



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: 4X10A
 COLLECTOR TYPE: Glazed Flat Plate
 CERTIFICATION #: 10002000
 Original Certification: December 29, 2015
 Expiration Date: November 23, 2027

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 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)
Category (Ti-Ta)				Category (Ti-Ta)			
A (-5 °C)	15.6	11.8	8.1	A (-9 °F)	53.3	40.4	27.6
B (5 °C)	13.8	10.0	6.3	B (9 °F)	47.2	34.3	21.5
C (20 °C)	11.3	7.6	4.0	C (36 °F)	38.7	26.1	13.5
D (50 °C)	7.1	3.7	0.7	D (90 °F)	24.1	12.6	2.6
E (80 °C)	3.4	0.8	0.0	E (144 °F)	11.7	2.7	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					
Gross Area:	3.720 m ²	40.04 ft ²	Dry Weight:	67 kg	148 lb
Net Aperture Area:	3.510 m ²	37.78 ft ²	Fluid Capacity:	3.4 liter	0.9 gal
Absorber Area:	3.510 m ²	37.78 ft ²	Test Pressure:	1200 kPa	174 psi

TECHNICAL INFORMATION			Tested in accordance with: ISO 9806:2013 with Class B & C exposure		
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]					
SI UNITS:	$\eta = 0.701 - 4.36600(P/G) - 0.00310(P^2/G)$	Y Intercept:	0.701	Slope:	-4.511 W/m ² .°C
IP UNITS:	$\eta = 0.701 - 0.76947(P/G) - 0.00030(P^2/G)$	Y Intercept:	0.701	Slope:	-0.795 Btu/hr.ft ² .°F

Incident Angle Modifier								Test Fluid:	
θ	10	20	30	40	50	60	70	Water	
K_{τα}	1.00	0.99	0.98	0.96	0.92			Test Mass Flow Rate:	0.0200 kg/(s m ²) 14.75 lb/(hr ft ²)
								Impact Safety Rating: 11	

REMARKS:

Shawn Martin

Technical Director

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ADDITIONAL INFORMATION (click here to return to the rating page)			
Test Lab:	Intertek Testing Services Shenzhen, Ltd, Guangzhou Branch	Test Date:	November 23, 2015
Test Report Number:	150506078GZU-006	Test Location:	outdoors

SOLAR COLLECTOR CONSTRUCTION DETAILS					
Gross Length:	3.050 m	Gross Width:	1.220 m	Gross Depth:	86.000 mm

COLLECTOR MATERIALS					
Outer Cover:	Glass sheet	Enclosure back:	Steel	Back Insulation:	Fiber, None
Inner Cover:	None	Enclosure side:	Aluminum	Side Insulation:	Fiber, 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:	3.044 m	
Width:	1.214 m	
Tube Glazing to Header Enclosure Seal:	Adhesive tape	

ABSORBER:	Absorber Coating:	Selective
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Header Material:	Copper	Header OD:	28.6 mm	Header Wall:	0.9 mm
Riser Tube Material:	Copper	Riser Tube OD:	10.0 mm	Riser Tube Wall Thickness:	0.6 mm
Fin Material:	Aluminum	Fin Thickness:	0.40 mm		

Flow Pattern:	Parallel/Harp				
Number of Riser Tubes:	11	Tube Spacing:	100.0 mm	Number of times each riser crosses the absorber:	1
Length of Flow Path:	2.92 m	Riser to Fin/Plate Bond:	Laser Weld		

INSULATION:					
Location	Type	Thickness	Location	Type	Thickness
Back – Top Layer:	Fiber	35.0 mm	Sides – Inner Layer:	Fiber	20.0 mm
Back – Bottom Layer:	None		Sides – Outer Layer:	None	
Enclosure Fastening Methods:	Mechanical Forming				

Power Output per Collector(W) [Ti-Ta, G = 1000 W/m²]				
0	10	30	50	70
2607	2443	2109	1766	1414

PRESSURE DROP				
Flow	ΔP		Flow	ΔP
m/s	Pa		gpm	in H₂O
20	18		0.32	0.1
50	58		0.79	0.2
80	111		1.27	0.4



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