



**CERTIFIED SOLAR COLLECTOR**

SUPPLIER:  
**Advanced Thermal Solar, LLC**  
 PO Box 270  
 Port Jefferson Station, NY 11776 USA  
 www.Advthermalsolar.com

BRAND: ATS  
 MODEL: ATS-30  
 COLLECTOR TYPE: Tubular  
 CERTIFICATION #: 10001728  
 Original Certification: August 15, 2012  
 Expiration Date: July 28, 2023

The solar collector listed below has been evaluated by the Solar Rating & Certification Corporation™ (SRCC™) 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.

COLLECTOR THERMAL PERFORMANCE RATING							
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)	12.9	9.8	6.6	A (-9 °F)	44.2	33.4	22.6
B (5 °C)	12.3	9.2	6.0	B (9 °F)	42.1	31.3	20.5
C (20 °C)	11.4	8.2	5.1	C (36 °F)	38.9	28.1	17.3
D (50 °C)	9.7	6.5	3.4	D (90 °F)	33.0	22.3	11.7
E (80 °C)	7.8	4.7	1.9	E (144 °F)	26.8	16.1	6.4

**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>	5.055 m <sup>2</sup>	54.41 ft <sup>2</sup>	<b>Dry Weight:</b>	110 kg	243 lb
<b>Net Aperture Area:</b>	2.833 m <sup>2</sup>	30.49 ft <sup>2</sup>	<b>Fluid Capacity:</b>	3.0 liter	0.8 gal
<b>Absorber Area:</b>	2.455 m <sup>2</sup>	26.42 ft <sup>2</sup>	<b>Test Pressure:</b>	900 kPa	131 psi

TECHNICAL INFORMATION			Tested in accordance with: ISO 9806		
<b>ISO Efficiency Equation</b> [NOTE: Based on gross area and (P)=Ti-Ta]					
<b>SI UNITS:</b>	$\eta = 0.370 - 1.07480 \cdot (P)/G - 0.00196 \cdot (P)^2/G$	<b>Y Intercept:</b>	0.371	<b>Slope:</b>	-1.225 W/m <sup>2</sup> .°C
<b>IP UNITS:</b>	$\eta = 0.370 - 0.18943 \cdot (P)/G - 0.00019 \cdot (P)^2/G$	<b>Y Intercept:</b>	0.371	<b>Slope:</b>	-0.216 Btu/hr.ft <sup>2</sup> .°F

Transverse Incident Angle Modifier								Longitudinal Incident Angle Modifier at 50°:		
$\theta$	10	20	30	40	50	60	70	<b>Test Fluid:</b>	Water	
<b>K<math>\tau</math></b>	1.02	1.07	1.16	1.29	1.42	1.42	0.45	<b>Test Mass Flow Rate:</b>	0.0023 kg/(s m <sup>2</sup> )	1.69 lb/(hr ft <sup>2</sup> )

REMARKS:

*Jen Higgins*

Technical Director





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<b>ADDITIONAL INFORMATION</b> ( <a href="#">click here to return to the rating page</a> )			
Test Lab:	Fraunhofer Institute for Solare Energy Systems	Test Report Date:	July 28, 2011
Test Report Number:	KTB Nr.:2011-21	Test conducted:	outdoors

<b>SOLAR COLLECTOR CONSTRUCTION DETAILS</b>					
<b>Header Enclosure:</b>					
<b>Gross Length:</b>	2.030 m	<b>Gross Width:</b>	2.490 m	<b>Gross Depth:</b>	
<b>Tube Bank:</b>					
<b>Gross Length:</b>		<b>Gross Width:</b>			

<b>COLLECTOR MATERIALS</b>					
<b>Outer Cover:</b>	Glass sheet	<b>Enclosure back:</b>	Aluminum	<b>Back Insulation:</b>	,
<b>Inner Cover:</b>	Glass Tube	<b>Enclosure side:</b>	Aluminum	<b>Side Insulation:</b>	,
<b>Absorber Description:</b>		<b>Flow Pattern:</b>			
<b>Riser Tube:</b>	Copper	<b>Fin:</b>			
<b>Absorber Coating:</b>	Selective	<b>Tube to fin connection</b>			

<b>Glazing</b>	<b>Outer Cover</b>	<b>Inner Cover</b>
<b>Material:</b>	Glass sheet	Glass Tube
<b>Surface Characteristics:</b>		
<b>Thickness:</b>	1.6 mm	1.6 mm
<b>Transmissivity:</b>		
<b>Gross Tube Length (uninstalled):</b>	1.800 m	
<b>Diameter:</b>	1.740 m	
<b>Tube Glazing to Header Enclosure Seal:</b>		
<b>Reflector Shape:</b>		<b>Reflector Material:</b>

**ABSORBER:**





Header Material:		Header OD:		Header Wall:	
Riser Tube Material:	Copper	Riser Tube OD:		Riser Tube Wall Thickness:	
Fin Material:		Fin Thickness:	0.30 mm		
Flow Pattern:		Number of Flow Tubes / Heat Pipes:	30	Tube / Heat Pipe Spacing:	
Number of absorber tubes:	30	Flow Tube to Fin Bond:		Length of Flow Path:	1.74 m
Length of Flow Path:	1.74 m	Riser to Fin/Plate Bond:			

<b>INSULATION:</b>					
Location	Type	Thickness	Location	Type	Thickness
Back – Top Layer:			Sides – Inner Layer:		
Back – Bottom Layer:			Sides – Outer Layer:		
Enclosure Fastening Methods:			Header Enclosure:		

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

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

