



evergreen power limited

2009 - 2010 edition

## Solar Thermal System Pressurized Heating System

*your valued solar partner*



[www.evergreenpower.com.hk](http://www.evergreenpower.com.hk)



**Evergreen Power Limited (EPL)** is Asia's leading supplier of solar lighting, heating and power system. We specialize in delivering practical solar applications for our customers and partners. Based in Hong Kong, EPL believes solar green energy will become inevitable part of life in the 21st century and beyond. **Our aim is to deliver cost effective solar solution.** During these years, we have acquired strong technical expertise and experience working with agencies and distributors in Asia, Europe and Africa. We believe in long term, mutually beneficial relationships with our customers and create value through collaboration to enhance customer competitiveness. **Quality is what we built in each and every of our products which are backed by our extended warranty.** We have successfully delivered systems for powering computers, mobile phones and lightings to schools and communities in Africa and street illumination in Asia and other remote locations where electricity is not readily available.

**Clean. Green. Efficient.** Household heating is the major consumer of energy in most homes. Installing a solar hot water system will not only help the environment by reducing CO2 emission, it can also reduce your heating bill by up to 80%.

**EPL Residential Solar Water Heater** is a clean, cost effective solution that uses the sun's energy to heat your water. The appliance is **attractive, safe, and reliable** with minimal maintenance required over its long operational life. Our solar water heating systems are backed by a **10 year limited warranty**. By choosing to install a solar water heating system in your home, you can also increase the property value of your home and reduce your monthly electricity bills.



### EVACUATED TUBE

Evacuated tube technology delivers significantly better performance than traditional absorbers in the market today. Their advanced design incorporates tubes that consist of 2 layers of borosilicate glass with a vacuum layer between them. This vacuum acts like a thermos flask, retaining up to 97% of the thermal energy, resulting in increased efficiency. The Sun's thermal energy is then transferred to the manifold via the heat pipe located inside each tube.

The small amount of evaporative liquid in each tube is super heated by the Sun's energy and forms a vapour. The vapor rises to the top of each pipe; this heat is then transferred to the water flowing through the manifold. The heated water is then returned to the tank. The cylindrical design of the tubes ensures effective collection of the Sun's thermal energy throughout the day.



EPL Solar Heating System Installed in Italy, Cagliari (Pitch 42 degree)

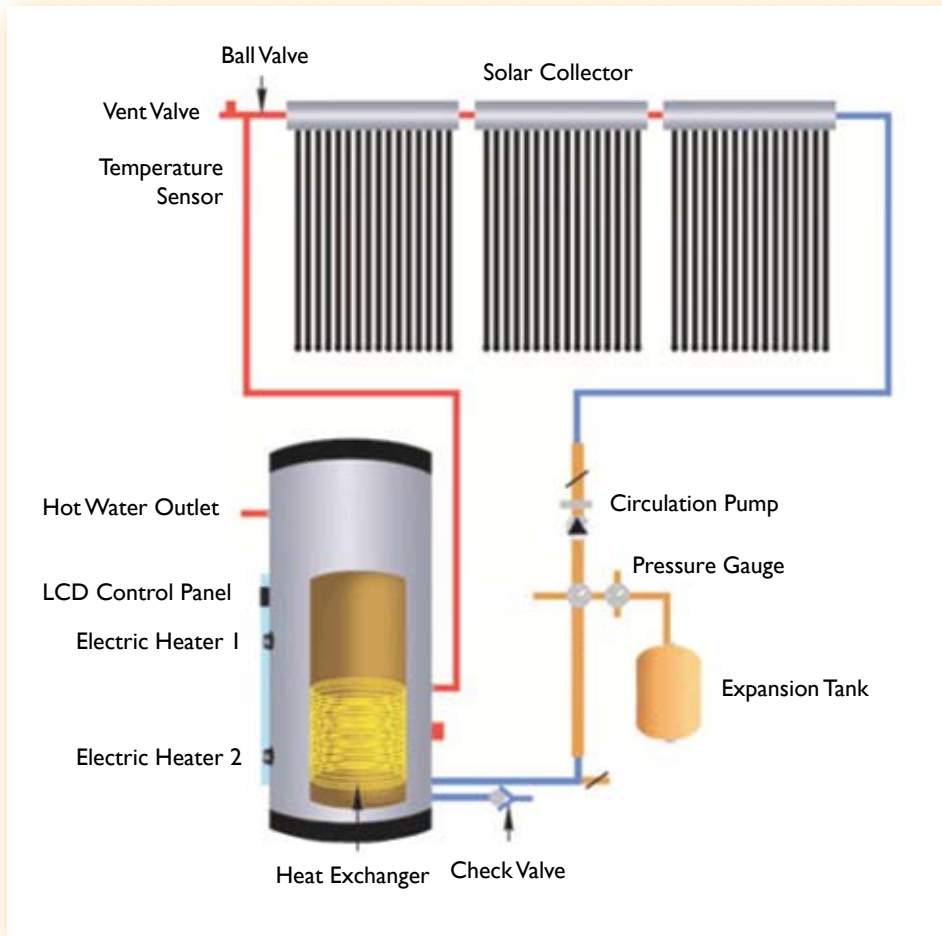


32 Tubes Solar Heating System on roof (Pitch 30 degree)

### KEY FEATURES

1. Internationally certified product DIN EN 12975-1/2:2006-06
2. Reliable, efficient, twin-glass evacuated tubes
3. Copper heat pipes for rapid heat transfer
4. Easy plug-in installation and maintenance free
5. Suitable for mains pressure water (up to 8 bar/116psi)
6. Corrosion resistant silver brazed copper header
7. All stainless steel frame (439 grade SS)
8. Black or Silver aluminium casing
9. Stable solar conversion throughout the day (tubes passively track the sun)
10. The perfect solar collector for domestic solar water heater systems
11. Ideal for commercial solar water heating application

**Working Principle of Pressurized Solar Water Heater**



**Evacuated Tube Collector Specification:**

- Manifold Casing Material : 304 stainless steel or powder coated aluminium
- Frame Material : 304 stainless steel
- Header Pipe Material : C 12200 copper
- Insulation : Polyurethane 55mm
- Rubber Seals and Rings : UV stabilized high temperature silicone rubber
- Optimal Installation Angle : 30-70°vertical,0°horizontal
- Maximum Operating Pressure : 6 bar-85 psi
- Pressure Drop : 700 pa@3.3L/min for 20 tube manifold (SRCC)
- Optimal Flow Rate : 0.1L/min/tube-0.026G/min/tube



**Electronic Controller Specification:**

- Clear LCD display of time, relays, errors and temperatures
- Constant display of all three sensor temperatures
- Comprehensive system error reporting
- 3 Relays: to run pumps, valves and other consumers
- Daily time control of relays
- Degree Celsius °C and Fahrenheit °F temperature display options
- 110-240V, 50-60Hz compatible
- Widely adjustable temperature ranges for each function
- Ability to turn any function OFF
- Auto recovery with memory of time and settings after power cut
- Low 3VA power consumption
- High accuracy NTC thermostats (sensors)
- Functions and errors listed on front panel for easy reference.
- Left and right knock-out panels for conduit entry



PSP Controller MPI 12 with clear LCD display of time, relays, errors and temperatures

Due to continuous product improvement, product specifications are subject to change without notice \*\*\*

## EPL Pressurized Heating System



200L Stainless Steel Water Tank with CFC-free insulation



Details of the pump inner with gauges and valves

### WATER TANK SPECIFICATION

| Tank Capacity                   | 150L                                     | 200L | 250L | 300L |
|---------------------------------|--|------|------|------|
| Overall Tank Height (mm)        | 890                                      | 1100 | 1560 | 1750 |
| Weight (w/o heating coil)       | 23kg                                     | 29kg | 34kg | 42kg |
| Inner Tank Diameter             | 480mm                                    |      |      |      |
| Outer Casing Diameter           | 610mm                                    |      |      |      |
| Standard Ports                  | 3/4" - 2" female BPP thread              |      |      |      |
| Temperature Sensor Ports        | 8mm ID - total 80mm depth                |      |      |      |
| Insulation Material             | 56mm CFC-free Polyurethane Insulation    |      |      |      |
| Inner Tank Material             | 4mm SUS304 2B Food Grade Stainless Steel |      |      |      |
| Outer Tank Casing               | 0.6mm 304 2B Stainless Steel             |      |      |      |
| Special Aluminium / Zinc Anodes | 20mm x 400mm Zinc Anodes                 |      |      |      |
| Maximum Tank Pressure Rating    | 6 bars                                   |      |      |      |

EPL Solar Water Heater Systems use stainless steel tanks which have a natural oxide barrier to corrosion. Stainless steel tanks are tough, durable and lighter than their equivalent vitreous enamel mild steel tanks. The tanks are of a high quality and offer a 10 year warranty.

### POWER PUMP SPECIFICATION

| Power Pump                    | Data                   |          |
|-------------------------------|------------------------|----------|
| Working Media Temperature     | -25 ~ +110             |          |
| Power Supply                  | Single Phase 220V/50Hz |          |
| Max Output Power              | 93W                    |          |
| Max Output Water              | 3.3t/h                 |          |
| Lift                          | 6m                     |          |
| Min Input Pressure            | +50                    | 0.05 bar |
|                               | +95                    | 0.3 bar  |
|                               | +110                   | 1.0 bar  |
| Max Environmental Temperature | 40°C                   |          |
| Max. Working Pressure         | 6.0 bar                |          |
| Available Working Media       | Water or Glycol Liquid |          |
| Speed Control                 | Three Speed Control    |          |
| Dimension (L x B x Th)        | 480 x 200 x 154mm      |          |

### SPECIFICATIONS

| Model          | Number of E-Tubes | Dimension (mm) |             |                | Tank Capacity (litres) |
|----------------|-------------------|----------------|-------------|----------------|------------------------|
|                |                   | Tube Diameter  | Tube Length | Collector Area |                        |
| EPL-PS-15-1800 | 15                | 58             | 1800        | 2.8            | 150                    |
| EPL-PS-20-1801 | 20                | 58             | 1800        | 3.3            | 200                    |
| EPL-PS-25-1802 | 25                | 58             | 1800        | 4.0            | 250                    |
| EPL-PS-30-1803 | 30                | 58             | 1800        | 4.8            | 300                    |
| EPL-PS-40-1804 | 40                | 58             | 1800        | 5.8            | 400                    |
| EPL-PS-50-1805 | 50                | 58             | 1800        | 6.5            | 500                    |

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