



# ICC-SRCC™ LISTING CERTIFICATE

## Solar Thermal Listing Program

LISTING NUMBER: SRCC-19004  
EXPIRATION DATE: 01/01/2023

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A Program of the ICC Evaluation Service (ICC-ES) – [www.icc-es.org](http://www.icc-es.org)

### CSI

DIVISION: 22 00 00 – PLUMBING  
Section: 22 33 30.23 – Solar Domestic Water Heater System

### PRODUCT CERTIFICATION PROGRAM

The ICC-SRCC Solar Thermal Standard Listing Program is conducted in accordance with the latest version of the *ICC-SRCC Solar Thermal Listing Program Guidelines*. The program includes evaluation of the manufacturer's quality assurance systems to assess continued compliance with applicable codes and standards.

**PRODUCTS** Photovoltaic (PV) Water Heating System

**LISTEE** Sensible Technologies, Inc.  
4723 Tidewater Ave, Suite C  
Oakland, CA 94601, USA

### COMPLIANCE WITH:

#### CODES

- ❖ 2021 2018, Uniform Solar, Hydronics & Geothermal Code® (USHGC)\*
- ❖ 2021, 2018 Uniform Plumbing Code® (UPC)\*
- ❖ 2021, 2018 Uniform Mechanical Code® (UMC)\*
- ❖ 2021 International Building Code (IBC)\*\*

#### STANDARDS & CRITERIA

- ❖ ICC 900/SRCC 300-2020, Solar Thermal System Standard
- ❖ SRCC EM-1, Methodology for Determining Compliance with State and Federal Lead in Plumbing Laws for Solar Heating and Cooling Equipment, 10/28/2015.

\*Uniform Codes are copyrighted publications and trademarks of the International Association of Plumbing and Mechanical Officials (IAPMO)  
\*\*International Codes are copyrighted publications and trademarks of the International Code Council (ICC). The USHGC was formerly known as the Uniform Solar Energy Code (USEC).

### System Models:

The Solar Electric Thermal Storage System listed below have been evaluated by the Solar Rating & Certification Corporation (ICC-SRCC™), an ISO/IEC 17065 accredited Certification Body, in accordance with the *ICC-SRCC Rules of Procedure for Solar Thermal Listing Reports* and has been listed by the ICC-SRCC to the specific codes, standards and criteria listed above. This award of listing is subject to all terms and conditions of the *ICC-SRCC Rules of Procedure for Solar Thermal Listing Reports* and documents incorporated therein by reference.

The SETS system can be configured with the three auxiliary water heater types listed below each designated by a unique model number. Installation of the SETS system with any other type of auxiliary water heater is not within the scope of this listing.

Mfg. Brand Name	Mfg. Model Number	Auxiliary Water Heater
SETS Solar Electric Thermal Storage	SETS-55-TG	Tankless Gas
	SETS-55-G	Tank-Type Gas
	SETS-55-E	Tank-Type Electric

PV Water heating systems listed under the ICC-SRCC™ Solar Heating & Cooling Listing Program include the assembly of components that convert solar radiation to thermal energy in a fluid. In this case, the system is comprised of the PV modules, tanks, auxiliary water heaters, inverter, and controllers and all associated cabling and connectors. The SETS 55 systems were evaluated with the components specified by the manufacturer below. Component substitution is only permitted where all specified criteria are satisfied and as allowed by the manufacturer and local codes. Where N/A is specified, no substitution is permitted.

**Components List:**

Component	Qty	Evaluated Component	*Specified Criteria for Substitution
<b>Photovoltaic Modules</b>	8	Sunpower SPR X21-350-BLK-E-AC	Listed and labeled to UL 1703 or UL 61730 Fire Rating (US) Type 1, as defined in each standard. Output of each PV module must be compatible with the inverter.
<b>Inverters</b>	8	Enphase Microinverters IQ7XS-96-ACM-US	Listed and labeled to UL 1741 and as specified by the manufacturer.
<b>Tank</b>	1	SETS-55 with integral controller and heating elements.	No substitution. Replacement electrical heating elements shall be selected and installed as specified by the manufacturer.
<b>Tempering (Thermostatic Mixing) Valve</b>	1	ESBE ¾" 193B1502 tempering valve with thermometer	Listed and labeled to ASSE 1017, NSF 61 and NSF 372; As specified by the manufacturer.
<b>Expansion Tank</b>	1	ESBE DXT-18, 5-gal. expansion tank	Listed and labeled to NSF 61 and NSF 372, and as specified by the manufacturer.
<b>Recirculation Pump</b>	1	Aquamotion AMH2k-RN	
<b>Temperature and Pressure Relief Valve</b>	1	Watts Model 100XL	Listed and labeled to ANSI Z21.22, with a 125°F setpoint and as specified by the manufacturer.
<b>Piping and Fittings</b>			Listed and labeled to NSF 61 and NSF 372, and as specified by the manufacturer and local code.
<b>Ball and Check Valves</b>			
<b>Gauges</b>			

**INSTALLATION**

The Solar Electric Thermal Storage System (SETS) must be installed in accordance with the manufacturer’s published installation instruction, applicable local code(s) and this listing. Where differences exist, the instructions in this listing must govern.

1. All wiring, connections, components and labeling shall be sized and installed in accordance with the National Electrical Code (NFPA 70) and as specified by the manufacturer. This listing does not assess compliance with the NEC or include electrical safety testing.
2. All components of the system which may require periodic examination, adjustment, service and or maintenance must be easily and safely accessible by the owner in accordance with local codes.
3. Interconnection of the auxiliary water heating system to the solar energy system shall be made in a manner which will not result in excessive temperature or pressure in the auxiliary system or bypassing of safety devices of the auxiliary system.
4. Structural supports shall be selected and installed in such a manner that thermal expansion of the modules and appurtenances will not cause damage to the modules, structural framing or building.

5. Tanks shall be installed in accordance with the manufacturer's instructions and local codes in order to avoid damage to the building and meet local seismic requirements.

## CONDITIONS OF LISTING

6. Devices and components shall be installed and used in accordance with the manufacturer's published installation instructions and the applicable code(s) and standard(s).
7. Systems shall be sized in accordance with the demand, manufacturer's requirement, and local codes.
8. Solar thermal system shall only be used with water per manufacturer's requirements.
9. Each installation must be pressure-tested for leaks in the presence of the code official or code official's designated representative in accordance with the manufacturers instructions and local codes..
10. Penetrations through fire-resistance-rated walls and roof decks shall comply with Section 712 of the 2018 IBC and Section 714 of the 2021 IBC.
11. Solar thermal components shall use approved mounting hardware in compliance with the manufacturer's installation instructions and local codes.
12. Solar thermal collectors shall be installed to prevent water intrusion into roof assemblies in accordance with the requirements of Section 1503.2 of the IBC.
13. Devices and components are manufactured by Sensible Technologies, under a quality control program with surveillance inspection every two years conducted in accordance with the requirements of ICC-SRCC.

## MARKING



Models listed above were evaluated to the codes and standards listed in accordance with the *ICC-SRCC Solar Thermal Listing Program Guidelines* and are eligible to display the following mark as governed by the *ICC-SRCC Rules for Certificate and Mark Use*. The solar thermal system must be labeled in accordance with the requirements of Chapter 5 of ICC 900/SRCC 300-2020.

*Listings are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the listing or a recommendation for its use. There is no warranty by the Solar Rating and Certification Corporation, express or implied as to any finding or other matter in this listing, or as to any product covered by the listing. This document must be reproduced in its entirety.*

*Shawn Martin*

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