MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address: 211 Market St., Brookeville
Meeting Date: 9/25/2019

Resource: Primary Resource
Report Date: 9/18/2019
Brookeville Historic District

Applicant: Harry Montgomery
Public Notice: 9/11/2019

Review: HAWP
Tax Credit: N/A

Case Number: 23/65-19D
Staff: Dan Bruechert

Proposal: Solar Panel Installation

STAFF RECOMMENDATION
Staff recommends that the HPC approve the HAWP application.

ARCHITECTURAL DESCRIPTION
SIGNIFICANCE: Primary Resource within the Brookeville Historic District
STYLE: Gothic Revival
DATE: c.1870

Figure 1: 211 Market St.
PROPOSAL

The applicant proposes to install 18 (eighteen) solar panels on a non-historic addition at the rear of the house.

APPLICABLE GUIDELINES

When reviewing alterations and new construction within the Brookeville Historic District several documents are to be utilized as guidelines to assist the Commission in developing their decision. These documents include the *Brookeville Historic District Master Plan Amendment (Plan)*, *Montgomery County Code Chapter 24A (Chapter 24A)*, and *the Secretary of the Interior’s Standards for Rehabilitation (Standards)*. The pertinent information in these documents is outlined below.

*Brookeville Historic District Master Plan Amendment*

The *Brookeville Historic District Master Plan Amendment (#23/65)* identifies Primary Resources, Secondary Resources, and Spatial Resources. 211 Market St. is a Primary Resource.

*Montgomery County Code; Chapter 24A-8*

(b) The commission shall instruct the director to issue a permit, or issue a permit subject to such conditions as are found to be necessary to insure conformity with the purposes and requirements of this chapter, if it finds that:

(1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or

(2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter;

(d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (Ord. No. 9-4, § 1; Ord. No. 11-59.)

*Secretary of the Interior’s Standards for Rehabilitation*

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, space and spatial relationships that characterize a property will be avoided.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportions, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

STAFF DISCUSSION

The applicant proposes to install 18 (eighteen) roof-mounted solar panels on the western side of the house’s non-historic, one-story, metal-roofed, rear gable addition to the house at 211 Market St. Staff
finds that the use of solar panels is appropriate as it is on a non-historic element and to the rear of the house. Staff recommends approval of the HAWP.

The subject property is at the northeast corner of the intersection of Water St., Market St., and High St. The proposed solar panels will not be visible from either High St. or Market St. Water St., which boarders the subject property to the west, is a gravel road identified in the Brookeville Comprehensive Plan as a secondary street:

“Town secondary streets, North, South, and north High (now Water Street) originally had no homes directly facing them but served to access mostly later 20th century development rear properties. Literally side streets, they were for the most part “unimproved” rights-of-way that provided views of side and rear yards for the various scale of homesteads in Town. As of this Plan (2009), there have been houses built on North Street and on a new street - Water Street.”

Because of the categorization of Water St. as a secondary street, Staff finds that the views of the subject property from Water St. should be evaluated as less historically significant than views from High St. or Market St. Staff finds that the view of the solar array visible from Water St. will not detract from the historic character of the surrounding district.

The proposed solar panels will be installed using roof-mounted rails and will not require a full rack system to be installed on the roof. This method has the benefit of allowing the panels to be installed closer to the roof surface, lessening the visual impact to the roofline. Staff finds that this proposal will not detract from the historic character of the house or the surrounding district, per 24A-8(b)(1) and Standard 2.

The required inverter box will be installed on the east of the existing addition and will not be visible from the public right-of-way. A buried conduit will connect the inverter to the existing utility meter and panel. This conduit will not be at all visible after installation, as it will be buried. As the applicant is taking advantage of the existing electric hardware, the proposed change will not have an impact on the historic character of the building (per 24A-8(b)(1)). Additionally, this work will be reversible should the applicant or a future owner ever decide to remove the solar array (per Standards 9 and 10).

Staff finds that the proposed installation of 18 (eighteen solar panels), on a non-historic addition, at the rear, and only visible from a street identified by the Town of Brookeville as having secondary significance, is appropriate and recommends approval of this HAWP.

**STAFF RECOMMENDATION**

Staff recommends that the Commission approve the HAWP application under the Criteria for Issuance in Chapter 24A-8(b)(1),(2), and (d), having found that the proposal will not substantially alter the exterior features of the historic resource and is compatible in character with the district and the purposes of Chapter 24A;

and with the Secretary of the Interior’s Standards for Rehabilitation #2, #9, and #10,

and with the general condition that the applicant shall present the 3 permit sets of drawings, if applicable, to Historic Preservation Commission (HPC) staff for review and stamping prior to submission for the Montgomery County Department of Permitting Services (DPS) building permits;

and with the general condition that final project design details, not specifically delineated by the Commission, shall be approved by HPC staff or brought back to the Commission as a revised HAWP application at staff’s discretion;

and with the general condition that the applicant shall notify the Historic Preservation Staff if they
propose to make any alterations to the approved plans. Once the work is completed the applicant will contact the staff person assigned to this application at 301-563-3400 or dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.
APPLICATION FOR
HISTORIC AREA WORK PERMIT

Contact Email: jstokes@solarenergyworld.com
Contact Person: John Stokes

Daytime Phone No: 410-579-2082

Tax Account No: 00731767
Name of Property Owner: Montgomery, Harry
Daytime Phone No: 301-580-5824

Address: 211, Brookville, Market St, 20833

Contractor: Solar Energy World
Contractor Registration No: 37-0284821

Agent for Owner: John Stokes
Daytime Phone No: 410-579-2082

LOCATION OF BUILDING PREMISES

House Number: 211
Street: Market St.

Town/City: Brookville, Nearest Cross Street: Wahr St.
Lot: 05325, Block: 00703, Subdivision: 005 - Lot in Brookville
Parcel: P426

PART ONE: TYPE OF PERMIT AND USE

1A. CHECK ALL APPLICABLE

☐ Construct ☐ Extend ☐ Alter/Renovate ☐ A/C ☐ Stab ☐ Room Addition ☐ Porch ☐ Deck ☐ Shed
☐ Move ☐ Install ☐ Window/Door ☐ ☐ Solar ☐ Fireplace ☐ Woodburning Stove ☐ Single Family
☐ Revision ☐ Repair ☐ Removable ☐ ☐ Fence/Wall (complete Section 4) ☐ Other:

1B. Construction cost estimate: $13,000

1C. If this is a revision of a previously approved active permit, see Permit #

PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTENSIONS

2A. Type of sewage disposal: 01 WSSC 02 Septic 03 Other:

2B. Type of water supply: 01 WSSC 02 Well 03 Other:

PART THREE: COMPLETE ONLY FOR PARTICIPATING WALL

3A. Height feet inches

1B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:

☐ On party line/property line ☐ Entirely on land of owner ☐ On public right of way/assessment

I hereby certify that I have the authority to make the foregoing application, that the application is correct, and that the construction will comply with plans approved by all agencies listed and that I hereby acknowledge and accept this to be a condition for the issuance of this permit.

Signature of owner or authorized agent
08.30.19

Date

Approved: ____________________________  For Chairperson, Historic Preservation Commission

Disapproved: ____________________________

Signature: ____________________________ Date: ____________________________

Application/Permit No: ____________________________ Date Filed: ____________________________ Date issued: ____________________________

SEE REVERSE SIDE FOR INSTRUCTIONS
THE FOLLOWING ITEMS MUST BE COMPLETED AND THE REQUIRED DOCUMENTS MUST ACCOMPANY THIS APPLICATION.

1. WRITTEN DESCRIPTION OF PROJECT
   a. Description of existing structure(s) and environmental setting, including their historical features and significance:

   Single Family Dwelling in historic Brookline

   ____________________________________________
   ____________________________________________
   ____________________________________________

   b. General description of project and its effect on the historic resource(s), the environmental setting, and, where applicable, the historic district:

   Install 18 roof mounted solar panels on Southern facing roof only
   Trees obstruct view of panels from Main Street (Market St.)

2. SITE PLAN
   Site and environmental setting, drawn to scale. You may use your plot. Your site plan must include:
   a. the scale, north arrow, and data;
   b. dimensions of all existing and proposed structures; and
   c. site features such as walkways, driveways, fences, ponds, streams, trash dumpsters, mechanical equipment, and landscaping.

3. PLANS AND ELEVATIONS
   You must submit 2 copies of plans and elevations in a format no larger than 11" x 17". Plans on 8 1/2" x 11" paper are preferred.
   a. Submittal of construction plans, with marked dimensions, indicating location, size and general type of walls, window and door openings, and other fixed features of both the existing resource(s) and the proposed work.
   b. Elevations (facades), with marked dimensions, clearly indicating proposed work in relation to existing construction and, when appropriate, context.
      All materials and fixtures proposed for the exterior must be noted on the elevations drawings. An existing and a proposed elevation drawing of each facade affected by the proposed work is required.

4. MATERIALS SPECIFICATIONS
   General description of materials and manufactured items proposed for incorporation in the work of the project. This information may be included on your design drawings.

5. PHOTOGRAPHS
   a. Clearly labeled photographic prints of each facade of existing resource, including details of the affected portions. All labels should be placed on the front of photographs.
   b. Clearly label photographic prints of the resource as viewed from the public right-of-way and of the adjoining properties. All labels should be placed on the front of photographs.

6. TREE SURVEY
   If you are proposing construction adjacent to or within the dripline of any tree 6" or larger in diameter (at approximately 4 feet above the ground), you must file an accurate tree survey identifying the size, location, and species of each tree of at least that dimension.

7. ADDRESSES OF ADJACENT AND CONFRONTING PROPERTY OWNERS
   For all projects, provide an accurate list of adjacent and confronting property owners (not tenants), including names, addresses, and zip codes. This list should include the owners of all lots or parcels which adjoin the parcel in question, as well as the owner(s) of lot(s) or parcel(s) which lie directly across the street/roadway from the parcel in question.

PLEASE PRINT (IN BLUE OR BLACK INK) OR TYPE THIS INFORMATION ON THE FOLLOWING PAGE.
PLEASE STAY WITHIN THE GUIDES OF THE TEMPLATE, AS THIS WILL BE PHOTOCOPIED DIRECTLY ONTO MAILING LABELS.
# HAWP APPLICATION: MAILING ADDRESSES FOR NOTIFYING

[Owner, Owner's Agent, Adjacent and Confronting Property Owners]

<table>
<thead>
<tr>
<th>Owner's mailing address</th>
<th>Owner's Agent's mailing address</th>
</tr>
</thead>
<tbody>
<tr>
<td>211 Market St.</td>
<td>5681 Main St.</td>
</tr>
<tr>
<td>Brookeville, MD 20833</td>
<td>Elkridge, MD 21075</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjacent and confronting Property Owners mailing addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson, Garrett &amp; Beth</td>
</tr>
<tr>
<td>104 Water St.</td>
</tr>
<tr>
<td>Brookeville, MD 20833</td>
</tr>
<tr>
<td>Haxis, Christ &amp; Nicole</td>
</tr>
<tr>
<td>301 Market St.</td>
</tr>
<tr>
<td>Brookeville, MD 20833</td>
</tr>
<tr>
<td>Kassaei, Harry</td>
</tr>
<tr>
<td>215 Long Trail LN</td>
</tr>
<tr>
<td>Rockville, MD 20850</td>
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</tbody>
</table>
# HISTORIC AREA WORK PERMIT
## CHECKLIST OF APPLICATION REQUIREMENTS

<table>
<thead>
<tr>
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<td>Additions/Alterations</td>
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<td>Demolition</td>
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<td>Deck/Porch</td>
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<td>Fence/Wall</td>
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<td>Driveway/Parking Area</td>
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<td>Major Landscaping/Grading</td>
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<td>Tree Removal</td>
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<td>Siding/Roof Changes</td>
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<td>Window/Door Changes</td>
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<td>Masonry Repair/Repoint</td>
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<td>Signs</td>
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PLEASE SEE INSTRUCTIONS ON DPS’ HAWP APPLICATION FOR FURTHER DETAILS REGARDING APPLICATION REQUIREMENTS.

**NOTE:** Historic Area Work Permits are not required for ordinary maintenance projects, such as painting, gutter repair, roof repair with duplicate materials, and window repairs. All replacement materials must match the original exactly and be of the same dimensions.

**ALL HAWPS MUST BE FILED AT DPS:**
255 ROCKVILLE PIKE,
ROCKVILLE, MARYLAND, 20850.
Directly in front of Proposed array

View from 301 Market St.
View from 1 High St. Directly across st.
Project: Montgomery Residence
Property Owner: Harry Montgomery
Address: 211 Market St., Brookeville, MD 20833

☑ I reviewed the design of the photovoltaic (PV) system, as designed by the manufacturer, and the design criteria utilized for the mounting equipment and panel mounting assembly (rack system) for the installation of 00 panels supported by the rack system, as shown on the drawings prepared for the above referenced address. I certify that the configurations and design criteria meet the standards and requirements of the International Residential Code (IRC) and International Existing Building Code (IEBC) adopted by Montgomery County in COMCOR 08.00.02.

☑ The attachment of the rack system to the building at the above address, including the location, number, and type of attachment points; the number of fasteners per attachment point; and the specific type of fasteners (size, diameter, length, minimum embedment into structural framing, etc.) meets the standards and requirements of the IRC and IEBC adopted by Montgomery County in COMCOR 08.00.02.

☒ I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. I certify that no structural modifications of the existing roof structure are required. The existing roof structure meets the standards and requirements of the IRC and IEBC, adopted by Montgomery County in COMCOR 08.00.02, necessary to support the PV system.

☐ I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. Structural modifications of the existing roof structure are required. I certify that the roof structure, as modified on the drawings for this project, will support the additional loads imposed by the PV system. I further certify that design of the modified roof structure meets the standards and requirements of the IRC and IEBC, adopted by Montgomery County in COMCOR 08.00.02.

☑ I approved the construction documents for the mounting equipment, rack system, roof structure for this project.

Maryland PE License Number:
Date: 8.02.19
Signature:

Seal:
### Electrical Specifications

<table>
<thead>
<tr>
<th>Test Conditions</th>
<th>SILFAB SLA Monocrystalline</th>
<th>NOCT</th>
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</thead>
<tbody>
<tr>
<td>Module Power (Pmax)</td>
<td>Wp 310</td>
<td>234</td>
</tr>
<tr>
<td>Maximum power voltage (Vpmax)</td>
<td>V 33.05</td>
<td>29.7</td>
</tr>
<tr>
<td>Maximum power current (Ipmax)</td>
<td>A 9.38</td>
<td>7.88</td>
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<tr>
<td>Open circuit voltage (Voc)</td>
<td>V 40.25</td>
<td>37.2</td>
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<tr>
<td>Short circuit current (Isc)</td>
<td>A 9.93</td>
<td>8.14</td>
</tr>
<tr>
<td>Module efficiency</td>
<td>% 19.0</td>
<td>17.9</td>
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<tr>
<td>Maximum system voltage (VDC)</td>
<td>V 1000</td>
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</tr>
<tr>
<td>Series fuse rating</td>
<td>A 15</td>
<td></td>
</tr>
<tr>
<td>Power Tolerance</td>
<td>Wp -0/+5</td>
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</tr>
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</table>

Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%
• Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by -0/+5W.

### Temperature Ratings

| Temperature Coefficient Isc | SILFAB SLA Monocrystalline | 0.03 |
| Temperature Coefficient Voc | %/K | -0.30 |
| Temperature Coefficient Pmax | %/K | -0.38 |
| NOCT (±2°C) | °C | 45 |
| Operating temperature | °C | -40/+85 |

### Mechanical Properties and Components

| Module weight (±1 kg) | SILFAB SLA Monocrystalline | 19 |
| Dimensions (H x L x D; ±1 mm) | mm | 1650 x 990 x 38 |
| Maximum surface load (wind/snow)² | N/m² | 5400 |
| Hall impact resistance | θ 25 mm at 83 km/h | |
| Cells | 60 - Si monocrystalline - 4 or 5 busbar - 156.75 x 156.75 mm |
| Glass | 3.2 mm high transmittance, tempered, antireflective coating |
| Backsheet | Multilayer polyester-based |
| Frame | Anodized Al |
| Bypass diodes | 3 diodes-45V/12A, IP67/IP68 |
| Cables and connectors (See installation manual) | 1200 mm Φ 5.7 mm (4 mm²), MC4 compatible |

### Warranties

| Module product warranty | SILFAB SLA Monocrystalline | 12 years |
| Linear power performance guarantee | | 25 years |
|                           | | ≥ 97% end of 1st year |
|                           | | ≥ 90% end of 12th year |
|                           | | ≥ 82% end of 25th year |

### Certifications

<table>
<thead>
<tr>
<th>Product</th>
<th>SILFAB SLA Monocrystalline</th>
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<tbody>
<tr>
<td>Factory</td>
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</table>

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**Warning:** Read the installation and User Manual before handling, installing and operating modules.

Third-party generated pan files from PV Evolution Labs available for download at: www.silfab.ca/downloads

- **Pallet Count:** 26
- **Container Count:** 936

Silfab Solar Inc.
240 Courtenaypark Drive East • Mississauga, Ontario Canada L5T 255
Tel +1 905-255-2501 • Fax +1 905-696-0267
info@silfab.ca • www.silfab.ca
# Single Phase Inverter with HD-Wave Technology for North America

|------------|------------|------------|------------|------------|-------------|-------------|

## OUTPUT

<table>
<thead>
<tr>
<th>Rated AC Power Output</th>
<th>3000</th>
<th>3800 @ 240V</th>
<th>3300 @ 208V</th>
<th>5000</th>
<th>6000 @ 240V</th>
<th>5000 @ 208V</th>
<th>7600</th>
<th>10000</th>
<th>11400 @ 240V</th>
<th>10000 @ 208V</th>
<th>VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum AC Power Output</td>
<td>3000</td>
<td>3800 @ 240V</td>
<td>3300 @ 208V</td>
<td>5000</td>
<td>6000 @ 240V</td>
<td>5000 @ 208V</td>
<td>7600</td>
<td>10000</td>
<td>11400 @ 240V</td>
<td>10000 @ 208V</td>
<td>VA</td>
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<td>✓</td>
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<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Vac</td>
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<tr>
<td>AC Frequency (Nominal)</td>
<td>59.3 - 60 - 60.5</td>
<td>Hz</td>
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<tr>
<td>Maximum Continuous Output Current @240V</td>
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<td>16</td>
<td>21</td>
<td>25</td>
<td>32</td>
<td>42</td>
<td>47.5</td>
<td>A</td>
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<tr>
<td>Maximum Continuous Output Current @208V</td>
<td>12.5</td>
<td>16</td>
<td>21</td>
<td>25</td>
<td>32</td>
<td>42</td>
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<td>GFDI Threshold</td>
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<td>A</td>
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<tr>
<td>Utility Monitoring, Islanding Protection, Country Configurable Thresholds</td>
<td>Yes</td>
<td></td>
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</tbody>
</table>

## INPUT

| Maximum DC Power @240V | 4650 | 5900 | 7750 | 9300 | 11800 | 15500 | 17650 | W |
| Maximum DC Power @208V | 5100 | 7750 | 1450 | 1790 | 21500 | 29500 | 35000 | W |
| Transformer-less, Ungrounded | Yes |
| Maximum Input Voltage | 480 | Vdc |
| Nominal DC Input Voltage | 300 | 300 | 300 | 400 | 400 | 400 | 400 | Vdc |
| Maximum Input Current @240V | 8.5 | 10.5 | 13.5 | 16.5 | 20 | 27 | 30.5 | Adc |
| Maximum Input Current @208V | 8.5 | 10.5 | 13.5 | 16.5 | 20 | 27 | 30.5 | Adc |
| Max. Input Short Circuit Current | 45 | Adc |
| Reverse-Polarity Protection | Yes |
| Ground-Fault Isolation Detection | 600x50 Sensitivity |
| Maximum Inverter Efficiency | 99 | 99.2 | % |
| CEC Weighted Efficiency | 99 | 99 @ 240V | 99.5 @ 208V | % |
| Nighttime Power Consumption | < 2.5 | W |

## ADDITIONAL FEATURES

- Supported Communication Interfaces: RS485, Ethernet, Zigbee (optional), Cellular (optional)
- Revenue Grade Data, ANSI C12.20
- Rapid Shutdown - NEC 2014 and 2017 690.12
- Automatic Rapid Shutdown upon AC Grid Disconnect

## STANDARD COMPLIANCE

- UL 1741, UL 1741 SA, UL 1990B, CSA C22.2, Canadian APCI according to T.I.I. M-07
- IEEE 1547, Rule 21, Rule 14 (HI)
- FCC Part 15 Class B
- Emisions

## INSTALLATION SPECIFICATIONS

| AC Output Conduit Size / AWG Range | 3/4" minimum / 14-6 AWG | 3/4" minimum / 14-6 AWG |
| DC Input Conduit Size / # of Strings / AWG Range | 3/4" minimum / 1-2 strings / 14-6 AWG | 3/4" minimum / 1-3 strings / 14-6 AWG |
| Dimensions with Safety Switch (in mm/W) | 177 x 146 x 68 / 450 x 370 x 174 | 231 x 146 x 73 / 540 x 370 x 185 |
| Weight with Safety Switch | 22 / 10 | 25.1 / 11.4 | 26.2 / 11.9 | 38.8 / 17.6 |
| Noise | < 25 | dBA |
| Cooling | Natural Convection |
| Operating Temperature Range | -40 to +140 / -25 to +60°C (-40°F / +140°F) |
| Protection Rating | NEMA 4X (Inverter with Safety Switch) |

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**Footnotes:**

1. For other regional settings, please contact SolarEdge support.
2. A higher current source may be used; the inverter will limit its input current to the values stated.
3. Rainbow grade data: P/N 510001-58000NMC
4. For power derating information refer to: https://www.solaredge.com/sites/default/files/ua-temperature-de-rating-note-ra.pdf
5. 01 version P/N 510001-58000NMB

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NOTES:
1. THE SYSTEM SHALL INCLUDE [18] SR20 SXA-N 310M.
2. S-CLAMP SOLAR ARRAY RACK WILL BE INSTALLED IN ACCORDANCE WITH S-CLAMP INSTALLATION MANUAL.
3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.
NOTES:
1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF INTERNATIONAL RESIDENTIAL CODE (IRC 2016):
   - LOADING CODE, (AREA 1-5) V-600 DESIGN CONSIDER 2016 AND LOCAL REQUIREMENTS
2. LOAD CRITERIA PER:
   - EXTERIOR CATEGORY "C"
   - EXTERIOR EXPOSED LOAD = 30 PSF
   - EXTERIOR NON EXPOSED LOAD = 20 PSF
   - FIRE CATEGORY "1"
   - ULTIMATE DESIGN WIND SPEED = 100 MPH
3. SOLAR PANELS AND MOUNTING SYSTEMS SHALL BE INSTALLED PER MANUFACTURER'S
   RECOMMENDATION
4. FOLLOW ALL LOCAL AND FEDERAL SAFETY REQUIREMENTS
NOTES:
1. SNAPRACK SOLAR MOUNT RAIL SHALL BE INSTALLED IN ACCORDANCE WITH SNAPRACK INSTALLATION MANUAL.
2. USE CLAMP FOR RAISED ROOF METAL ROOF SEE DETAIL A.
SOLAR PANEL LAYOUT

Scale: 3/16" = 1'-0"

NOTES:
1. THE SYSTEM SHALL INCLUDE [16] GAME SLA-M 314W.
2. SSI-CLAMP SOLAR MOUNT RAIL WILL BE INSTALLED IN ACCORDANCE WITH SSI-CLAMP INSTALLATION MANUAL.
3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.
EQUIPMENT LOCATION PLAN

Scale: NTS

NOTE:
EQUIPMENT LOCATION PLAN IS APPROXIMATE. EXACT LOCATION TO BE VERIFIED WITH INSTALLATION CREW AND HOME OWNER AT THE TIME OF INSTALLATION.

-5" UNDERGROUND CONDUIT

MAIN SOLAR AC DISCONNECT
INVERTER

UTILITY DISCONNECT SWITCH
EXISTING UTILITY METER
EXISTING ELECTRICAL PANEL

Henry Montgomery
211 Market St.
Brookeville, MD 20833
5.56 kW

E001
1 STRING OF 18 MODULES

ARRAY

MODULE SPECIFICATION

MODEL NO. Sillab's SLA-M 310W
PEAK POWER 310 W
RATED VOLTAGE (Vmp) 33.6 V
RATED CURRENT (Imp) 9.3 A
OPEN CIRCUIT VOLTAGE (Voc) 40.25 V
SHORT CIRCUIT CURRENT (Isc) 9.93 A
MAXIMUM SYSTEM VOLTAGE 1000VDC

OPTIMIZER MODEL P029
MAXIMUM DC OUTPUT 48 V
MAXIMUM POWER OUTPUT 500 W
MAXIMUM DC CURRENT 15 A
MAXIMUM DC CURRENT INPUT 13.75 A

INVERTER MODEL SE1000H-US1GM
MAXIMUM DC VOLTAGE 480 V
MAXIMUM DC POWER OUTPUT 5000 W
NO. NOMINAL AC VOLTAGE 240 V
MAXIMUM AC CURRENT 21 A

ARRAY DETAILS
NO. OF MODULES PER STRING 18
NO. OF STRINGS 2
ARRAY WATTS AT STC 5580
MAX. VOLTAGE 480
MAX. CURRENT 690.53 Label Info.
RATED VOLTAGE 380 V
RATED CURRENT 14.68 A
MAX. SYSTEM VOLTAGE 480 V
SHORT CIRCUIT CURRENT 15 A

WIRING/CONDUCTOR SCHEDULE ARRAY

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<thead>
<tr>
<th>TAG</th>
<th>DESCRIPTION</th>
<th>WIRE SIZE/TYP</th>
<th>NOTES</th>
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<td>1</td>
<td>Panel to Optimizer</td>
<td>#10 PV WIRE 250V RATED</td>
<td>Integrated</td>
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<td>2</td>
<td>Transition Box to DC Disconnect</td>
<td>#10 THHN/THW-2</td>
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<tr>
<td>3</td>
<td>DC Disconnect to Inverter</td>
<td>#18 Cu THHN/THW-2</td>
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<td>Inverter to AC disconnect</td>
<td>#18 Cu THHN/THW-2</td>
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<td>Transition grounding conductor</td>
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<td>DC Disconnect grounding conductor</td>
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<td>8</td>
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