

# FAFCO

## Solar Bear

### ABOVE GROUND POOL SOLAR HEAT EXCHANGER

**DESCRIPTION:** The Solar Bear Solar Collector is manufactured in Chico, California. The collector is a specially developed, highly stabilized polyolefin and is of parallel, circular channel design. It is unglazed, uninsulated, and designed for low temperature applications such as swimming pool heating, heat pumps, aquaculture, and hydroponics.

**DIMENSIONS:** Header Length = 50.875 in. (1.29 m)  
Width (Panel body) = 47.5 in. (1.21 m)

Overall Dimensions:	<u>Effective Area</u>
4 ft. X 10 ft. (1.22 X 3.05 m)	39.5 ft <sup>2</sup> (3.67 m <sup>2</sup> )
4 ft. X 20 ft. (1.22 X 6.10 m)	79.2 ft <sup>2</sup> (7.35 m <sup>2</sup> )

**ROOF MOUNTING SPACE:** Width = 50.875 in. (129 cm) + 14 in. (35 cm)  
Length = Panel length + 24 in. (61 cm)

**RACK SPACE:** Width = 50.875 in. (129 cm) + 6 in. (15 cm)  
Length = Panel length + 6 in. (15 cm)

**FLOW:** Maximum recommended flow = 8 gpm per panel  
3.47 psi head loss (1,817 l/hr, 0.244 kg/cm<sup>2</sup>)  
Minimum recommended flow = 2 gpm per panel  
0.23 psi head loss (454 l/hr, 0.016 kg/cm<sup>2</sup>)  
Recommended flow = 4 gpm per panel  
0.87 psi head loss (908 l/hr, 0.061 kg/cm<sup>2</sup>)

<b>PRESSURE:</b>	<b>NORMAL OPERATING PRESSURE</b>	<b>MAXIMUM INTERMITTENT PRESSURE</b>
80°F (27°C)	0 to 30 psi (0 - 2.11 kg/cm <sup>2</sup> )	45 psi (3.16 kg/cm <sup>2</sup> )
212°F (100°C)	0 to 5 psi (0 - 0.35 kg/cm <sup>2</sup> )	5 psi (0.35 kg/cm <sup>2</sup> )
70°F (21°C)	Measured burst pressure of panel body = Over 300 psi (21.1 kg/cm <sup>2</sup> )	

**TEMPERATURE:** Normal operating temperature = 60°F to 90°F (16°C to 32°C)  
Maximum continuous operating temperature = 212°F (100°C)  
Maximum intermittent temperature (unpressured) = 250°F (121°C)  
Melt temperature = 338°F (170°C)

**CHEMICAL RESISTANCE:** Compatible with common collector fluids

**CORROSION:** Non-corrosive

**FREEZING:** The system should be drained before freezing conditions occur.

**WEATHERABILITY:** Weatherometer, accelerated outdoor exposure, and other extensive laboratory testing demonstrates long-term weatherability of SunSaver™ collectors (see warranty). Additionally, FAFCO's experience of 30 years and over 1,000,000 collectors installed confirms that the proprietary stabilization and high mechanical strength results in negligible warranty over the warranty period.

**WEIGHT:**

Without Water:

4 ft. X 10 ft. 15.9 lbs (5.93 kg) or 0.40 lbs/ft<sup>2</sup> (1.95 kg/m<sup>2</sup>)  
4 ft. X 20 ft. 31.8 lbs (14.4 kg) or 0.40 lbs/ft<sup>2</sup> (1.95 kg/m<sup>2</sup>)

With Water:

4 ft. X 10 ft. 59.8 lbs (22.3 kg) or 1.50 lbs/ft<sup>2</sup> (7.32 kg/m<sup>2</sup>)  
4 ft. X 20 ft. 119.6 lbs (54.2 kg) or 1.50 lbs/ft<sup>2</sup> (7.32 kg/m<sup>2</sup>)

**ABSORPTIVITY:** 0.96

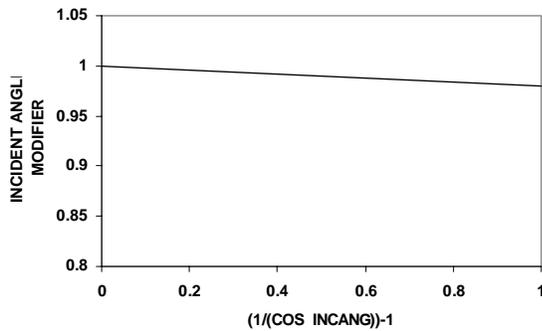
**EMISSIVITY:** 0.90

**TIME CONSTANT:** 64 seconds

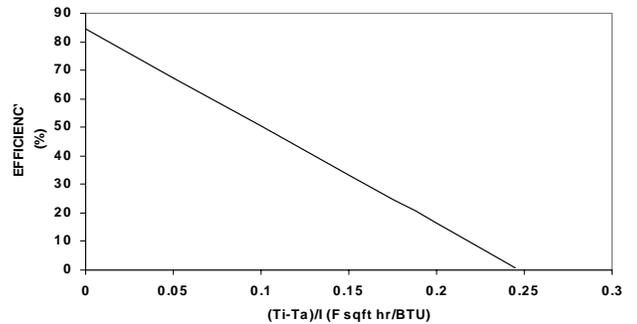
**TESTED OUTPUT:** 1,014 BTU/ft<sup>2</sup> (Florida Solar Energy Center)

**PERFORMANCE CURVES:**

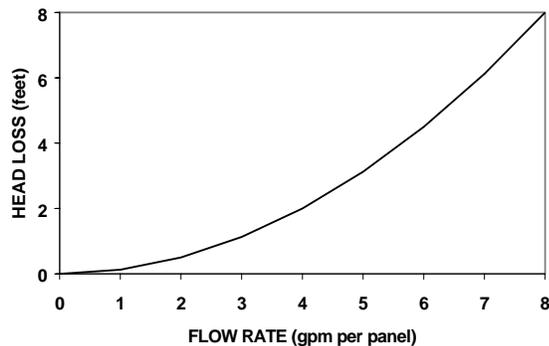
**INCIDENT ANGLE CHARACTERISTICS**



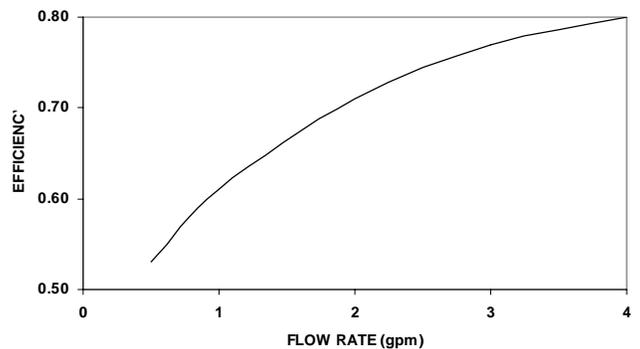
**MEASURED EFFICIENCY**  
Average flow rate 4.9 gpm (1113 l/hr)  
Average wind velocity 2.4 mph (3.9 km/hr)



**PRESSURE vs. FLOW**



**EFFICIENCY vs. FLOW**  
(for typ. conditions)



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