CERTIFIED SOLAR COLLECTOR

SUPPLIER:
1st Sunflower Renewable Energy Co., Ltd
No.1, Hongxi Road, Niutang Industrial District
Changzhou, JIANGSU 213163 China
www.sunflower-solar.com

BRAND:	Soflower
MODEL:	SF-B305818
COLLECTOR TYPE:	Tubular
CERTIFICATION #:	2008006B
Original Certification:	April 26, 2011
Expiration Date:	September 10, 2022

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)	11.9	9.0	6.1	A (-9 °F)	40.5	30.6	20.8
B (5 °C)	11.3	8.4	5.5	B (9 °F)	38.5	28.7	18.8
C (20 °C)	10.4	7.5	4.6	C (36 °F)	35.4	25.6	15.7
D (50 °C)	8.5	5.7	2.9	D (90 °F)	29.1	19.5	9.9
E (80 °C)	6.6	3.8	1.4	E (144 °F)	22.6	13.0	4.6

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:	4.530 m²	48.76 ft²	**Dry Weight:**	55 kg	121 lb
Net Aperture Area:	2.830 m²	30.46 ft²	**Fluid Capacity:**	0.9 liter	0.2 gal
Absorber Area:	2.431 m²	26.17 ft²	**Test Pressure:**	900 kPa	131 psi

TECHNICAL INFORMATION			Tested in accordance with:			
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]						
SI UNITS:	η= 0.363 - 1.15130(P/G) - 0.00306(P²/G)		**Y Intercept:**	0.365	**Slope:**	-1.361 W/m².°C
IP UNITS:	η= 0.363 - 0.20291(P/G) - 0.00030(P²/G)		**Y Intercept:**	0.365	**Slope:**	-0.240 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	
Kτα	1.01	1.04	1.10	1.19	1.31	1.45	1.40	**Test Mass Flow Rate:**	0.0127 kg/(s m²)	9.37 lb/(hr ft²)

REMARKS:

Technical Director

Print Date: December, 2012

www.solar-rating.org ♦ 400 High Point Drive, Suite 400 ♦ Cocoa, Florida 32926 ♦ (321) 213-6037 ♦ Fax (321) 821-0910

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ADDITIONAL INFORMATION (click here to return to the rating page)			
Test Lab:	Forschungs- und Testzentrum für Solaranlagen (TZS) am Institut für Thermodynamik und Wärmetechnik (ITW) der Universität Stuttgart	Test Report Date:	September 10, 2010
Test Report Number:		Test conducted:	

SOLAR COLLECTOR CONSTRUCTION DETAILS					
Header Enclosure:					
Gross Length:	1.970 m	**Gross Width:**	2.300 m	**Gross Depth:**	
Tube Bank:					
Gross Length:		**Gross Width:**			

COLLECTOR MATERIALS					
Outer Cover:	Glass Tube	**Enclosure back:**	Aluminum	**Back Insulation:**	,
Inner Cover:	None	**Enclosure side:**	Aluminum	**Side Insulation:**	,
Absorber Description:			**Flow Pattern:**		
Riser Tube:	Copper		**Fin:**		
Absorber Coating:	Selective		**Tube to fin connection**		

Glazing	Outer Cover	Inner Cover
Material:	Glass Tube	None
Surface Characteristics:		
Thickness:	1.6 mm	N/A
Transmissivity:		
Gross Tube Length (uninstalled):	1.724 m	
Diameter:	0.058 m	
Tube Glazing to Header Enclosure Seal:	Silicone bead	
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:**	0.15 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:**	1.75 m
Length of Flow Path:	1.75 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:	Mechanical Forming		**Header Enclosure:**		

Power Output per Collector(W) **[Ti-Ta, G = 1000 W/m²]**				
0	**10**	**30**	**50**	**70**

PRESSURE DROP				
Flow	**ΔP**		**Flow**	**ΔP**
ml/s	**Pa**		**gpm**	**in H_20**
20			0.32	
50			0.79	
80			1.27	