	0	0	-
A7	SA tracking	SA tracking	0	0	-
B8	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: A1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 945,265 sq-ft

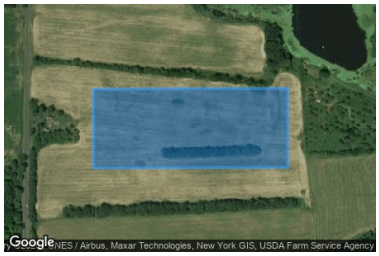
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.904208	-76.956774	480.39	13.00	493.39
2	42.901486	-76.956758	476.81	13.00	489.81
3	42.901481	-76.958367	475.65	13.00	488.65
4	42.902228	-76.959956	480.67	13.00	493.67
5	42.905188	-76.959974	485.75	13.00	498.75

Name: A2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 209,821 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899737	-76.958870	472.85	13.00	485.85
2	42.899001	-76.958865	482.90	13.00	495.90
3	42.898991	-76.961786	480.54	13.00	493.54
4	42.899727	-76.961790	480.92	13.00	493.92

Name: A3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 742,226 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.898361	-76.956635	483.98	13.00	496.98
2	42.896857	-76.956626	489.66	13.00	502.66
3	42.896840	-76.961677	477.00	13.00	490.00
4	42.898345	-76.961686	479.80	13.00	492.80



Name: A4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 422,276 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.896857	-76.956626	489.66	13.00	502.66
2	42.896121	-76.956622	488.55	13.00	501.56
3	42.896101	-76.962492	471.96	13.00	484.96
4	42.896837	-76.962496	475.05	13.00	488.05

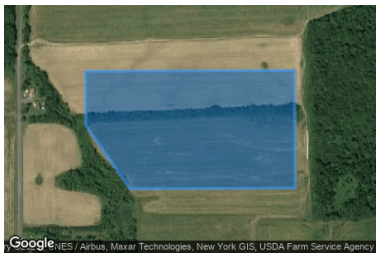
Name: A5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 758,548 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895791	-76.957388	485.93	13.00	498.93
2	42.894286	-76.957379	481.51	13.00	494.51
3	42.894269	-76.962539	467.99	13.00	480.99
4	42.895774	-76.962548	470.33	13.00	483.33

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

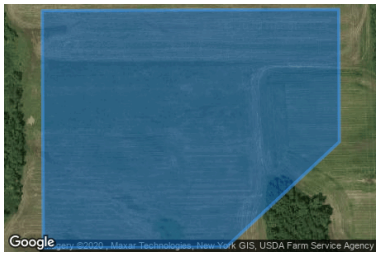
Name: A6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,120,893 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.894290	-76.956286	480.66	13.00	493.66
2	42.892049	-76.956273	472.19	13.00	485.19
3	42.892035	-76.960559	466.72	13.00	479.72
4	42.893246	-76.961713	467.16	13.00	480.16
5	42.894272	-76.961720	469.25	13.00	482.25



Name: A7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 776,682 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892049	-76.956273	472.19	13.00	485.19
2	42.890788	-76.956265	469.66	13.00	482.66
3	42.889787	-76.957734	467.04	13.00	480.04
4	42.889779	-76.960108	464.29	13.00	477.29
5	42.892036	-76.960122	467.80	13.00	480.80



Name: B8
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 845,746 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.883752	-76.951775	460.35	13.00	473.35
2	42.882761	-76.949911	462.41	13.00	475.41
3	42.882270	-76.949909	462.39	13.00	475.39
4	42.880999	-76.953178	462.81	13.00	475.81
5	42.880995	-76.954350	465.30	13.00	478.30
6	42.882962	-76.954362	460.64	13.00	473.65
7	42.883749	-76.952892	459.77	13.00	472.77

Route Receptor(s)

Name: Route 4
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.905011	-76.963312	487.53	8.00	495.53
2	42.896093	-76.963328	471.31	8.00	479.31
3	42.887174	-76.963343	460.56	8.00	468.56

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A1	SA tracking	SA tracking	0	0	-	-
A2	SA tracking	SA tracking	0	0	-	-
A3	SA tracking	SA tracking	0	0	-	-
A4	SA tracking	SA tracking	0	0	-	-
A5	SA tracking	SA tracking	0	0	-	-
A6	SA tracking	SA tracking	0	0	-	-
A7	SA tracking	SA tracking	0	0	-	-
B8	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A5 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A6 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A7 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

B8 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed A1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:12 p.m.**
Updated **June 22, 2020 6:01 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40270.7248

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
A1	14.0	180.0	0	3,120	-

Component Data

PV Array(s)

Name: A1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 945,265 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.904208	-76.956774	480.39	10.00	490.39
2	42.901486	-76.956758	476.81	10.00	486.81
3	42.901481	-76.958367	475.65	10.00	485.65
4	42.902228	-76.959956	480.67	10.00	490.67
5	42.905188	-76.959974	485.75	10.00	495.75

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	42.905995	-76.958851	483.03	16.00	499.03
OP 40	42.903431	-76.962955	482.05	16.00	498.06

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A1	14.0	180.0	0	3,120	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 40	0	3120

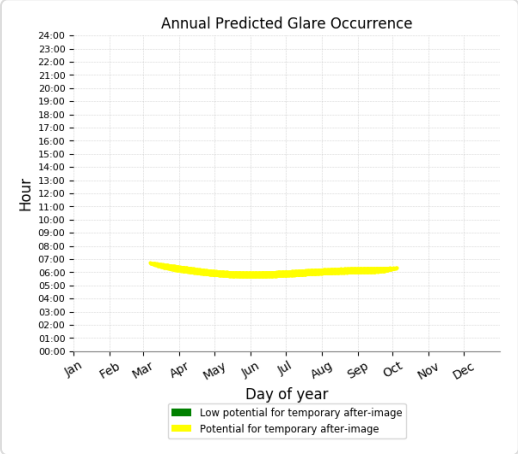
A1 - OP Receptor (OP 1)

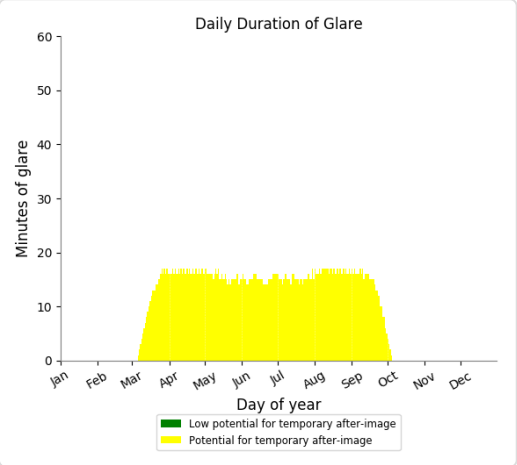
No glare found

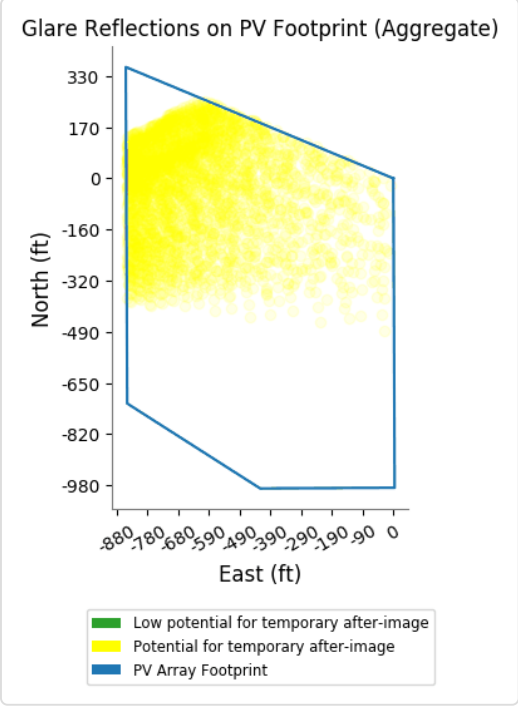
A1 - OP Receptor (OP 40)

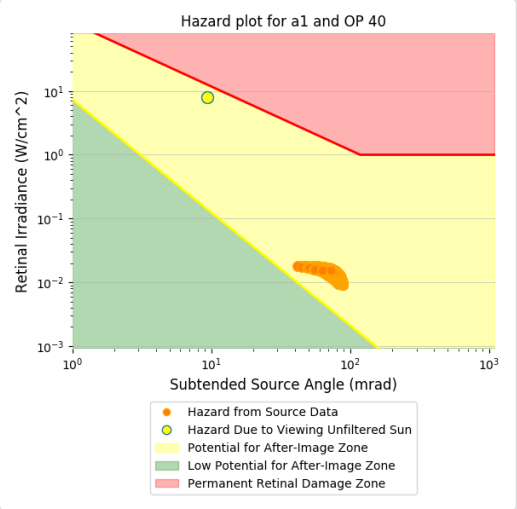
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,120 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed A7 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:17 p.m.**
Updated **June 22, 2020 6:02 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40272.7248

Summary of Results

Glare with potential for temporary after-image predicted

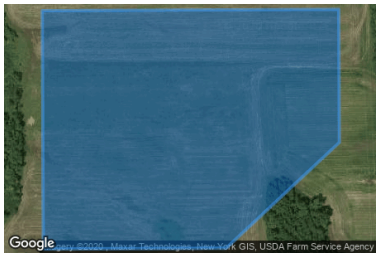
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A7	14.0	180.0	0	3,821	-

Component Data

PV Array(s)

Name: A7
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 776,828 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892049	-76.956273	472.19	10.00	482.19
2	42.890788	-76.956265	469.66	10.00	479.66
3	42.889787	-76.957734	467.04	10.00	477.04
4	42.889779	-76.960108	464.29	10.00	474.29
5	42.892036	-76.960122	467.80	10.00	477.80



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 36	42.889275	-76.962907	460.75	16.00	476.75
OP 37	42.889553	-76.963024	460.43	16.00	476.43

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A7	14.0	180.0	0	3,821	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

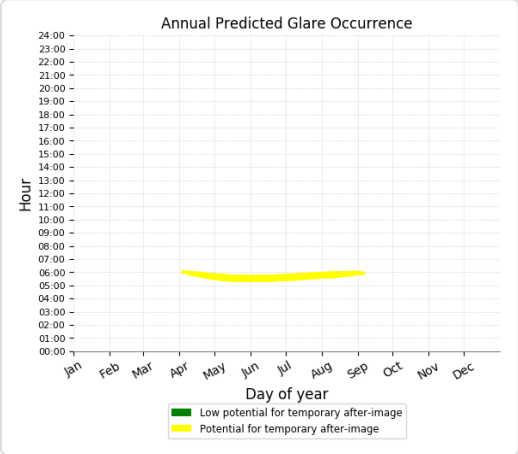
A7 potential temporary after-image

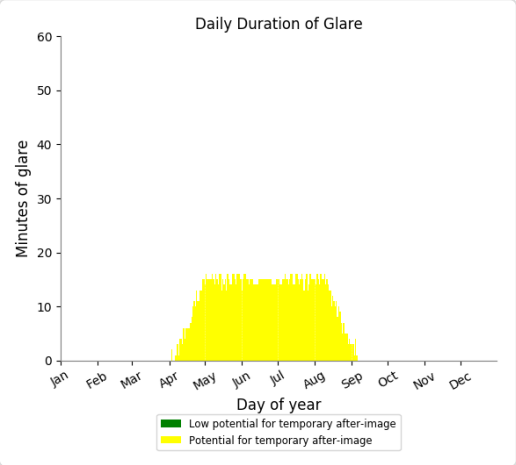
Component	Green glare (min)	Yellow glare (min)
OP: OP 36	0	1900
OP: OP 37	0	1921

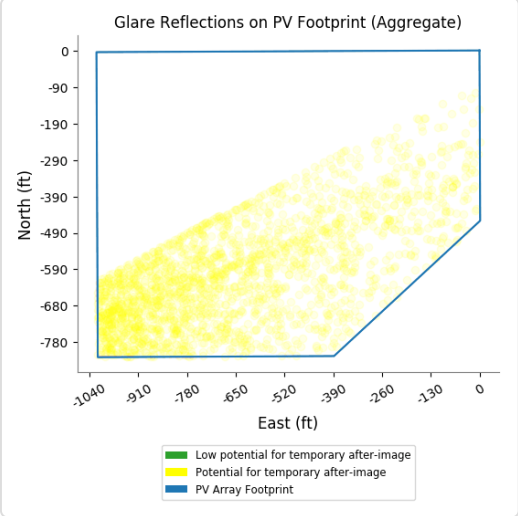
A7 - OP Receptor (OP 36)

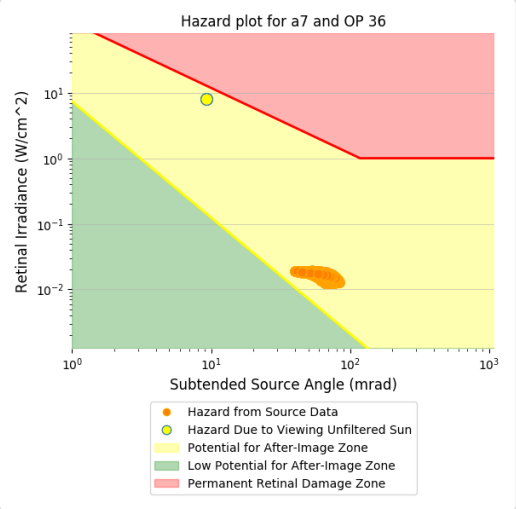
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,900 minutes of "yellow" glare with potential to cause temporary after-image.





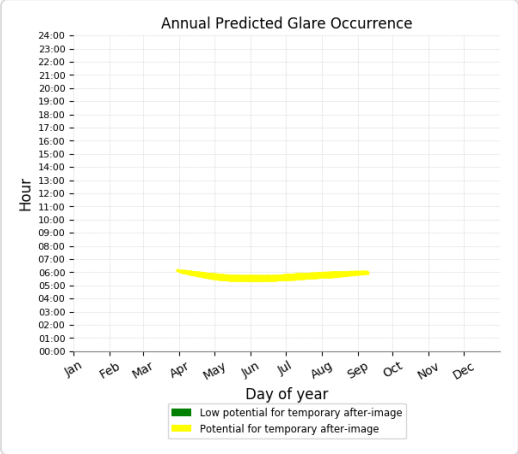


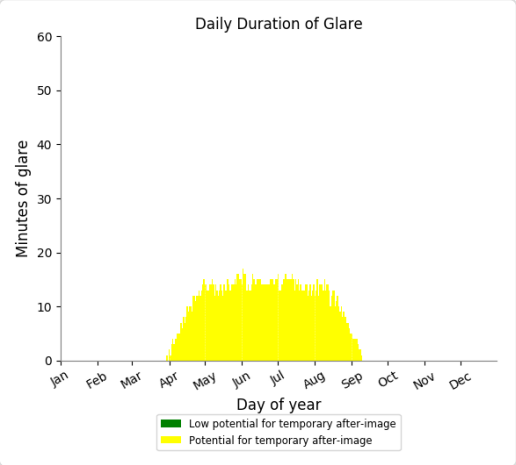


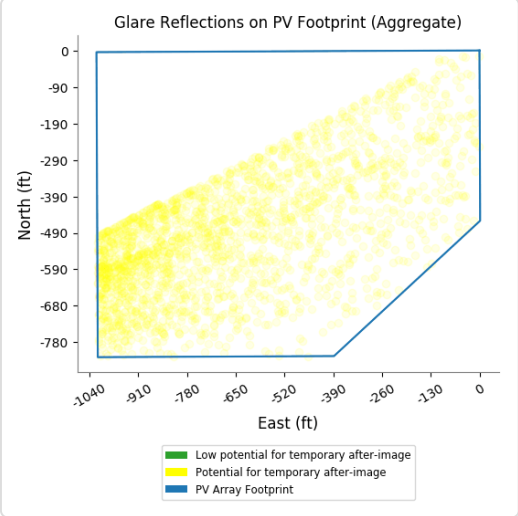
A7 - OP Receptor (OP 37)

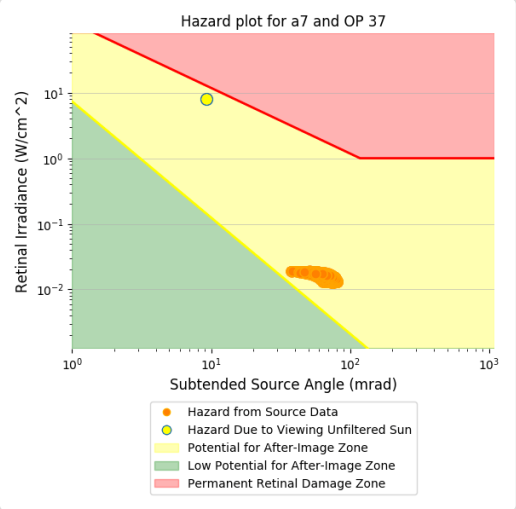
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,921 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed B1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:19 p.m.**
Updated **June 22, 2020 6:02 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40273.7248

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
B1	14.0	180.0	1	490	-

Component Data

PV Array(s)

Name: B1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 702,437 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893999	-76.951634	478.47	13.00	491.47
2	42.892760	-76.949540	477.12	13.00	490.12
3	42.891241	-76.949531	472.23	13.00	485.23
4	42.891235	-76.951527	473.69	13.00	486.69
5	42.892995	-76.953116	478.75	13.00	491.75
6	42.893995	-76.953122	479.47	13.00	492.47

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 31	42.891684	-76.943814	473.62	16.00	489.62
OP 32	42.892493	-76.944576	476.23	16.00	492.23

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B1	14.0	180.0	1	490	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

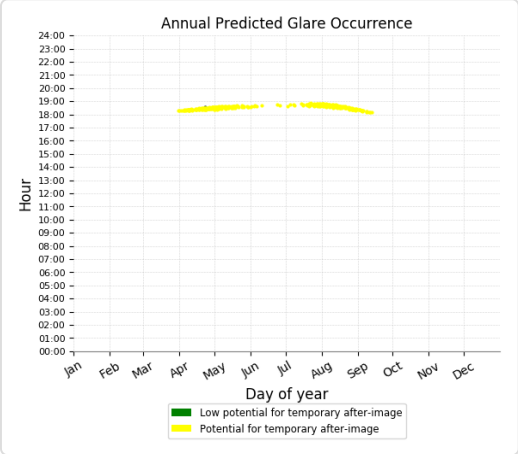
B1 potential temporary after-image

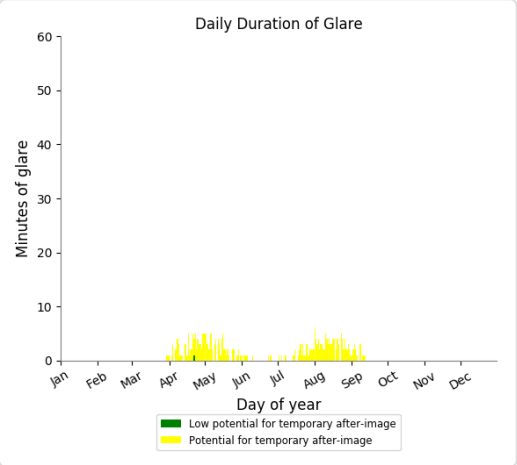
Component	Green glare (min)	Yellow glare (min)
OP: OP 31	1	286
OP: OP 32	0	204

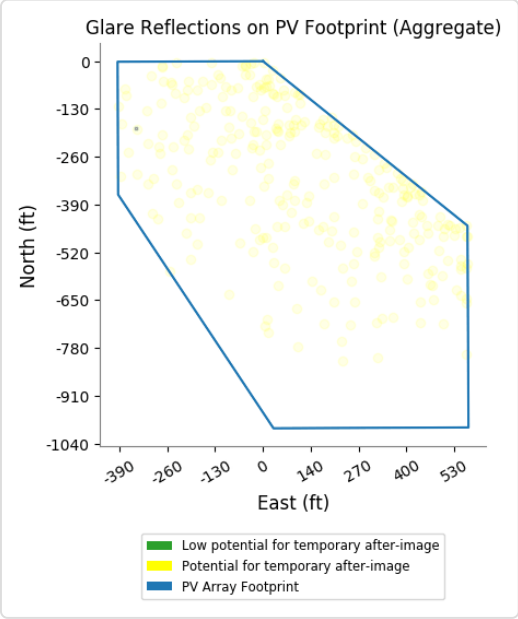
B1 - OP Receptor (OP 31)

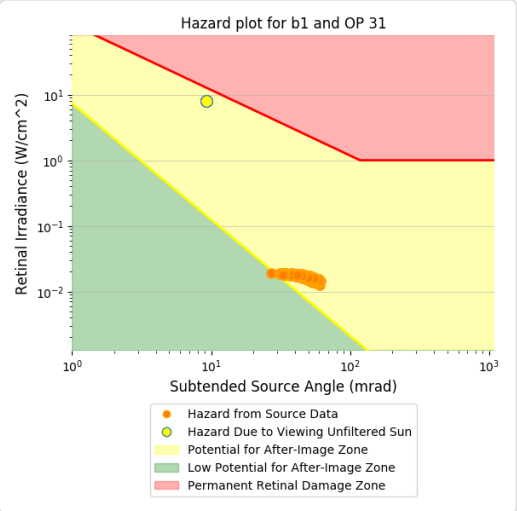
PV array is expected to produce the following glare for receptors at this location:

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





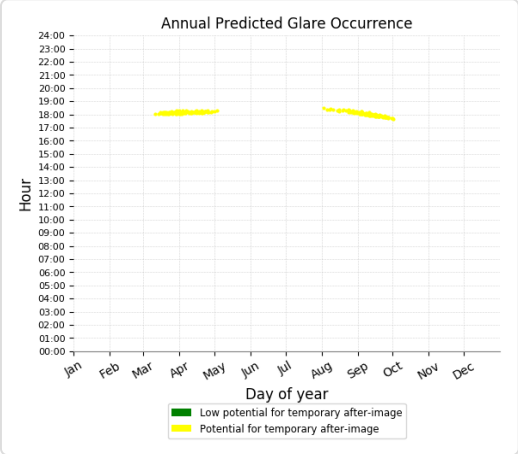


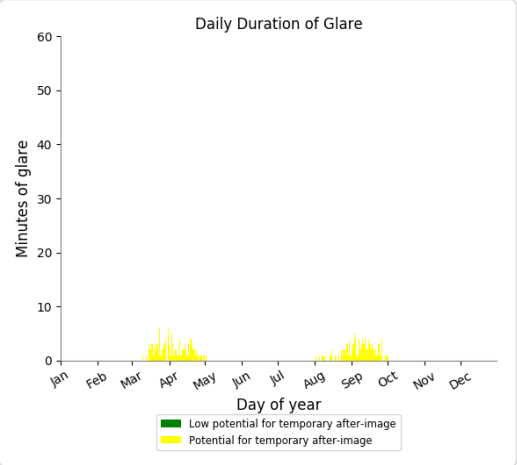


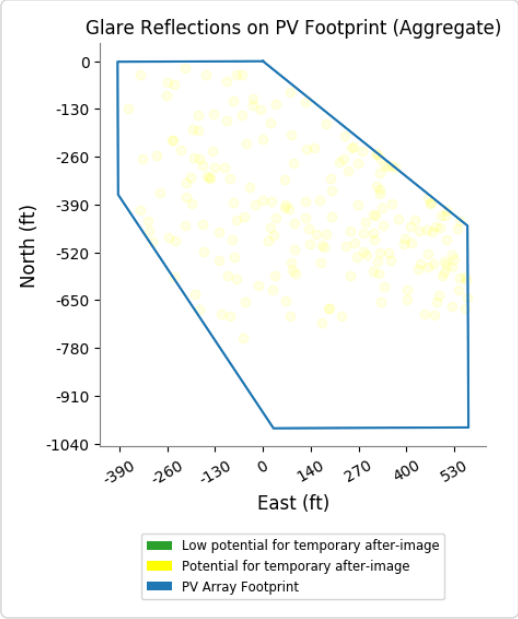
B1 - OP Receptor (OP 32)

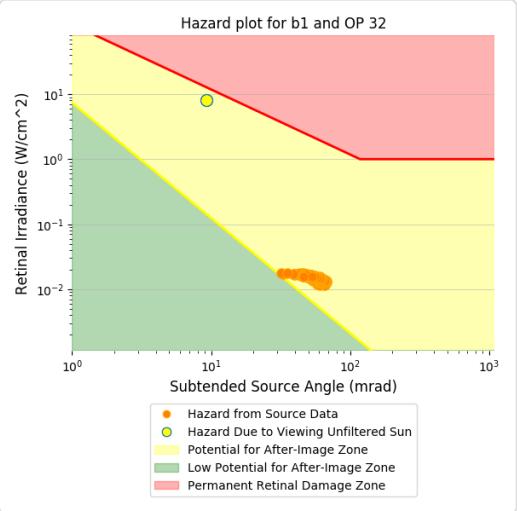
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 204 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed B2 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:19 p.m.**
Updated **June 22, 2020 6:08 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40274.7248

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
B2	14.0	180.0	17	6,375	-

Component Data

PV Array(s)

Name: B2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,211,216 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892772	-76.946056	479.18	13.00	492.18
2	42.890014	-76.944034	471.62	13.00	484.62
3	42.889997	-76.949524	468.93	13.00	481.93
4	42.892760	-76.949540	477.12	13.00	490.12

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 29	42.887894	-76.941215	464.38	16.00	480.38
OP 30	42.890618	-76.943150	471.90	16.00	487.90
OP 31	42.891684	-76.943814	473.62	16.00	489.62
OP 32	42.892493	-76.944576	476.23	16.00	492.23
OP 33	42.896032	-76.948574	480.02	16.00	496.02
OP 34	42.896537	-76.948651	480.95	16.00	496.95
OP 35	42.897691	-76.948642	481.21	16.00	497.21
OP 36	42.889275	-76.962907	460.75	16.00	476.75

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B2	14.0	180.0	17	6,375	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

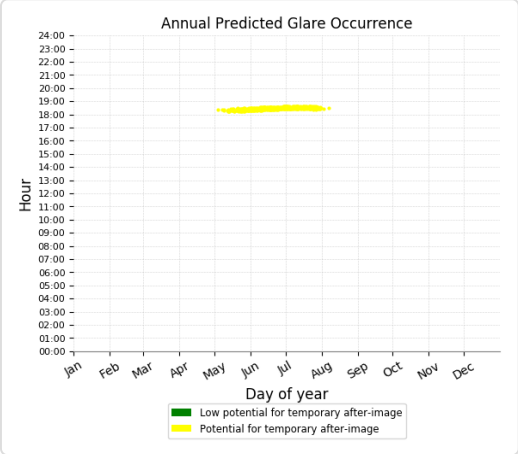
B2 potential temporary after-image

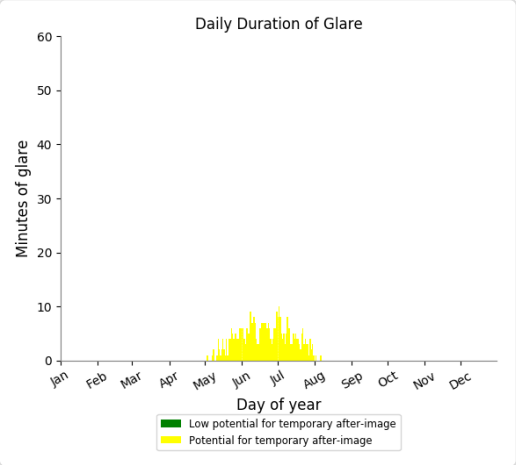
Component	Green glare (min)	Yellow glare (min)
OP: OP 29	0	392
OP: OP 30	0	3000
OP: OP 31	0	2034
OP: OP 32	0	917
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	17	32

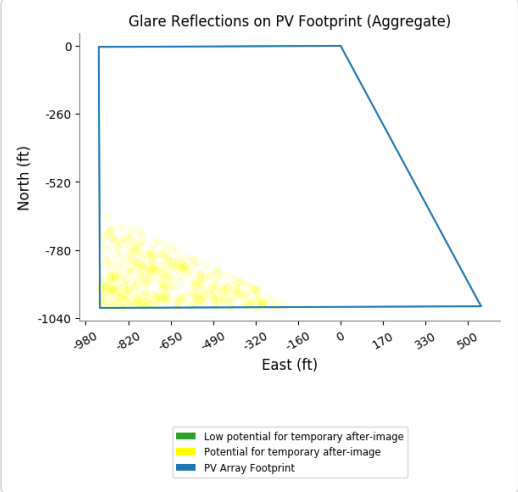
B2 - OP Receptor (OP 29)

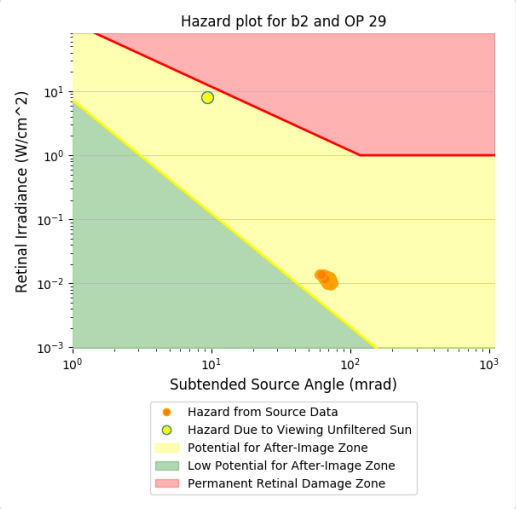
PV array is expected to produce the following glare for receptors at this location:

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





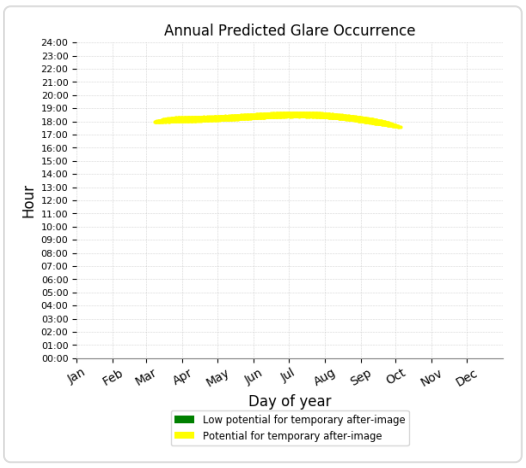


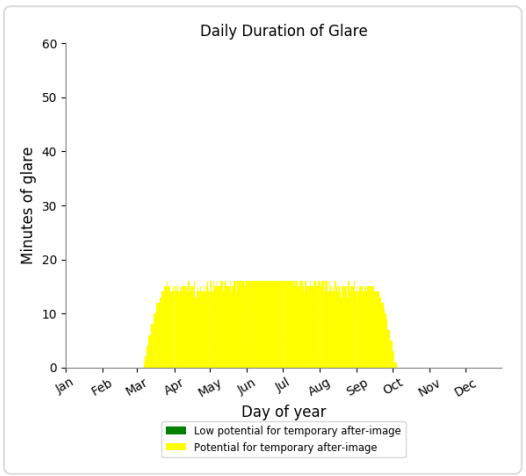


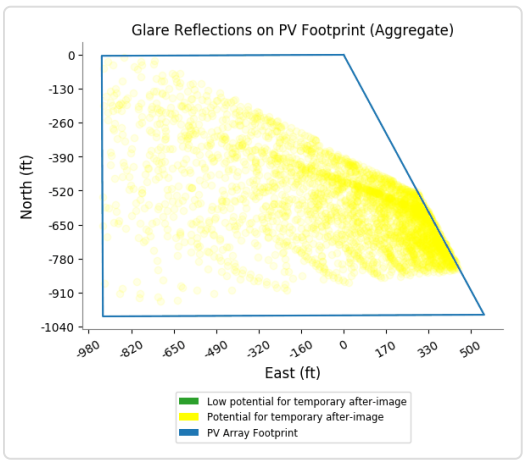
B2 - OP Receptor (OP 30)

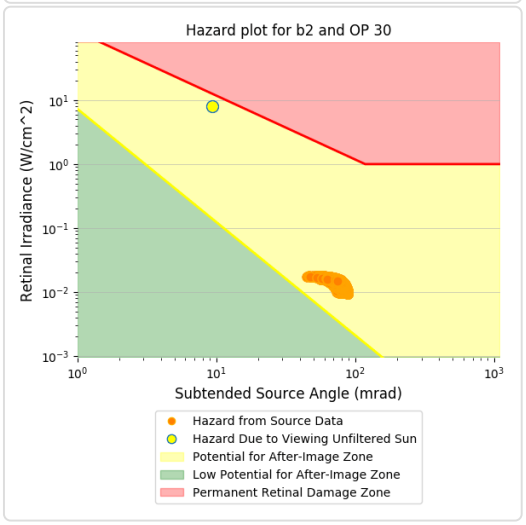
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,000 minutes of "yellow" glare with potential to cause temporary after-image.





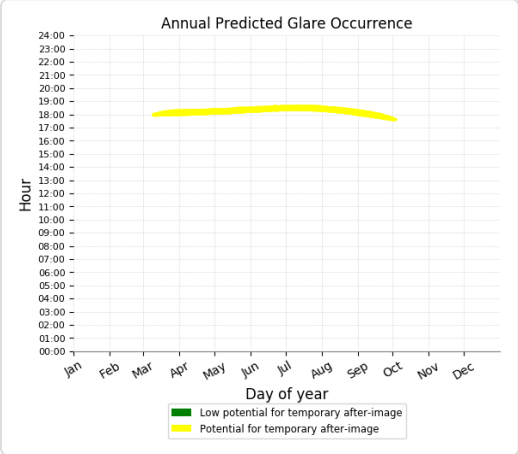


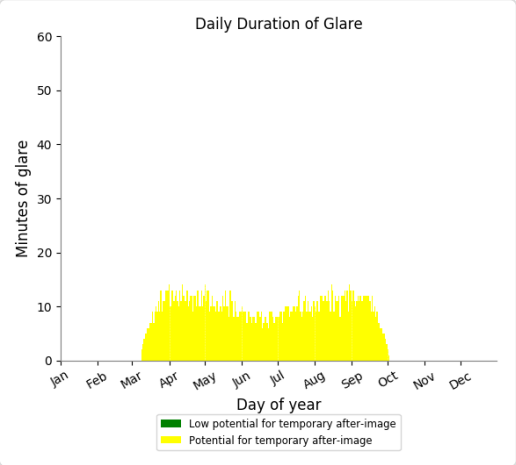


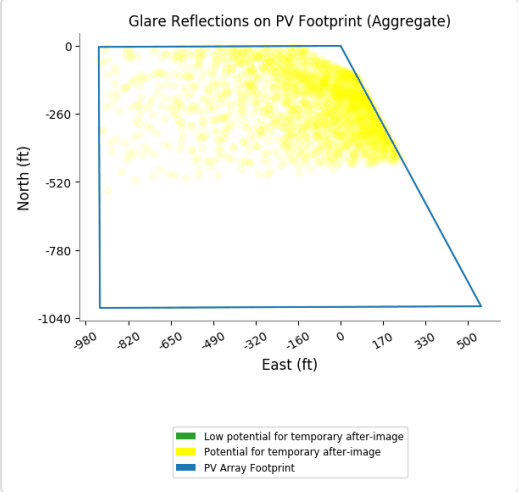
B2 - OP Receptor (OP 31)

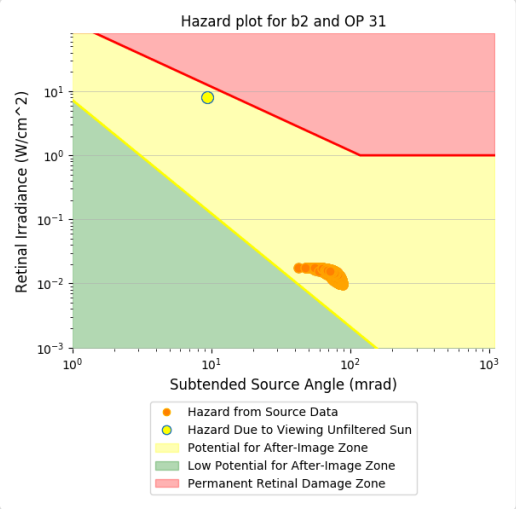
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,034 minutes of "yellow" glare with potential to cause temporary after-image.





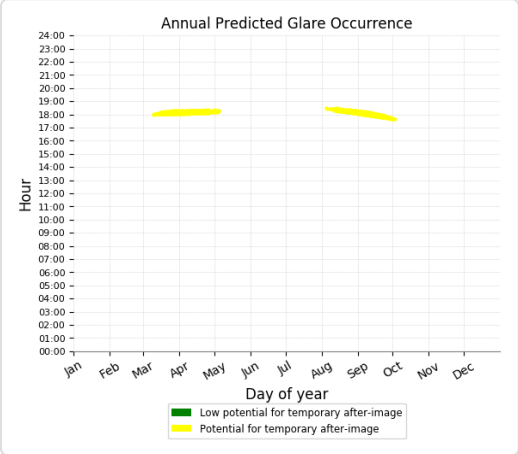


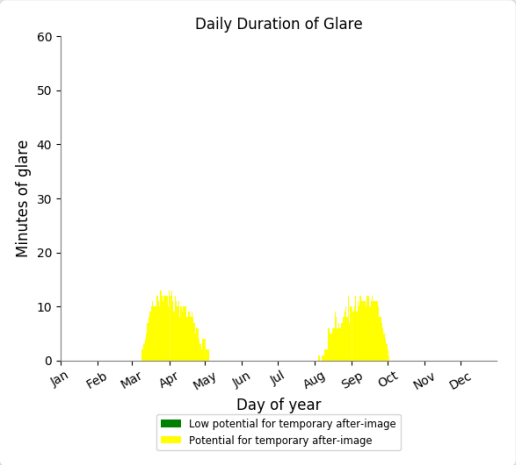


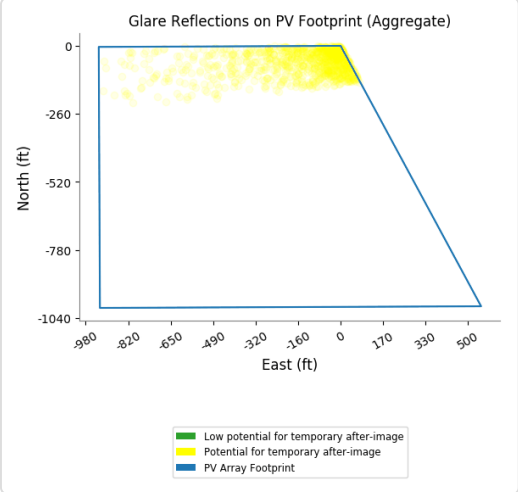
B2 - OP Receptor (OP 32)

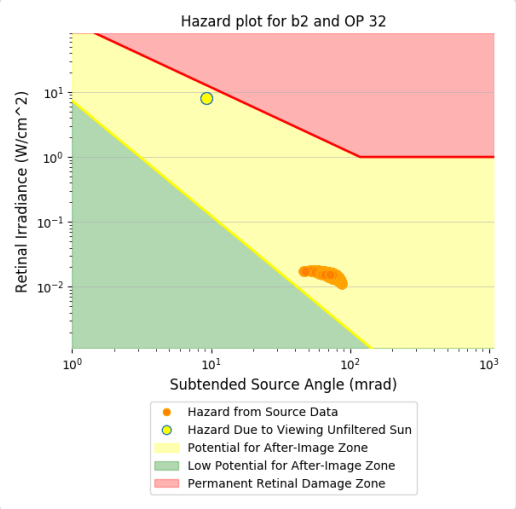
PV array is expected to produce the following glare for receptors at this location:

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









B2 - OP Receptor (OP 33)

No glare found

B2 - OP Receptor (OP 34)

No glare found

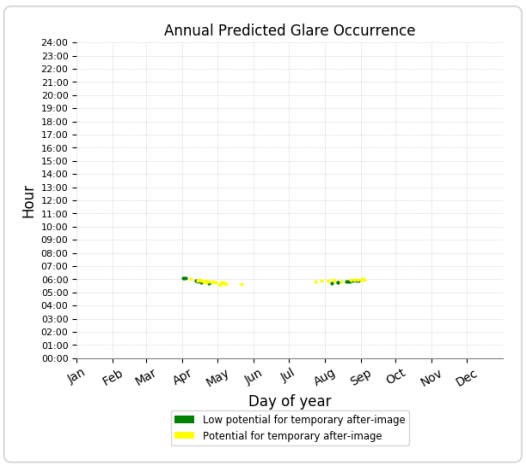
B2 - OP Receptor (OP 35)

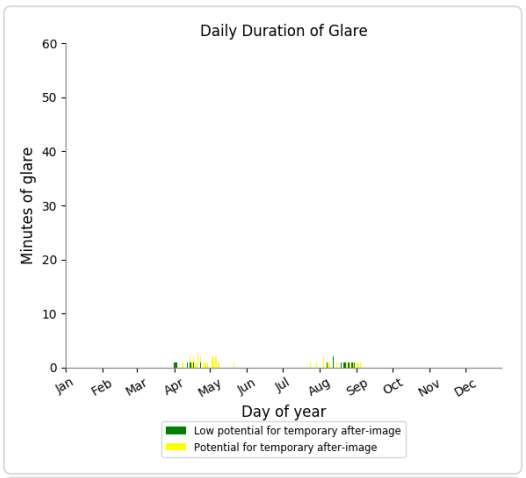
No glare found

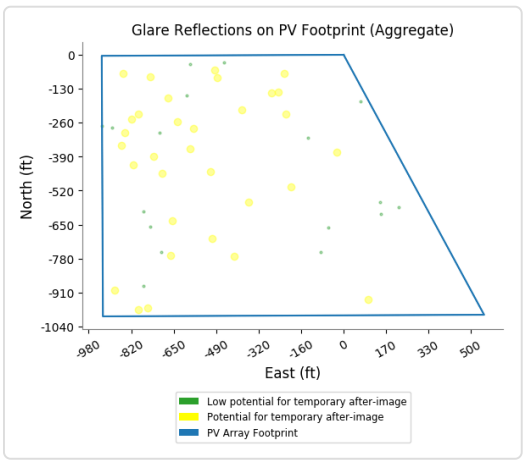
B2 - OP Receptor (OP 36)

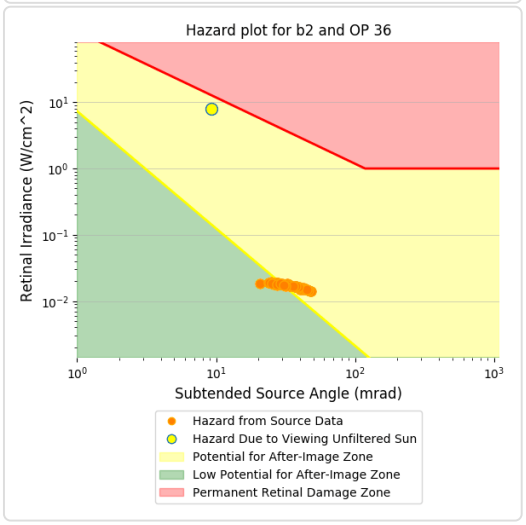
PV array is expected to produce the following glare for receptors at this location:

- 17 minutes of "green" glare with low potential to cause temporary after-image.
- 32 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Tracking B3 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:20 p.m.**
Updated **June 22, 2020 6:07 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40275.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
B3	14.0	180.0	0	0	-

Component Data

PV Array(s)

Name: B3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 583,079 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.891241	-76.949531	472.23	13.00	485.23
2	42.889997	-76.949524	468.93	13.00	481.93
3	42.889986	-76.952989	469.71	13.00	482.71
4	42.890732	-76.954905	470.59	13.00	483.59
5	42.891224	-76.954908	471.96	13.00	484.96

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 32	42.892493	-76.944576	476.23	16.00	492.23

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B3	14.0	180.0	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B3 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 32	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed B4 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:22 p.m.**
Updated **June 22, 2020 6:08 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40276.7248

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
B4	14.0	180.0	0	8	-

Component Data

PV Array(s)

Name: B4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,316,797 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.890002	-76.948020	468.96	13.00	481.96
2	42.887228	-76.948004	465.87	13.00	478.88
3	42.887212	-76.952863	460.08	13.00	473.08
4	42.889986	-76.952880	469.80	13.00	482.80

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 30	42.890618	-76.943150	471.90	16.00	487.90
OP 31	42.891684	-76.943814	473.62	16.00	489.62
OP 32	42.892493	-76.944576	476.23	16.00	492.23

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B4	14.0	180.0	0	8	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

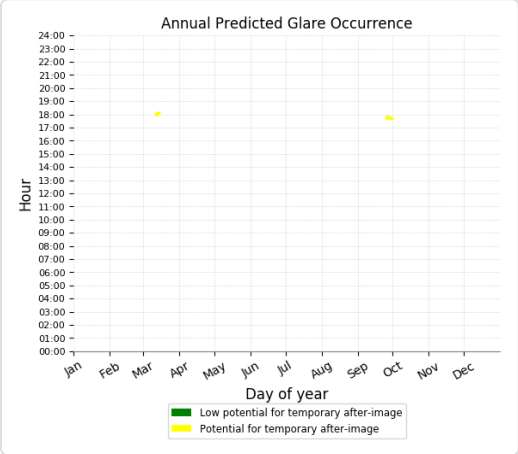
B4 potential temporary after-image

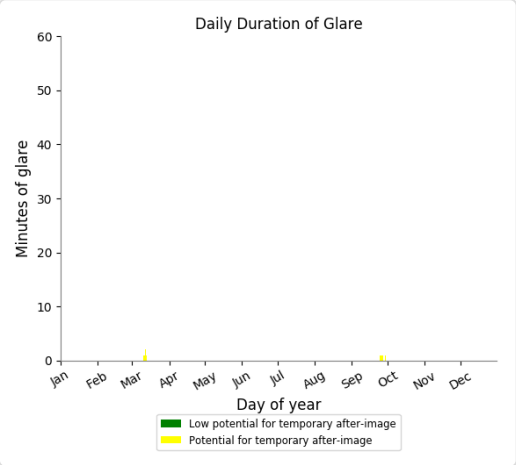
Component	Green glare (min)	Yellow glare (min)
OP: OP 30	0	8
OP: OP 31	0	0
OP: OP 32	0	0

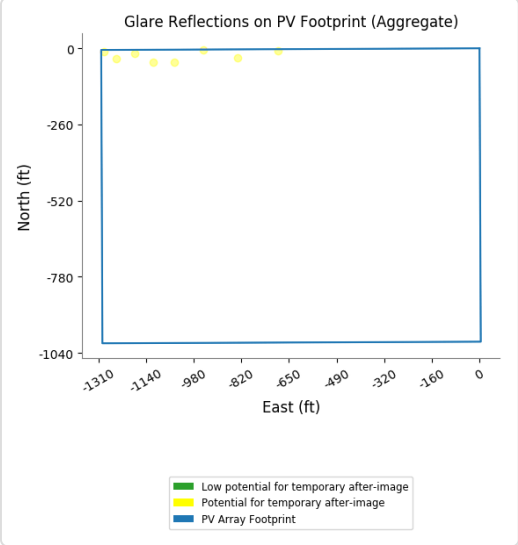
B4 - OP Receptor (OP 30)

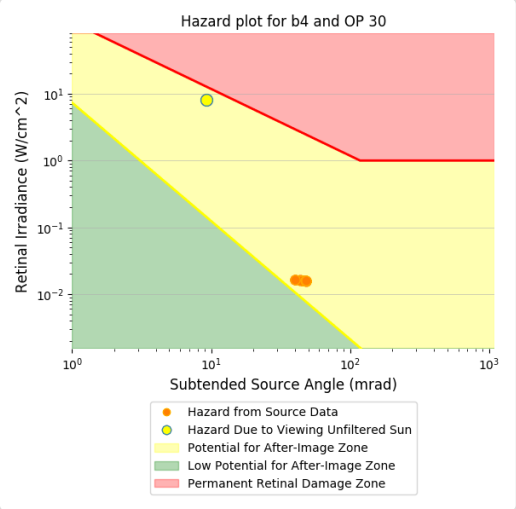
PV array is expected to produce the following glare for receptors at this location:

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









B4 - OP Receptor (OP 31)

No glare found

B4 - OP Receptor (OP 32)

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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed C1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:22 p.m.**
Updated **June 22, 2020 6:09 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40277.7248

Summary of Results

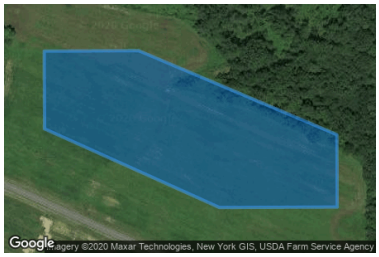
Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C1	14.0	180.0	55	3,868	-

Component Data

PV Array(s)

Name: C1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 367,540 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902590	-76.943302	471.39	10.00	481.39
2	42.901795	-76.940729	472.92	10.00	482.92
3	42.901110	-76.940725	477.37	10.00	487.37
4	42.901105	-76.942254	475.26	10.00	485.26
5	42.901850	-76.944524	476.97	10.00	486.97
6	42.902586	-76.944529	475.11	10.00	485.11

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 6	42.902223	-76.949457	479.46	16.00	495.46
OP 7	42.901458	-76.949049	481.49	16.00	497.49
OP 8	42.900769	-76.948931	479.56	16.00	495.56

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C1	14.0	180.0	55	3,868	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

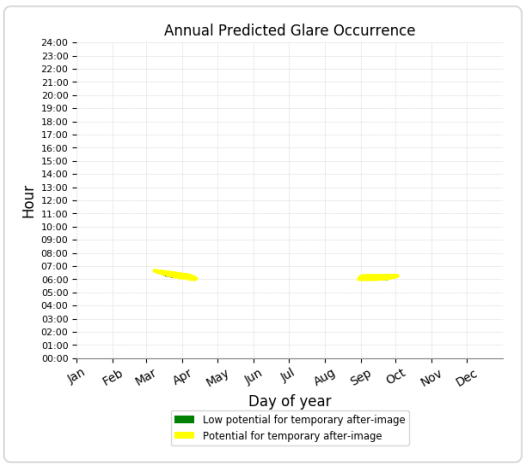
C1 potential temporary after-image

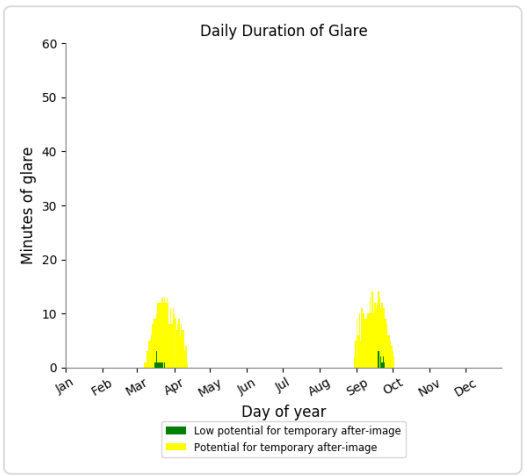
Component	Green glare (min)	Yellow glare (min)
OP: OP 6	19	584
OP: OP 7	25	1450
OP: OP 8	11	1834

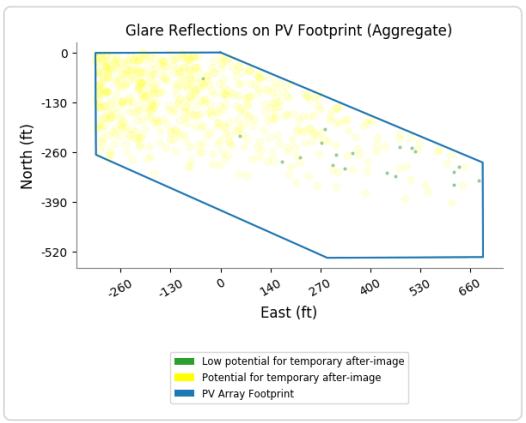
C1 - OP Receptor (OP 6)

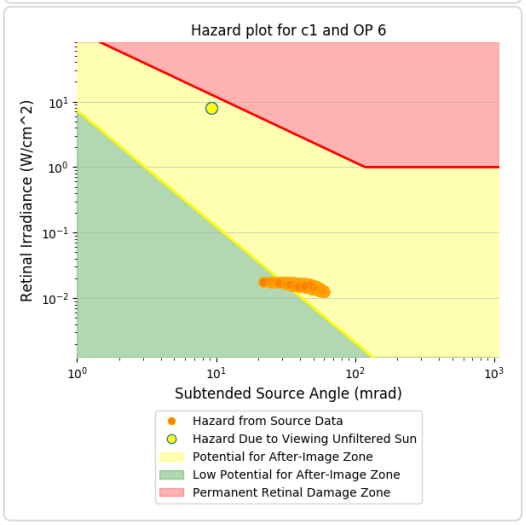
PV array is expected to produce the following glare for receptors at this location:

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





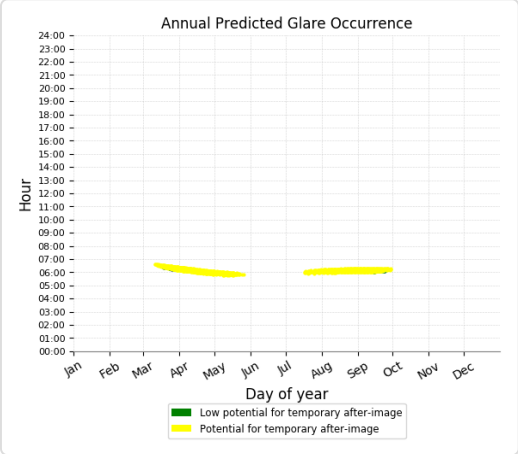


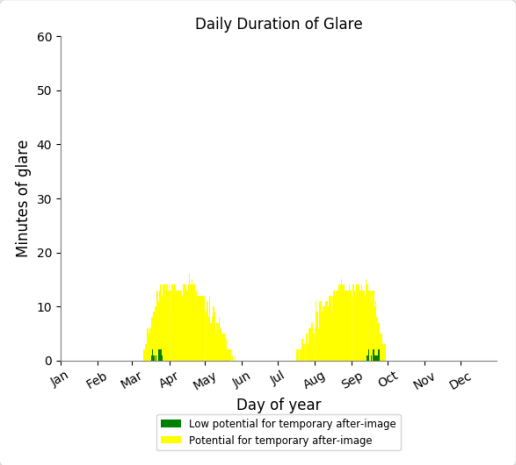


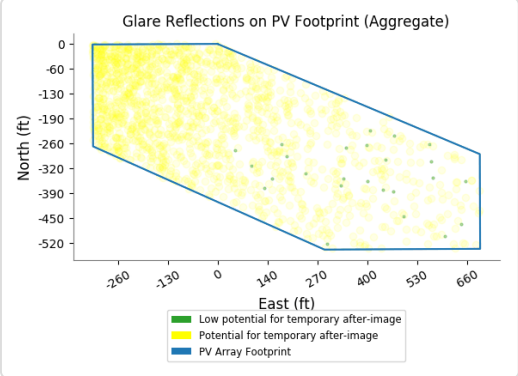
C1 - OP Receptor (OP 7)

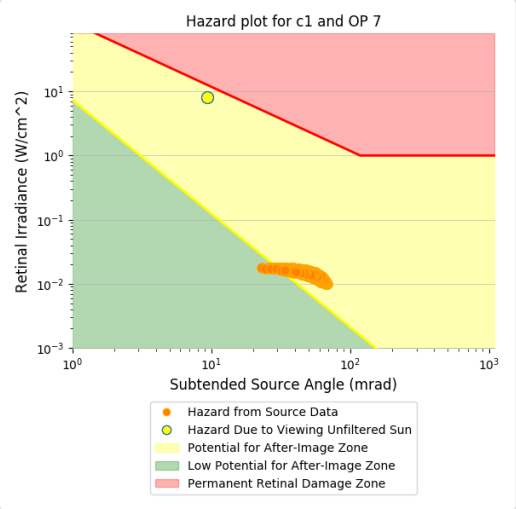
PV array is expected to produce the following glare for receptors at this location:

- 25 minutes of "green" glare with low potential to cause temporary after-image.
- 1,450 minutes of "yellow" glare with potential to cause temporary after-image.





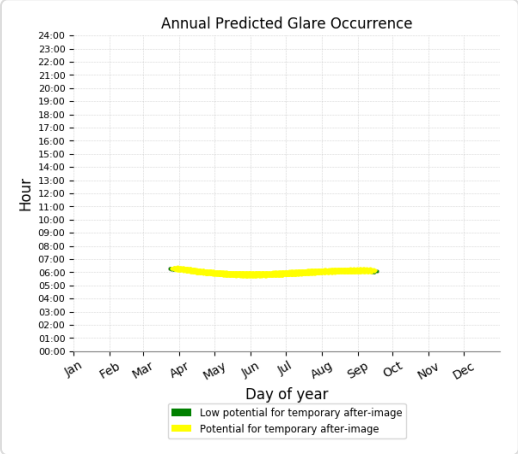


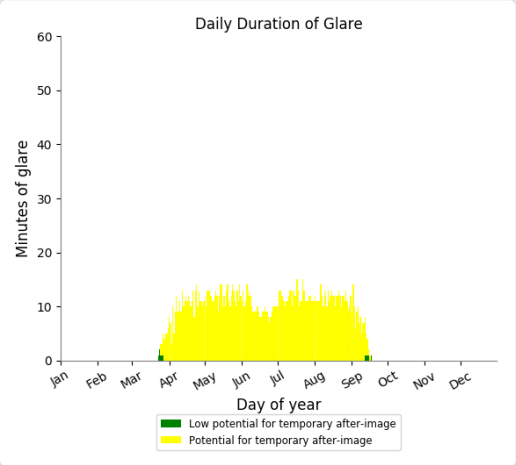


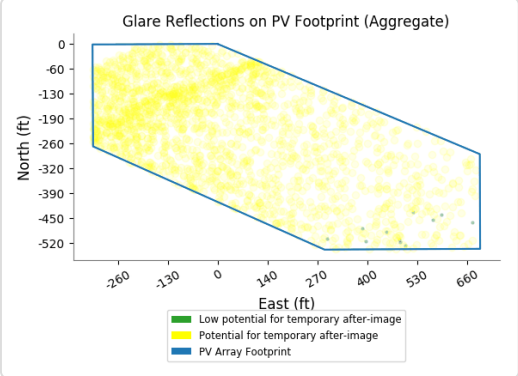
C1 - OP Receptor (OP 8)

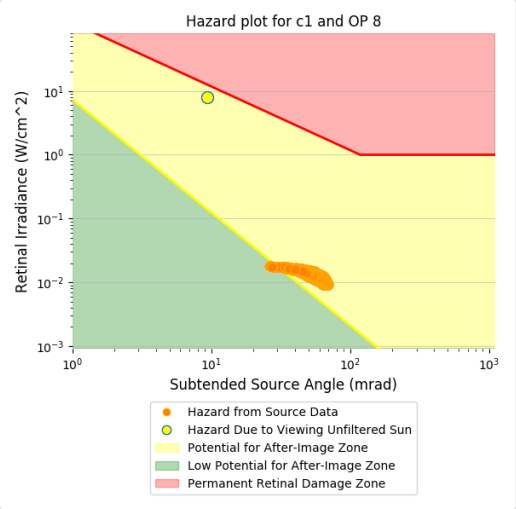
PV array is expected to produce the following glare for receptors at this location:

- 11 minutes of "green" glare with low potential to cause temporary after-image.
- 1,834 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed C2 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:30 p.m.**
Updated **June 22, 2020 6:09 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40278.7248

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
C2	14.0	180.0	0	171	-

Component Data

PV Array(s)

Name: C2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 326,973 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.900054	-76.949244	479.35	10.00	489.36
2	42.898607	-76.949235	480.41	10.00	490.41
3	42.898343	-76.950453	474.58	10.00	484.58
4	42.899977	-76.951235	473.10	10.00	483.10
5	42.900789	-76.951240	479.41	10.00	489.41

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 7	42.901458	-76.949049	481.49	16.00	497.49
OP 8	42.900769	-76.948931	479.56	16.00	495.56
OP 35	42.897691	-76.948642	481.21	16.00	497.21

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C2	14.0	180.0	0	171	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 7	0	0
OP: OP 8	0	149
OP: OP 35	0	22

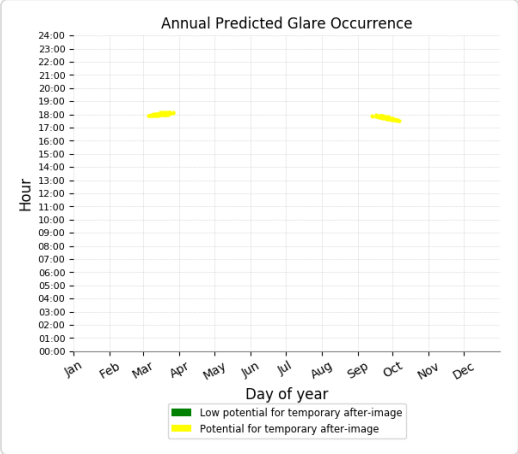
C2 - OP Receptor (OP 7)

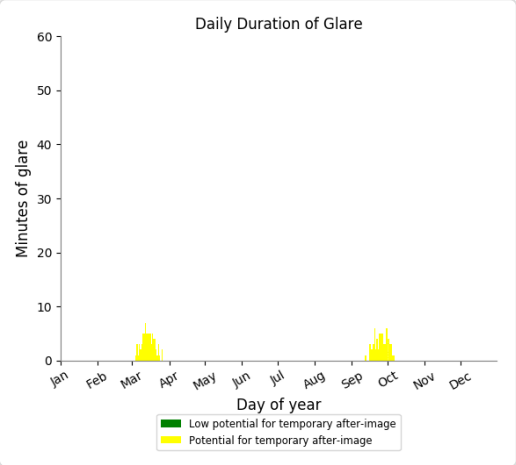
No glare found

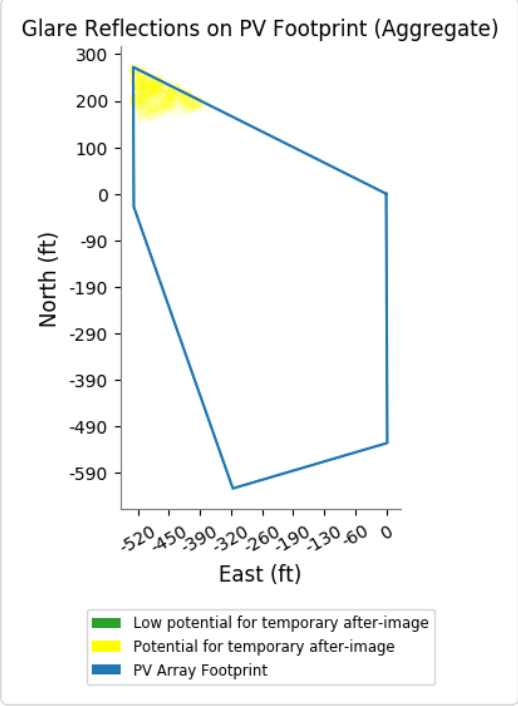
C2 - OP Receptor (OP 8)

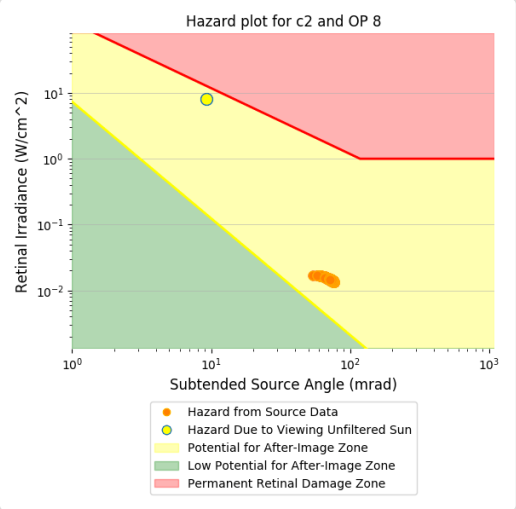
PV array is expected to produce the following glare for receptors at this location:

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





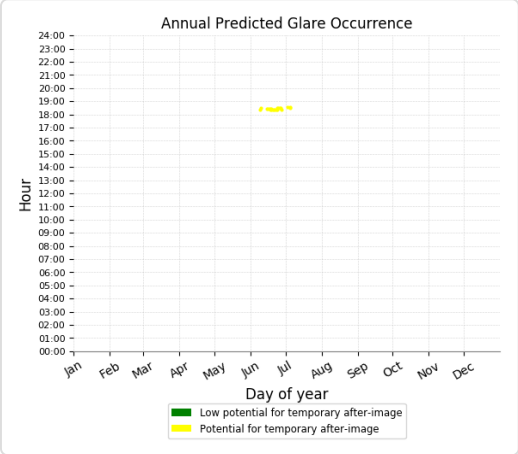


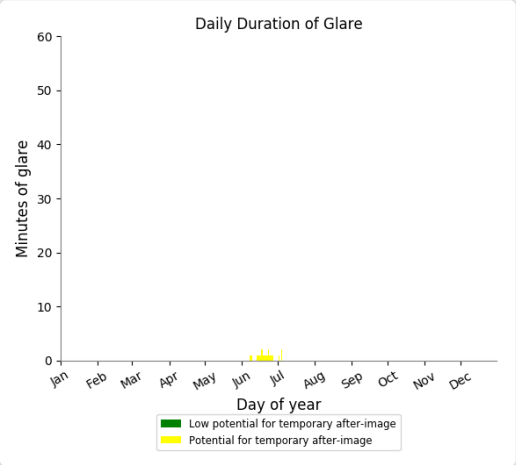


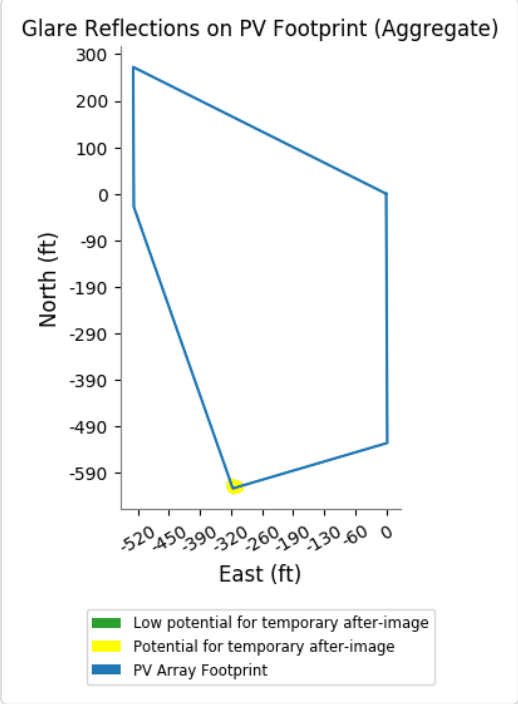
C2 - OP Receptor (OP 35)

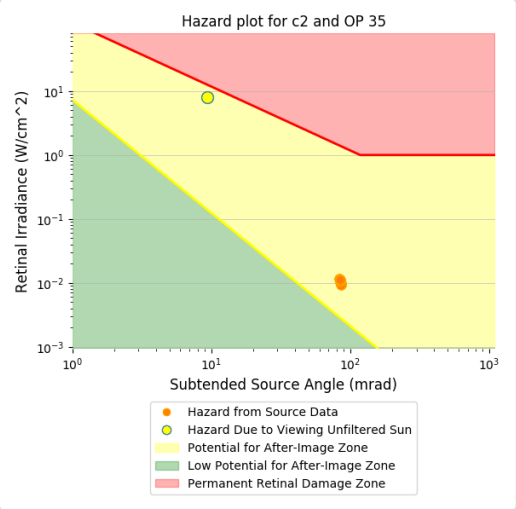
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 22 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed C3 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:30 p.m.**
Updated **June 22, 2020 6:12 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40279.7248

Summary of Results

Glare with potential for temporary after-image predicted

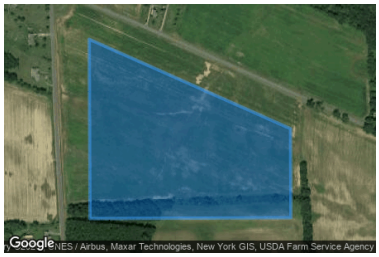
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C3	14.0	180.0	0	13,141	-

Component Data

PV Array(s)

Name: C3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,294,046 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899755	-76.942360	479.49	10.00	489.49
2	42.898069	-76.942351	481.42	10.00	491.42
3	42.898052	-76.947566	481.14	10.00	491.14
4	42.901448	-76.947586	480.32	10.00	490.32



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 2	42.903047	-76.952127	481.78	16.00	497.78
OP 3	42.902759	-76.951248	480.35	16.00	496.35
OP 4	42.903677	-76.950482	482.93	16.00	498.93
OP 5	42.902581	-76.950543	479.60	16.00	495.60
OP 6	42.902223	-76.949457	479.46	16.00	495.46
OP 7	42.901458	-76.949049	481.49	16.00	497.49
OP 8	42.900769	-76.948931	479.56	16.00	495.56
OP 9	42.899926	-76.939928	482.14	16.00	498.14
OP 10	42.899365	-76.938233	480.65	16.00	496.65
OP 11	42.898797	-76.937767	481.80	16.00	497.80
OP 12	42.899114	-76.937564	480.36	16.00	496.37
OP 13	42.898914	-76.936913	480.56	16.00	496.57
OP 35	42.897691	-76.948642	481.21	16.00	497.21

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C3	14.0	180.0	0	13,141	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C3 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	323
OP: OP 8	0	3422
OP: OP 9	0	1281
OP: OP 10	0	1286
OP: OP 11	0	1528
OP: OP 12	0	1262
OP: OP 13	0	1224
OP: OP 35	0	2815

C3 - OP Receptor (OP 2)

No glare found

C3 - OP Receptor (OP 3)

No glare found

C3 - OP Receptor (OP 4)

No glare found

C3 - OP Receptor (OP 5)

No glare found

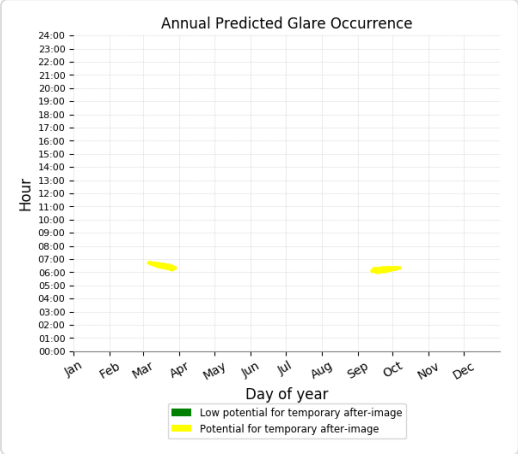
C3 - OP Receptor (OP 6)

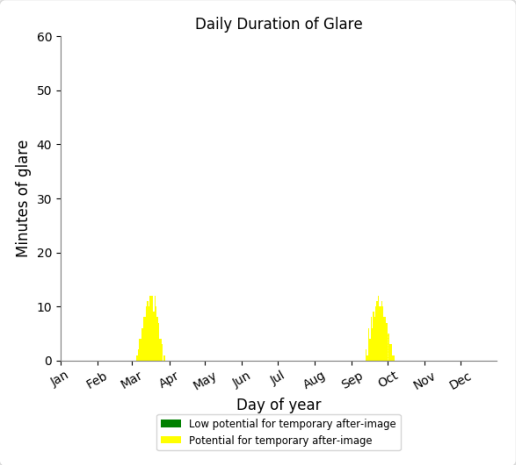
No glare found

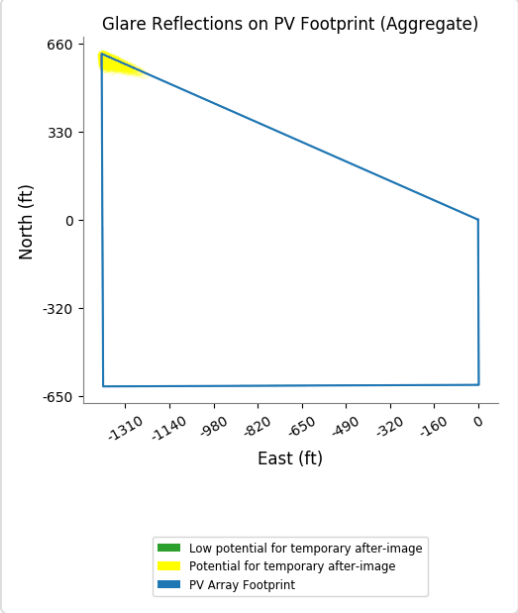
C3 - OP Receptor (OP 7)

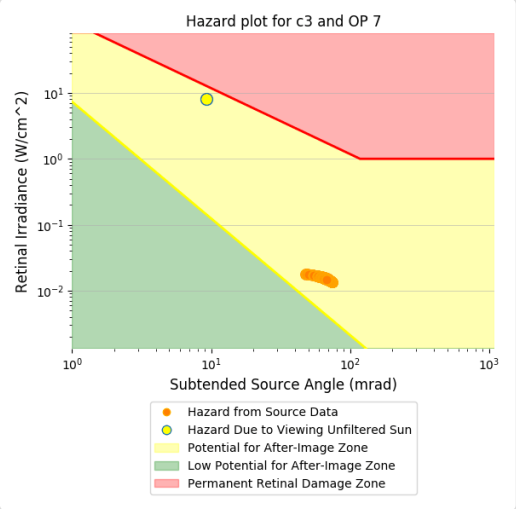
PV array is expected to produce the following glare for receptors at this location:

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





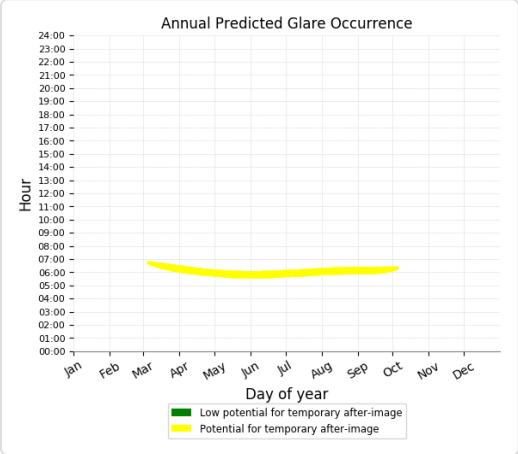


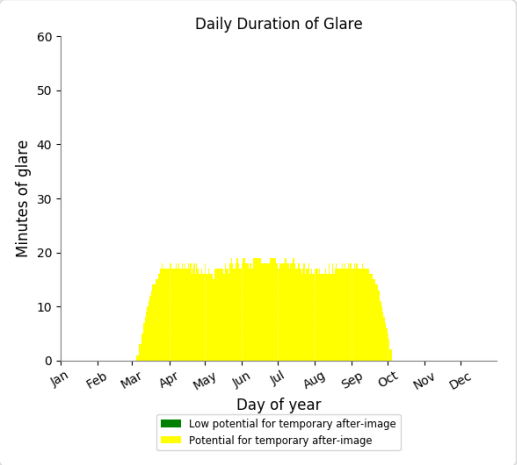


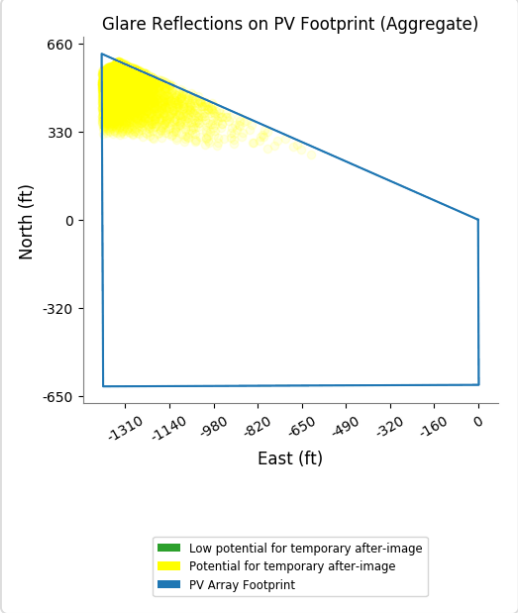
C3 - OP Receptor (OP 8)

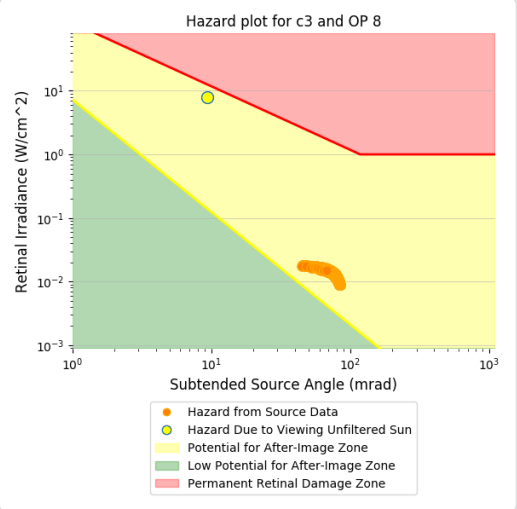
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,422 minutes of "yellow" glare with potential to cause temporary after-image.





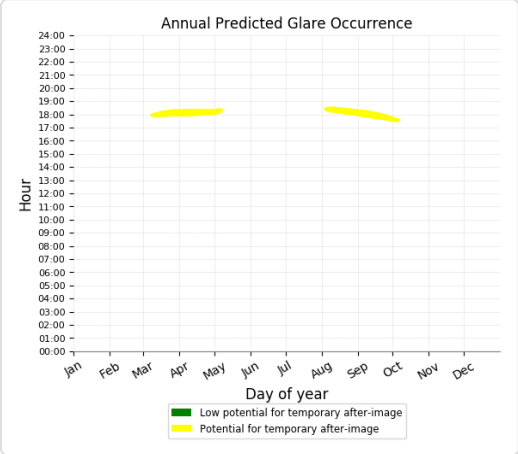


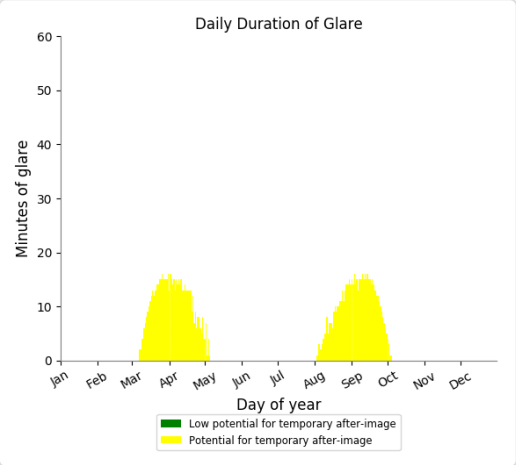


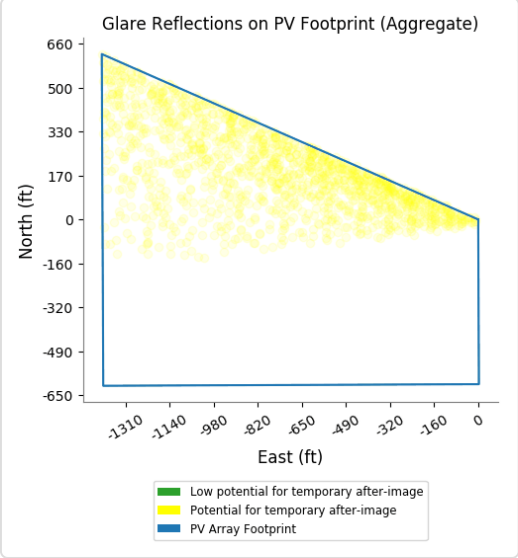
C3 - OP Receptor (OP 9)

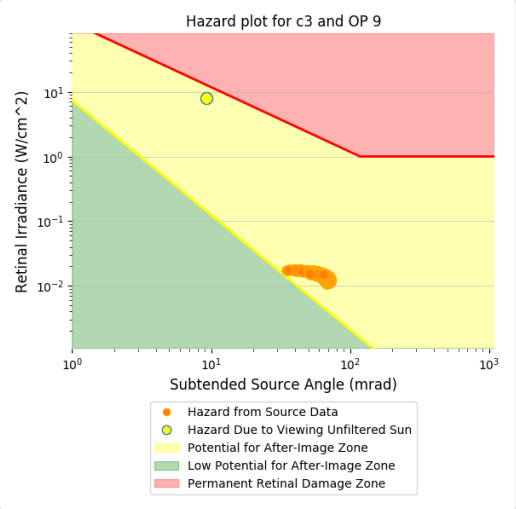
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,281 minutes of "yellow" glare with potential to cause temporary after-image.





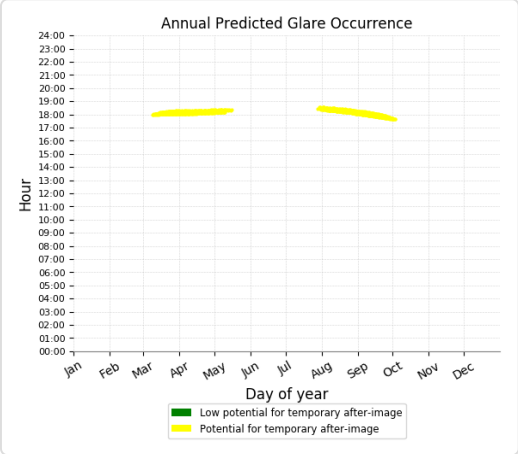


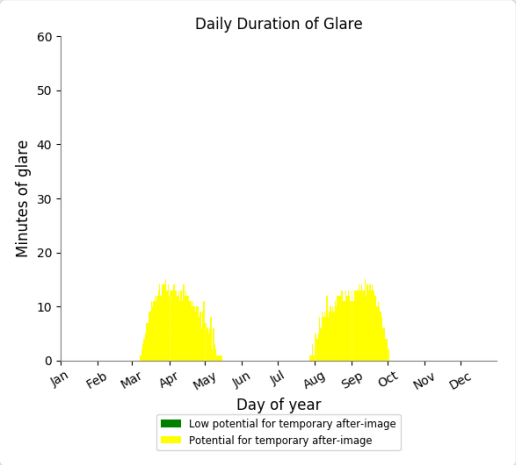


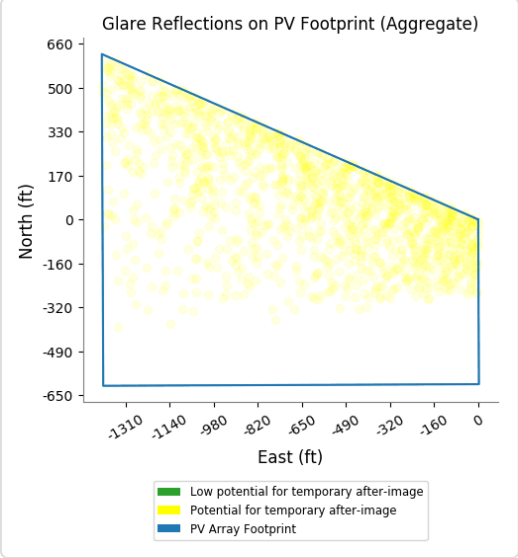
C3 - OP Receptor (OP 10)

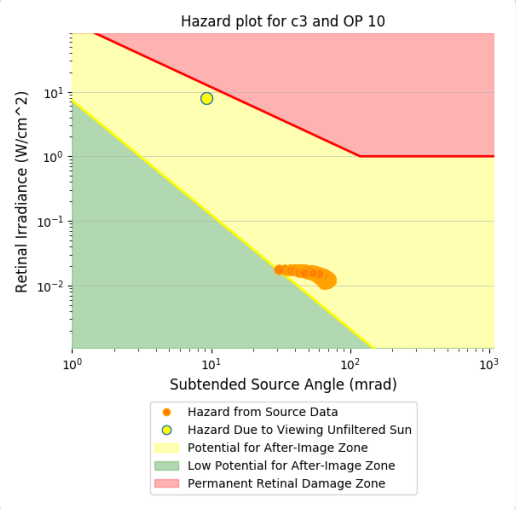
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,286 minutes of "yellow" glare with potential to cause temporary after-image.





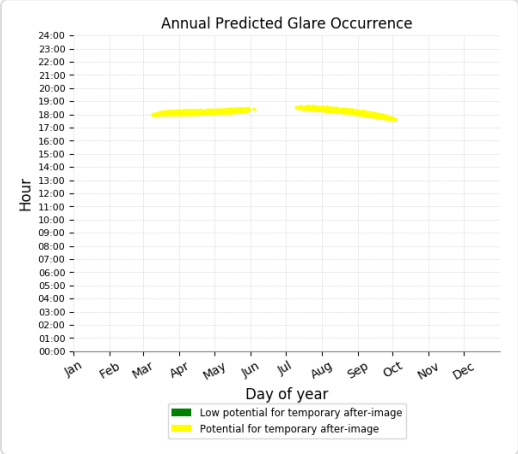


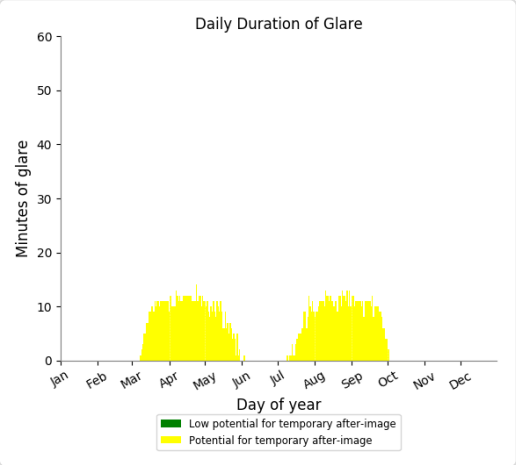


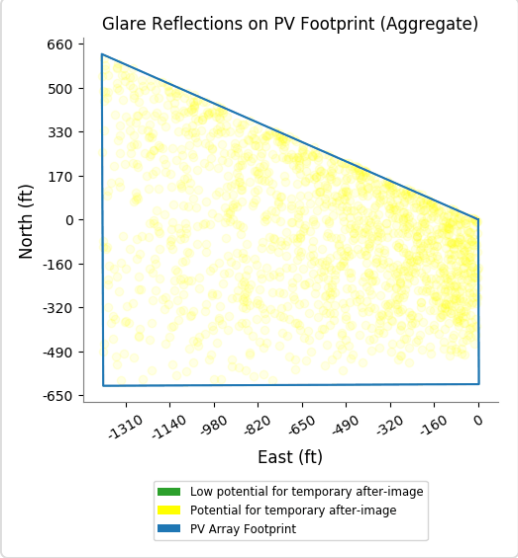
C3 - OP Receptor (OP 11)

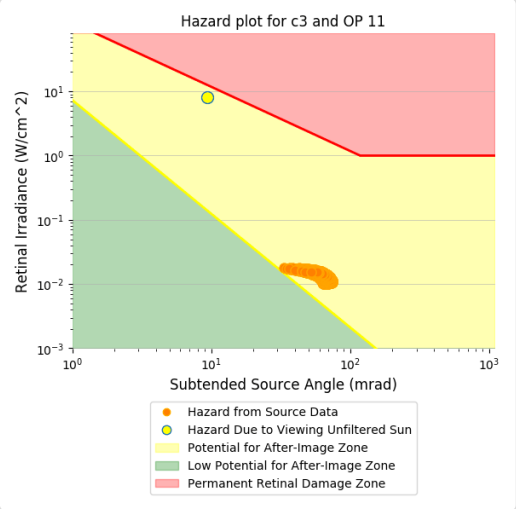
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,528 minutes of "yellow" glare with potential to cause temporary after-image.





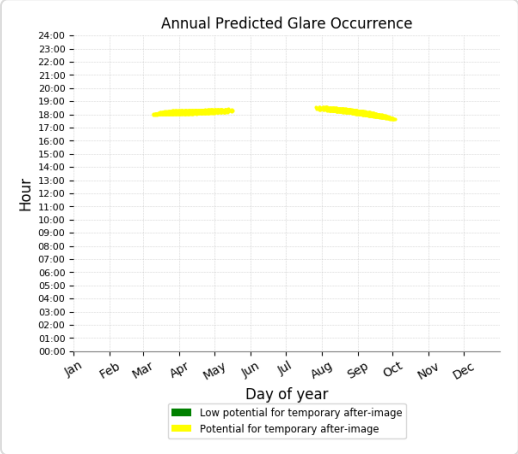


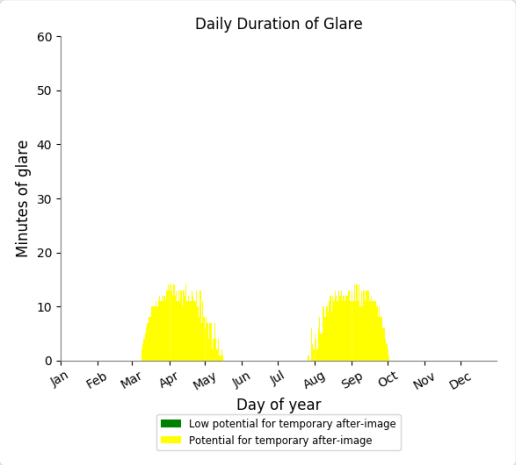


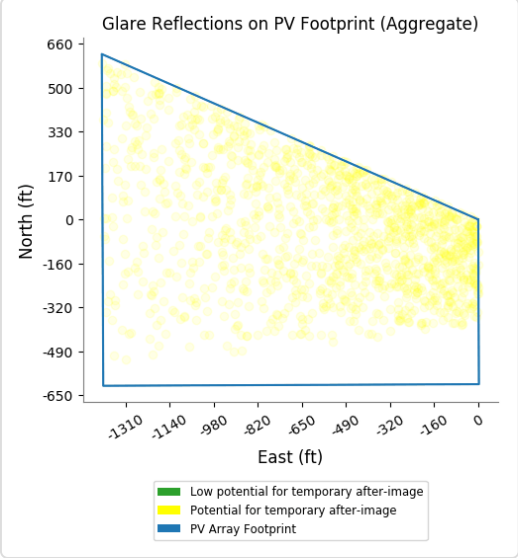
C3 - OP Receptor (OP 12)

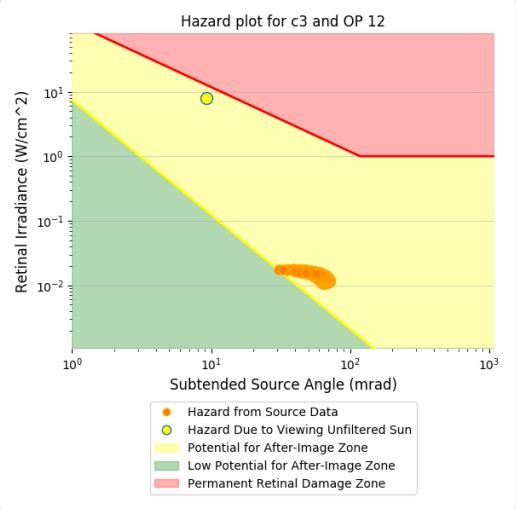
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,262 minutes of "yellow" glare with potential to cause temporary after-image.





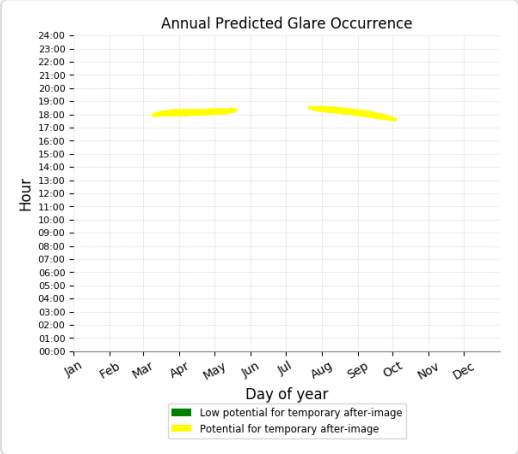


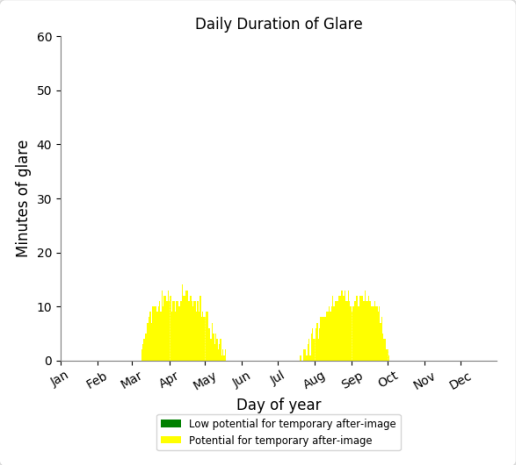


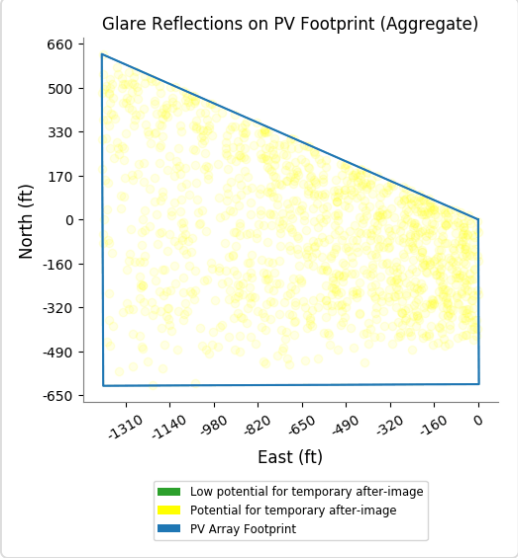
C3 - OP Receptor (OP 13)

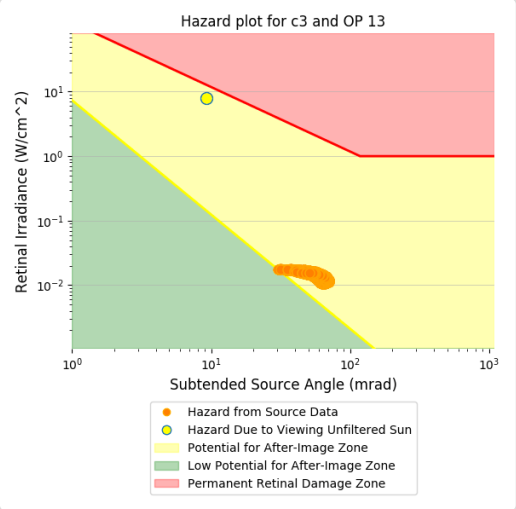
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,224 minutes of "yellow" glare with potential to cause temporary after-image.





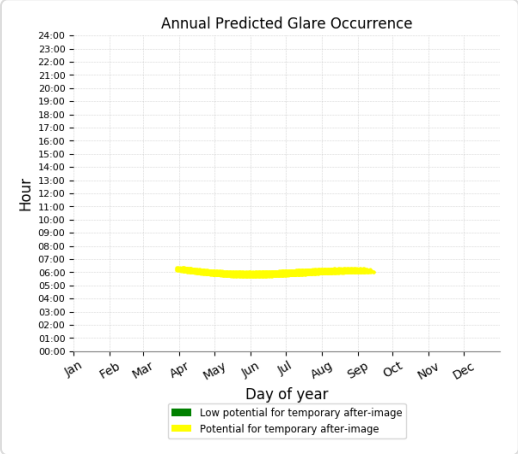


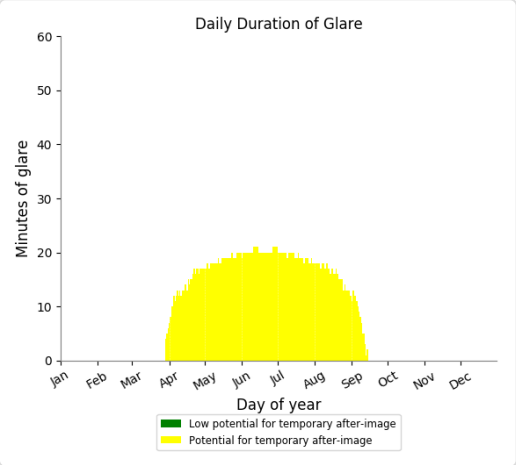


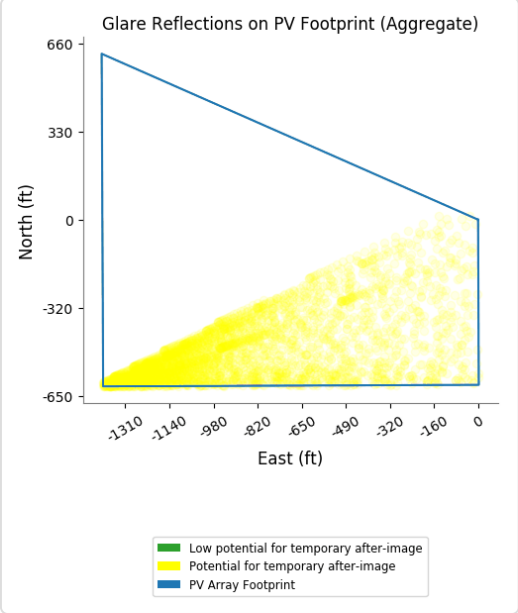
C3 - OP Receptor (OP 35)

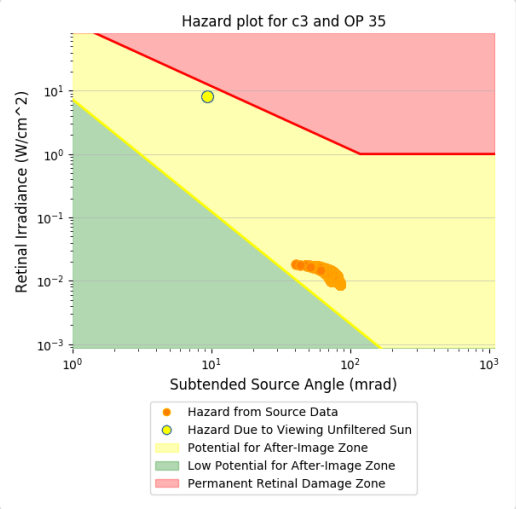
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,815 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed C4 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:33 p.m.**
Updated **June 22, 2020 6:10 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40280.7248

Summary of Results

Glare with potential for temporary after-image predicted

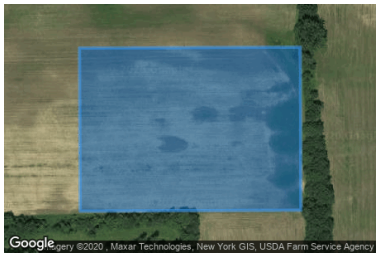
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C4	14.0	180.0	3	1,810	-

Component Data

PV Array(s)

Name: C4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 432,374 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.897256	-76.941999	482.96	10.00	492.96
2	42.895712	-76.941990	481.48	10.00	491.48
3	42.895703	-76.944856	474.57	10.00	484.57
4	42.897247	-76.944865	480.76	10.00	490.76



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 14	42.898563	-76.935548	479.63	16.00	495.63
OP 34	42.896537	-76.948651	480.95	16.00	496.95
OP 35	42.897691	-76.948642	481.21	16.00	497.21

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C4	14.0	180.0	3	1,810	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C4 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 14	0	0
OP: OP 34	3	1768
OP: OP 35	0	42

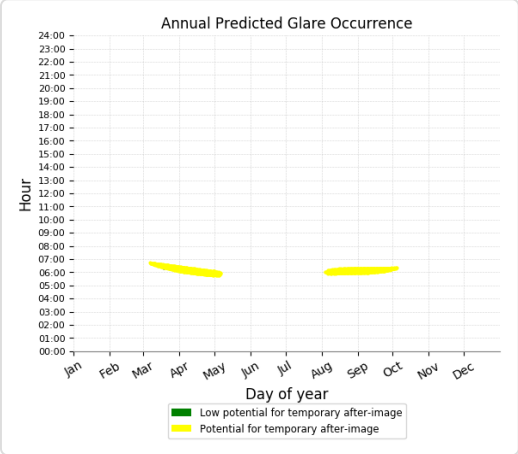
C4 - OP Receptor (OP 14)

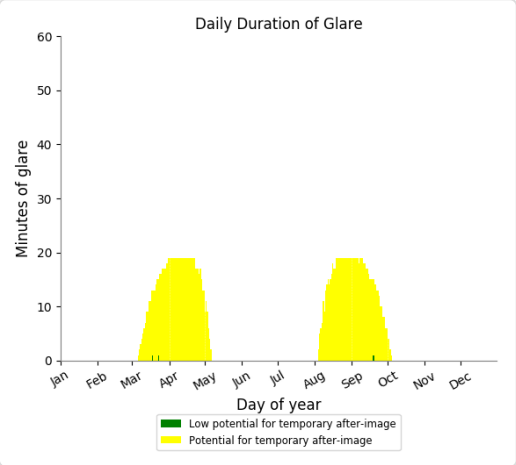
No glare found

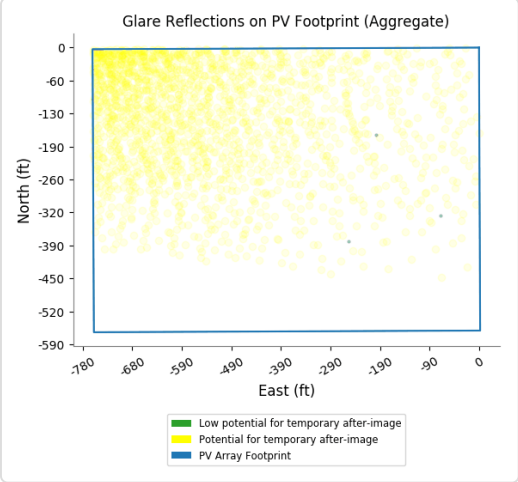
C4 - OP Receptor (OP 34)

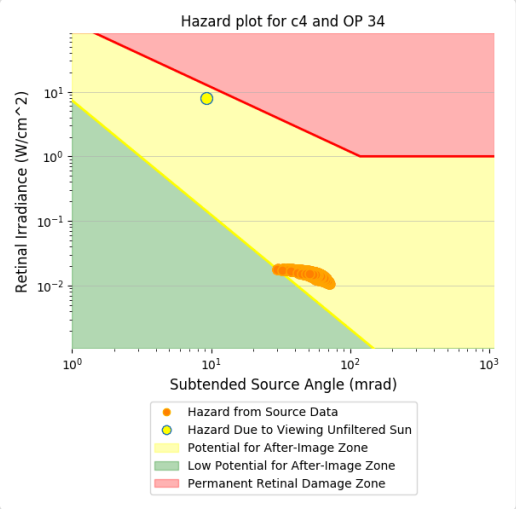
PV array is expected to produce the following glare for receptors at this location:

- 3 minutes of "green" glare with low potential to cause temporary after-image.
- 1,768 minutes of "yellow" glare with potential to cause temporary after-image.





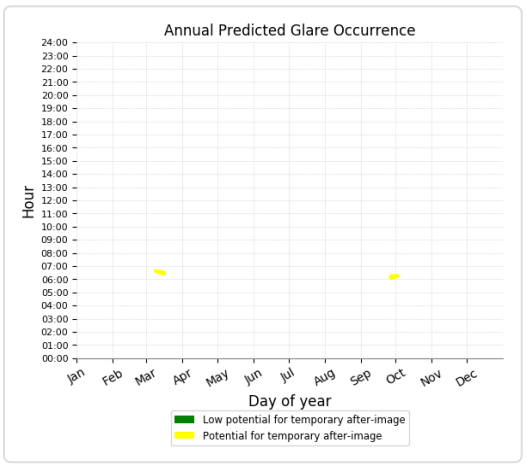


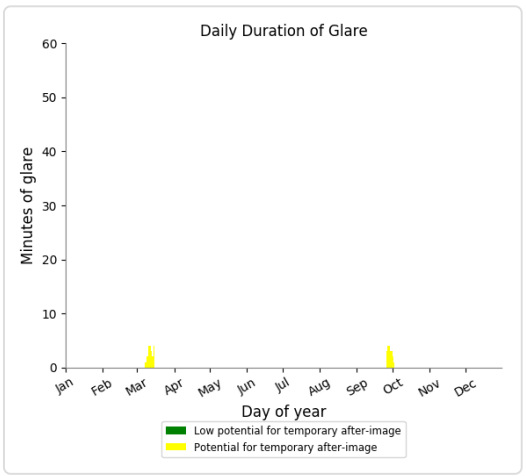


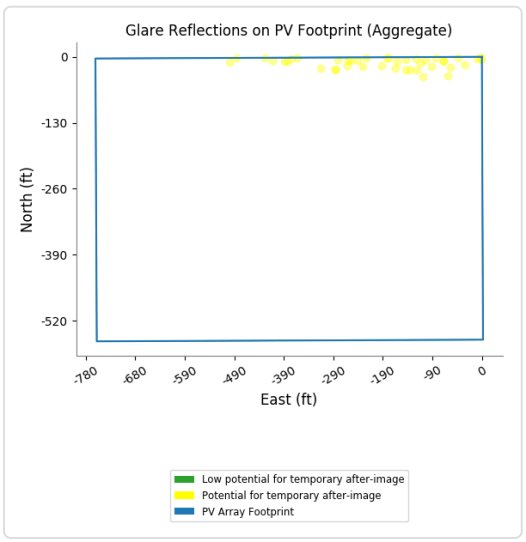
C4 - OP Receptor (OP 35)

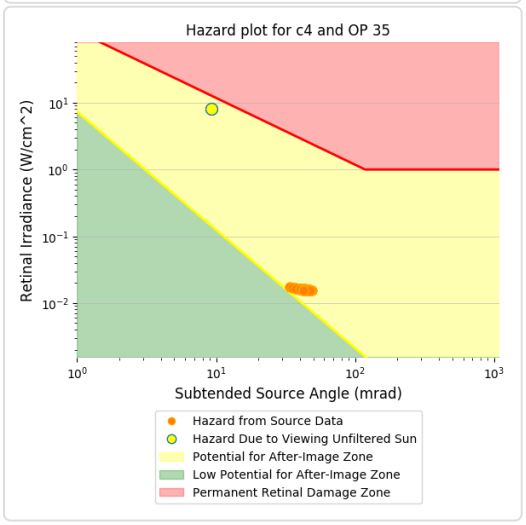
PV array is expected to produce the following glare for receptors at this location:

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









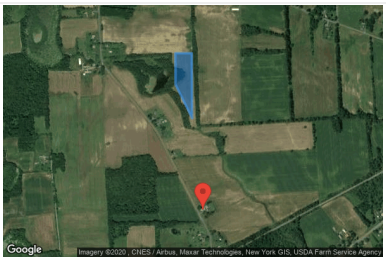
Assumptions

- 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed C5 Second Story Houses

Project site configuration details and results.



Created **June 18, 2020 6:35 p.m.**
Updated **June 22, 2020 6:10 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40281.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
C5	14.0	180.0	0	0	-

Component Data

PV Array(s)

Name: C5
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 262,355 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895712	-76.941990	481.48	10.00	491.48
2	42.892466	-76.941971	469.39	10.00	479.39
3	42.894147	-76.943098	471.67	10.00	481.67
4	42.895708	-76.943107	478.62	10.00	488.62

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 29	42.887894	-76.941215	464.38	16.00	480.38

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
C5	14.0	180.0	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

C5 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 29	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed D1 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:38 p.m.**
Updated **June 22, 2020 6:11 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40282.7248

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
D1	14.0	180.0	18	4,756	-

Component Data

PV Array(s)

Name: D1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,818 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	10.00	478.03
2	42.891096	-76.934219	465.92	10.00	475.92
3	42.890809	-76.942230	470.17	10.00	480.17
4	42.891802	-76.942236	469.34	10.00	479.34

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 29	42.887894	-76.941215	464.38	16.00	480.38
OP 30	42.890618	-76.943150	471.90	16.00	487.90
OP 31	42.891684	-76.943814	473.62	16.00	489.62

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D1	14.0	180.0	18	4,756	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 29	0	0
OP: OP 30	9	3558
OP: OP 31	9	1198

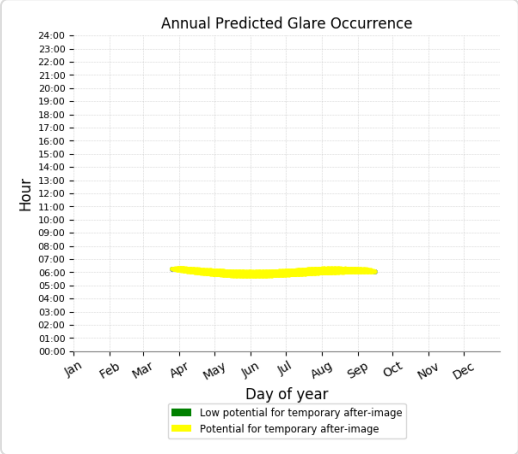
D1 - OP Receptor (OP 29)

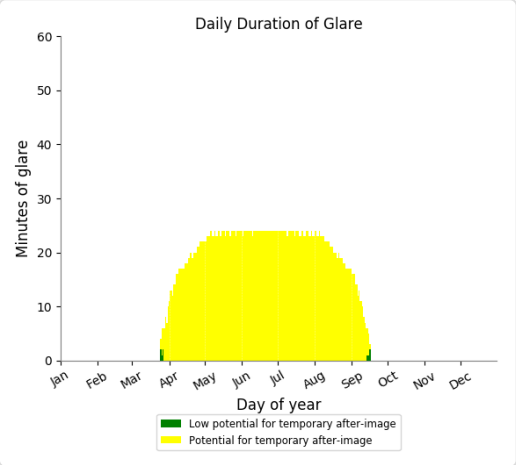
No glare found

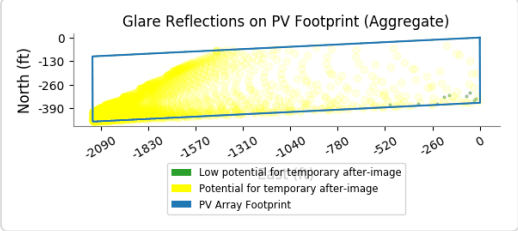
D1 - OP Receptor (OP 30)

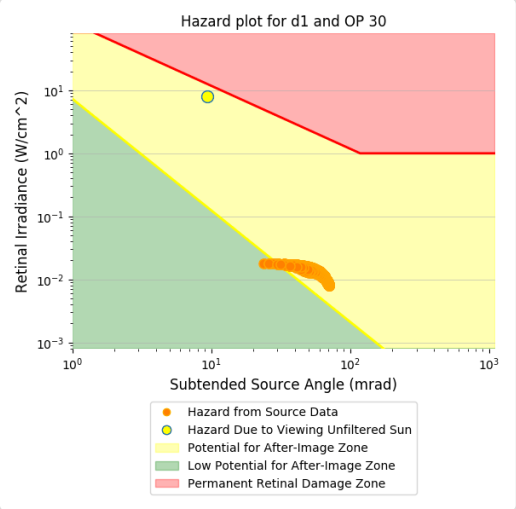
PV array is expected to produce the following glare for receptors at this location:

- 9 minutes of "green" glare with low potential to cause temporary after-image.
- 3,558 minutes of "yellow" glare with potential to cause temporary after-image.





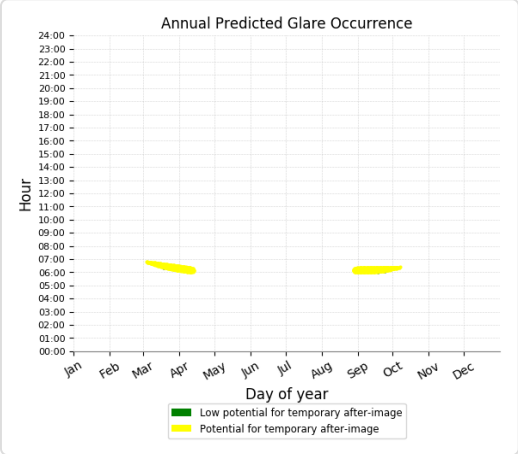


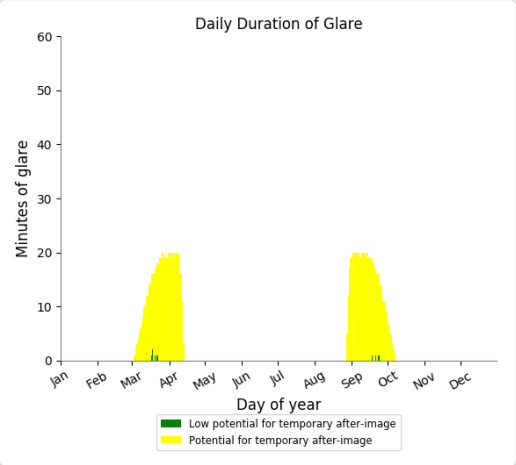


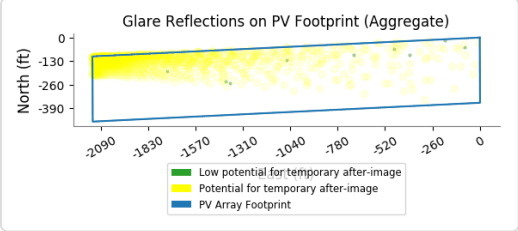
D1 - OP Receptor (OP 31)

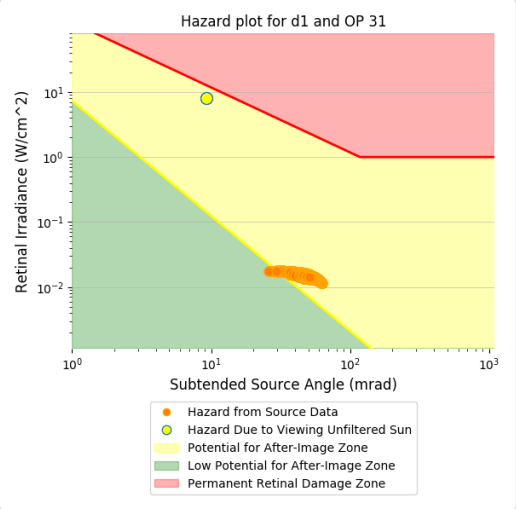
PV array is expected to produce the following glare for receptors at this location:

- 9 minutes of "green" glare with low potential to cause temporary after-image.
- 1,198 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed D2 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:38 p.m.**
Updated **June 22, 2020 6:12 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40283.7248

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
D2	14.0	180.0	0	149	-

Component Data

PV Array(s)

Name: D2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,002,986 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.896111	-76.931505	476.29	10.00	486.29
2	42.893053	-76.931488	470.58	10.00	480.58
3	42.893043	-76.934845	470.52	10.00	480.52
4	42.896101	-76.934863	479.01	10.00	489.01

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 14	42.898563	-76.935548	479.63	16.00	495.63
OP 15	42.897576	-76.932857	473.81	16.00	489.81
OP 16	42.896943	-76.932726	475.86	16.00	491.86
OP 18	42.896913	-76.930401	475.51	16.00	491.51
OP 19	42.896154	-76.926756	474.88	16.00	490.88

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D2	14.0	180.0	0	149	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 18	0	0
OP: OP 19	0	149

D2 - OP Receptor (OP 14)

No glare found

D2 - OP Receptor (OP 15)

No glare found

D2 - OP Receptor (OP 16)

No glare found

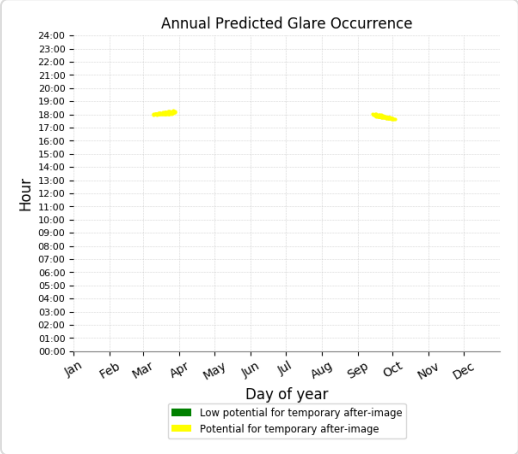
D2 - OP Receptor (OP 18)

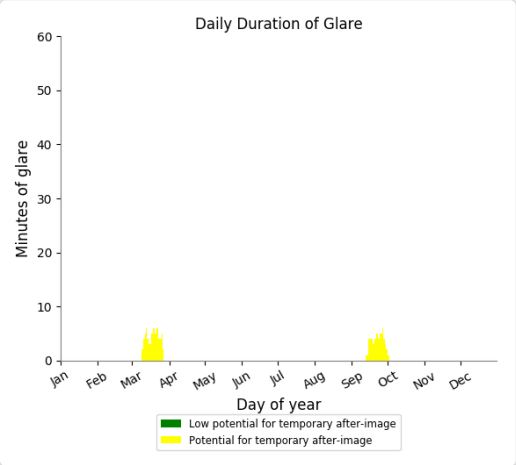
No glare found

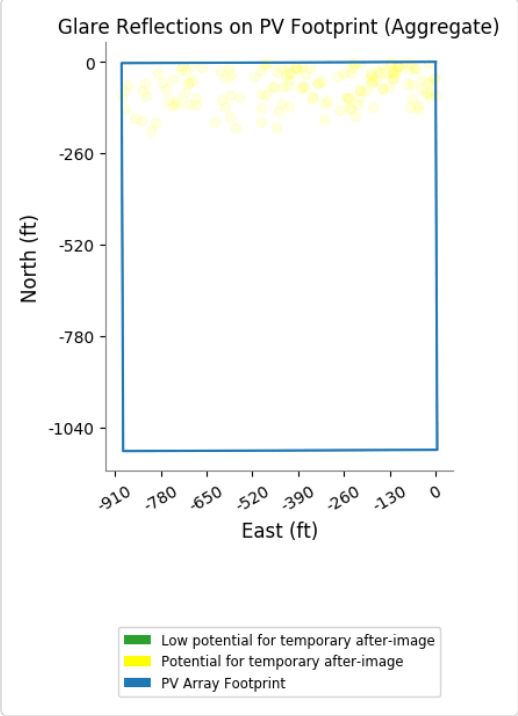
D2 - OP Receptor (OP 19)

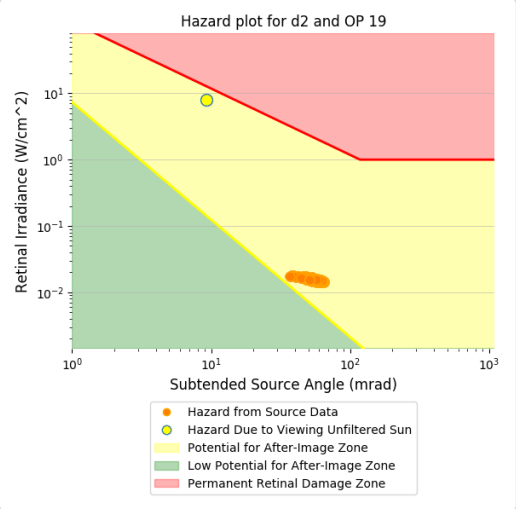
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 149 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed D3 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:38 p.m.**
Updated **June 22, 2020 6:14 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40285.7248

Summary of Results

Glare with potential for temporary after-image predicted

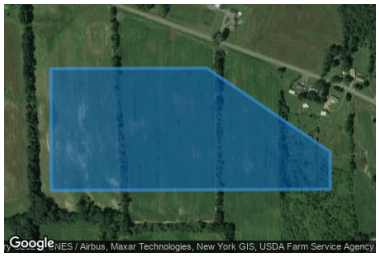
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D3	14.0	180.0	0	9,110	-

Component Data

PV Array(s)

Name: D3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,381,442 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895371	-76.927455	473.89	10.00	483.89
2	42.893783	-76.924251	470.89	10.00	480.89
3	42.893075	-76.924247	469.60	10.00	479.60
4	42.893053	-76.931488	470.58	10.00	480.58
5	42.895359	-76.931501	475.65	10.00	485.65



Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 15	42.897576	-76.932857	473.81	16.00	489.81
OP 16	42.896943	-76.932726	475.86	16.00	491.86
OP 18	42.896913	-76.930401	475.51	16.00	491.51
OP 19	42.896154	-76.926756	474.88	16.00	490.88
OP 20	42.894974	-76.925084	473.15	16.00	489.15
OP 21	42.894760	-76.924116	473.40	16.00	489.40
OP 22	42.895190	-76.923948	474.68	16.00	490.68
OP 23	42.895153	-76.923467	474.71	16.00	490.71
OP 24	42.894883	-76.922660	475.27	16.00	491.27
OP 25	42.894667	-76.922268	475.55	16.00	491.55
OP 26	42.894492	-76.921740	477.05	16.00	493.05
OP 27	42.893980	-76.921820	474.63	16.00	490.63
OP 28	42.893602	-76.921349	469.89	16.00	485.89

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D3	14.0	180.0	0	9,110	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D3 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	1232
OP: OP 21	0	1330
OP: OP 22	0	599
OP: OP 23	0	539
OP: OP 24	0	761
OP: OP 25	0	895
OP: OP 26	0	1068
OP: OP 27	0	1632
OP: OP 28	0	1054

D3 - OP Receptor (OP 15)

No glare found

D3 - OP Receptor (OP 16)

No glare found

D3 - OP Receptor (OP 18)

No glare found

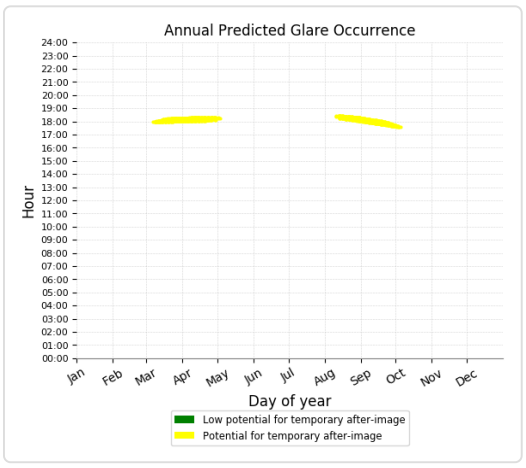
D3 - OP Receptor (OP 19)

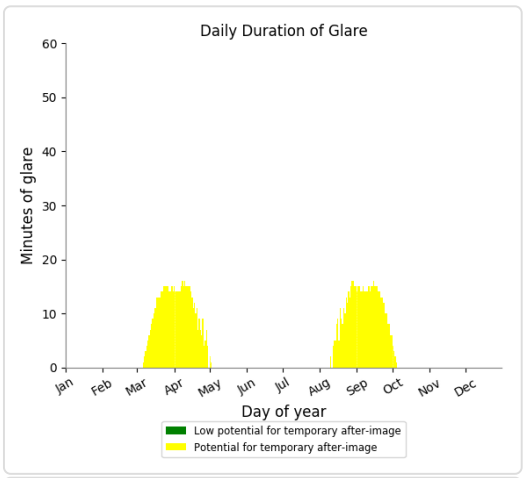
No glare found

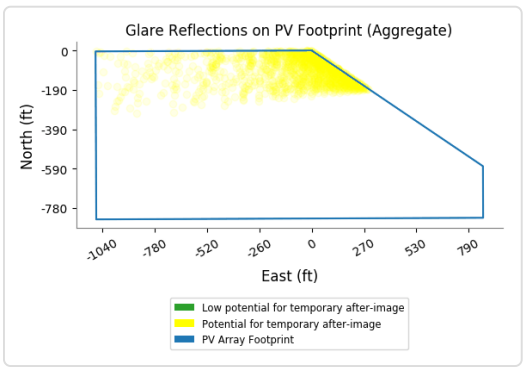
D3 - OP Receptor (OP 20)

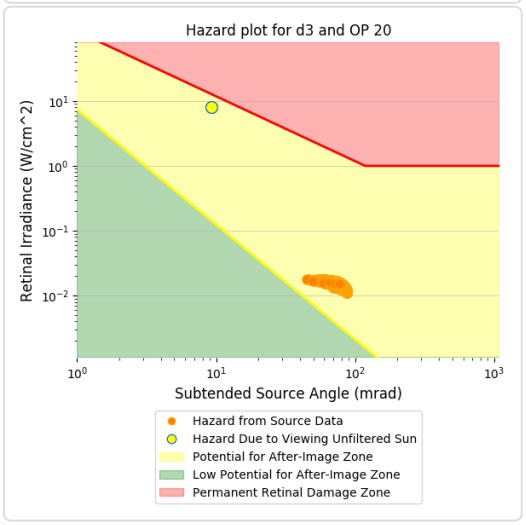
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,232 minutes of "yellow" glare with potential to cause temporary after-image.





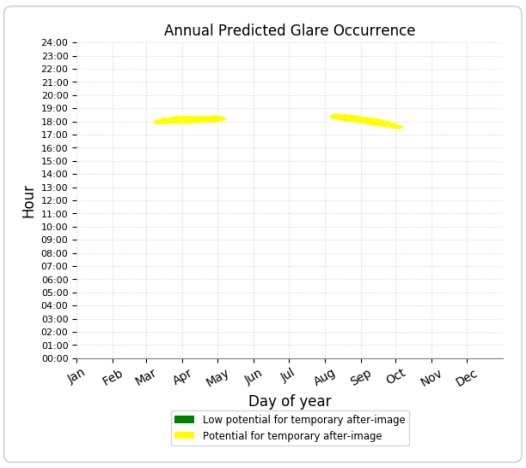


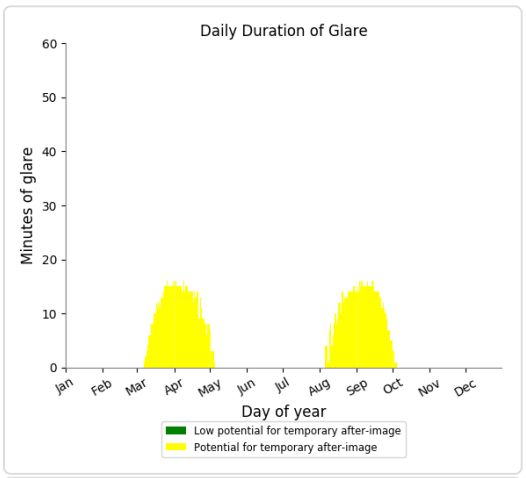


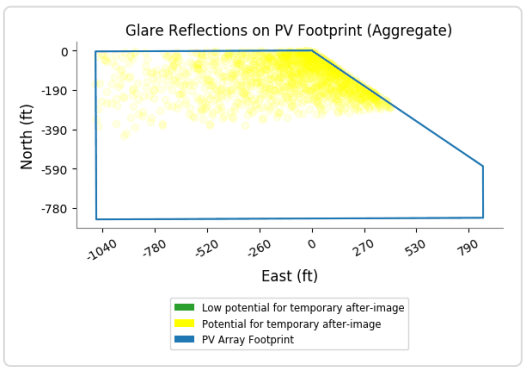
D3 - OP Receptor (OP 21)

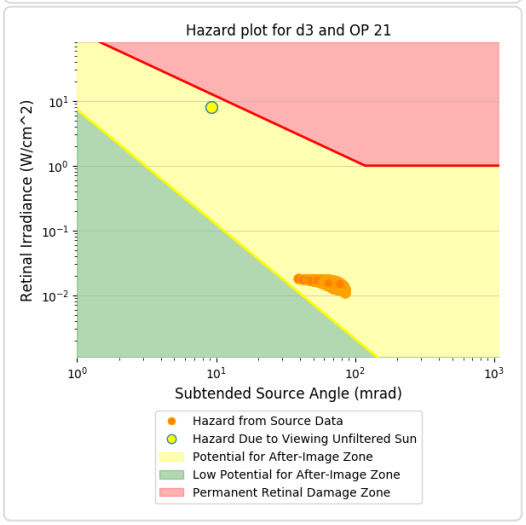
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,330 minutes of "yellow" glare with potential to cause temporary after-image.





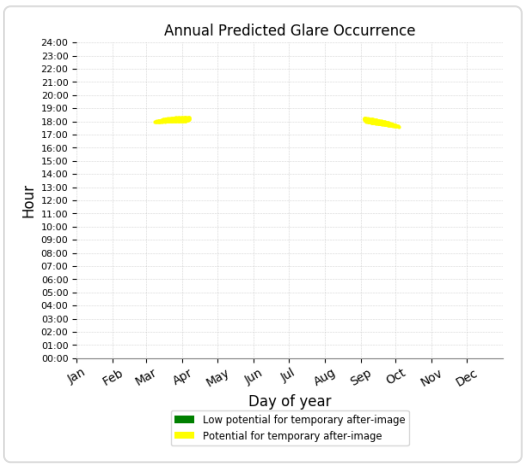


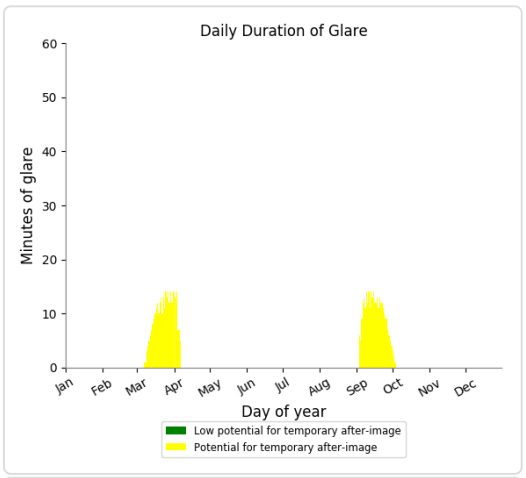


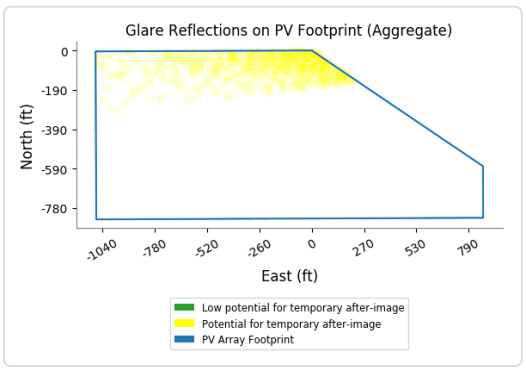
D3 - OP Receptor (OP 22)

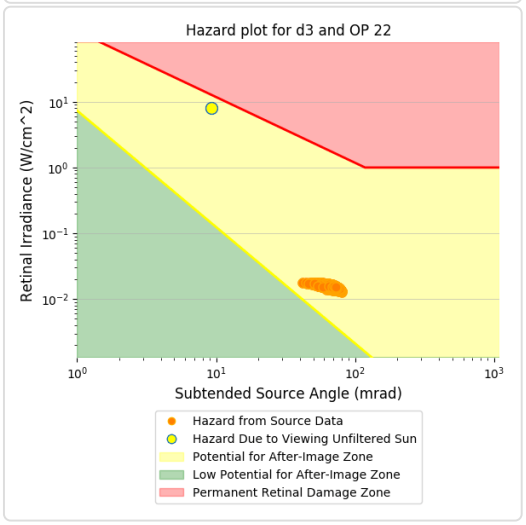
PV array is expected to produce the following glare for receptors at this location:

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





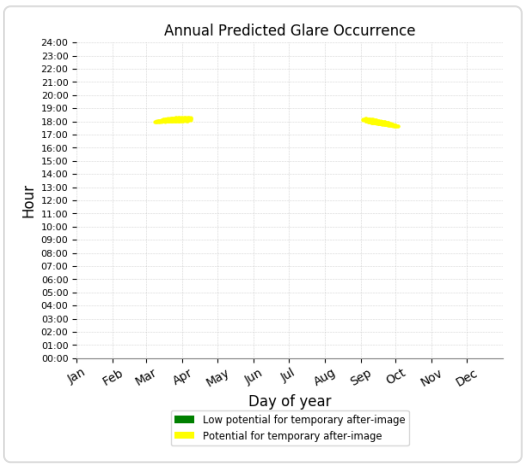


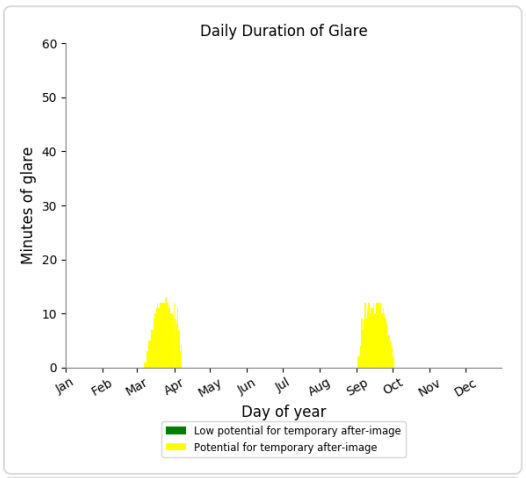


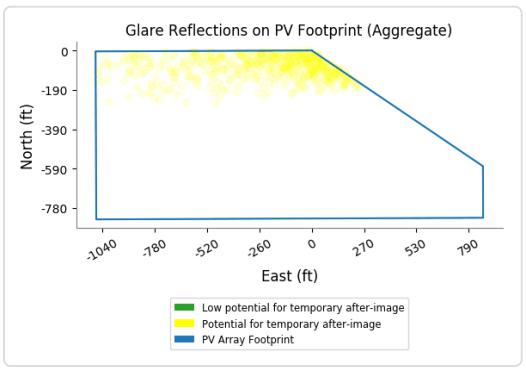
D3 - OP Receptor (OP 23)

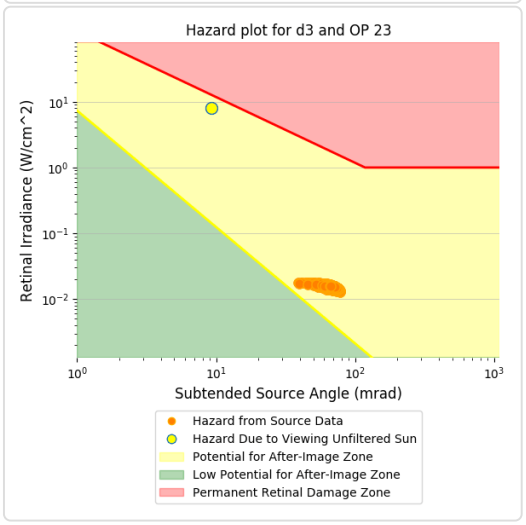
PV array is expected to produce the following glare for receptors at this location:

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





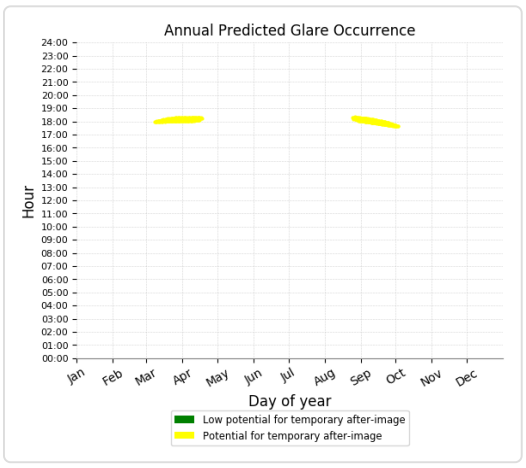


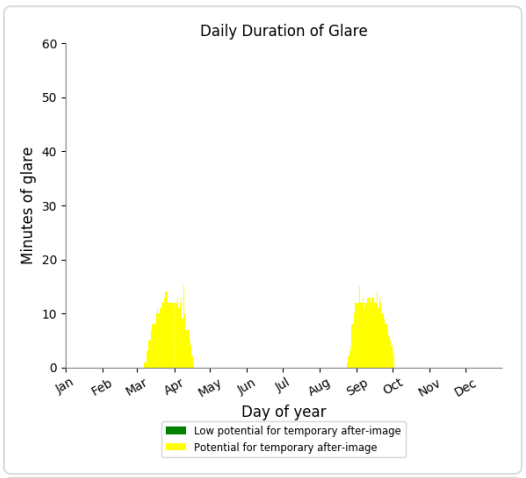


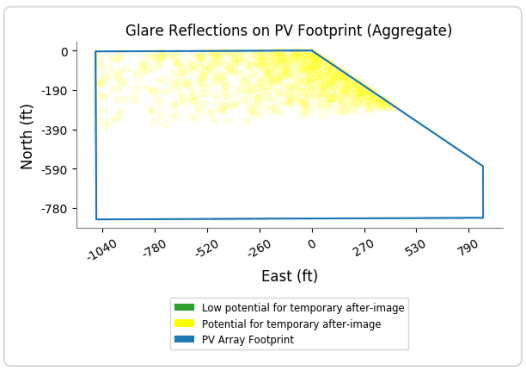
D3 - OP Receptor (OP 24)

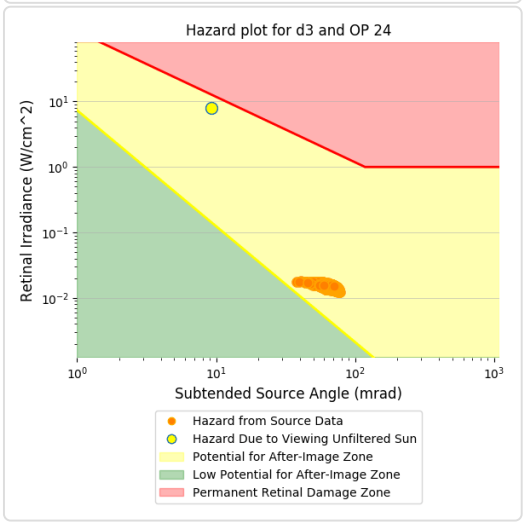
PV array is expected to produce the following glare for receptors at this location:

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





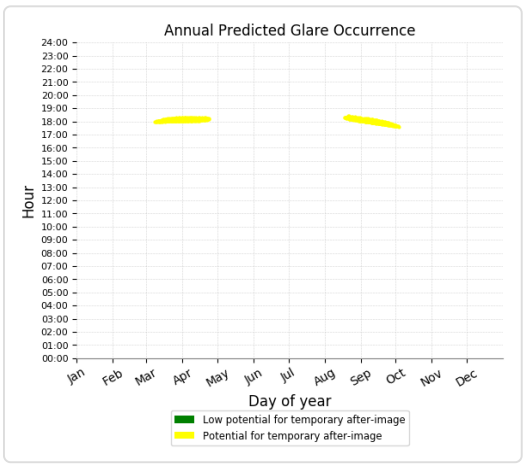


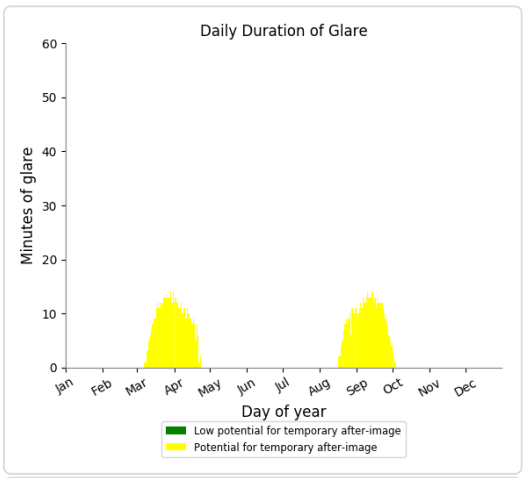


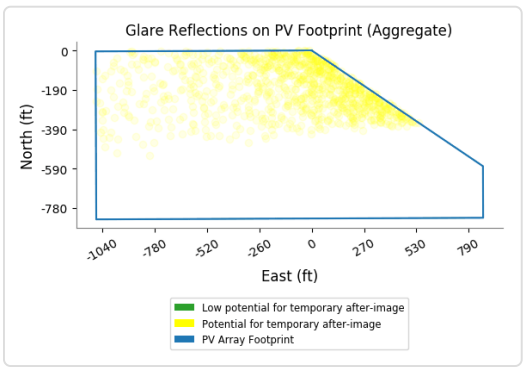
D3 - OP Receptor (OP 25)

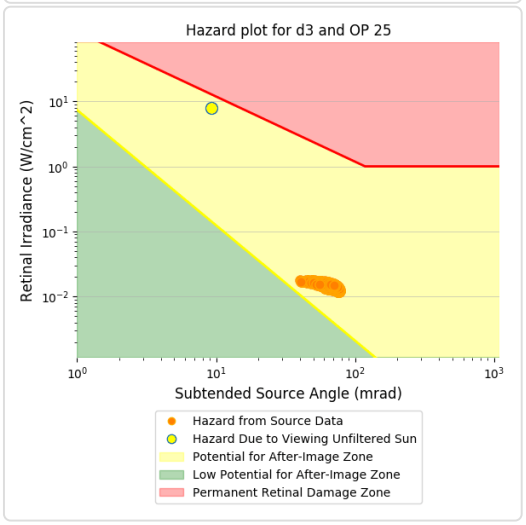
PV array is expected to produce the following glare for receptors at this location:

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





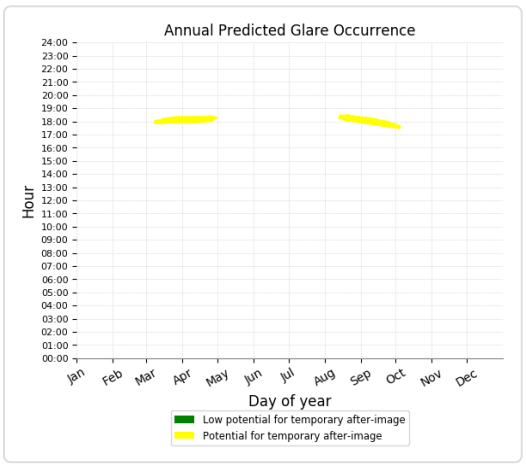


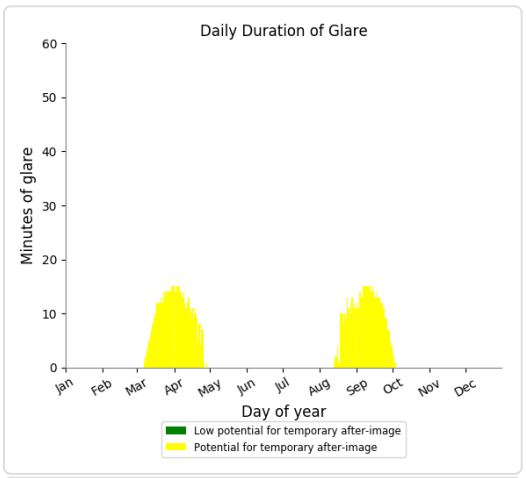


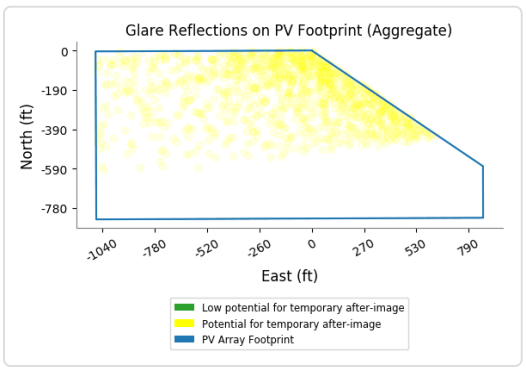
D3 - OP Receptor (OP 26)

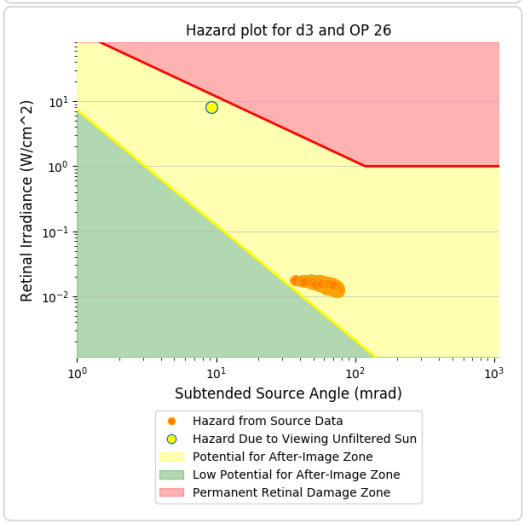
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,068 minutes of "yellow" glare with potential to cause temporary after-image.





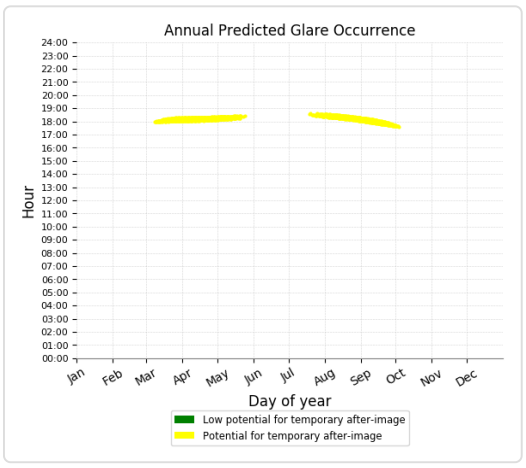


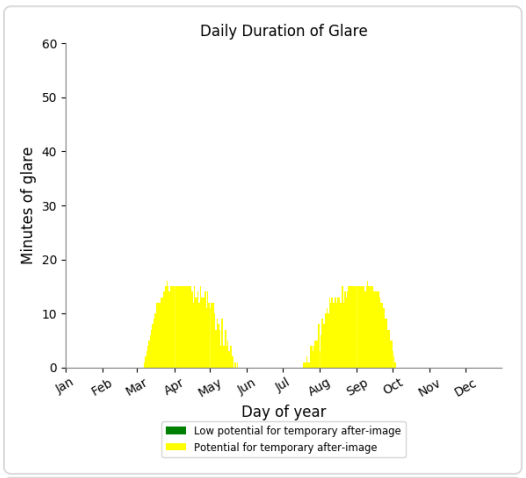


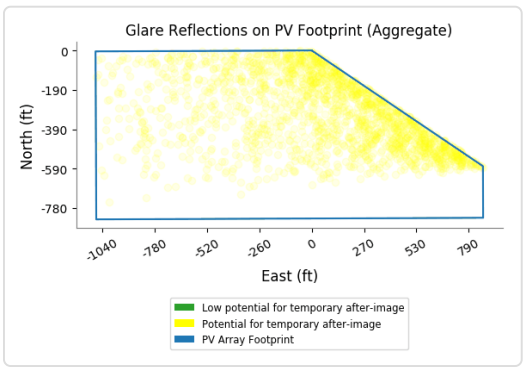
D3 - OP Receptor (OP 27)

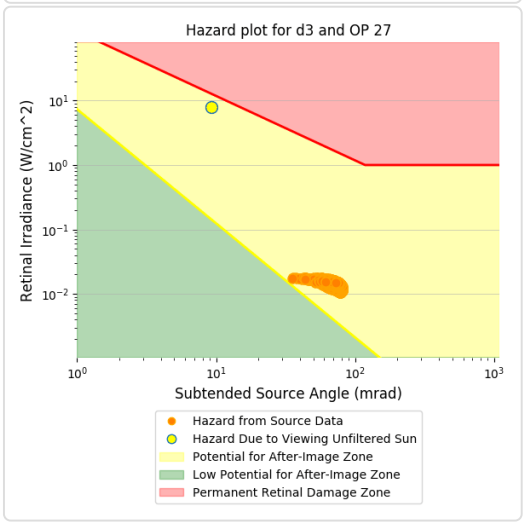
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,632 minutes of "yellow" glare with potential to cause temporary after-image.





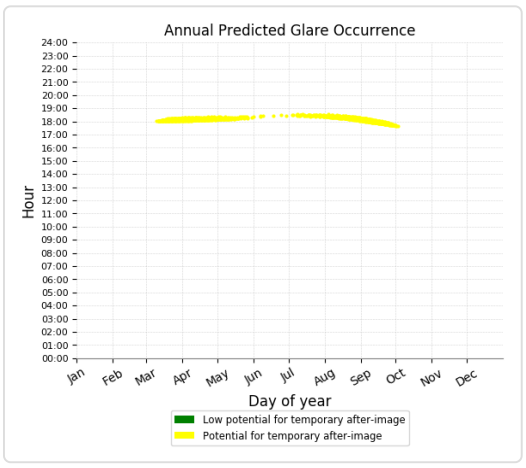


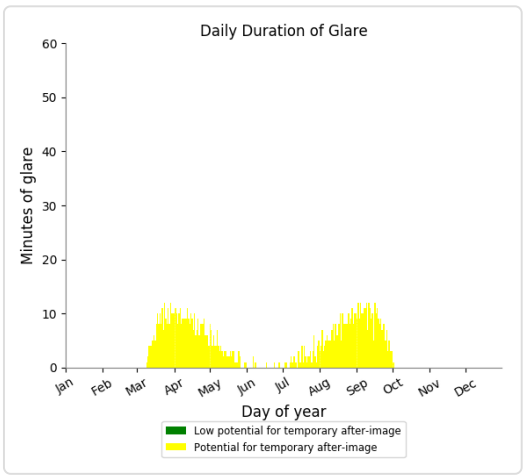


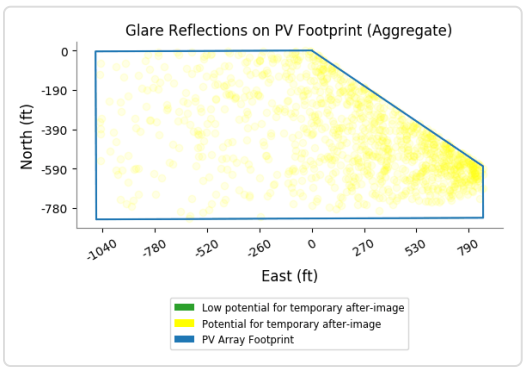
D3 - OP Receptor (OP 28)

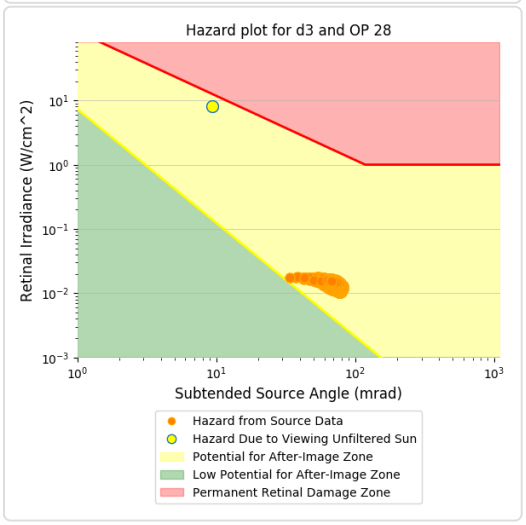
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,054 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Fixed D4 Second Story Houses

Project site configuration details and results.

Created **June 18, 2020 6:39 p.m.**
Updated **June 22, 2020 6:17 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40286.7248

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D4	14.0	180.0	0	0	-

Component Data

PV Array(s)

Name: D4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 903,186 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893075	-76.924247	469.60	10.00	479.60
2	42.892217	-76.924242	469.29	10.00	479.29
3	42.890807	-76.927840	467.75	10.00	477.75
4	42.890802	-76.929449	460.50	10.00	470.50
5	42.893059	-76.929462	470.20	10.00	480.20

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 18	42.896913	-76.930401	475.51	16.00	491.51
OP 19	42.896154	-76.926756	474.88	16.00	490.88
OP 20	42.894974	-76.925084	473.15	16.00	489.15
OP 21	42.894760	-76.924116	473.40	16.00	489.40
OP 22	42.895190	-76.923948	474.68	16.00	490.68
OP 23	42.895153	-76.923467	474.71	16.00	490.71
OP 24	42.894883	-76.922660	475.27	16.00	491.27
OP 25	42.894667	-76.922268	475.55	16.00	491.55
OP 26	42.894492	-76.921740	477.05	16.00	493.05

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
D4	14.0	180.0	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

D4 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0

No glare found

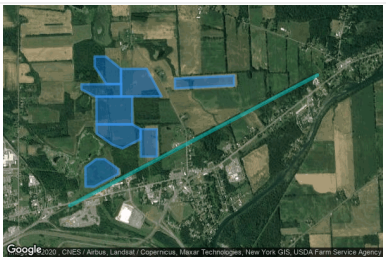
Assumptions

- 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 1 Fixed - Railroad Jun18

Project site configuration details and results.



Created **June 18, 2020 7:03 p.m.**
Updated **June 22, 2020 7:36 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40303.7248

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
B1	14.0	180.0	0	0	-
B2	14.0	180.0	0	0	-
B3	14.0	180.0	0	19	-
B4	14.0	180.0	0	0	-
B6	14.0	180.0	0	0	-
B7	14.0	180.0	0	409	-
B8	14.0	180.0	0	317	-
D1	14.0	180.0	0	23	-

Component Data

PV Array(s)

Name: B1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 702,437 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893999	-76.951634	478.47	10.00	488.47
2	42.892760	-76.949540	477.12	10.00	487.12
3	42.891241	-76.949531	472.23	10.00	482.23
4	42.891235	-76.951527	473.69	10.00	483.69
5	42.892995	-76.953116	478.75	10.00	488.75
6	42.893995	-76.953122	479.47	10.00	489.47

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,211,062 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892772	-76.946056	479.18	10.00	489.18
2	42.890014	-76.944034	471.62	10.00	481.62
3	42.889997	-76.949524	468.93	10.00	478.93
4	42.892760	-76.949540	477.12	10.00	487.12

Name: B3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 582,971 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.891241	-76.949531	472.23	10.00	482.23
2	42.889997	-76.949524	468.93	10.00	478.93
3	42.889986	-76.952989	469.71	10.00	479.71
4	42.890732	-76.954905	470.59	10.00	480.59
5	42.891224	-76.954908	471.96	10.00	481.96

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,316,797 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.890002	-76.948020	468.96	10.00	478.96
2	42.887228	-76.948004	465.87	10.00	475.88
3	42.887212	-76.952863	460.08	10.00	470.08
4	42.889986	-76.952880	469.80	10.00	479.80

Name: B6
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,043,287 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.887228	-76.948004	465.87	10.00	475.88
2	42.886750	-76.946879	465.68	10.00	475.68
3	42.885750	-76.946873	464.68	10.00	474.68
4	42.884827	-76.949341	463.42	10.00	473.42
5	42.885163	-76.950637	461.30	10.00	471.30
6	42.886310	-76.952858	459.90	10.00	469.90
7	42.887212	-76.952863	460.08	10.00	470.08

Name: B7
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 593,204 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.886757	-76.944669	465.67	10.00	475.67
2	42.884008	-76.944653	461.01	10.00	471.01
3	42.884001	-76.946863	462.45	10.00	472.45
4	42.886750	-76.946879	465.68	10.00	475.68

Name: B8
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 846,055 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.883752	-76.951775	460.35	10.00	470.35
2	42.882761	-76.949911	462.41	10.00	472.41
3	42.882270	-76.949909	462.39	10.00	472.39
4	42.880999	-76.953178	462.81	10.00	472.81
5	42.880995	-76.954350	465.30	10.00	475.30
6	42.882962	-76.954362	460.64	10.00	470.65
7	42.883749	-76.952892	459.77	10.00	469.77

Name: D1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,037 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	10.00	478.03
2	42.891096	-76.934219	465.92	10.00	475.92
3	42.890809	-76.942230	470.17	10.00	480.17
4	42.891802	-76.942236	469.34	10.00	479.34

Route Receptor(s)

Name: Route 1
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.879117	-76.956477	461.96	11.00	472.96
2	42.885627	-76.939709	460.69	11.00	471.69
3	42.892135	-76.922939	460.65	11.00	471.65

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
B1	14.0	180.0	0	0	-	-
B2	14.0	180.0	0	0	-	-
B3	14.0	180.0	0	19	-	-
B4	14.0	180.0	0	0	-	-
B6	14.0	180.0	0	0	-	-
B7	14.0	180.0	0	409	-	-
B8	14.0	180.0	0	317	-	-
D1	14.0	180.0	0	23	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

B1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

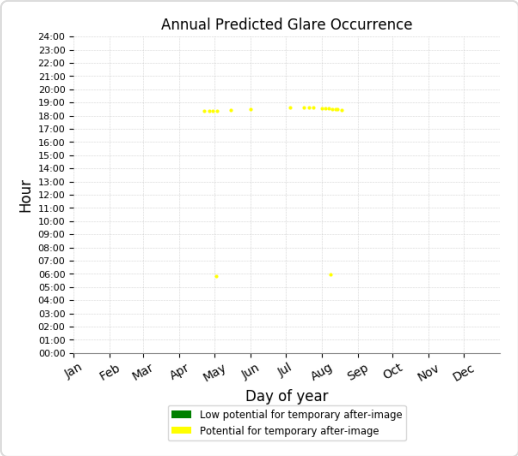
B3 potential temporary after-image

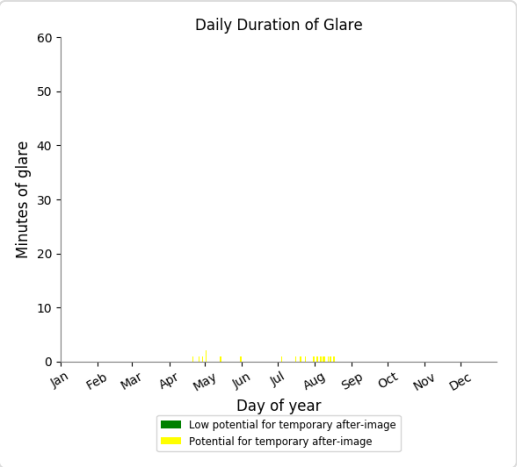
Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	19

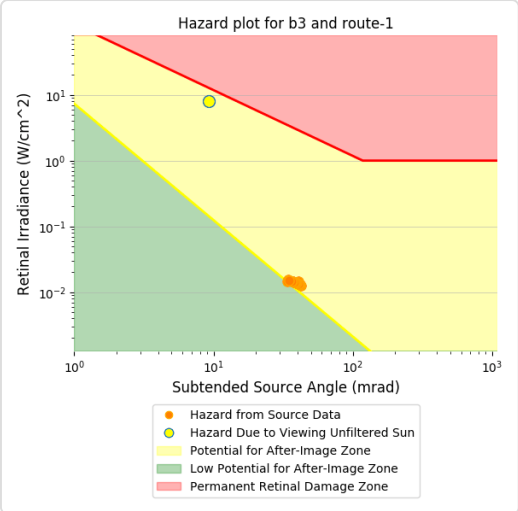
B3 - Route Receptor (Route 1)

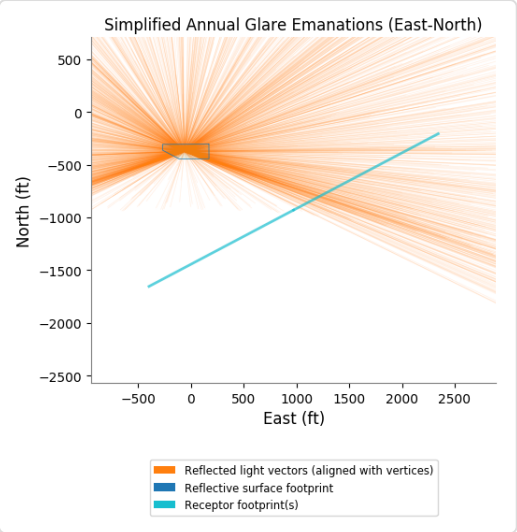
PV array is expected to produce the following glare for receptors at this location:

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









re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

B4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

B6 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	0

No glare found

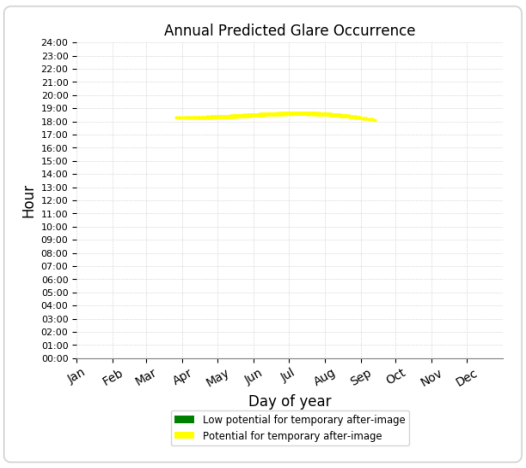
B7 potential temporary after-image

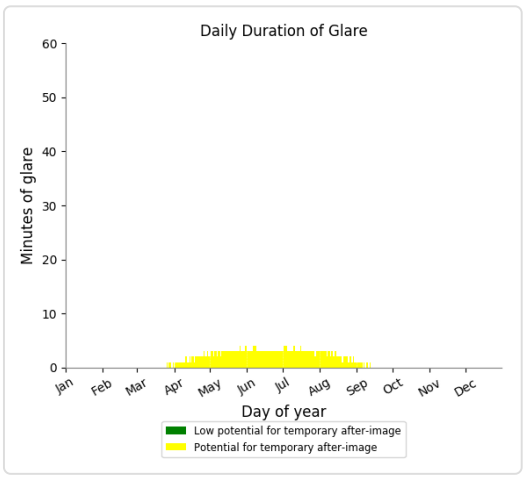
Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	409

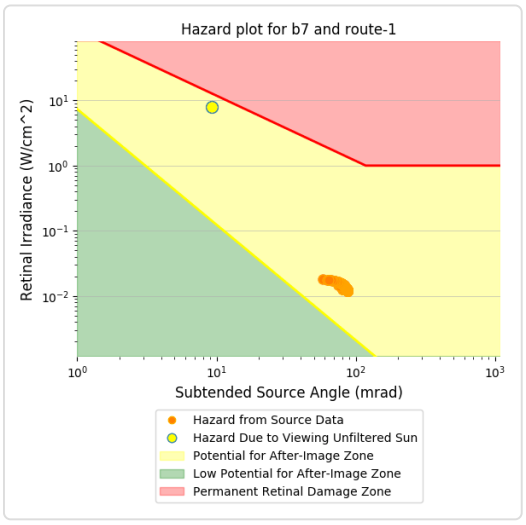
B7 - Route Receptor (Route 1)

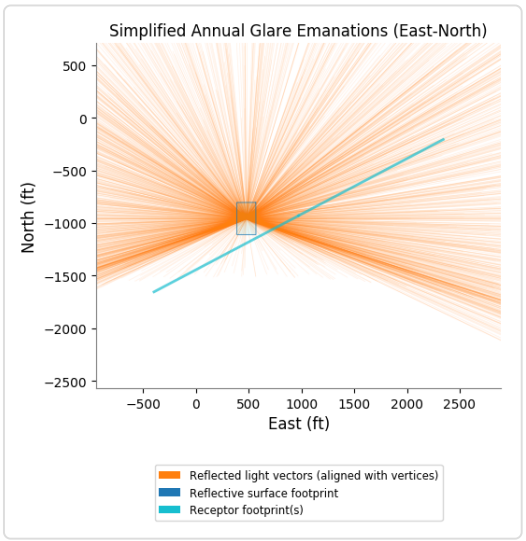
PV array is expected to produce the following glare for receptors at this location:

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









re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

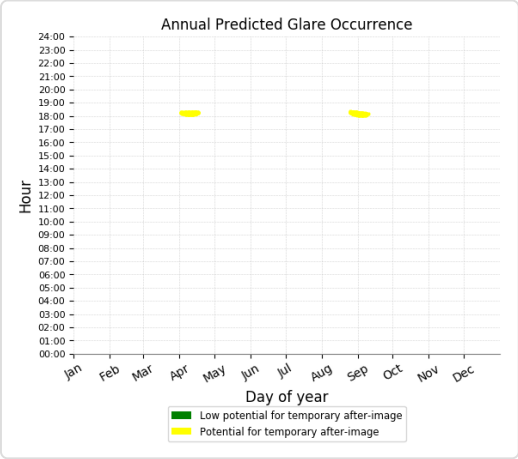
B8 potential temporary after-image

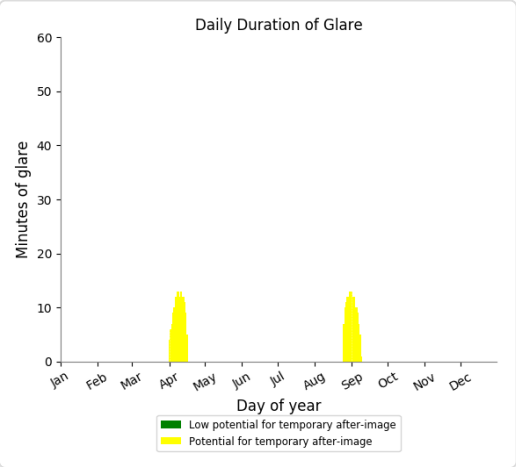
Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	317

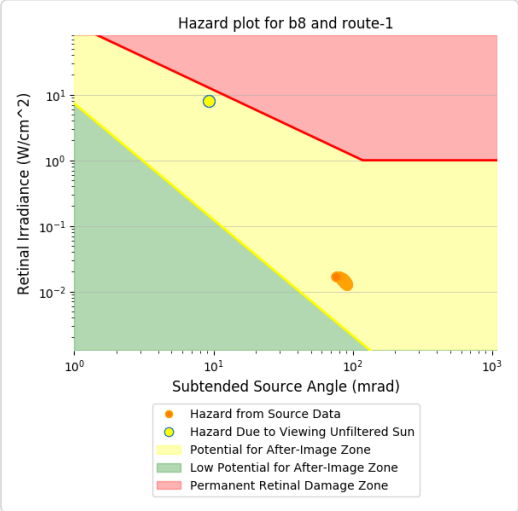
B8 - Route Receptor (Route 1)

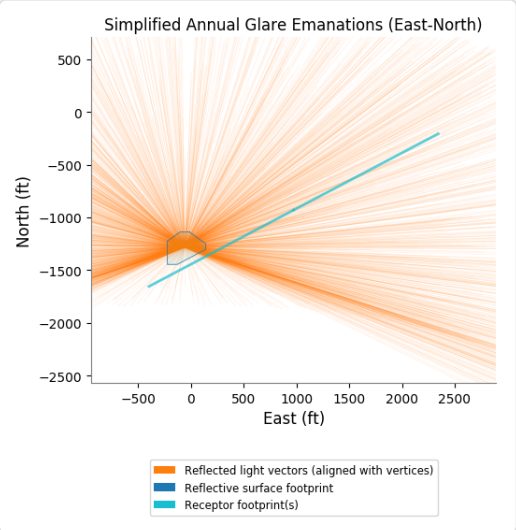
PV array is expected to produce the following glare for receptors at this location:

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









re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

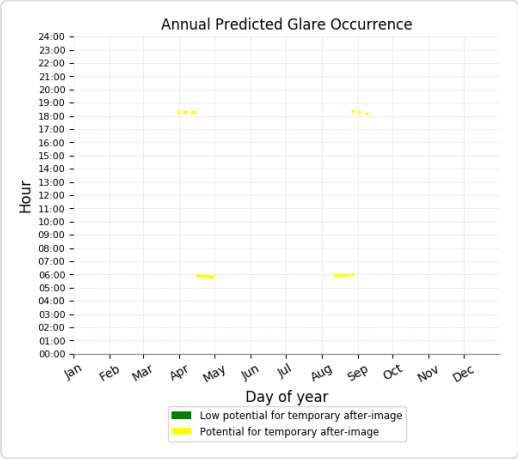
D1 potential temporary after-image

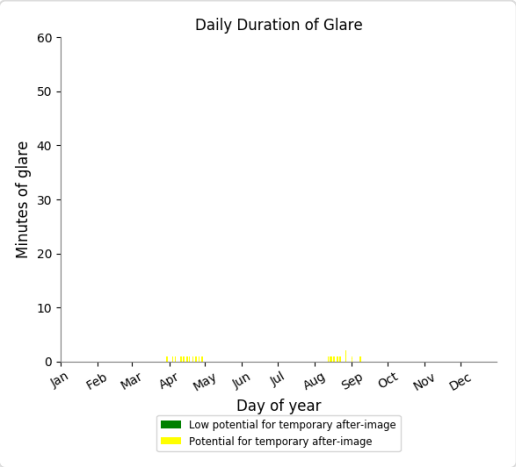
Component	Green glare (min)	Yellow glare (min)
Route: Route 1	0	23

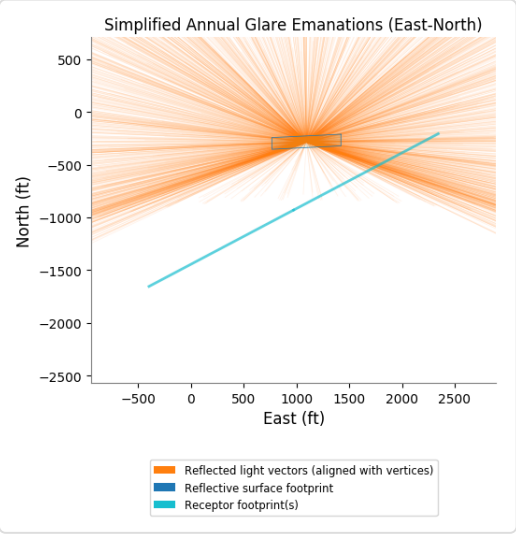
D1 - Route Receptor (Route 1)

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.
- 23 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 2 Fixed - trucks Jun18

Project site configuration details and results.

Created **June 18, 2020 7:03 p.m.**
Updated **June 22, 2020 7:45 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40304.7248

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
A7	14.0	180.0	0	0	-
B1	14.0	180.0	0	4	-
B2	14.0	180.0	0	112	-
B3	14.0	180.0	0	30	-
B4	14.0	180.0	0	0	-
B5	14.0	180.0	0	0	-
B6	14.0	180.0	0	0	-
C1	14.0	180.0	0	0	-
C2	14.0	180.0	0	0	-
C3	14.0	180.0	0	0	-
C4	14.0	180.0	0	0	-
C5	14.0	180.0	0	527	-
D1	14.0	180.0	0	843	-

Component Data

PV Array(s)

Name: A7
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 776,828 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892049	-76.956273	472.19	10.00	482.19
2	42.890788	-76.956265	469.66	10.00	479.66
3	42.889787	-76.957734	467.04	10.00	477.04
4	42.889779	-76.960108	464.29	10.00	474.29
5	42.892036	-76.960122	467.80	10.00	477.80

Name: B1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 702,437 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893999	-76.951634	478.47	10.00	488.47
2	42.892760	-76.949540	477.12	10.00	487.12
3	42.891241	-76.949531	472.23	10.00	482.23
4	42.891235	-76.951527	473.69	10.00	483.69
5	42.892995	-76.953116	478.75	10.00	488.75
6	42.893995	-76.953122	479.47	10.00	489.47

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,211,217 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892772	-76.946056	479.18	10.00	489.18
2	42.890014	-76.944034	471.62	10.00	481.62
3	42.889997	-76.949524	468.93	10.00	478.93
4	42.892760	-76.949540	477.12	10.00	487.12

Name: B3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 583,076 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.891241	-76.949531	472.23	10.00	482.23
2	42.889997	-76.949524	468.93	10.00	478.93
3	42.889986	-76.952989	469.71	10.00	479.71
4	42.890732	-76.954905	470.59	10.00	480.59
5	42.891224	-76.954908	471.96	10.00	481.96

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: B4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,316,799 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.890002	-76.948020	468.96	10.00	478.96
2	42.887228	-76.948004	465.87	10.00	475.88
3	42.887212	-76.952863	460.08	10.00	470.08
4	42.889986	-76.952880	469.80	10.00	479.80

Name: B5
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 244,025 sq-ft

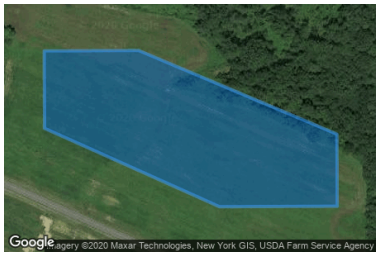
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.888538	-76.952871	465.28	10.00	475.28
2	42.887485	-76.952865	459.47	10.00	469.47
3	42.886682	-76.955373	461.69	10.00	471.69
4	42.887618	-76.955378	461.91	10.00	471.91

Name: B6
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,043,490 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.887228	-76.948004	465.87	10.00	475.88
2	42.886750	-76.946879	465.68	10.00	475.68
3	42.885750	-76.946873	464.68	10.00	474.68
4	42.884827	-76.949341	463.42	10.00	473.42
5	42.885163	-76.950637	461.30	10.00	471.30
6	42.886310	-76.952858	459.90	10.00	469.90
7	42.887212	-76.952863	460.08	10.00	470.08

Name: C1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 367,736 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902590	-76.943302	471.39	10.00	481.39
2	42.901795	-76.940729	472.92	10.00	482.92
3	42.901110	-76.940725	477.37	10.00	487.37
4	42.901105	-76.942254	475.26	10.00	485.26
5	42.901850	-76.944524	476.97	10.00	486.97
6	42.902586	-76.944529	475.11	10.00	485.11



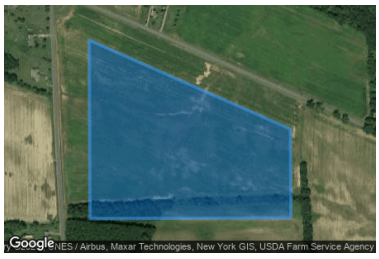
Name: C2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 327,159 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.900054	-76.949244	479.35	10.00	489.36
2	42.898607	-76.949235	480.41	10.00	490.41
3	42.898343	-76.950453	474.58	10.00	484.58
4	42.899977	-76.951235	473.10	10.00	483.10
5	42.900789	-76.951240	479.41	10.00	489.41

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

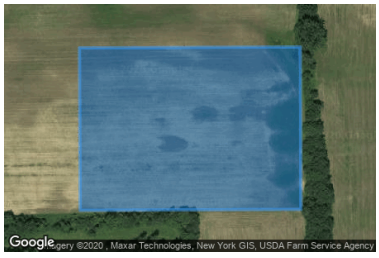
Name: C3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,294,578 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899755	-76.942360	479.49	10.00	489.49
2	42.898069	-76.942351	481.42	10.00	491.42
3	42.898052	-76.947566	481.14	10.00	491.14
4	42.901448	-76.947586	480.32	10.00	490.32



Name: C4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 432,340 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.897256	-76.941999	482.96	10.00	492.96
2	42.895712	-76.941990	481.48	10.00	491.48
3	42.895703	-76.944856	474.57	10.00	484.57
4	42.897247	-76.944865	480.76	10.00	490.76



Name: C5
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 262,354 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895712	-76.941990	481.48	10.00	491.48
2	42.892466	-76.941971	469.39	10.00	479.39
3	42.894147	-76.943098	471.67	10.00	481.67
4	42.895708	-76.943107	478.62	10.00	488.62

Name: D1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,818 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	10.00	478.03
2	42.891096	-76.934219	465.92	10.00	475.92
3	42.890809	-76.942230	470.17	10.00	480.17
4	42.891802	-76.942236	469.34	10.00	479.34

Route Receptor(s)

Name: Route 2
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902349	-76.948534	481.78	8.00	489.78
2	42.895229	-76.948127	477.84	8.00	485.84
3	42.892337	-76.944828	477.54	8.00	485.54
4	42.889742	-76.942974	470.56	8.00	478.56
5	42.886543	-76.940667	460.63	8.00	468.63
6	42.884362	-76.940513	461.94	8.00	469.94

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A7	14.0	180.0	0	0	-	-
B1	14.0	180.0	0	4	-	-
B2	14.0	180.0	0	112	-	-
B3	14.0	180.0	0	30	-	-
B4	14.0	180.0	0	0	-	-
B5	14.0	180.0	0	0	-	-
B6	14.0	180.0	0	0	-	-
C1	14.0	180.0	0	0	-	-
C2	14.0	180.0	0	0	-	-
C3	14.0	180.0	0	0	-	-
C4	14.0	180.0	0	0	-	-
C5	14.0	180.0	0	527	-	-
D1	14.0	180.0	0	843	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A7 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

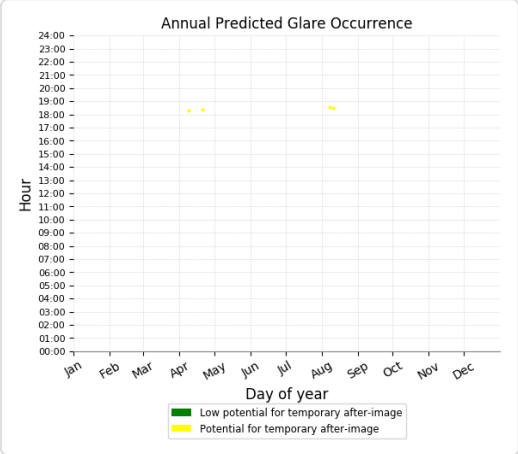
B1 potential temporary after-image

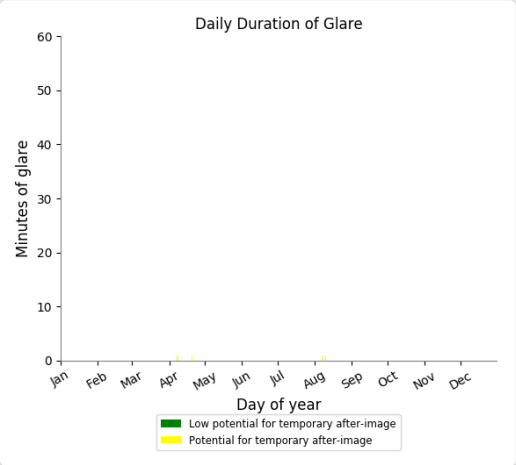
Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	4

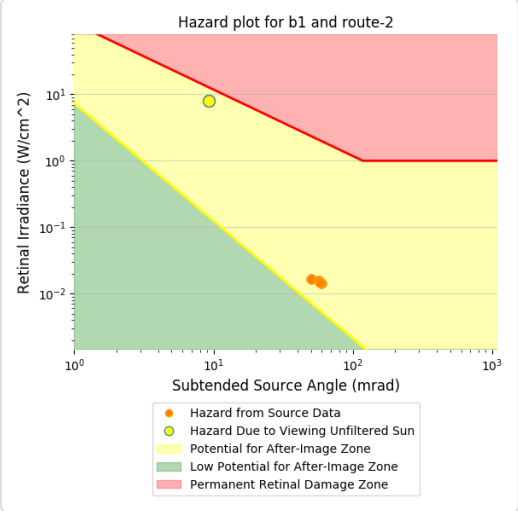
B1 - Route Receptor (Route 2)

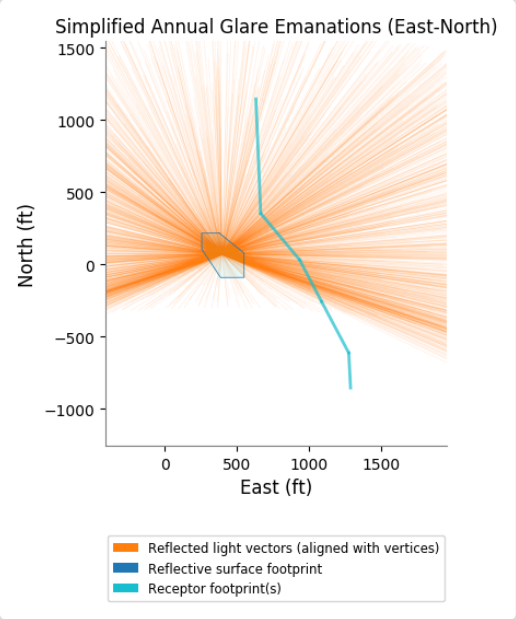
PV array is expected to produce the following glare for receptors at this location:

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









re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

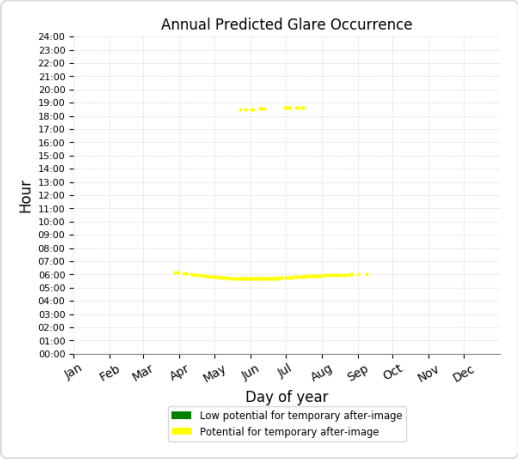
B2 potential temporary after-image

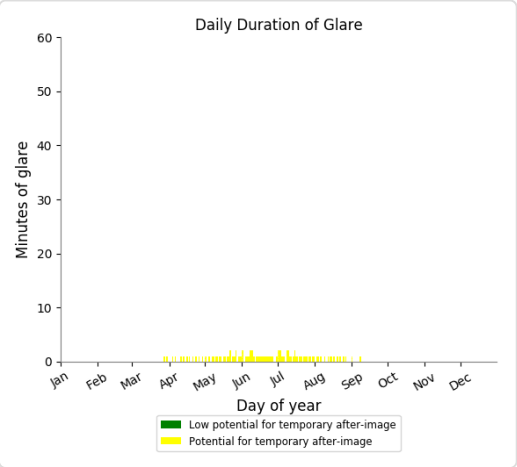
Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	112

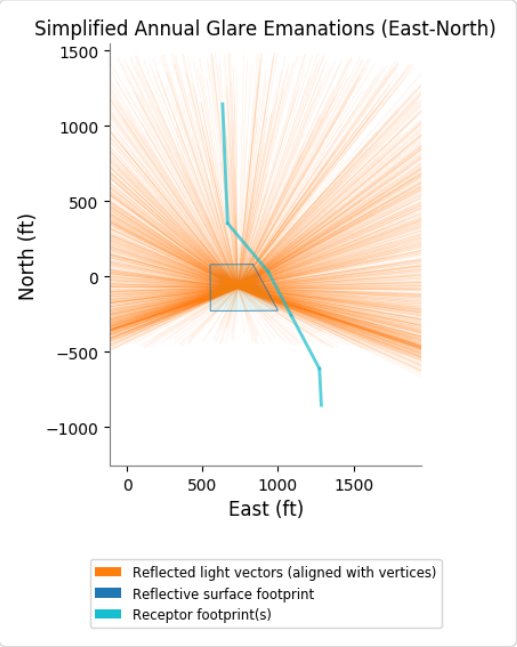
B2 - Route Receptor (Route 2)

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.
- 112 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

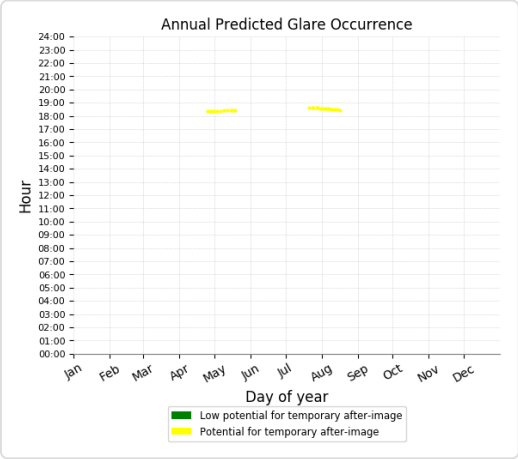
B3 potential temporary after-image

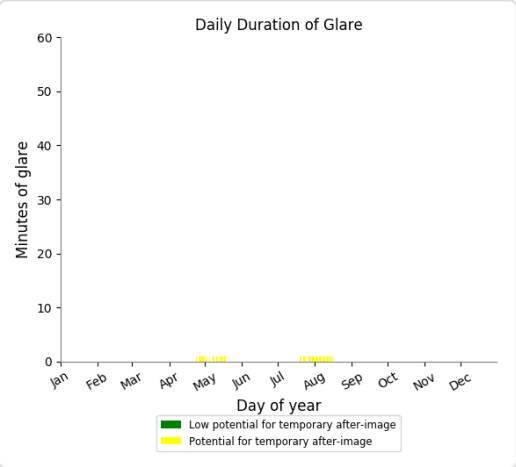
Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	30

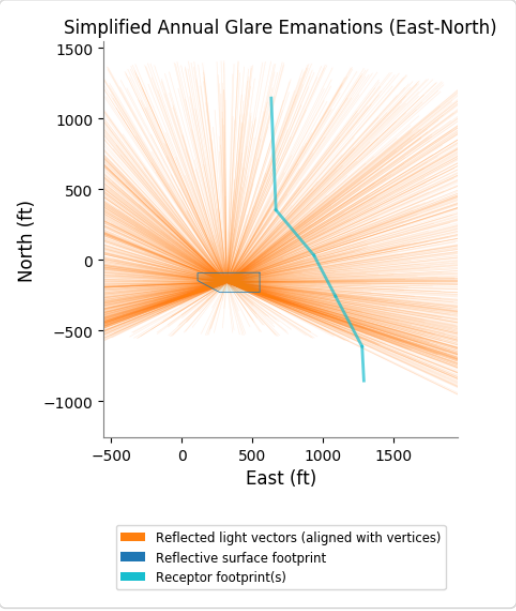
B3 - Route Receptor (Route 2)

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.
- 30 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

B4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B5 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

B6 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

C4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	0

No glare found

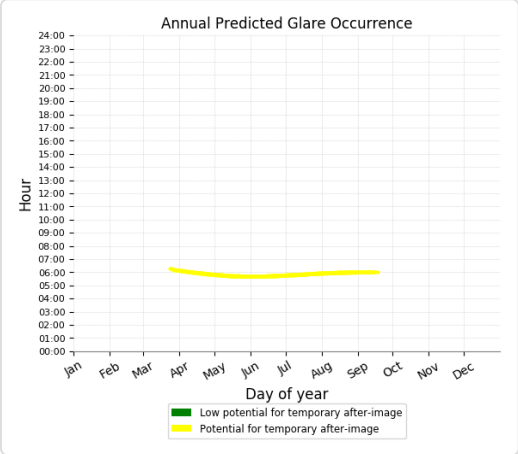
C5 potential temporary after-image

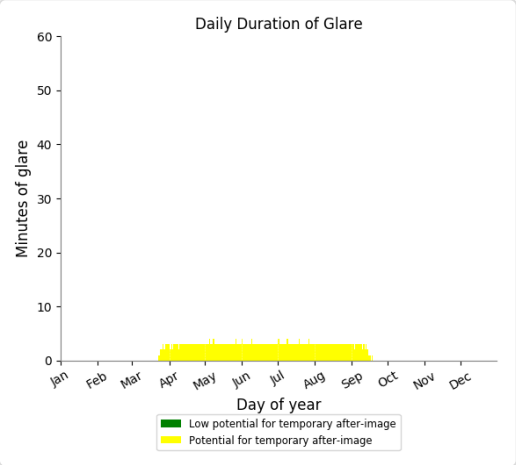
Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	527

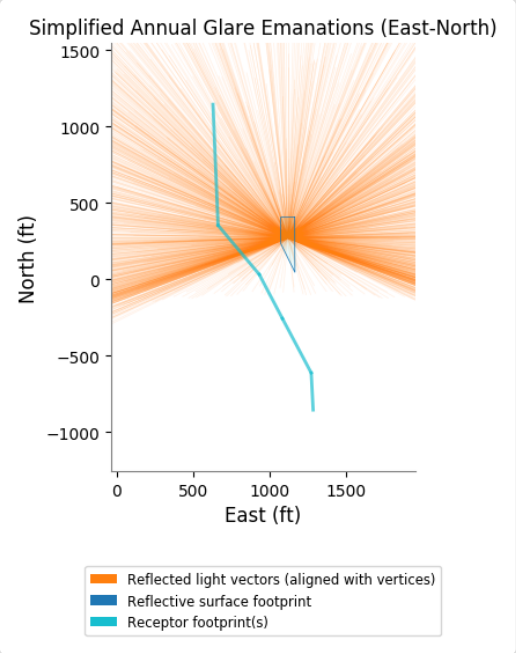
C5 - Route Receptor (Route 2)

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.
- 527 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

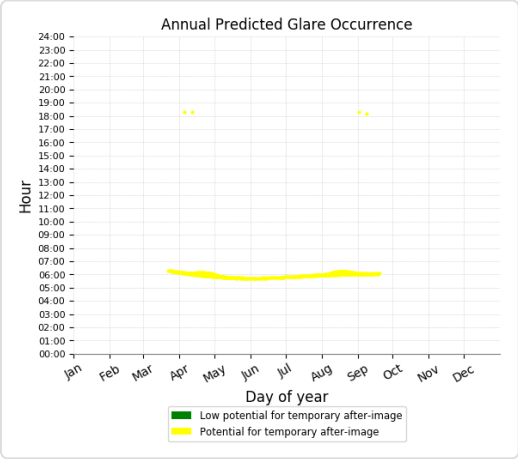
D1 potential temporary after-image

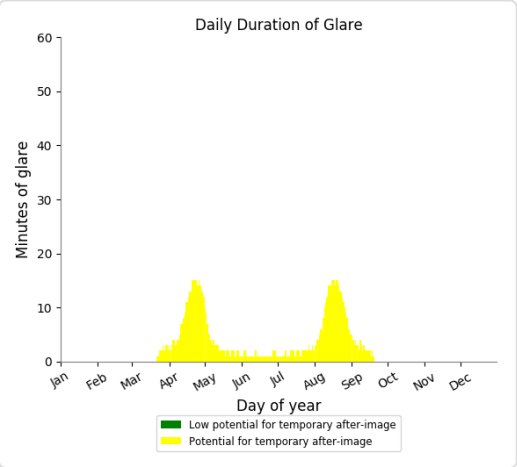
Component	Green glare (min)	Yellow glare (min)
Route: Route 2	0	843

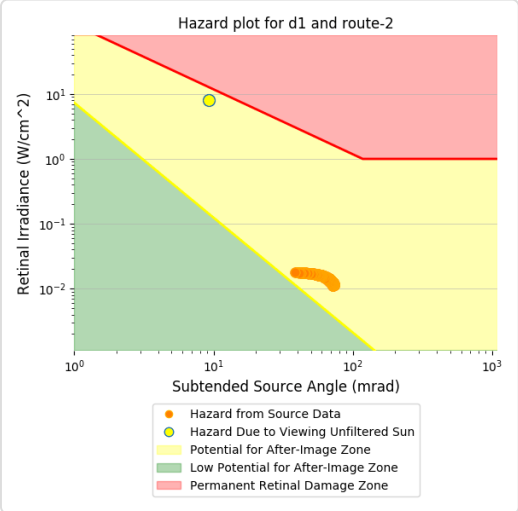
D1 - Route Receptor (Route 2)

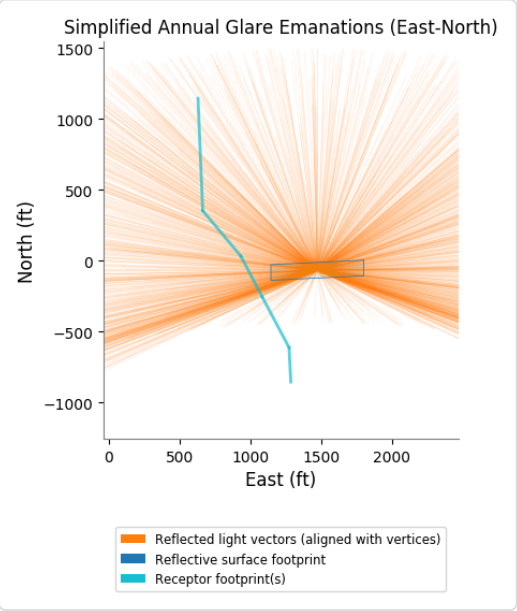
PV array is expected to produce the following glare for receptors at this location:

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









re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 3 Fixed - Trucks Jun18

Project site configuration details and results.

Created **June 18, 2020 7:03 p.m.**
Updated **June 22, 2020 7:44 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40305.7248

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
A1	14.0	180.0	0	6	-
C1	14.0	180.0	0	0	-
C2	14.0	180.0	0	0	-
C3	14.0	180.0	0	0	-
C4	14.0	180.0	0	0	-
C5	14.0	180.0	0	0	-
D1	14.0	180.0	0	0	-
D2	14.0	180.0	2	24	-
D3	14.0	180.0	0	97	-
D4	14.0	180.0	0	0	-

Component Data

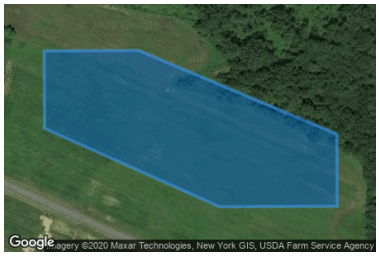
PV Array(s)

Name: A1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 945,265 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.904208	-76.956774	480.39	10.00	490.39
2	42.901486	-76.956758	476.81	10.00	486.81
3	42.901481	-76.958367	475.65	10.00	485.65
4	42.902228	-76.959956	480.67	10.00	490.67
5	42.905188	-76.959974	485.75	10.00	495.75

Name: C1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 367,525 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.902590	-76.943302	471.39	10.00	481.39
2	42.901795	-76.940729	472.92	10.00	482.92
3	42.901110	-76.940725	477.37	10.00	487.37
4	42.901105	-76.942254	475.26	10.00	485.26
5	42.901850	-76.944524	476.97	10.00	486.97
6	42.902586	-76.944529	475.11	10.00	485.11



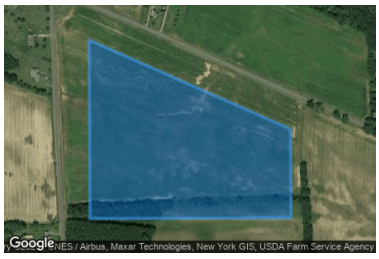
Name: C2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 327,060 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.900054	-76.949244	479.35	10.00	489.36
2	42.898607	-76.949235	480.41	10.00	490.41
3	42.898343	-76.950453	474.58	10.00	484.58
4	42.899977	-76.951235	473.10	10.00	483.10
5	42.900789	-76.951240	479.41	10.00	489.41

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

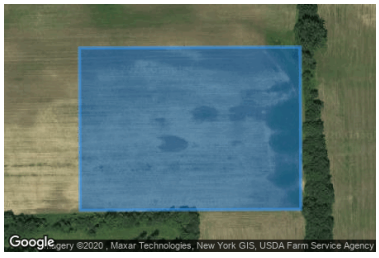
Name: C3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,294,247 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899755	-76.942360	479.49	10.00	489.49
2	42.898069	-76.942351	481.42	10.00	491.42
3	42.898052	-76.947566	481.14	10.00	491.14
4	42.901448	-76.947586	480.32	10.00	490.32



Name: C4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 432,372 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.897256	-76.941999	482.96	10.00	492.96
2	42.895712	-76.941990	481.48	10.00	491.48
3	42.895703	-76.944856	474.57	10.00	484.57
4	42.897247	-76.944865	480.76	10.00	490.76



Name: C5
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 262,356 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895712	-76.941990	481.48	10.00	491.48
2	42.892466	-76.941971	469.39	10.00	479.39
3	42.894147	-76.943098	471.67	10.00	481.67
4	42.895708	-76.943107	478.62	10.00	488.62

Name: D1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 777,347 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892089	-76.934225	468.02	10.00	478.03
2	42.891096	-76.934219	465.92	10.00	475.92
3	42.890809	-76.942230	470.17	10.00	480.17
4	42.891802	-76.942236	469.34	10.00	479.34

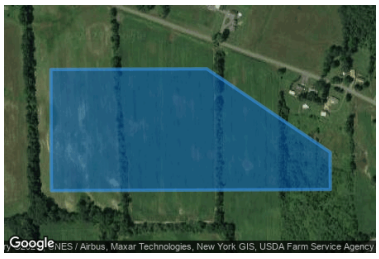
Name: D2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,002,984 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.896111	-76.931505	476.29	10.00	486.29
2	42.893053	-76.931488	470.58	10.00	480.58
3	42.893043	-76.934845	470.52	10.00	480.52
4	42.896101	-76.934863	479.01	10.00	489.01

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: D3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,381,423 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895371	-76.927455	473.89	10.00	483.89
2	42.893783	-76.924251	470.89	10.00	480.89
3	42.893075	-76.924247	469.60	10.00	479.60
4	42.893053	-76.931488	470.58	10.00	480.58
5	42.895359	-76.931501	475.65	10.00	485.65



Name: D4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 902,755 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.893075	-76.924247	469.60	10.00	479.60
2	42.892217	-76.924242	469.29	10.00	479.29
3	42.890807	-76.927840	467.75	10.00	477.75
4	42.890802	-76.929449	460.50	10.00	470.50
5	42.893059	-76.929462	470.20	10.00	480.20

Route Receptor(s)

Name: Route 3
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.905981	-76.960467	486.83	8.00	494.83
2	42.905765	-76.959407	484.44	8.00	492.44
3	42.902418	-76.948371	481.87	8.00	489.87
4	42.897278	-76.932621	475.04	8.00	483.04
5	42.895540	-76.925946	474.13	8.00	482.13
6	42.895004	-76.923918	474.17	8.00	482.17
7	42.893768	-76.920600	475.47	8.00	483.47

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A1	14.0	180.0	0	6	-	-
C1	14.0	180.0	0	0	-	-
C2	14.0	180.0	0	0	-	-
C3	14.0	180.0	0	0	-	-
C4	14.0	180.0	0	0	-	-
C5	14.0	180.0	0	0	-	-
D1	14.0	180.0	0	0	-	-
D2	14.0	180.0	2	24	-	-
D3	14.0	180.0	0	97	-	-
D4	14.0	180.0	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

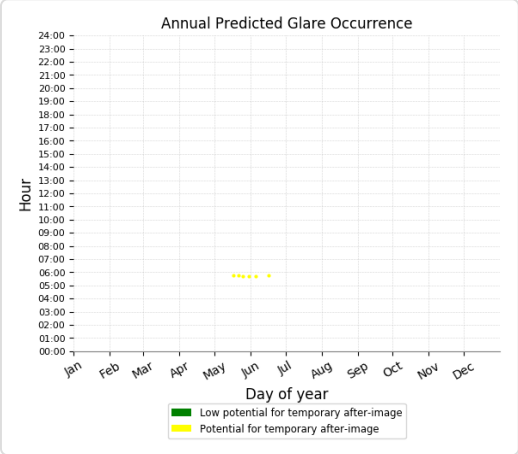
A1 potential temporary after-image

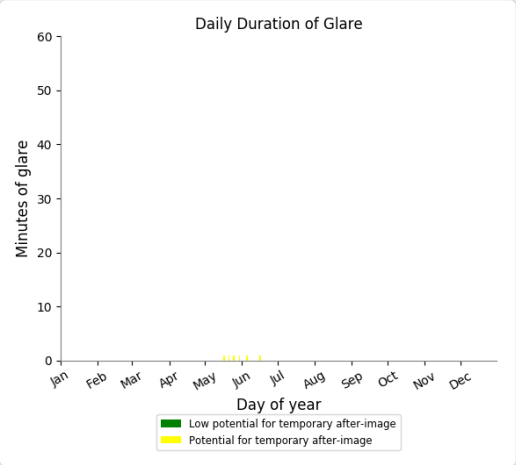
Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	6

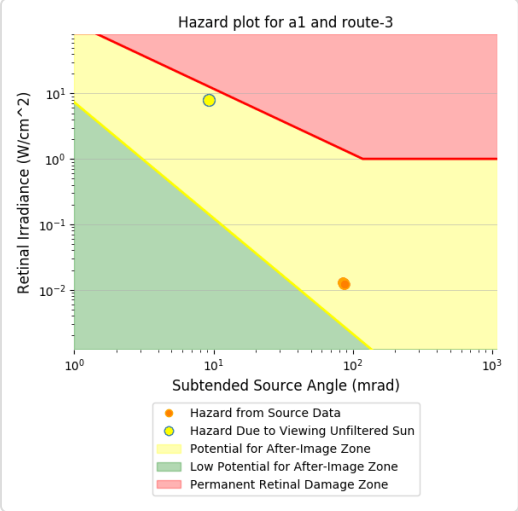
A1 - Route Receptor (Route 3)

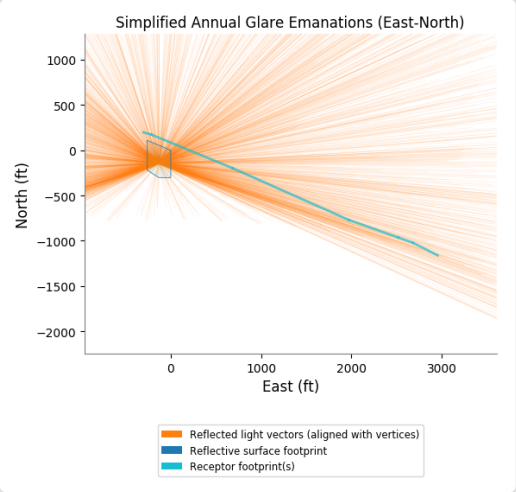
PV array is expected to produce the following glare for receptors at this location:

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









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations

y.

C1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C3 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

C5 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

D1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

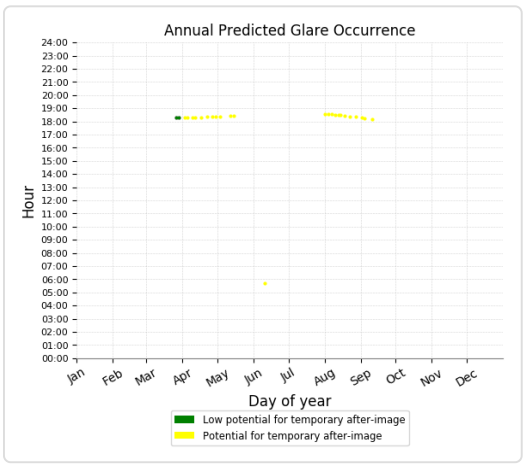
D2 potential temporary after-image

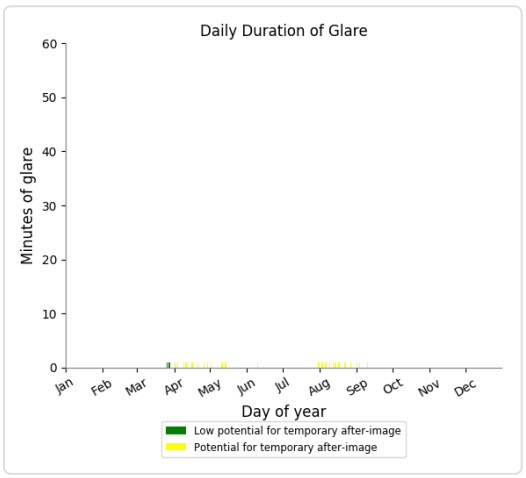
Component	Green glare (min)	Yellow glare (min)
Route: Route 3	2	24

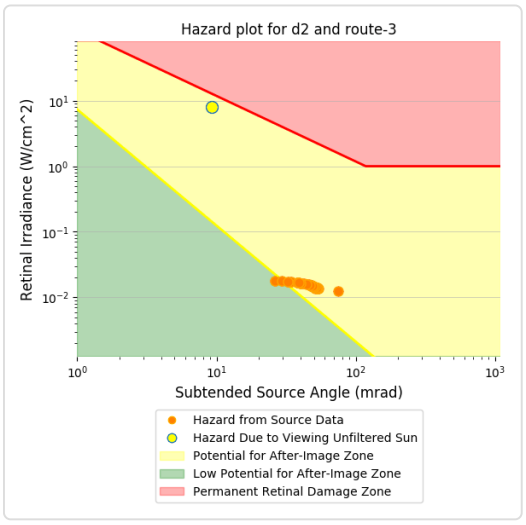
D2 - Route Receptor (Route 3)

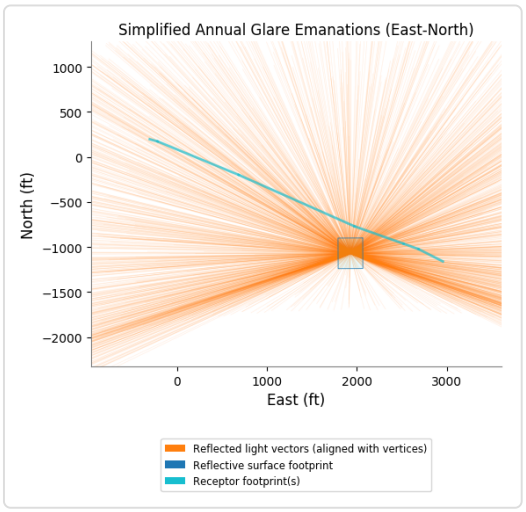
PV array is expected to produce the following glare for receptors at this location:

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









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations

y.

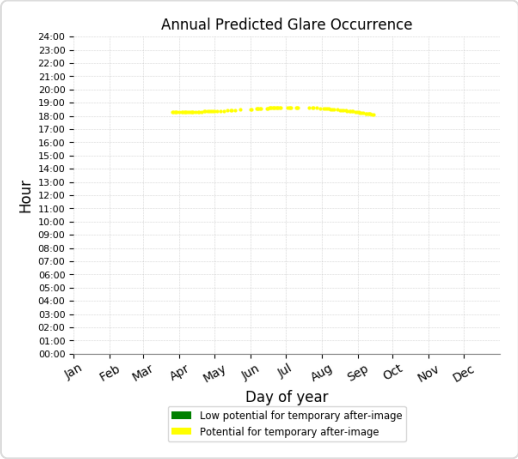
D3 potential temporary after-image

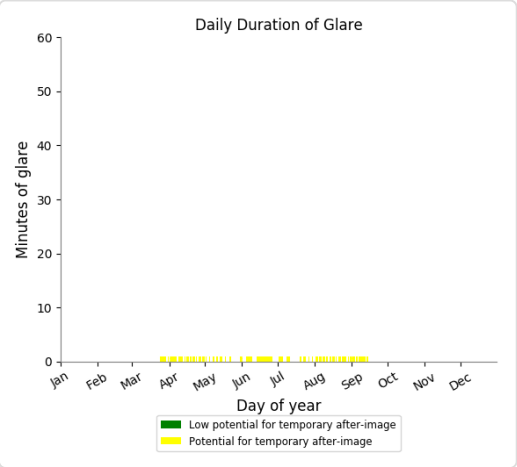
Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	97

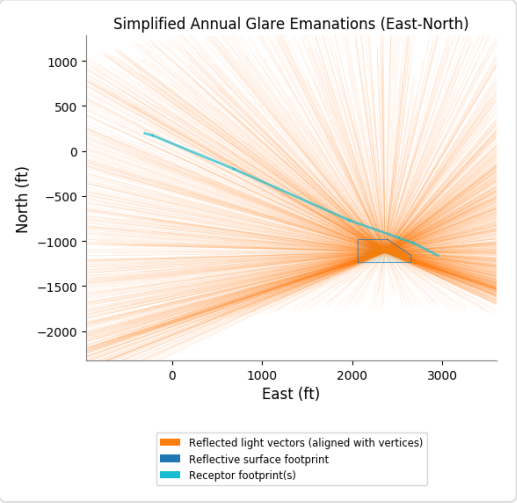
D3 - Route Receptor (Route 3)

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.
- 97 minutes of "yellow" glare with potential to cause temporary after-image.







Glare vectors placed at PV centroid for clarity. Actual glare-spot locations

y.

D4 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 3	0	0

No glare found

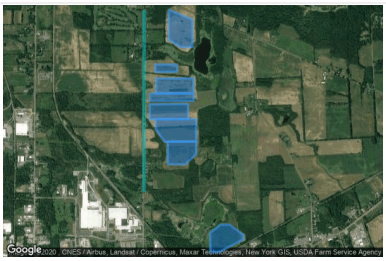
Assumptions

- 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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Route 4 Fixed - trucks Jun18

Project site configuration details and results.



Created **June 18, 2020 7:04 p.m.**
Updated **June 22, 2020 7:43 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 40306.7248

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
A1	14.0	180.0	0	0	-
A2	14.0	180.0	0	0	-
A3	14.0	180.0	0	24	-
A4	14.0	180.0	0	62	-
A5	14.0	180.0	0	1,426	-
A6	14.0	180.0	0	190	-
A7	14.0	180.0	0	34	-
B8	14.0	180.0	0	0	-

Component Data

PV Array(s)

Name: A1
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 945,265 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.904208	-76.956774	480.39	10.00	490.39
2	42.901486	-76.956758	476.81	10.00	486.81
3	42.901481	-76.958367	475.65	10.00	485.65
4	42.902228	-76.959956	480.67	10.00	490.67
5	42.905188	-76.959974	485.75	10.00	495.75

Name: A2
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 209,821 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.899737	-76.958870	472.85	10.00	482.85
2	42.899001	-76.958865	482.90	10.00	492.90
3	42.898991	-76.961786	480.54	10.00	490.54
4	42.899727	-76.961790	480.92	10.00	490.92

Name: A3
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 742,226 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.898361	-76.956635	483.98	10.00	493.98
2	42.896857	-76.956626	489.66	10.00	499.66
3	42.896840	-76.961677	477.00	10.00	487.00
4	42.898345	-76.961686	479.80	10.00	489.80

Name: A4
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 422,276 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.896857	-76.956626	489.66	10.00	499.66
2	42.896121	-76.956622	488.55	10.00	498.56
3	42.896101	-76.962492	471.96	10.00	481.96
4	42.896837	-76.962496	475.05	10.00	485.05

Name: A5
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 758,548 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.895791	-76.957388	485.93	10.00	495.93
2	42.894286	-76.957379	481.51	10.00	491.51
3	42.894269	-76.962539	467.99	10.00	477.99
4	42.895774	-76.962548	470.33	10.00	480.33

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: A6
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,120,893 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.894290	-76.956286	480.66	10.00	490.66
2	42.892049	-76.956273	472.19	10.00	482.19
3	42.892035	-76.960559	466.72	10.00	476.72
4	42.893246	-76.961713	467.16	10.00	477.16
5	42.894272	-76.961720	469.25	10.00	479.25

Name: A7
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 776,682 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.892049	-76.956273	472.19	10.00	482.19
2	42.890788	-76.956265	469.66	10.00	479.66
3	42.889787	-76.957734	467.04	10.00	477.04
4	42.889779	-76.960108	464.29	10.00	474.29
5	42.892036	-76.960122	467.80	10.00	477.80

Name: B8
Axis tracking: Fixed (no rotation)
Tilt: 14.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 845,746 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.883752	-76.951775	460.35	10.00	470.35
2	42.882761	-76.949911	462.41	10.00	472.41
3	42.882270	-76.949909	462.39	10.00	472.39
4	42.880999	-76.953178	462.81	10.00	472.81
5	42.880995	-76.954350	465.30	10.00	475.30
6	42.882962	-76.954362	460.64	10.00	470.65
7	42.883749	-76.952892	459.77	10.00	469.77

Route Receptor(s)

Name: Route 4
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	42.905011	-76.963312	487.53	8.00	495.53
2	42.896093	-76.963328	471.31	8.00	479.31
3	42.887174	-76.963343	460.56	8.00	468.56

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
A1	14.0	180.0	0	0	-	-
A2	14.0	180.0	0	0	-	-
A3	14.0	180.0	0	24	-	-
A4	14.0	180.0	0	62	-	-
A5	14.0	180.0	0	1,426	-	-
A6	14.0	180.0	0	190	-	-
A7	14.0	180.0	0	34	-	-
B8	14.0	180.0	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

A1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

A2 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	0

No glare found

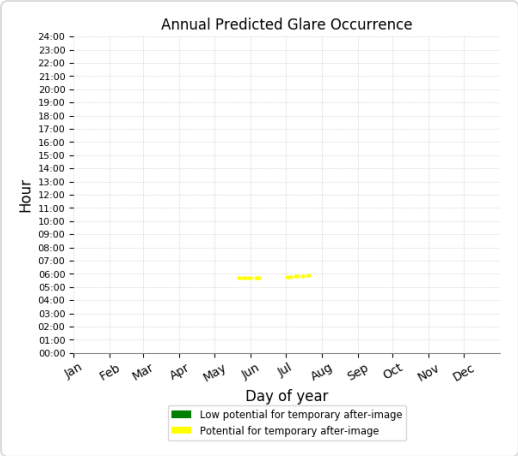
A3 potential temporary after-image

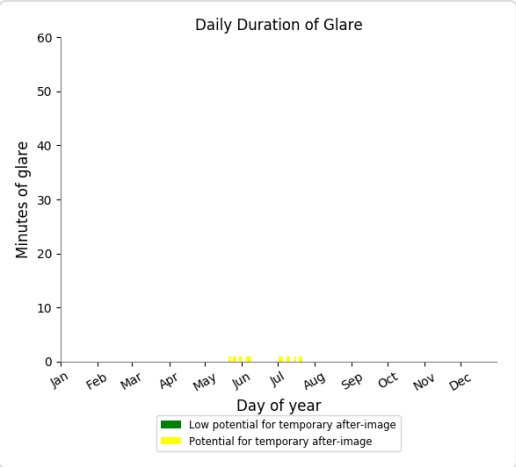
Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	24

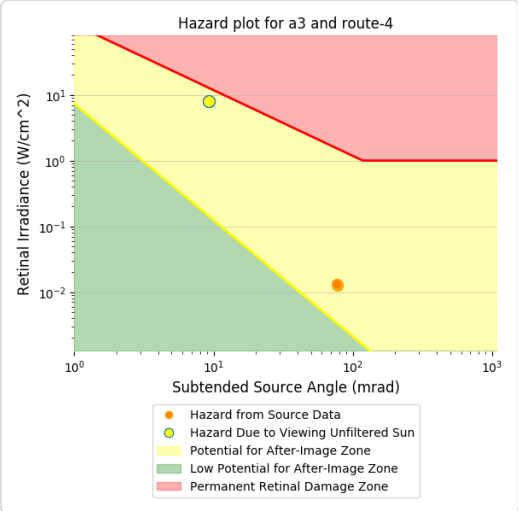
A3 - Route Receptor (Route 4)

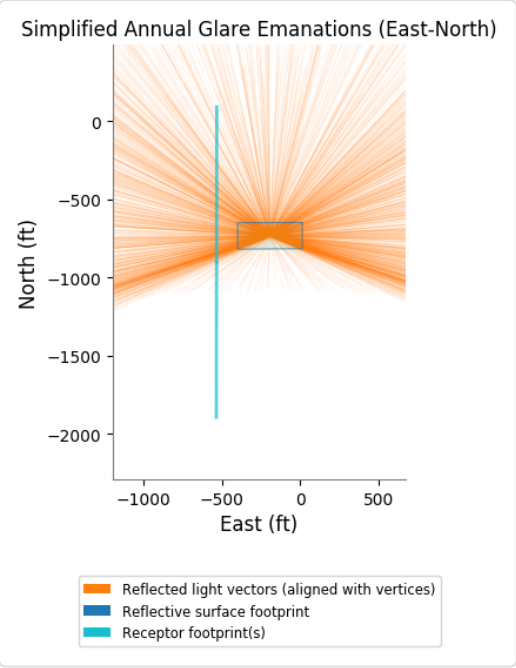
PV array is expected to produce the following glare for receptors at this location:

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









re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

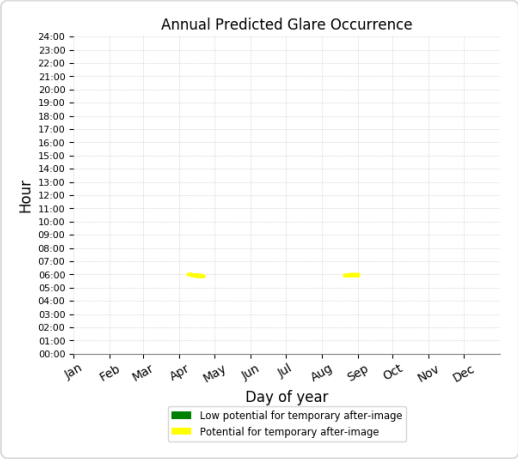
A4 potential temporary after-image

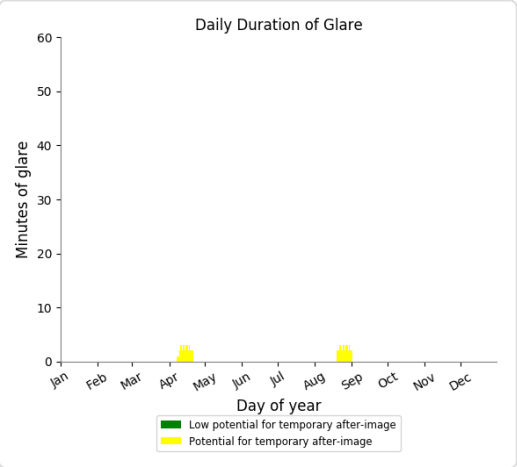
Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	62

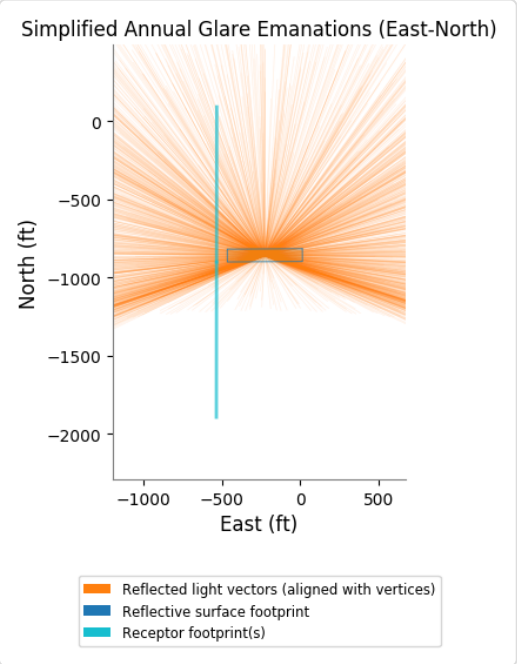
A4 - Route Receptor (Route 4)

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.
- 62 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

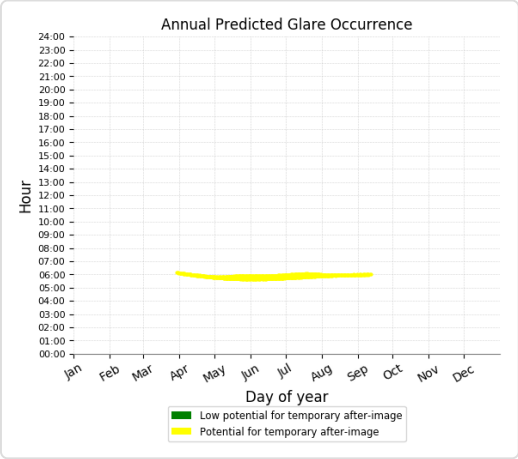
A5 potential temporary after-image

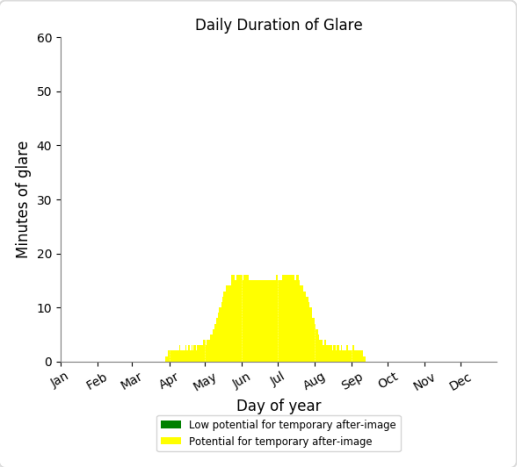
Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	1426

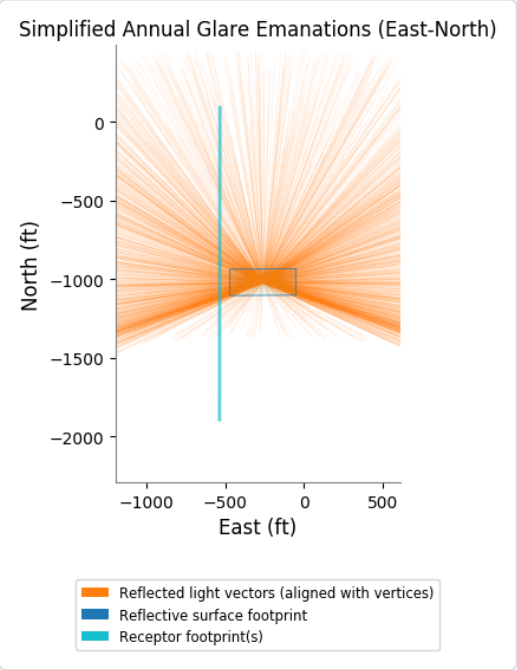
A5 - Route Receptor (Route 4)

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.
- 1,426 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

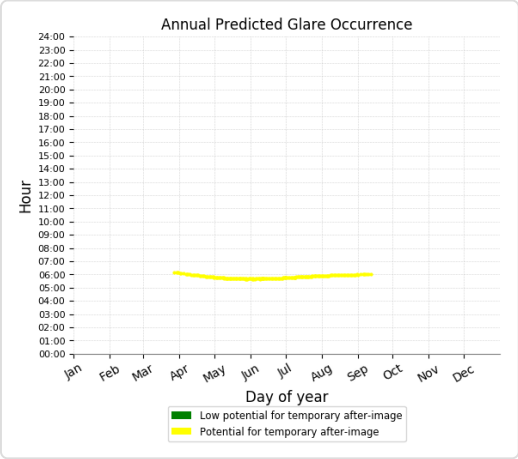
A6 potential temporary after-image

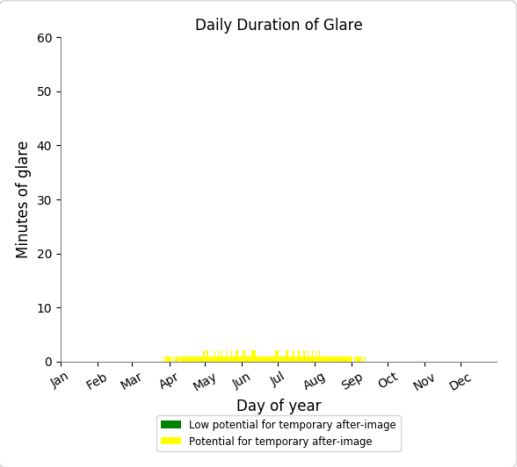
Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	190

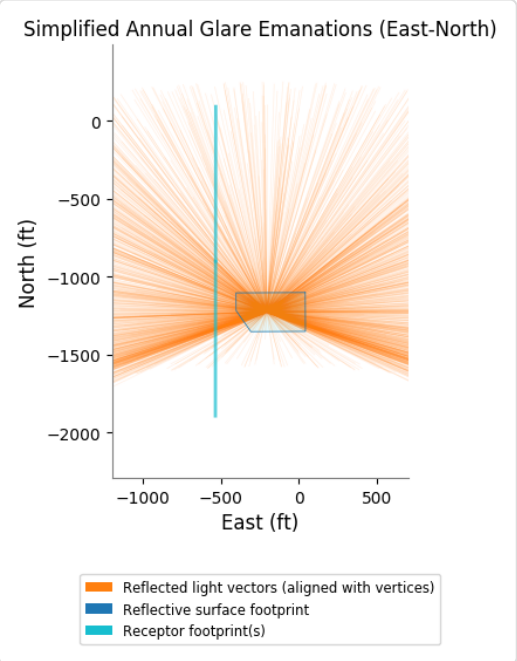
A6 - Route Receptor (Route 4)

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.
- 190 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

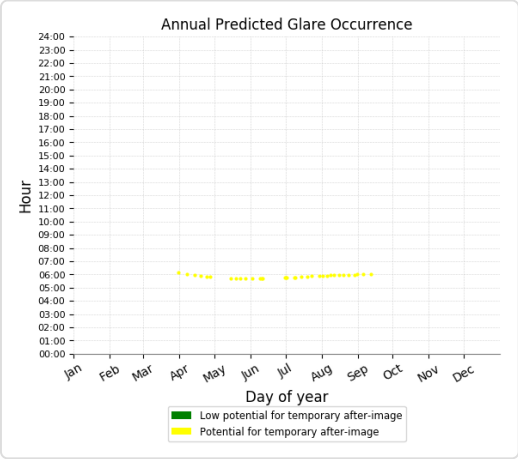
A7 potential temporary after-image

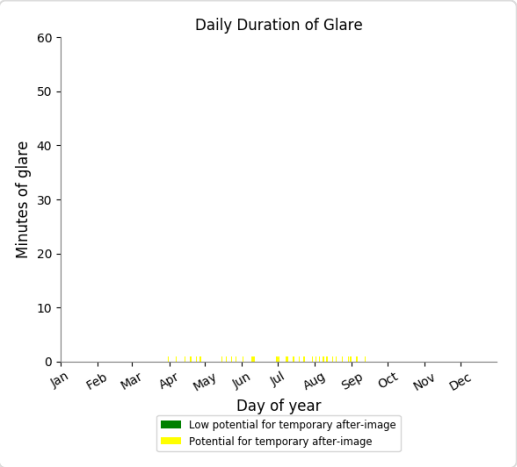
Component	Green glare (min)	Yellow glare (min)
Route: Route 4	0	34

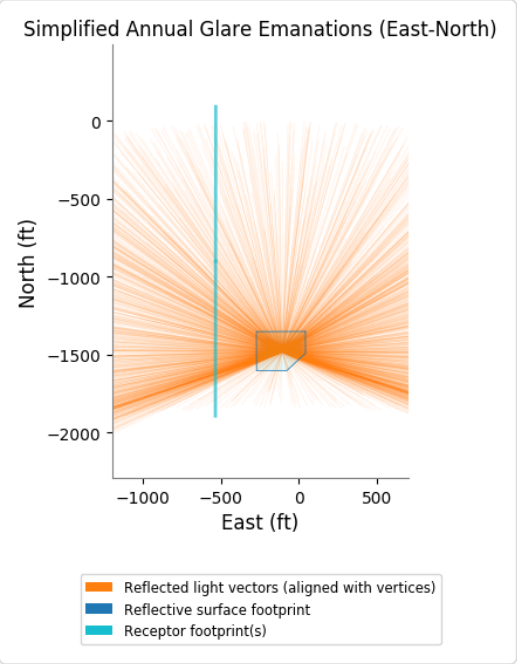
A7 - Route Receptor (Route 4)

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.
- 34 minutes of "yellow" glare with potential to cause temporary after-image.







re vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

B8 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Route 4	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 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.