

# Apricus AP-30 Solar Collector

## Engineering Specification



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.

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 absorptivity 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 purified water only as the heat transfer liquid and provide protection against freeze related heat pipe damage. Heat pipes shall 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 by FSEC, SRCC, AS2712 and Solarkeymark.