

SOLAR RATING & CERTIFICATION CORPORATION

AWARD OF COLLECTOR CERTIFICATION

The solar collector listed below has been evaluated by the Solar Rating and Certification Corporation (SRCC) in accordance with SRCC Document OG-100, *Operating Guidelines and Minimum Standards for Certifying Solar Collectors*, and has been certified by the SRCC as specified in SRCC Standard 100-94, *Test Methods and Minimum Standards for Certifying Solar Collectors*. Certification and thermal performance ratings are based on the successful durability and performance testing of a sample unit where said tests have been conducted by an independent laboratory accredited by the SRCC.

Collector Certification Number: **100-2009114A**

Certification Date: 17-FEB-11	Type: Unglazed Flat-Plate	Expiration Date: 24-NOV-22
Test Laboratory: LabTest Certification	Report Number: 9659-1SC	Report Date: 24-NOV-10
Brand: ELIOSOLAR	Certified Model: Eliosolar Thermal Modular Element (ETME)	Model Tested: 2009114A

Supplier: **ElioSolar**
 8950 W. Olympic Blvd #116
 Beverly Hills, Ca 90211 USA
 (323) 270-0789

Description: Aluminum frame. cover. Aluminum absorber with Non-selective coating. No side insulation and no back insulation. Water was the fluid for performance tests. Gross Area: 2.539 m² (27.3 ft²). Aperture Area: 1.437 m² (15.5 ft²).

UNGLAZED COLLECTOR THERMAL PERFORMANCE RATING

Megajoules Per Square Meter Per Day				Thousands of BTU Per Square Foot Per Day			
CATEGORY (Ti-Ta)	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY	CATEGORY (Ti-Ta)	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY
A (-5 °C)	5.7	4.5	3.3	A (-9 °F)	0.5	0.4	0.3
B (5 °C)	3.9	2.7	1.6	B (9 °F)	0.3	0.2	0.1
C (20 °C)	0.7	0.0	0.0	C (36 °F)	0.1	0.0	0.0
D (50 °C)	0.0	0.0	0.0	D (90 °F)	0.0	0.0	0.0
E (80 °C)	0.0	0.0	0.0	E (144 °F)	0.0	0.0	0.0

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

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

				Y INTERCEPT	SLOPE
S I UNITS:	$\eta = 0.163$	$-4.33740 (P)/I$	$-0.09379 (P)^2/I$	0.162	$-5.37 \text{ W/m}^2 \cdot \text{°C}$
I P UNITS:	$\eta = 0.163$	$-0.76400 (P)/I$	$-0.00920 (P)^2/I$	0.162	$-0.90 \text{ Btu/hr.ft}^2 \cdot \text{°F}$

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

Kα = 1	1.27 (S)	$-0.263 (S)^2$	Kα = 1	1.00 (S)	Linear Fit (S) ²
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REMARKS:

This award of certification is subject to all terms and conditions of the program Agreement and the documents incorporated therein by reference. It must be renewed annually. Any change in collector design, materials, specifications, parts, or construction must be reported to SRCC for evaluation of continued certification.

Technical Director

February 17, 2011



**SOLAR COLLECTOR
CERTIFICATION AND RATING**



SRCC OG-100

CERTIFIED SOLAR COLLECTOR

SUPPLIER: **ElioSolar**
8950 W. Olympic Blvd #116
Beverly Hills, Ca 90211 USA

MODEL: Eliosolar Thermal Modular Element
(ETME)

COLLECTOR TYPE: ELIOSOLAR Unglazed Flat-Plate

CERTIFICATION#: 2009114A

ALL SIZES OF THIS COLLECTOR MODEL ARE CERTIFIED

COLLECTOR THERMAL PERFORMANCE RATING

Megajoules Per Square Meter Per Day				Thousands of BTU Per Square Foot Per Day			
CATEGORY (Ti-Ta)	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY	CATEGORY (Ti-Ta)	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY
A (-5 °C)	5.7	4.5	3.3	A (-9 °F)	0.5	0.4	0.3
B (5 °C)	3.9	2.7	1.6	B (9 °F)	0.3	0.2	0.1
C (20 °C)	0.7	0.0	0.0	C (36 °F)	0.1	0.0	0.0
D (50 °C)	0.0	0.0	0.0	D (90 °F)	0.0	0.0	0
E (80 °C)	0.0	0.0	0.0	E (144 °F)	0.0	0.0	0.0

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: 17-FEB-11

COLLECTOR SPECIFICATIONS

Gross Area: 2.539 m² 27.33 ft²

Dry Weight: 45.4 kg 100 lb

Test Pressure: 1103. KPa 160. psig

Net Aperture Area: 1.44 m² 15.47 ft²

Fluid Capacity: .5 liter 0.1 gal

COLLECTOR MATERIALS

Frame: Aluminum

Cover (Outer):

Cover (Inner):

Pressure Drop

Flow		ΔP	
ml/s	gpm	Pa	in H ₂ O

Absorber Material: Tube - Pex /
Plate - Aluminum

Absorber Coating: Non-selective coating

Insulation Side: No

Insulation Back: no

TECHNICAL INFORMATION

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

S I UNITS: $\eta = 0.163 - 4.33740 (P)/I - 0.09379 (P)^2/I$

I P UNITS: $\eta = 0.163 - 0.76403 (P)/I - 0.00918 (P)^2/I$

Y INTERCEPT

SLOPE

0.162

-5.374 W/m².°C

0.162

-0.947 Btu/hr.ft².°F

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

Kτα = 1 1.271 (S) -0.263 (S)²

Kτα = 1 1.00 (S) Linear Fit

Model Tested: 2009114A

Test Fluid: Water

Test Flow Rate: 47.0 ml/s.m² 0.0692 gpm/ft²

REMARKS: