

**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-24**

COLLECTOR TYPE: **Tubular**

CERTIFICATION#: **2011104A**

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)	10.5	7.9	5.3	A (-9 °F)	35.7	26.9	18.2
B (5 °C)	10.0	7.4	4.9	B (9 °F)	34.1	25.4	16.7
C (20 °C)	9.3	6.8	4.2	C (36 °F)	31.8	23.0	14.3
D (50 °C)	8.0	5.5	2.9	D (90 °F)	27.3	18.6	10.0
E (80 °C)	6.6	4.1	1.7	E (144 °F)	22.7	14.0	5.9

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: 3.842 m² 41.35 ft² **Net Aperture Area:** 2.22 m² 23.88 ft²

Dry Weight: 83.9 kg 185. lb **Fluid Capacity:** 1.4 liter 0.4 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
20.00	0.32	28.83	0.12
50.00	0.79	184.4	0.7
80.00	1.27	474.62	1.91

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

Kτα = 1 0.40 (S) Linear Fit

Test Fluid: Water

Test Flow Rate: 287.1 ml/s.m² 0.4228 gpm/ft²

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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