

**OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10002071**



Supplier:  
**SunEarth, Inc.**  
 8425 Almeria Avenue  
 Fontana, CA 92335 USA  
 www.sunearthinc.com  
 Reference Standard:  
**SRCC Standard 100-2010-08**

Brand: ThermoRay  
 Model: TRB-26  
 Collector Type: Glazed Flat Plate  
 Certification #: 10002071  
 Original Certification: July 17, 2018  
 Renewal Expiration Date: December 31, 2018  
 Certifications must be renewed annually.

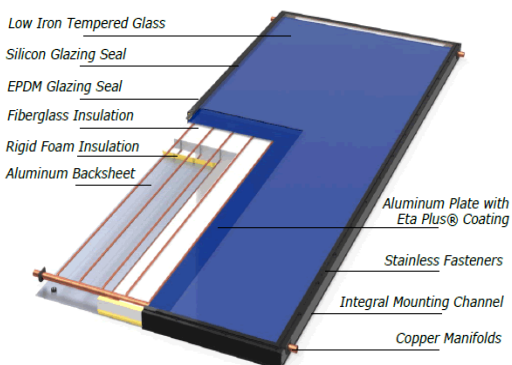
This solar collector has been evaluated and certified by the Solar Rating & Certification Corporation™ (ICC-SRCC™), an ISO/IEC 17065 accredited and EPA recognized Certification Body, in accordance with the SRCC OG-100 Certification Program, as defined in SRCC OG-100, Operating Guidelines and Minimum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

COLLECTOR THERMAL PERFORMANCE RATINGS							
Kilowatt-hours (thermal) Per Panel Per Day				Thousands of Btu Per Panel Per Day			
Climate -> Category (Ti-Ta)	High Radiation (6.3 kWh/m <sup>2</sup> .day)	Medium Radiation (4.7 kWh/m <sup>2</sup> .day)	Low Radiation (3.1 kWh/m <sup>2</sup> .day)	Climate -> Category (Ti-Ta)	High Radiation (2000 Btu/ft <sup>2</sup> .day)	Medium Radiation (1500 Btu/ft <sup>2</sup> .day)	Low Radiation (1000 Btu/ft <sup>2</sup> .day)
A (-5 °C)	11.4	8.6	5.9	A (-9 °F)	38.9	29.5	20.1
B (5 °C)	10.4	7.6	4.9	B (9 °F)	35.5	26.0	16.6
C (20 °C)	8.8	6.1	3.4	C (36 °F)	30.1	20.9	11.8
D (50 °C)	6.0	3.4	1.1	D (90 °F)	20.5	11.8	3.8
E (80 °C)	3.5	1.3	0.0	E (144 °F)	11.8	4.4	0.0

A- Pool Heating (Warm Climate) B- Pool Heating (Cool Climate) C- Water Heating (Warm Climate) D- Space & Water Heating (Cool Climate) E- Commercial Hot Water & Cooling

TECHNICAL RESULTS				Tested in accordance with: ISO 9806:1994			
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]							
SI UNITS:	$\eta = 0.737 - 3.67840(P/G) - 0.00660(P^2/G)$			Y Intercept:	0.740	Slope:	-4.115 W/m <sup>2</sup> .°C
IP UNITS:	$\eta = 0.737 - 0.64829(P/G) - 0.00065(P^2/G)$			Y Intercept:	0.740	Slope:	-0.725 Btu/hr.ft <sup>2</sup> .°F
Incident Angle Modifier							
$\theta$	10 <sup>0</sup>	20 <sup>0</sup>	30 <sup>0</sup>	40 <sup>0</sup>	50 <sup>0</sup>	60 <sup>0</sup>	70 <sup>0</sup>
K <sub>ra</sub>	1.00	0.99	0.98	0.96	0.94	0.88	0.77
Impact Safety Rating: 11							

COLLECTOR SPECIFICATIONS					
Gross Area:	2.310 m <sup>2</sup>	24.86 ft <sup>2</sup>	Dry Weight:	36.3 kg	80.1 lb
Net Aperture Area:	2.204 m <sup>2</sup>	23.72 ft <sup>2</sup>	Fluid Capacity:	2.2 liter	0.6 gal
REMARKS:					



*Shawn Martin*

Technical Director

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

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**ADDITIONAL INFORMATION** ([click here to return to the rating page](#))

**COLLECTOR TESTING INFORMATION**

<b>Test Lab:</b>	TÜV Rheinland PTL, LLC	<b>Test Date:</b>	February 01, 2013		
<b>Test Report Number:</b>	RS1-KIO120809	<b>Test Location:</b>	outdoors		
<b>Test Fluid:</b>	Water				
<b>Test Mass Flow Rate:</b>	0.0199 kg/(s m²)	14.65 lb/(hr ft²)	<b>Test Pressure:</b>	1103 kPa	160 psi

**SOLAR COLLECTOR CONSTRUCTION DETAILS**

<b>Gross Length:</b>	2.038 m	<b>Gross Width:</b>	1.225 m	<b>Gross Depth:</b>	84.988 mm
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**COLLECTOR MATERIALS**

<b>Outer Cover:</b>	Glass sheet	<b>Enclosure back:</b>	Aluminum	<b>Back Insulation:</b>	Fiber, Foam
<b>Inner Cover:</b>	None	<b>Enclosure side:</b>	Aluminum	<b>Side Insulation:</b>	None, Foam
<b>Absorber Description:</b>	Tubes connected to Single Sheet		<b>Flow Pattern:</b>	Parallel/Harp	
<b>Riser Tube:</b>	Copper		<b>Fin:</b>	Aluminum	
<b>Absorber Coating:</b>	Selective		<b>Tube to fin connection</b>	Laser Weld	

GLAZING	Outer Cover	Inner Cover
<b>Material:</b>	Glass sheet	None
<b>Surface Characteristics:</b>	Textured	
<b>Thickness:</b>	3.8 mm	N/A
<b>Transmissivity:</b>	High (equal to or greater than 90%)	
<b>Length:</b>	1.948 m	
<b>Width:</b>	1.134 m	
<b>Tube Glazing to Header Enclosure Seal:</b>	Silicone bead	

<b>ABSORBER:</b>	<b>Absorber Coating:</b>	Selective
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<b>Header Material:</b>	Copper	<b>Header OD:</b>	28.5 mm	<b>Header Wall:</b>	0.8 mm
<b>Riser Tube Material:</b>	Copper	<b>Riser Tube OD:</b>	12.7 mm	<b>Riser Tube Wall Thickness:</b>	0.4 mm
<b>Fin Material:</b>	Aluminum	<b>Fin Thickness:</b>	0.51 mm		

<b>Flow Pattern:</b>	Parallel/Harp				
<b>Number of Riser Tubes:</b>	10	<b>Tube Spacing:</b>	121.4 mm	<b>Number of times each riser crosses the absorber:</b>	1
<b>Length of Flow Path:</b>	1.91 m	<b>Riser to Fin/Plate Bond:</b>	Laser Weld		

<b>INSULATION:</b>					
<b>Location</b>	<b>Type</b>	<b>Thickness</b>	<b>Location</b>	<b>Type</b>	<b>Thickness</b>
<b>Back – Top Layer:</b>	Fiber	29.0 mm	<b>Sides – Inner Layer:</b>	None	
<b>Back – Bottom Layer:</b>	Foam	25.0 mm	<b>Sides – Outer Layer:</b>	Foam	25.0 mm
<b>Enclosure Fastening Methods:</b>	Screws				

<b>Power Output per Collector(W)</b> [ $T_i - T_a, G = 1000 \text{ W/m}^2$ ]				
<b>0</b>	<b>10</b>	<b>30</b>	<b>50</b>	<b>70</b>
1841	1747	1550	1340	1117

<b>PRESSURE DROP</b>				
<b>Flow</b>	<b><math>\Delta P</math></b>		<b>Flow</b>	<b><math>\Delta P</math></b>
<b>ml/s</b>	<b>Pa</b>		<b>gpm</b>	<b>in H<sub>2</sub>O</b>
20	0		0.32	0.0
50	0		0.79	0.0
80	0		1.27	0.0





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### ICC-SRCC OG-100 Certification Label

The collectors listed in this certification must display the label below.  
The certification label must be permanently affixed to each collector in accordance with SRCC OG-100 program requirements.

