

QUANTUM HEAT PUMP

By installing a Quantum Heat Pump system, you'll use far less energy, and dramatically reduce your household's footprint.

Quantum Heat Pump systems can provide you with energy efficient solar hot water, without the need for roof panels.

How do Quantum Heat Pumps Work?

The Quantum Solar Heat Pump works on a patented refrigeration principle similar to that found in an air conditioner, or refrigerator - but in reverse.

1. Sun Heats the Air

Heat Pumps rely on ambient air temperature rather than incidental sunshine. Utilising refrigeration principles, Quantum heat pumps can operate without direct sunshine, and can produce hot water in rain, hail or shine, without the need for a booster element.

2. Energised Air Inducted into Heat Pump

Once the air has been drawn into the heat pump, this passes over the evaporator preheating the refrigeration (that boils at a very low temperature). This preheated refrigerant is then compressed causing its' temperature to be raised and superheating the refrigerant.

3. Energy Transferred to Heat Cold Water

Using Quantum's patented tank wrap technology, this superheated refrigerant is guided through copper tubes (condenser) wrapped around the outside of the tank, turning the whole tank into a heat exchanger which heats the entire volume of water from the outside in.

4. Cold Air Expelled

Once the heat has been transferred to the water, the cold air is discharged from the heap pump via a fan, and the refrigerant liquid is forced back into the evaporator to start the process again until the water in the storage tank reaches the desired temperature.



IMAGE: Quantum, 2015

Conventional Solar vs Solar Heat Pump

Solar HWS typically consists of collector panels or tubes which water flows through, connected to a storage tank. Water is heated by the sun and is pumped or flows between the tank and panel as hot water.

However a Quantum Solar Heat Pump (unlike conventional solar HWS) makes use of the heat in the ambient air around the system, and a reverse refrigeration process to heat the water. This means QUANTUM DON'T NEED THE SUN to be shining, and what's more, it's so efficient that it can provide reliable hot water 24 hours a day, even in temperatures as low as -10°C. Only a Quantum can do that.

Quantum Solar Hot Water Systems Pay for Themselves!

Not many household appliances can provide you with a financial benefit, let alone pay for themselves - however a Quantum Heat Pump can do exactly that!

Once installed, a Quantum could save you thousands of dollars in energy bills compared to other forms of water heating, as well as reducing your greenhouse gas emissions, and reducing the environmental footprint of your home.

HOT WATER HEATING COST COMPARISON





Proven Performance Over Time

Installing a Quantum Solar Heat Pump is almost identical to installing a regular electric hot water system. There are no roof panels or additional components, meaning an easy, trouble free conversion from electric hot water to sustainable and reliable solar hot water for your home.

AMBIENT AIR	HOT WATER PRODUCTION RATE , LITRES PER HOUR (COP)			
35°C	110 (5.55)	110 (5.55)	113 (5.75)	113 (5.75)
30°C	98 (5.12)	98 (5.12)	102 (5.42)	102 (5.42)
25°C	86 (4.73)	86 (4.73)	89 (4.98)	89 (4.98)
20°C	72 (4.30)	72 (4.30)	75 (4.53)	75 (4.53)
15°C	58 (3.88)	58 (3.88)	61 (4.08)	61 (4.08)
10°C	48 (3.45)	48 (3.45)	51 (3.64)	51 (3.64)
5°C	38 (3.03)	38 (3.03)	42 (3.19)	42 (3.19)
0°C	31 (2.60)	31 (2.60)	33 (2.75)	33 (2.75)
-5°C	26 (2.18)	26 (2.18)	29 (2.30)	29 (2.30)
-10°C	24 (1.75)	24 (1.75)	26 (1.86)	26 (1.86)

* All text, images and information provided by Quantum Energy, 2015