



SOLAR RATING & CERTIFICATION CORPORATION

**CERTIFIED SOLAR COLLECTOR**

SUPPLIER:  
**SolAqua, Inc.**  
 3111 East Tahquitz Canyon Way  
 Palm Springs, CA 92262 USA  
 www.sunheatingtec.com  
 In Accordance with:  
**SRCC Standard 100-2014-07**

BRAND: SHT  
 MODEL: 2000H  
 COLLECTOR TYPE: Glazed Flat Plate  
 CERTIFICATION #: 10002009  
 Original Certification: May 06, 2016  
 Expiration Date: April 12, 2028

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

COLLECTOR THERMAL PERFORMANCE RATING							
Kilowatt-hours (thermal) Per Panel Per Day				Thousands of Btu Per Panel Per Day			
Climate ->	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 ->	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)
Category (Ti-Ta)				Category (Ti-Ta)			
A (-5 °C)	9.3	7.0	4.8	A (-9 °F)	31.6	23.9	16.3
B (5 °C)	8.4	6.2	3.9	B (9 °F)	28.7	21.1	13.4
C (20 °C)	7.1	4.9	2.7	C (36 °F)	24.1	16.7	9.2
D (50 °C)	4.5	2.5	0.7	D (90 °F)	15.4	8.6	2.5
E (80 °C)	2.2	0.6	0.0	E (144 °F)	7.4	2.1	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

COLLECTOR SPECIFICATIONS					
<b>Gross Area:</b>	2.000 m <sup>2</sup>	21.53 ft <sup>2</sup>	<b>Dry Weight:</b>	35 kg	77 lb
<b>Net Aperture Area:</b>	1.850 m <sup>2</sup>	19.91 ft <sup>2</sup>	<b>Fluid Capacity:</b>	1.6 liter	0.4 gal
<b>Absorber Area:</b>	1.850 m <sup>2</sup>	19.91 ft <sup>2</sup>	<b>Test Pressure:</b>	1200 kPa	174 psi

TECHNICAL INFORMATION			Tested in accordance with: ISO 9806:2013 with Class B & C exposure		
<b>ISO Efficiency Equation</b> [NOTE: Based on gross area and (P)=Ti-Ta]					
<b>SI UNITS:</b>	$\eta = 0.755 - 3.84040(P/G) - 0.01250(P^2/G)$	<b>Y Intercept:</b>	0.758	<b>Slope:</b>	-4.583 W/m <sup>2</sup> .°C
<b>IP UNITS:</b>	$\eta = 0.755 - 0.67684(P/G) - 0.00122(P^2/G)$	<b>Y Intercept:</b>	0.758	<b>Slope:</b>	-0.808 Btu/hr.ft <sup>2</sup> .°F

Incident Angle Modifier								Test Fluid:	
$\theta$	10	20	30	40	50	60	70	Water	
<b>K<sub>ra</sub></b>	1.00	0.99	0.98	0.96	0.92			<b>Test Mass Flow Rate:</b>	0.0400 kg/(s m <sup>2</sup> )    29.49 lb/(hr ft <sup>2</sup> )
								<b>Impact Safety Rating: 11</b>	

REMARKS:

*Shawn Martin*

Technical Director

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ADDITIONAL INFORMATION ( <a href="#">click here to return to the rating page</a> )			
Test Lab:	Intertek Testing Services Shenzhen, Ltd, Guangzhou Branch	Test Date:	April 12, 2016
Test Report Number:	160107134GZU-001	Test Location:	outdoors

SOLAR COLLECTOR CONSTRUCTION DETAILS					
Gross Length:	2.000 m	Gross Width:	1.000 m	Gross Depth:	86.500 mm

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

GLAZING	Outer Cover	Inner Cover
Material:	Glass sheet	None
Surface Characteristics:	Textured	
Thickness:	3.2 mm	N/A
Transmissivity:	High (equal to or greater than 90%)	
Length:	1.990 m	
Width:	0.990 m	
Tube Glazing to Header Enclosure Seal:	Adhesive tape	

ABSORBER:	Absorber Coating:	Selective
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<b>Header Material:</b>	Copper	<b>Header OD:</b>	25.4 mm	<b>Header Wall:</b>	0.9 mm
<b>Riser Tube Material:</b>	Copper	<b>Riser Tube OD:</b>	8.0 mm	<b>Riser Tube Wall Thickness:</b>	0.6 mm
<b>Fin Material:</b>	Aluminum	<b>Fin Thickness:</b>	0.40 mm		

<b>Flow Pattern:</b>	Parallel/Harp				
<b>Number of Riser Tubes:</b>	10	<b>Tube Spacing:</b>	85.0 mm	<b>Number of times each riser crosses the absorber:</b>	1
<b>Length of Flow Path:</b>	1.88 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>	Other	45.0 mm	<b>Sides – Inner Layer:</b>	Other	20.0 mm
<b>Back – Bottom Layer:</b>	None		<b>Sides – Outer Layer:</b>	None	
<b>Enclosure Fastening Methods:</b>	Mechanical Forming				

<b>Power Output per Collector(W)</b> [ Ti-Ta, G = 1000 W/m <sup>2</sup> ]				
<b>0</b>	<b>10</b>	<b>30</b>	<b>50</b>	<b>70</b>
1509	1430	1256	1062	849

<b>PRESSURE DROP</b>				
<b>Flow</b>	<b>ΔP</b>		<b>Flow</b>	<b>ΔP</b>
<b>m/s</b>	<b>Pa</b>		<b>gpm</b>	<b>in H<sub>2</sub>O</b>
20	88		0.32	0.4
50	281		0.79	1.1
80	546		1.27	2.2



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