

**SOLAR COLLECTOR
CERTIFICATION AND RATING**



CERTIFIED SOLAR COLLECTOR

SUPPLIER: **Haining Fadi Solar Energy Co., Ltd**
 No. 100, Gongren Road
 Haining, Zhejiang Province 314400 China

MODEL: **FADI FD-SC-18**

COLLECTOR TYPE: **Tubular**

CERTIFICATION#: **2011104C**

COLLECTOR THERMAL PERFORMANCE RATING

| Kilowatt-hours 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) | 7.9 | 6.0 | 4.0 | A (-9 °F) | 27.1 | 20.4 | 13.8 |
| B (5 °C) | 7.6 | 5.6 | 3.7 | B (9 °F) | 25.9 | 19.3 | 12.6 |
| C (20 °C) | 7.1 | 5.1 | 3.2 | C (36 °F) | 24.1 | 17.5 | 10.8 |
| D (50 °C) | 6.1 | 4.2 | 2.2 | D (90 °F) | 20.7 | 14.1 | 7.6 |
| E (80 °C) | 5.0 | 3.1 | 1.3 | E (144 °F) | 17.2 | 10.6 | 4.5 |

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: 15-SEP-11

COLLECTOR SPECIFICATIONS

Gross Area: 2.915 m² 31.38 ft² Net Aperture Area: 1.66 m² 17.91 ft²
 Dry Weight: 62.9 kg 139. lb Fluid Capacity: 1.1 liter 0.3 gal
 Test Pressure: 44. KPa 6. psig

COLLECTOR MATERIALS

Frame: Aluminum
 Cover (Outer): Glass
 Cover (Inner): Glass

Pressure Drop

| Flow | | ΔP | |
|------|-----|----|---------------------|
| ml/s | gpm | Pa | in H ₂ O |
| | | | |
| | | | |
| | | | |

Absorber Material: Tube - Copper / Plate - Aluminum Insulation Side: Fiber, vacuum
 Absorber Coating: Selective coating Insulation Back: fiber, vacuum

TECHNICAL INFORMATION

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

| | SI Units: | IP Units: | Y INTERCEPT | SLOPE |
|--|--|--|-------------|-----------------------------------|
| | $\eta = 0.380 - 1.04780 (P)/l - 0.00196 (P)^2/l$ | $\eta = 0.380 - 0.18457 (P)/l - 0.00019 (P)^2/l$ | 0.380 | -1.131 W/m ² .°C |
| | | | 0.380 | -0.199 Btu/hr.ft ² .°F |

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

| | | | | |
|---------|-----------|-------------------------|-----------------|---|
| Kτα = 1 | 1.422 (S) | -1.054 (S) ² | Test Fluid: | Water |
| Kτα = 1 | 0.40 (S) | Linear Fit | Test Flow Rate: | 378.4 ml /s.m ² 0.5573 gpm/ft ² |

REMARKS:

Collector tested with long axis of tubes oriented north-south. IAM perpendicular to the tubes is listed above. IAM parallel to the tubes = 1.0 - 0.1(S)

September, 2011

Certification must be renewed annually, For current status contact:

SOLAR RATING & CERTIFICATION CORPORATION

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