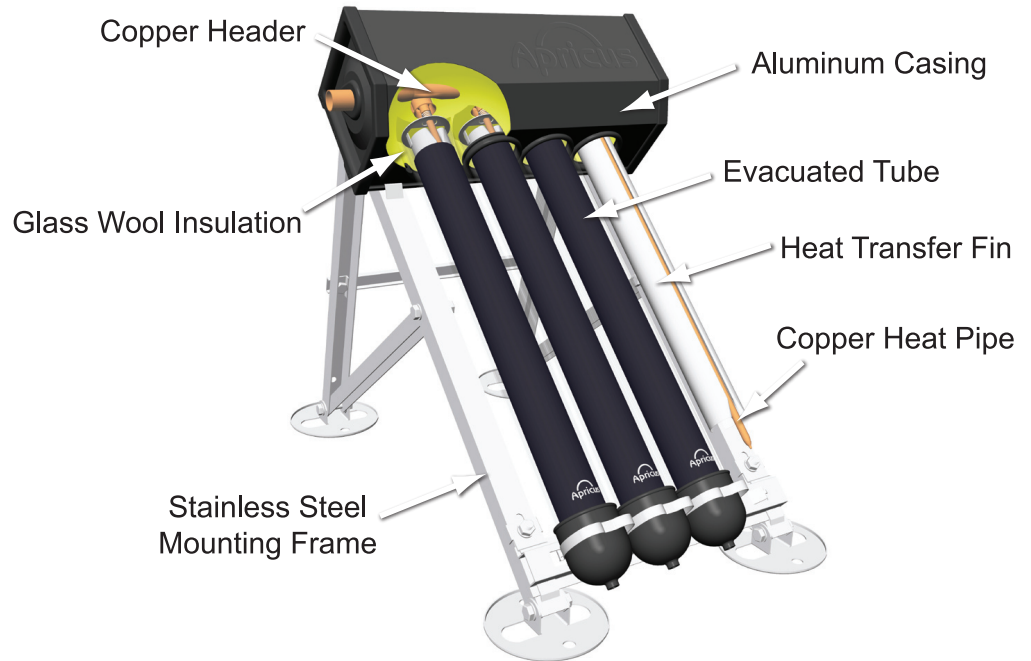


## AP-30 Solar Collector



### Submittal

Solar collectors shall be as manufactured by Apricus Solar Co., Ltd, Model No. AP-30 and shall be a twin-glass evacuated tube & dry plug heat pipe system.

Collector shall be 1980mm / 80" in length, 2196mm / 86.4" in width and 156mm / 6.14" in height. The enclosure casing shall be 0.8mm / 0.03" thick 1060-H16 grade aluminum with enamel paint finish. The copper header (water flow pipe) shall be of C11000 grade copper. Two contoured copper pipes of  $\varnothing 18\text{mm}$  /  $\varnothing 0.7$ " OD x 1mm / 0.04" shall form the header assembly, with all potable water connections brazed with BAg45CuZn brazing material. Each header must be factory tested to 1000kPa / 145psi. The header shall be insulated with compressed glass wool of no less than  $60\text{kg/m}^3$  /  $3.7\text{lbs/ft}^3$  density and average thickness of 50mm / 2".

Evacuated tubes shall be twin glass, with outer tube wall thickness no less than 1.8mm / 0.07" and outside diameter of 58mm / 2.28". The absorber coating shall be AL/N on a aluminum base with a minimum absorptance of 0.92% and maximum emissivity of 8%.

Collector instantaneous efficiency curve shall not have less than a first order Y-intercept (based on gross area of  $4.05\text{m}^2$  /  $43.63\text{ft}^2$ ) of 0.418, and a slope of not more than  $1.17\text{W}/(\text{m}^2\text{K}\cdot^\circ\text{C})$  /  $0.206\text{ Btu/hr.ft}^2\cdot^\circ\text{F}$

Heat pipes shall use a non-toxic heat transfer liquid and provide protection against freeze related heat pipe damage, have a minimum wall thickness of 0.7mm / 0.027" and be grade C10200 "oxygen free" copper.

The mounting frame shall be 439 grade stainless steel (1.5mm / 0.06" thick) and when installed in accordance with the installation instructions, shall withstand a wind load of 130mph.

Collectors shall have a design life of 20 years and shall be warranted for not less than 10 years. Collectors shall be certified to IAPMO USEC, FSEC, SRCC OG-100, AS/NZS2712 and EN12975-2.

**Physical Specifications**

Overall Length	1980mm / 80"
Overall Height	156mm / 6.14"
Overall Width	2196mm / 86.4"
Aperture Area	2.83m <sup>2</sup> / 30.45ft <sup>2</sup>
Gross Area	4.26m <sup>2</sup> / 45.83ft <sup>2</sup>
Gross Dry Weight	95kg / 209lb
Fluid Capacity	710ml / 24fl oz
Max Operating Pressure	800kPa / 116psi
Stagnation Temperature	< 220°C / 432°F

**Key Material Specifications**

Evacuated Tubes	Borosilicate 3.3 Glass
Absorber	Al-N on Al on Glass
Heat Pipes	High Purity Copper
Heat Transfer Fins	Aluminum
Rubber Components	HTV Silicone Rubber
Mounting Frame	439 Stainless Steel
Manifold Casing	5005-H16 Aluminum

**Performance Variables<sup>(1)</sup>**

Eta0 (y-intercept)	0.687
a1 [W/(m <sup>2</sup> K)]	1.505
a2 [W/(m <sup>2</sup> K <sup>2</sup> )]	0.011
Heat Capacity [kJ/(m <sup>2</sup> K)]	52.44
Peak Power Output <sup>(2)</sup>	1944W / 6632Btu

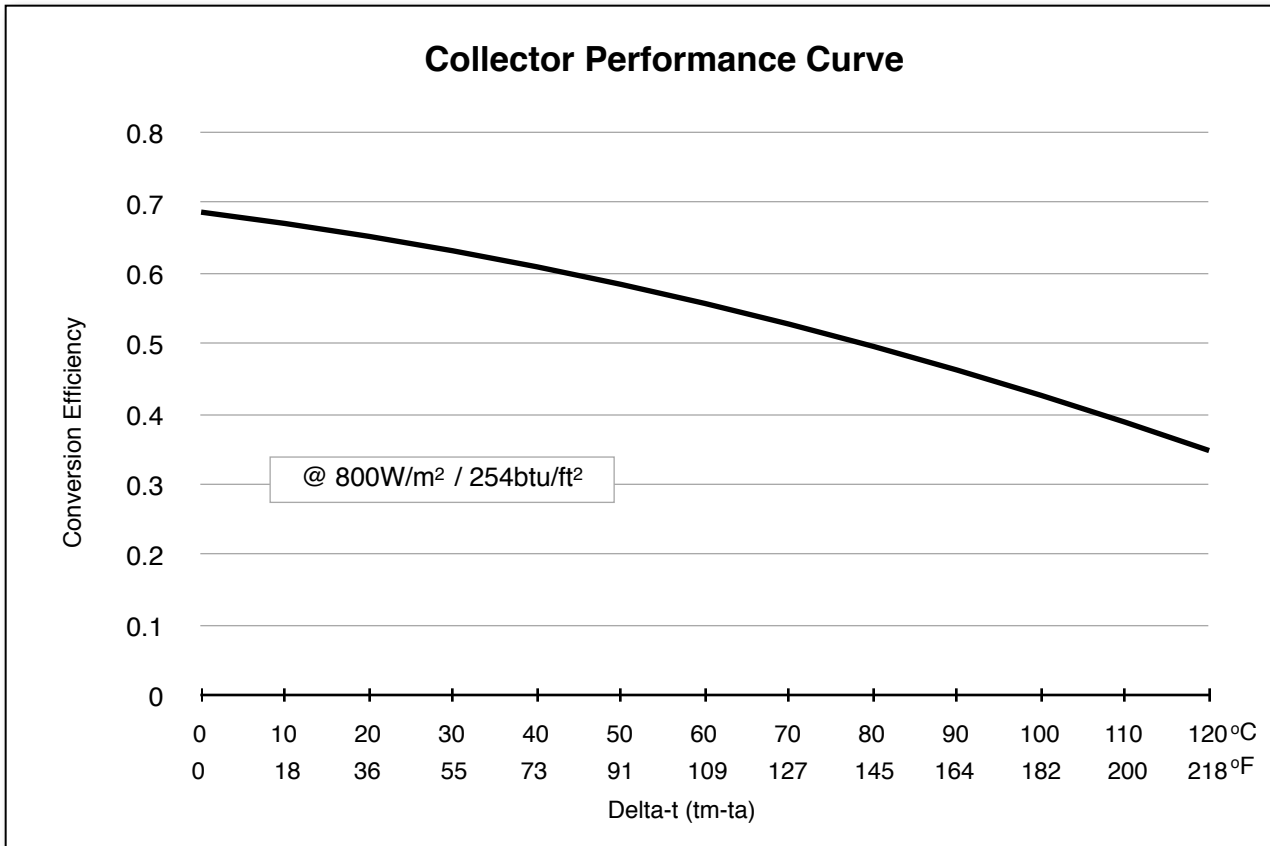
Incidence Angle Modifier (passive tracking):

Angle	0	20	40	50	60	70	90
Long	1.00	1.00	0.97	0.92	0.84	0.70	0.00
Trans	1.00	1.08	1.35	1.47	1.39	1.57	0.00

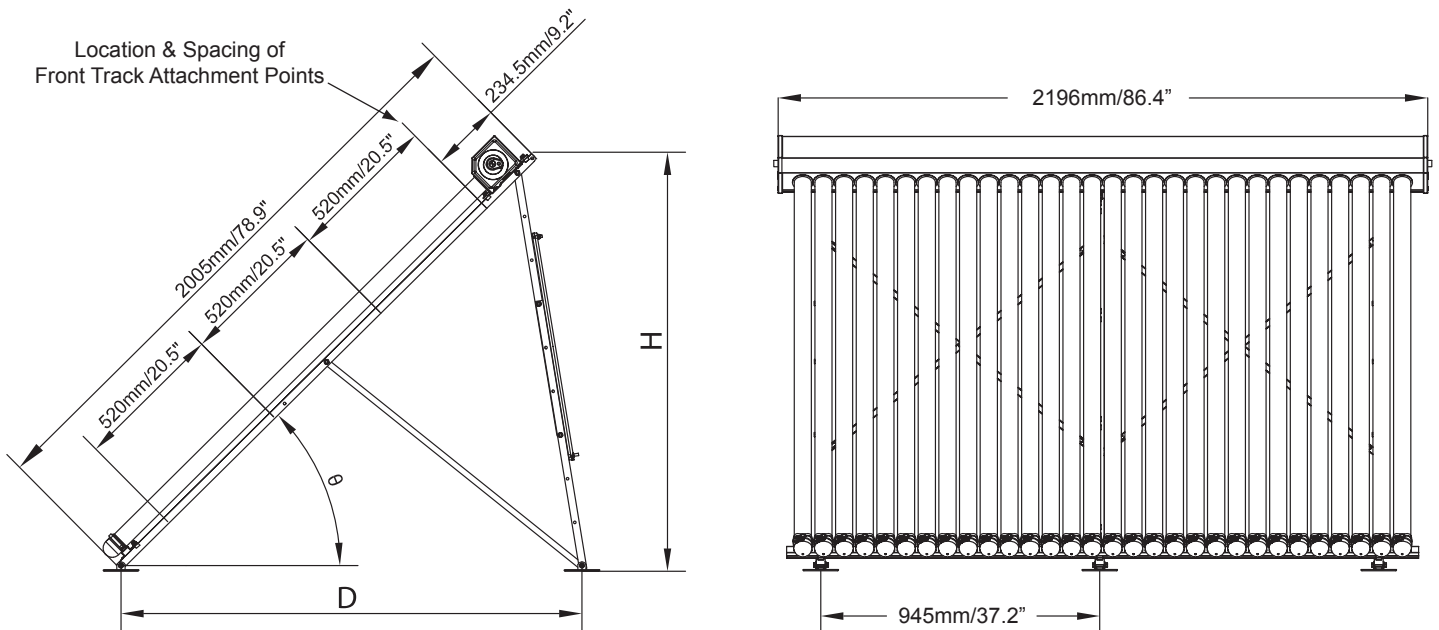
**Installation Guidelines**

Max Flow Rate	15L/min / 3.9 US gpm
Max Tubes in Series	150 tubes
Install Angle Range	20-80°
Maximum Pressure Drop <sup>(3)</sup>	10kPa / 3ft / 1.3psi

(1) Data from ITW test report 09COL805  
 (2) G=1000W/m<sup>2</sup>, IAM angle = 0°  
 (3) @20°C/68°F & 15L/min / 4US gpm



## Mounting Frame Dimensions



Angle	Type	D	H
57°	High Angle (Round Feet)	1278mm / 50.3"	1674mm / 65.9"
51°		1427mm / 56.2"	1551mm / 61.1"
44°		1581mm / 62.2"	1393mm / 54.8"
38°		1709mm / 67.3"	1236mm / 48.7"
33°		1814mm / 71.4"	1078mm / 42.4"
51°	High Angle (Roof Track)	1900mm / 74.8"	1562mm / 61.5"
46°		1900mm / 74.8"	1448mm / 57.0"
41°		1900mm / 74.8"	1326mm / 52.2"
37°		1900mm / 74.8"	1196mm / 47.1"
32°		1900mm / 74.8"	1059mm / 41.7"
27°	Mid Angle (Round Feet)*	Variable	~ 918mm / 36.1"
27°	Mid Angle (Roof Track)*	1900mm / 74.8"	918mm / 36.1"
13°	Low Angle (Round Feet)*	Variable	~ 450mm / 17.7"
13°	Low Angle (Round Track)	1900mm / 74.8"	450mm / 17.7"

## Certifications

**North America:** SRCC OG100 AP-30 Report # 100-2007033A  
 IAPMO USEC Report # S-5995  
 FSEC AP-30 Report # 00204N

**Europe:** Dincertco Solarkeymark # 011-7S161 R

**Australia/NZ:** Global Mark (AS/NZSAS2712) Client # 100633

**ISO9001-2008:** Global Mark Client # 100633