



OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10002083

SUPPLIER:
Next Generation Energy
75 Waneka Parkway
Lafayette, CO 80026
www.ngeus.com

BRAND: Sun Bandit
MODELS: SBES Model C
COLLECTOR TYPE: PV Water Heating
CERTIFICATION #: 10002083
ORIGINAL CERTIFICATION: December 17, 2018
RENEWAL EXPIRATION DATE*: October 31, 2019
**Certifications must be renewed annually*

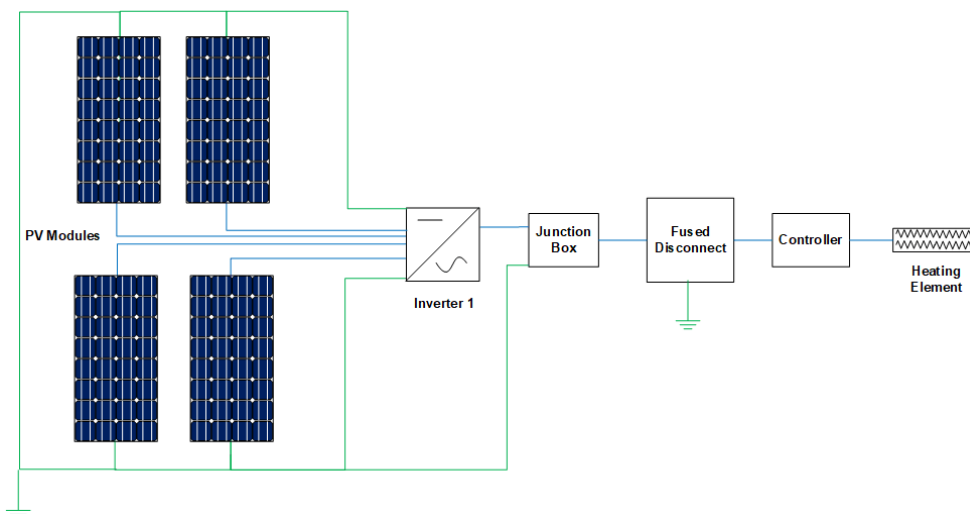
In Accordance with: **ICC-SRCC OG-100 and TM-2**

This solar collector listed below has been evaluated and certified by the Solar Rating & Certification Corporation (ICC-SRCC™), an ISO/IEC 17065 accredited Certification Body, in accordance with ICC-SRCC OG-100, Operating Guidelines and Minimum Standards for Certifying Solar Collectors. This award of certification is subject to all terms and conditions of the ICC-SRCC OG-100 Program Agreement and the documents incorporated therein by reference. This document must be reproduced in its entirety.

| PV WATER HEATING COLLECTOR THERMAL PERFORMANCE RATINGS ² | | | | | | | |
|---|---|---|--|---|---|---|--|
| Kilowatt-hours (thermal) Per Collector ¹ Per Day | | | | Thousands of Btu Per Collector ¹ Per Day | | | |
| Climate → | High Radiation (6.3 kWh/m ² •day) | Medium Radiation (4.7 kWh/m ² •day) | Low Radiation (3.1 kWh/m ² •day) | Climate → | High Radiation (2000 Btu/ft ² •day) | Medium Radiation (1500 Btu/ft ² •day) | Low Radiation (1000 Btu/ft ² •day) |
| Ambient 0°C | 8.10 | 6.13 | 4.07 | Ambient 32°F | 27.64 | 20.90 | 13.90 |
| Ambient 10°C | 7.82 | 5.87 | 3.90 | Ambient 50°F | 26.70 | 20.02 | 13.30 |
| Ambient 20°C | 7.49 | 5.61 | 3.72 | Ambient 68°F | 25.55 | 19.15 | 12.69 |
| Ambient 30°C | 7.14 | 5.36 | 3.54 | Ambient 86°F | 24.35 | 18.29 | 12.08 |
| Ambient 40°C | 6.79 | 5.11 | 3.36 | Ambient 104°F | 23.17 | 17.42 | 11.47 |

- Collector area of 7.98 m² (85.90 ft²) gross collector area used for performance rating calculations.
- An array of (4) SolarWorld Sunmodule SWA 350 XL Mono PV modules were used for performance rating calculations.

COLLECTOR DESCRIPTION: Photovoltaic (PV) array connected to two inverters powering one resistive heating element. No grid connection with the inverter is permitted.



Please verify certification is active on SRCC website www.solar-rating.org
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SOLAR RATING
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CORPORATION

PV ARRAY SPECIFICATIONS

| | |
|-----------------------------|--|
| Number of Modules: 4 | Nominal Output per Module (@ STC): 350 W or greater |
|-----------------------------|--|

Any PV module is acceptable that meets all of the following conditions:

1. P_{max} of each module equal to or greater than 350 W (@STC).
2. Each module is listed and labeled to UL 1703 and installed in accordance with manufacturer's specifications.
3. No more than one module connected to each input channel of the inverter.

INVERTER SPECIFICATIONS

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|---|--------------------------------------|-------------------------------|
| Manufacturer: Next Generation Energy | Model: AC Micro-Grid Inverter | Number of Inverters: 1 |
|---|--------------------------------------|-------------------------------|

DC Input (per channel, per inverter)

| | | |
|---|--|--|
| Input Voltage Range: 15 V - 58 VDC | Maximum Input Current: 10.5 ADC | Maximum Input Power: 880-1400 W |
|---|--|--|

AC Output (per inverter)

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| Output Voltage Range: 15 – 58 VAC |
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Other Acceptable Models: No alternate inverters specified.

HEATING ELEMENT SPECIFICATIONS

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|---|------------------------------|
| Heating Element Power: 3000 W at 20 -150 VAC | Number of Elements: 1 |
|---|------------------------------|

Any heating element is acceptable that meets all of the following conditions:

1. P_{max} equal to or greater than 3000 W
2. Heating element is listed and labeled to UL 1030 and installed in accordance with manufacturer's specifications.
3. Heating element is approved for use with the tank in which it is to be installed.

LABORATORY TEST INFORMATION

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| Test Lab: Exova Canada, Inc. | Test Report Date: February 13, 2015 |
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| Tested in Accordance With: SRCC TM-2 | Test Location: Indoors |
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| Tested PV Modules: (4) Trina Solar TSM-295PD14 | Tested Inverter: (2) Altenergy Power Systems YC500-S |
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REMARKS:

1. Ratings are based on the output of conditioned, new PV modules and do not account for degradation over time.
2. All wiring, connections, components and labeling shall be made in accordance with the National Electrical Code (NFPA 70) and as specified by the manufacturer.
3. PV module mounting and racking shall comply with all local codes and the manufactures' installation requirements.
4. Any PV module and any resistive heating element may be utilized that meet the conditions specified above, manufacturer's requirements, and the input specifications of the inverter listed above.
5. Performance ratings have been calculated for the specified components at the standardized conditions established by the OG-100 program. Installed performance values may differ.
6. PV Water heating collectors certified under the ICC-SRCC OG-100 program include the assembly of components that convert solar radiation to thermal energy in a fluid. In this case, the collector is comprised of the PV modules, inverter, resistive heating element and all associated cabling and connectors. PV Water heating collectors do not include or account for tanks, auxiliary water heaters, and any controllers. See ICC-SRCC OG-300 certified systems incorporating this collector for information on the certification and performance of complete systems.
7. The collectors listed in this ICC-SRCC OG-100 PV Water Heater certification must display a label within the installation and operation manual(s) in accordance with the *ICC-SRCC Certification, Trademark and Certificate Policy*, which is available on the ICC-SRCC website.

Shawn Martin

Vice President of Technical Services, ICC-SRCC



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