

**SOLAR COLLECTOR
CERTIFICATION AND RATING**



SRCC OG-100

CERTIFIED SOLAR COLLECTOR

SUPPLIER: **Modulo Solar SA de CV**
Calle 23 Este # 3, Col. Civac
Cuernavaca, Morelos 62578 Mexico

MODEL: Modulo Solar Maxol MS 2.5

COLLECTOR TYPE: Glazed Flat-Plate

CERTIFICATION#: 2011118A

Original Certification Date:

COLLECTOR THERMAL PERFORMANCE RATING

Kilowatt-hours Per Panel Per Day				Thousands of BTU Per Panel Per Day			
CATEGORY (Ti-Ta)	CLEAR DAY (6.3 kWh / m ² .day)	MILDLY CLOUDY (4.7 kWh / m ² .day)	CLOUDY DAY (3.1 kWh / m ² .day)	CATEGORY (Ti-Ta)	CLEAR DAY (2000 Btu / ft ² .day)	MILDLY CLOUDY (1500 Btu / ft ² .day)	CLOUDY DAY (1000 Btu / ft ² .day)
A (-5 °C)	10.5	7.9	5.4	A (-9 °F)	35.7	27.0	18.3
B (5 °C)	9.6	7.0	4.5	B (9 °F)	32.7	24.0	15.3
C (20 °C)	8.1	5.7	3.2	C (36 °F)	27.8	19.3	10.8
D (50 °C)	5.2	3.0	0.9	D (90 °F)	17.9	10.1	3.0
E (80 °C)	2.4	0.7	0.0	E (144 °F)	8.3	2.2	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

COLLECTOR SPECIFICATIONS

Gross Area: 2.506 m² 26.97 ft² Net Aperture Area: 2.33 m² 25.04 ft²

Dry Weight: 46.5 kg 103. lb Fluid Capacity: 2.1 liter 0.6 gal

Test Pressure: 1103. KPa 160. psig

COLLECTOR MATERIALS

Frame: Metal

Cover (Outer): Tempered glass

Cover (Inner):

Pressure Drop

Flow		ΔP	
ml/s	gpm	Pa	in H ₂ O
20.00	0.32		
50.00	0.79	0.0	0.0
80.00	1.27	0.23	0.00

Absorber Material: Tube - Copper / Plate - Composite Insulation Side: Foam

Absorber Coating: Selective Insulation Back: Foam

TECHNICAL INFORMATION

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

SI Units: $\eta = 0.697 - 3.13480 (P)/l - 0.01648 (P)^2/l$ 0.708 -4.265 W/m².°C

IP Units: $\eta = 0.697 - 0.55220 (P)/l - 0.00161 (P)^2/l$ 0.708 -0.751 Btu/hr.ft².°F

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

K_{τα} = 1 -0.254 (S) 0.077 (S)² Test Flow Rate: 7.6 ml/s.m² 0.0112 gpm/ft²

K_{τα} = 1 -0.14 (S) Linear Fit

REMARKS:

December, 2011
Certification must be renewed annually, For current status contact:
SOLAR RATING & CERTIFICATION CORPORATION
400 High Point Drive, Suite 400 ♦ Cocoa, Florida 32926 ♦ (321) 213-6037 ♦ Fax (321) 821-0910

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This product certified by the Solar Rating & Certification Corporation
400 High Point Drive, Suite 400
Cocoa, Florida 32926
(321) 213-6037
www.solar-rating.org

SRCC Document OG-100

Modulo Solar SA de CV
Calle 23 Este # 3, Col. Civac
Cuernavaca, Morelos 62578

Model No: Maxol MS 2.5
Gross Area: 2.506m² (26.97) ft²
Serial Number:

Clear Day Rating in
Category C

29.3 MJ/day
27.8 KBTu/day

Draft

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: **100-201118A**

Certification Date:	Type: Glazed Flat-Plate	Expiration Date:
Test Laboratory: TUV/PTL	Report Number: R2-NDS10217	Report Date: 01-NOV-11
Brand: Modulo Solar	Certified Model: Maxol MS 2.5	Model Tested: 201118A
Supplier: Modulo Solar SA de CV	Calle 23 Este # 3, Col. Civac Cuernavaca, Morelos 62578 Mexico (+52) (777) 5169497	

Description: Metal frame. Tempered glass cover. Composite absorber with Selective. Foam side insulation and Foam back insulation. Water was the fluid for performance tests. Gross Area: 2.506 m² (27 ft²). Aperture Area: 2.326 m² (25 ft²).

GLAZED COLLECTOR THERMAL PERFORMANCE RATING

Megajoules Per Panel Per Day				Thousands of BTU Per Panel Per Day			
CATEGORY (Ti-Ta)	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY	CATEGORY (Ti-Ta)	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY
A (-5 °C)	37.6	28.4	19.3	A (-9 °F)	35.7	27.0	18.3
B (5 °C)	34.5	25.3	16.2	B (9 °F)	32.7	24.0	15.3
C (20 °C)	29.3	20.3	11.4	C (36 °F)	27.8	19.3	10.8
D (50 °C)	18.8	10.6	3.2	D (90 °F)	17.9	10.1	3.0
E (80 °C)	8.8	2.4	0.0	E (144 °F)	8.3	2.2	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]

S I UNITS:	$\eta = 0.697$	$-3.13480 (P)/I$	$-0.01648 (P)^2/I$
I P UNITS:	$\eta = 0.697$	$-0.55220 (P)/I$	$-0.00160 (P)^2/I$

Y INTERCEPT

0.708
0.708

SLOPE

-4.27 W/m².°C
-0.80 Btu/hr.ft².°F

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

Kα = 1 -0.25 (S) 0.077 (S)²

Kα = 1 -0.14 (S) Linear Fit (S)²

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

December 06, 2011