

# Solar Hot Water

Featuring Innovative Evacuated Tube Technology

Generation PV

A Generation PV Solar Hot Water system is the perfect choice for homeowners or businesses looking to significantly lower water heating bills. It provides an attractive, efficient and reliable source of free and clean solar thermal energy that can offset your gas or electric heater usage by up to 75% and reduce household CO<sub>2</sub> emissions by more than 20%!

The Integrated Pump Station control system with optional excess collector heat compensation allows for fully automatic operation, and the climate-optimized solar collector provides the highest available output all year long. Systems can either be installed during new construction or retrofitted to existing buildings.

From laundry to showers, cottages to car washes, radiant heating and more, a Generation PV Solar Hot Water system is ideal for most water heating applications.

*Lowers Energy Bills*  
*Reliable and Efficient*  
*Reduces CO<sub>2</sub> Emissions*

## How it works...

Heat from sunlight shining on the solar collector is directed to the upper manifold. A mixture of water and glycol is circulated through the manifold to collect the heat and is then pumped through a heat exchanger to transfer the heat to a water tank. An electronic controller monitors the tank's temperature and controls the operation of the pumps.



Retrofit your existing tank or install our premium solar tanks with internal heat exchangers for maximum efficiency.

The circulating pumps, gauges, valves and control system are conveniently integrated and preinstalled in an attractive housing.



Innovative omni-directional collectors ensure stable heat output from morning to evening.

Advanced Apricus evacuated tube technology with integrated heat pipe freeze-protection easily outperforms flat plate collectors in cold winters.

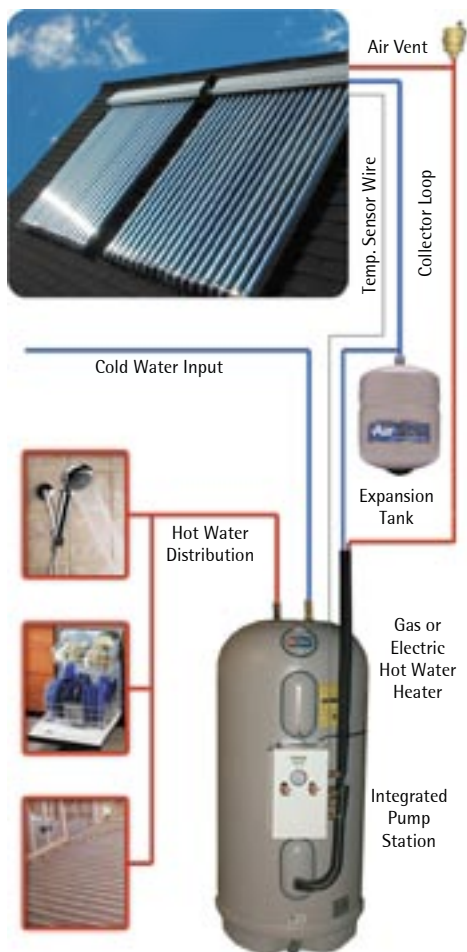
Apricus™

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## PRODUCT FEATURES AND SPECIFICATIONS

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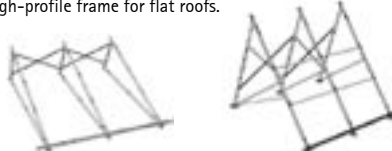
Solar Collectors



An optional heat dissipator is allows excess heat to be safely dissipated from the collector loop automatically, preventing problems with high pressure and breakdown of the glycol mixture.



Additional frames are available including a low-profile frame for mildly pitched roofs and a high-profile frame for flat roofs.



Solar Tube Specifications	
Length	1500 mm
Outer Tube Diameter	58 mm
Inner Tube Diameter	47 mm
Glass Thickness	1.6 mm
Material	Borosilicate Glass 3.3
Absorptive Coating	Graded Al-N/Al
Absorptance	>1.5% (ATM 1.5)
Emittance	<8% (80°C)
Vacuum	$P < 5 \times 10^{-3} \text{Pa}$
Stagnation Temperature	>200°C
Heat Loss	<0.8W/(m <sup>2</sup> °C)
Maximum Strength	0.8MPa

### Solar Collector General Specifications

Manifold Casing Material	Powder Coated Aluminum (3A21)
Frame Material	1.5mm 304 Stainless Steel
Header Pipe Material	99.93% Pure Copper Et Lead Free 45% Silver Brazing
Insulation	Compressed Glass Wool - $K=0.043\text{W/mK}$
Rubber Seals and Rings	UV Stabilized High Temperature Silicone Rubber
Optimal Installation Angle	20 to 70° Vertical, -5 to +5° Horizontal
Maximum Operating Pressure	8bar - 116psi
Pressure Drop	700Pa @ 3.3L/min for 20 Tube Manifold (SRCC)
Optimal Flow Rate	0.1L/min/tube - 0.026G/min/tube
Performance Data (SPF)	Conversion Factor: $h_o=0.717$ ; Loss Coefficients: $a_1=1.52, a_2=0.0085$

### Pump Station Specifications

For Closed Loop, Dual Pump, AC Powered Models	
System Power	120VAC 60Hz 30W
Solar Loop Pressure	20-35 psi
Circulators	Bronze, High Efficiency DC
Heat Exchanger	SS Brazed Plate, Single Walled
Fittings	Copper Et Brass, 1/2"
Temperature / Pressure Indication	Combination P/T Gauge on Solar Loop, Digital Storage Et Collector Indication
Pressure Relief	Valve factory set to 40 psi
Controller	Integrated Programmable Differential Temperature Controller
Solar Loop Fluid	Non-toxic Propylene Glycol with Water only
Dimensions	8.5" x 14" x 5"

System	10 Tube	22 Tube	30 Tube
Overall Length (mm/in) <sup>1</sup>	1980 / 77.9"		
Overall Width (mm/in)	796 / 31.3"	1636 / 64.4"	2196 / 86.4"
Absorber Area (m <sup>2</sup> /ft <sup>2</sup> ) <sup>2</sup>	0.8 / 8.6	1.76 / 18.9	2.4 / 25.8
Fluid Capacity (ml/ounces)	290 / 9.8	550 / 18.6	833 / 28.2
Gross Area (m <sup>2</sup> /ft <sup>2</sup> ) <sup>3</sup>	1.57 / 16.95	3.24 / 34.8	4.35 / 46.8
Dry Weight (kg/lbs)	35 / 77	71 / 157	95 / 209

1. Length and width do not include the inlet and outlet which protrude from either the rear or ends of the manifold.

2. Absorber area calculated as:  $D \times L \times N$  where: D=Tube diameter; L=Exposed tube length; N=Number of tubes

3. Calculated simply as overlength (including frame) x overall width.

To purchase or for more information, please contact:

