



CERTIFIED SOLAR COLLECTOR

SUPPLIER:
Dimas SA
 2nd KLM Argos-Nafplion
 Argos, 21200 Greece
 www.dimas-solar.gr
 In Accordance with:

BRAND: Dimas SA
 MODEL: Energy + EVO 20
 COLLECTOR TYPE: Glazed Flat Plate
 CERTIFICATION #: 2010023E
 Original Certification: October 19, 2011
 Expiration Date: February 11, 2023

The solar collector listed below has been evaluated by the Solar Rating & Certification Corporation™ (SRCC™), an ANSI 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 | | | | | | | |
|--|---|---|--|------------------------------------|---|---|--|
| Kilowatt-hours (thermal) Per Panel Per Day | | | | Thousands of Btu Per Panel Per Day | | | |
| Climate -> | High Radiation (6.3 kWh/m ² .day) | Medium Radiation (4.7 kWh/m ² .day) | Low Radiation (3.1 kWh/m ² .day) | Climate -> | High Radiation (2000 Btu/ft ² .day) | Medium Radiation (1500 Btu/ft ² .day) | Low Radiation (1000 Btu/ft ² .day) |
| Category (Ti-Ta) | | | | Category (Ti-Ta) | | | |
| A (-5 °C) | 8.8 | 6.6 | 4.5 | A (-9 °F) | 29.9 | 22.6 | 15.4 |
| B (5 °C) | 8.0 | 5.9 | 3.8 | B (9 °F) | 27.3 | 20.0 | 12.8 |
| C (20 °C) | 6.8 | 4.7 | 2.7 | C (36 °F) | 23.2 | 16.1 | 9.1 |
| D (50 °C) | 4.6 | 2.7 | 0.9 | D (90 °F) | 15.8 | 9.1 | 3.0 |
| E (80 °C) | 2.6 | 1.0 | 0.0 | E (144 °F) | 9.0 | 3.3 | 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: | 2.022 m ² | 21.77 ft ² | Dry Weight: | 35 kg | 77 lb |
| Net Aperture Area: | 1.832 m ² | 19.72 ft ² | Fluid Capacity: | 1.5 liter | 0.4 gal |
| Absorber Area: | 1.714 m ² | 18.45 ft ² | Test Pressure: | 2400 kPa | 348 psi |

| TECHNICAL INFORMATION | | Tested in accordance with: | | | |
|---|--|----------------------------|-------|---------------|-----------------------------------|
| ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta] | | | | | |
| SI UNITS: | $\eta = 0.709 - 3.38580(P/G) - 0.00832(P^2/G)$ | Y Intercept: | 0.714 | Slope: | -3.952 W/m ² .°C |
| IP UNITS: | $\eta = 0.709 - 0.59672(P/G) - 0.00081(P^2/G)$ | Y Intercept: | 0.714 | Slope: | -0.697 Btu/hr.ft ² .°F |

| Incident Angle Modifier | | | | | | | | Test Fluid: | |
|------------------------------|------|------|------|------|------|------|------|-----------------------------|---|
| θ | 10 | 20 | 30 | 40 | 50 | 60 | 70 | Water | |
| K_{ra} | 1.00 | 0.99 | 0.98 | 0.96 | 0.92 | 0.85 | 0.72 | Test Mass Flow Rate: | 0.0187 kg/(s m ²) 13.76 lb/(hr ft ²) |
| Impact Safety Rating: | | | | | | | | | |

REMARKS:

Jim Higgins

Technical Director





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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 Date: | February 11, 2011 |
| Test Report Number: | 10COL934S | Test Location: | |

| SOLAR COLLECTOR CONSTRUCTION DETAILS | | | | | |
|---|---------|---------------------|---------|---------------------|-----------|
| Gross Length: | 2.008 m | Gross Width: | 1.007 m | Gross Depth: | 87.000 mm |

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

| GLAZING | Outer Cover | Inner Cover |
|---|--------------------|--------------------|
| Material: | Glass sheet | None |
| Surface Characteristics: | | |
| Thickness: | 4.0 mm | N/A |
| Transmissivity: | | |
| Length: | 1.961 m | |
| Width: | 0.965 m | |
| Tube Glazing to Header Enclosure Seal: | EPDM gasket | |

| | | | |
|-----------------------------|--------|--------------------------|-----------|
| ABSORBER: | | Absorber Coating: | Selective |
| Header Material: | | Header OD: | |
| Riser Tube Material: | Copper | Riser Tube OD: | |
| Fin Material: | | Fin Thickness: | 0.40 mm |





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| | | | | | |
|-------------------------------|--------|---------------------------------|--|---|----|
| Flow Pattern: | | | | | |
| Number of Riser Tubes: | 11 | Tube Spacing: | | Number of times each riser crosses the absorber: | 11 |
| Length of Flow Path: | 1.89 m | Riser to Fin/Plate Bond: | | | |

| | | | | | |
|-------------------------------------|-------------|------------------|-----------------------------|-------------|------------------|
| INSULATION: | | | | | |
| Location | Type | Thickness | Location | Type | Thickness |
| Back – Top Layer: | Fiber | | Sides – Inner Layer: | Fiber | |
| Back – Bottom Layer: | None | | Sides – Outer Layer: | None | |
| Enclosure Fastening Methods: | | | | | |

| | | | | |
|--|----|----|----|----|
| 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 H₂O |
| 20 | | | 0.32 | |
| 50 | | | 0.79 | |
| 80 | | | 1.27 | |

