

**CERTIFIED SOLAR COLLECTOR**

SUPPLIER:
Solar Panels Plus
2133 Smith Ave
Chesapeake, VA 23320 USA
www.solarpanelsplus.com

BRAND: Solar Panels Plus
MODEL: SPP-25
COLLECTOR TYPE: Tubular
CERTIFICATION #: 2008050C
Original Certification: January 01, 2010
Expiration Date: July 30, 2020

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/m².day)	Medium Radiation (4.7 kWh/m².day)	Low Radiation (3.1 kWh/m².day)	Climate -> Category (Ti-Ta)	High Radiation (2000 Btu/ft².day)	Medium Radiation (1500 Btu/ft².day)	Low Radiation (1000 Btu/ft².day)
A (-5 °C)	11.6	8.7	5.9	A (-9 °F)	39.5	29.7	20.0
B (5 °C)	11.2	8.3	5.4	B (9 °F)	38.1	28.3	18.6
C (20 °C)	10.4	7.6	4.7	C (36 °F)	35.6	25.8	16.1
D (50 °C)	8.9	6.0	3.2	D (90 °F)	30.3	20.6	10.9
E (80 °C)	7.0	4.4	1.7	E (144 °F)	24.0	14.9	5.8
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:	4.002 m²	43.08 ft²	Dry Weight:	83 kg	183 lb
Net Aperture Area:	3.154 m²	33.95 ft²	Fluid Capacity:	1.5 liter	0.4 gal
Absorber Area:	0.000 m²	0.00 ft²	Test Pressure:	600 kPa	87 psi

TECHNICAL INFORMATION			Tested in accordance with:		
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]					
SI UNITS:	$\eta = 0.477 - 0.93740(P/G) - 0.00655(P^2/G)$	Y Intercept:	0.481	Slope:	-1.334 W/m².°C
IP UNITS:	$\eta = 0.477 - 0.16521(P/G) - 0.00064(P^2/G)$	Y Intercept:	0.481	Slope:	-0.235 Btu/hr.ft².°F

Transverse Incident Angle Modifier								Longitudinal Incident Angle Modifier at 50°:		
θ	10	20	30	40	50	60	70	Test Fluid:	Water	
K τ_a	1.01	1.06	1.12	1.18	1.17	0.78	-1.53	Test Mass Flow Rate:	0.0202 kg/(s m²)	14.88 lb/(hr ft²)

REMARKS:

Jim Higgins

Technical Director





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

Test Lab:	Bodycote	Test Report Date:	July 30, 2008
Test Report Number:	07-08-0528	Test conducted:	

SOLAR COLLECTOR CONSTRUCTION DETAILS

Header Enclosure:

Gross Length:	0.000 m	Gross Width:	0.000 m	Gross Depth:	
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Tube Bank:

Gross Length:		Gross Width:			
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COLLECTOR MATERIALS

Outer Cover:	Other	Enclosure back:	Steel	Back Insulation:	
Inner Cover:	None	Enclosure side:	Steel	Side Insulation:	
Absorber Description:		Flow Pattern:			
Riser Tube:	Copper	Fin:			
Absorber Coating:	Selective	Tube to fin connection			

Glazing		Outer Cover		Inner Cover	
Material:		Other		None	
Surface Characteristics:					
Thickness:		0.0 mm		N/A	
Transmissivity:					
Gross Tube Length (uninstalled):		0.000 m			
Diameter:		0.000 m			
Tube Glazing to Header Enclosure Seal:					
Reflector Shape:			Reflector Material:		

ABSORBER:





Header Material:		Header OD:		Header Wall:	
Riser Tube Material:	Copper	Riser Tube OD:		Riser Tube Wall Thickness:	
Fin Material:		Fin Thickness:	0.00 mm		
Flow Pattern:		Number of Flow Tubes / Heat Pipes:	0	Tube / Heat Pipe Spacing:	
Number of absorber tubes:	0	Flow Tube to Fin Bond:		Length of Flow Path:	0.00 m
Length of Flow Path:	0.00 m	Riser to Fin/Plate Bond:			

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

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

PRESSURE DROP				
Flow	ΔP		Flow	ΔP
ml/s	Pa		gpm	in H ₂ O
20			0.32	
50			0.79	
80			1.27	

