SOLAR COLLECTOR CERTIFICATION AND RATING	**CERTIFIED SOLAR COLLECTOR**
SRCC OG-100	SUPPLIER: **Solar Panels Plus** 533 Byron Street Suite E Chesapeake, VA 23320 USA MODEL: SPP -25 COLLECTOR TYPE: Tubular CERTIFICATION #: 100-2008-050C

COLLECTOR THERMAL PERFORMANCE RATING

Megajoules Per Panel Per Day				Thousands of Btu Per Panel Per Day			
CATEGORY (Ti-Ta)	CLEAR DAY 23 MJ/m²·d	MILDLY CLOUDY 17 MJ/m²·d	CLOUDY DAY 11 MJ/m²·d	CATEGORY (Ti-Ta)	CLEAR DAY 2000 Btu/ft²·d	MILDLY CLOUDY 1500 Btu/ft²·d	CLOUDY DAY 1000 Btu/ft²·d
A (-5°C)	42	31	21	A (-9°F)	39	30	20
B (5°C)	40	30	20	B (9°F)	38	28	19
C (20°C)	38	27	17	C (36°F)	36	26	16
D (50°C)	32	22	12	D (90°F)	30	21	11
E (80°C)	25	16	6	E (144°F)	24	15	6

A-Pool Heating (Warm Climate) **B**-Pool Heating (Cool Climate) **C**-Water Heating (Warm Climate) **D**-Water Heating (Cool Climate) **E**-Air Conditioning

Original Certification Date:

COLLECTOR SPECIFICATIONS

Gross Area:	4.002	m^2	43.08	ft^2	**Net Aperture Area:**	3.457	m^2	37.21	ft^2
Dry Weight:	83	kg	183	lb	**Fluid Capacity:**	1.5	l	0.4	gal
Test Pressure:	600	kPa	87	psig					

COLLECTOR MATERIALS

Frame:	Stainless Steel
Cover (Outer):	Glass Vacuum Tube
Cover (Inner):	None
Absorber Material:	Tube - Copper / Plate - Aluminum
Absorber Coating:	Aluminum Nitride
Insulation (Side):	Vacumn
Insulation (Back):	Vacumn

PRESSURE DROP

Flow		ΔP	
ml/s	gpm	Pa	in H_2O
0	0.00	0	0.00
0	0.00	0	0.00
0	0.00	0	0.00

TECHNICAL INFORMATION

Efficiency Equation [NOTE: Based on gross area and (P) = Ti-Ta]

						Y Intercept	Slope	
S I Units:	η = 0.4772	-0.9374	(P)/I	-0.0066	$(P)^2/I$	0.4806	-1.3337	$W/m^2 \cdot °C$
I P Units:	η = 0.4772	-0.1652	(P)/I	-0.0006	$(P)^2/I$	0.4806	-0.235	$Btu/hr \cdot ft^2 \cdot °F$

Incident Angle Modifier [(S) = 1/cos θ - 1, 0°≤ θ ≤60°]

$K_{\alpha\tau}$ =	1.0	+0.9638 (S)	-1.1856	$(S)^2$	
$K_{\alpha\tau}$ =	1.0	-0.27 (S)	(Linear Fit)		

Model Tested:	100-2007-028C			
Test Fluid:	Water			
Test Flow Rate:	71	ml/s	1.13	gpm

REMARKS: Tested with long axis of tubes oriented north-south. IAM perpendicular to the tubes is listed above. IAM parallel to the tubes = 1.0 - 0.33(S)