



SOLAR RATING
& CERTIFICATION
CORPORATION™

What's in an OG-100 Pool Collector Certificate

SRCC OG-100 certifications are the preferred resource used by manufacturers, incentive programs and code officials to assess the safety, durability and performance of solar thermal collectors. And while all solar thermal collectors provide free, renewable thermal energy, the applications can vary widely. Solar pool heating is an ideal application for solar thermal and is unique in many ways from domestic water heating. For this reason, SRCC provides tailored OG-100 certificates for solar pool collectors.

- 1 **Manufacturer** – The name and address of the company or organization that holds the ICC-SRCC OG-100 certification.
- 2 **Collector Type** – Category of solar thermal collector addressed in the certification.
- 3 **Standard** – Edition of the ICC 901/SRCC 100 standard used to evaluate the solar thermal collector.
- 4 **Certified Models** – The specific products covered by the certification and their dimensions.
- 5 **Seasonal Efficiency** – Provides the peak efficiency ratings for the collector at standard conditions common in Spring, Summer and Fall pool heating.
 - 5a **Efficiency** – Percentage of solar energy on the collector when the sun is directly overhead that is transferred to heat in the water flowing through the collector. Calculated for the Spring, Summer and Fall conditions based on performance ratings measured in lab testing.

ICC-SRCC OG-100 SOLAR POOL HEATING COLLECTOR CERTIFICATION

	MANUFACTURER:	BRAND:	Pool Collector
	Manufacturer Address 1	COLLECTOR TYPE:	Unglazed Flat Plate
	City, State, Zip USA	CERTIFICATION NO.:	1000xxxx
	www.website.com	ISSUED:	1/1/2021
		EXPIRATION DATE:	1/1/2022

The collector models listed below have been evaluated under the OG-100 certification program by the Solar Rating & Certification Corporation (ICC-SRCC), an ISO/IEC 17065 accredited Certification Body, in accordance with the latest version of the *ICC-SRCC Rules for Solar Heating & Cooling Product Listing Reports* and found to comply with:

- ICC 901/SRCC 100 – 2020, *Solar Thermal Collectors Standard*

CERTIFIED MODELS

MODEL NAME/NO.	HEADER (in)	WIDTH (in)	LENGTH (in)	Area (ft ²)
• 111111	2	1	2	
• 222222	2	1	3	
• 333333	2	1	4	

OG-100 SEASONAL POOL HEATING EFFICIENCY

	SPRING 	SUMMER 	FALL
Efficiency*	65%	84%	65%
Wind Derating Factor**	0.84	0.93	0.84

* Peak instantaneous hemispherical efficiency at G=875/1000/750 W/m², dT=5/0/3.9 C, at fluid flowrate m=113 kg/h

**Efficiency derating calculated at wind speed, u=1.34 m/s.

Please verify certification is active on SRCC website www.solar-rating.org
© Solar Rating and Certification Corporation™ (ICC-SRCC) 3060 Saturn Street, Suite 100, Brea, CA 92821

5b **Wind Derating** – Measure of the drop in efficiency resulting from a 3 mph wind blowing across the face of the collector when the sun is directly overhead. The peak efficiency with 3 mph wind can be obtained by multiplying the peak efficiency value by the wind derating factor. For the example shown in Spring, that would be 65% x 0.84 = 54.6%.

6 Thermal Efficiency – This section provides the technical performance values measured for the collector in laboratory testing. They are used with the thermal efficiency to allow the peak efficiency (η_{hem}) of the collector to be determined as a function of inlet water temperature (T_i), air temperature (T_a), normal net solar irradiance (G'') and wind speed parallel to the plane of the collector (u). The performance parameters provided for the collector ($\eta_{0,hem}$, b_u , b_1 , b_2) are determined through testing to the methods established in the ISO 9806 standard at the water flowrate listed.

Solar system designers use the following equation to calculate the instantaneous useful power output of the collector (\dot{Q}), where A_G is the gross area of the collector, G'' is the net normal solar irradiance incident on the collector and η_{hem} is the instantaneous peak collector efficiency.

$$\dot{Q} = A_G G'' \eta_{hem}$$

7 Incident Angle Modifier – The IAM provides change to the performance at different angles as the sun moves across the sky, compared to the performance when it is directly over the collector. The IAM value is used together with the thermal efficiency equation to calculate the output of the collector at time intervals as the sun moves across the sky from sunrise to sunset.

8 Product Label – ICC-SRCC OG-100 mark to appear on the product to indicate certification and provide important product information.

9 Conditions of Certification – Specific requirements for the installation of the certified product. Also sets the terms, conditions and limitations of the certification.

TECHNICAL DATA SHEET – EFFICIENCY

Thermal Efficiency Equation ¹								
$\eta_{hem,sh} = \eta_{0,hem} (1 - b_u u) - (b_1 + b_2 u) \frac{(T_i - T_a)}{G''}$								
$\eta_{0,hem}$	b_u	b_1	b_2					
0.90	0.0500 s/m	15.000 W/m ² K	6.0000 W/m ² K					
1: Second order thermal efficiency equation calculated in accordance with ISO 9806:2013 at a fluid flowrate, $m' = ###$ kg/h.								
Longitudinal Incident Angle Modifier (IAM)								
θ_L	0°	10°	20°	30°	40°	50°	60°	70°
$K_t(\theta_L, 0)$	1.00	0.99	0.99	0.98	0.95	0.92	0.88	0.75

8 PRODUCT LABEL

Collectors listed in this ICC-SRCC OG-100 certification must display the following label in accordance with the [ICC-SRCC Rules for Mark and Certificate Use](#).



9 CONDITIONS OF CERTIFICATION

This award of certification is subject to all terms and conditions of the ICC-SRCC OG-100 Certification Program and the documents incorporated therein by reference. This document must be reproduced in its entirety.

1. The collector listed in this ICC-SRCC OG-100 certification has been evaluated to the [ICC 901/SRCC100-2020 standard](#) and has been found to comply in accordance with the [ICC-SRCC Rules for Solar Heating & Cooling Product Listing Reports](#). It is valid between the date of issuance and expiration and is subject to annual renewal. Certification validity should be confirmed on the ICC-SRCC website at [www.solar-rating.org](#).
2. OG-100 Thermal Performance Ratings have been calculated for the tested components using standardized conditions established by the OG-100 program and test standards. Actual results will vary based on the specific usage, installation and local environmental conditions.
3. The listed collector must be installed in accordance with the manufacturer's published installation instructions and applicable codes. OG-100 certifications do not include mounting hardware and appurtenances. Solar thermal collectors must be mounted in accordance with the requirements of the collector and mounting hardware manufacturers to comply with local codes for structural loading for wind, seismic, snow and other loads.
4. Solar thermal collectors and mounting hardware and appurtenances must comply with all local codes and requirements for fire resistance.
5. Solar thermal collectors must be used with the heat transfer fluids listed in this document.
6. Solar thermal collector manufactured by Manufacturer in Solar Town, USA under a quality control program subjected to periodic evaluation in accordance with the requirements of ICC-SRCC.

Shawn Martin

Vice President of Technical Services, ICC-SRCC



Please verify certification is active on SRCC website [www.solar-rating.org](#)

© Solar Rating and Certification Corporation™ (ICC-SRCC) 3060 Saturn Street, Suite 100, Brea, CA 92821

