CERTIFIED SOLAR COLLECTOR

SUPPLIER:
Suntrek Industries, Inc.
5 Holland, Building 215
Irvine, CA 92618 USA
www.suntreksolar.com

In Accordance with:
SRCC Standard 100-2008-02

BRAND:	Suntrek
MODEL:	Suntrek (Pool heating)
COLLECTOR TYPE:	Unglazed Flat Plate
CERTIFICATION #:	2007048A
Original Certification:	November 02, 2011
Expiration Date:	May 21, 2021

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 (Collector Tested per ISO 9806:1994)

Kilowatt-hours (thermal) Per m^2 Per Day				Thousands of Btu Per ft^2 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)	5.5	4.2	3.0	A (-9 °F)	1.7	1.3	0.9
B (5 °C)	3.3	2.1	0.9	B (9 °F)	1.0	0.7	0.3
C (20 °C)	0.9	0.2	0.0	C (36 °F)	0.3	0.0	0.0
D (50 °C)	0.0	0.0	0.0	D (90 °F)	0.0	0.0	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:	2.230 m²	24.00 ft²	**Dry Weight:**	16 kg	34 lb
Net Aperture Area:	2.230 m²	24.00 ft²	**Fluid Capacity:**	27.2 liter	7.2 gal
Absorber Area:	2.234 m²	24.04 ft²	**Test Pressure:**	186 kPa	27 psi

TECHNICAL INFORMATION	**Tested in accordance with:** ISO 9806:1994
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]	
SI UNITS:	Wind speed (u) in m/s, Temperature (Ti – Ta) in °C, Radiation (G") in W/m² $\eta = (0.869)(1 - 0.0334u) - (19.5938 + 1.0940u)(P/G")$
IP UNITS:	Wind speed (u) in mph, Temperature (Ti – Ta) in °F, Radiation (G") in Btu/hr-ft² $\eta = (0.869)(1 - 0.0149u) - (3.4509 + 0.0861u)(P/G")$

Incident Angle Modifier								Test Fluid:	Water	
θ	10	20	30	40	50	60	70	**Test Mass Flow Rate:**	0.0707 kg/(s m²)	52.14 lb/(hr ft²)
Kτα	1.00	1.00	0.99	0.98	0.96	0.91	0.76	**Impact Safety Rating:** 0		

REMARKS: All sizes of this collector model are certified

Jim Huggins
Technical Director

Print Date: January, 2015 Page 1 of 1
Please verify certification is active on the SRCC website.

SUMMARY INFORMATION SHEET

FLORIDA SOLAR ENERGY CENTER

1679 CLEARLAKE ROAD, COCOA, FLORIDA 32922-5703 (321) 638-1000

August 1992
FSEC # 92012

MANUFACTURER

Collector Model

Suntrek

Suntrek Industries
28081 Merit Circle, Suite 103
Laguana Hills, California 92653-7017

This solar collector was tested by the Florida Solar Energy Center (FSEC) at the Cape Canaveral facility, in accordance with prescribed methods and was found to meet the minimum standards established by FSEC. The purpose of the tests is to verify initial performance conditions and quality of construction only. The resulting certification is not a guarantee of long term performance or durability.

DESCRIPTION

Gross Length	6.218	meters	20.40	feet
Gross Width	0.622	meters	2.04	feet
Gross Depth	0.008	meters	0.03	feet
Gross Area	3.869	square meters	41.65	square feet
Transparent Frontal Area	3.869	square meters	41.65	square feet
Volumetric Capacity	8.7	liters	2.3	gallons
Weight (empty)	21.3	kilograms	47.0	pounds
Recommended Flow Rate	271	ml/s	4.3	gpm
Maximum Operating Pressure	276	kPag	40	psig
Maximum Wind Load		Not Applicable		
Number of Cover Plates		None		
Flow Pattern		Parallel		Forced circulation
Number of Flow Tubes		Multitube mat		

MATERIALS

Enclosure	None
Glazing	None
Absorber	EPDM tubes and fins
Absorber Coating	None
Insulation	None

THERMAL PERFORMANCE

Tested per ASHRAE 96-1980 (RA 1989)

Incident Angle Modifier $K\tau\alpha = 1.0 - 0.03 \left(\frac{1}{\cos\theta} - 1\right)$

Test Flow Rate 271 ml/s 4.29 gpm

Efficiency Equations

$\eta = 85.9 - 1764\ (Ti-Ta)/I$

$\eta = 85.6 - 1788\ (Ti-Ta)/I + 3496\ [(Ti-Ta)/I]^2$

Units of (Ti-Ta)/I are °C / Watt/m²

$\eta = 85.9 - 310\ (Ti-Ta)/I$

$\eta = 85.6 - 315\ (Ti-Ta)/I + 108\ [(Ti-Ta)/I]^2$

Units of (Ti-Ta)/I are °F / Btu/hr·ft²

RATING

The collector has been rated for energy output on measured performance and an assumed standard day. Total solar energy available for the standard day is 5045 Watt-hours/m² (1600 Btu/ft²) distributed over a 10 hour period.

Output energy ratings for this collector based on the second-order efficiency curve are:

Collector Temperature	Energy Output			
Low Temperature, 35°C (95°F)	45,000	Kilojoules/day	42,600	Btu/day
Intermediate Temperature, 50°C (122°F)	20,700	Kilojoules/day	19,600	Btu/day
High Temperature, 100°C (212°F)	0	Kilojoules/day	0	Btu/day