



Electr  Heat  
ECO-V

# Inverter Heat Pumps for Swimming Pools

extend the season or swim year round

[www.waterco.com](http://www.waterco.com)

**WATERCO**  
water, the liquid of life

Extend the swimming season



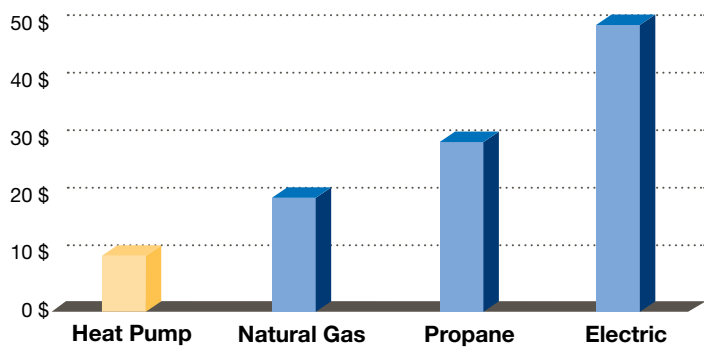
## COST EFFECTIVE HEATING

A swimming pool is a major financial investment. Getting the most out of your pool, means keeping the pool at a swimmable temperature for the maximum number of hours each day and maximum number of days each year. A heat pump can economically keep your pool warm.

Heat pumps only require energy to operate a compressor and a fan motor, using low amperage in the process.

For every 1kW of electricity consumed, Electroheat ECO-V inverter heat pumps can produce up to 7kW of heat.

Save up to 80% over propane gas, 50% over natural gas and 500% over electric heaters.



Compared to gas and electric heaters, Electroheat ECO-V inverter pool heat pumps use a fraction of the energy to generate the same amount of heat and unlike solar heating; there is no reliance on the sun as the latent heat in the air is used.

## ENERGY EFFICIENT HEATING WITH INVERTER TECHNOLOGY

Electroheat ECO-V inverter pool heat pumps utilise a variable speed compressor to regulate the pool water temperature automatically and independently.

- inverter technology uses a variable speed compressor motor similar to a cars engine.
- it slows down and speeds up as needed to hold a selected set temperature
- the desired set temperature will be reached more quickly and maintained more efficiently.
- inverter technology provides a more precise water temperature without the fluctuations and power wastage of fixed speed systems.
- inverter technology is significantly more energy efficient with energy savings of between 15 - 30% over fixed speed systems.
- the speed control of the compressor and fan motor also means quieter operation

## AUTOMATIC EVAPORATOR DE-ICING

Electroheat ECO-V inverter pool heat pumps feature automatic de-icing for situations where frost or ice may develop on the evaporator as part of normal operation. Common in cooler climates or winter months, when a build-up of ice is detected the heat pump shifts temporarily into cooling mode to reverse the flow of refrigerant through the evaporator coils. Hot refrigerant moves through the outside coils, melting ice and defrosting the system. When the defrost cycle is complete, the unit shifts back to heating mode.

## HOW ELECTROHEAT HEAT PUMPS WORK

Electroheat ECO-V heat pumps use refrigeration technology to extract heat from the surrounding air and transfers it to the swimming pool.

### HEAT EXTRACTION

The fan circulates air through the evaporator air coil that acts as a heat collector. The liquid refrigerant in the evaporator air coil absorbs the available heat from the ambient air.

### HEAT TRANSFER

The heat from the hot refrigerant flowing inside the heat exchanger is then transferred to the pool water.

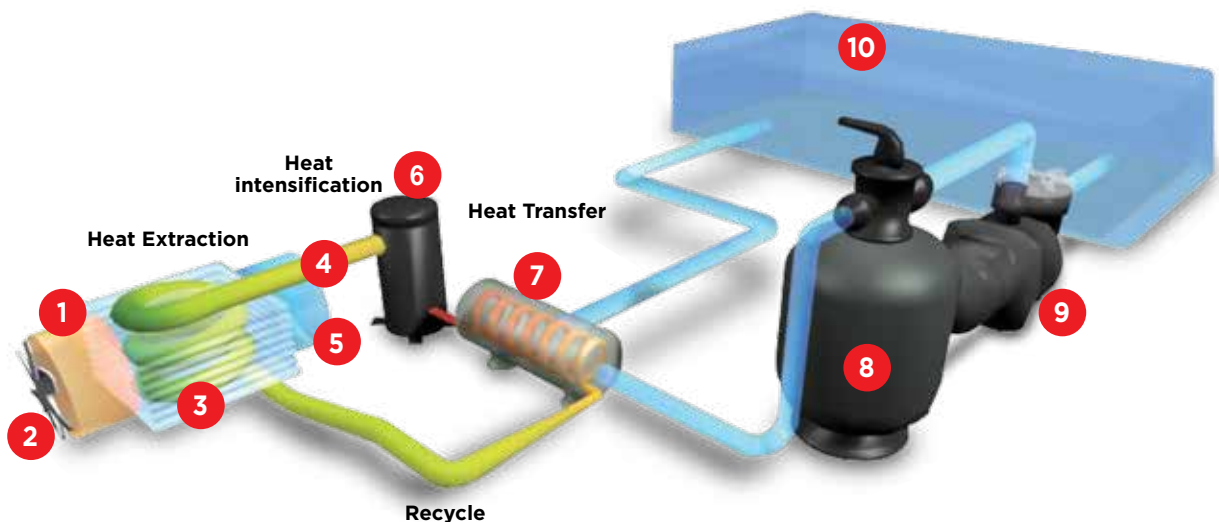
### HEAT INTENSIFICATION

The compressor then receives the warmed refrigerant and intensifies the heat. The intensely hot refrigerant is then pumped into the heat exchanger.

### RECYCLE

The refrigerant restarts the process and flows through the evaporator air coil to collect heat once again.

- |                |                   |               |
|----------------|-------------------|---------------|
| 1. Warm air in | 5. Cool air out   | 8. Filter     |
| 2. Fan         | 6. Compressor     | 9. Water Pump |
| 3. Evaporator  | 7. Heat exchanger | 10. Pool      |
| 4. Warm gas    |                   |               |



Use ambient air to heat your pool



# Electr Heat ECO-V

**Electroheat ECO-V Inverter technology heat pumps can heat your pool in colder climates even when the ambient air temperature is close to 0°C and are ideal for heating:**

- Swimming pools for year round enjoyment
- Swimming pools to extend the season
- Plunge pools
- Swim spas
- Spas
- Available in 12KW heat only and 25KW heat and cool models



12KW model



**SMART CONTROLS** for temperature management, scheduling and self diagnosis



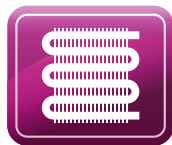
**INBUILT SAFETY DEVICES** for water flow, refrigerant level and compressor startup delay



**POWERFUL HEAT TRANSFER** through the dual coil heat exchanger maximising water contact



**TITANIUM DUAL COIL** heat exchanger is highly resistant to ozone, iodine, baquacil, salt and chlorinated water



**LARGE EVAPORATOR AREA** to extract more ambient heat



**VARIABLE SPEED SCROLL COMPRESSOR** for improved energy efficiency and high performance



**WEATHERPROOF CABINET** for outdoor installation



**R410A REFRIGERANT**, ozone friendly and maximises performance

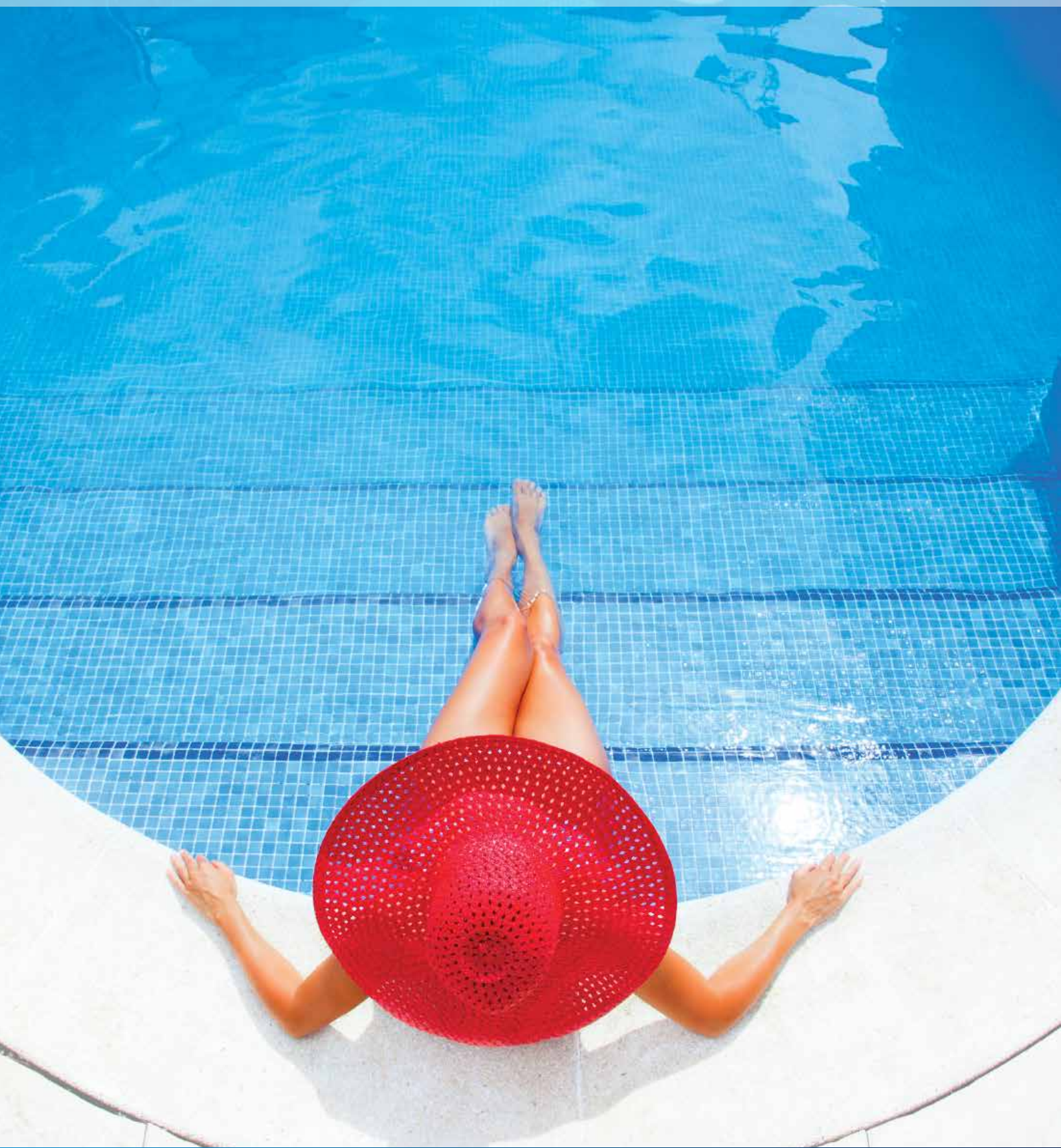


**5 YEAR WARRANTY** - Residential 2 + 3 years and Commercial 1 year



**AUTOMATIC HOT GAS DE-ICING**  
Heats your pool even when the ambient air temperature is close to 0°

Energy efficient way to heat your pool





# Frequently asked questions

## SHOULD I USE A POOL COVER?

The most effective way to prevent heat loss is to install a pool cover. An un-blanketed pool loses 2-3 times more heat than a blanketed pool. Pool covers virtually eliminate evaporation and reduce heat loss by insulating the surface of the pool, greatly reducing pool heating costs. As with all pool heaters, it would be advisable to use a pool cover at night, and when the pool is not in use.

## WHAT IS THE MINIMUM AMBIENT OPERATING TEMPERATURE?

The heat pump will actually operate down to an ambient air temperature of 0° if fitted with hot gas deicing but with minimal heat output. Therefore, we recommend heat pumps be operated in the warmest part of a 24 hour period to increase operating efficiency.

## WHAT IS THE BEST LOCATION FOR THE ELECTROHEAT?

The location of the Electroheat is very important in keeping installation costs to a minimum, while providing for maximum efficiency of operation allowing adequate service and maintenance access.

The unit should be located as close as practically possible to the existing pool pump and filter to minimise water piping. The use of 90 degree bends and short radius elbows in the water piping should be kept to a minimum. Longer distances from the pool increase piping heat loss.

## CAN THE ELECTROHEAT BE ENCLOSED?

The Electroheat is designed for outdoor installation and should not be installed in totally enclosed areas such as a shed, garage, etc., unless mechanical ventilation is provided to ensure adequate air exchange for proper operation. Re-circulation of cold discharged air back into the evaporator coil will greatly reduce unit's heating capacity and efficiency.

## WHAT IS THE ELECTROHEAT'S PERFORMANCE DEPENDENT ON?

Performance will fluctuate depending on water and weather temperatures. 5 important factors determine the performance of Electroheat:

1. Size of the pool
2. The desired temperature of the pool
3. Ambient air temperature - the warmer the air, the better the performance
4. The presence of a pool cover
5. The size of the heater

## WHAT IS THE ELECTROHEAT'S HEATER RUNNING TIME?

Most units should be sized to operate during warmer months the pool filtering cycle time of 8 - 12 hours daily, providing a steady flow of heated water. On warmer days the heater will run less because the heat loss will be less.

Electroheat heat pumps have a lower heating capacity on a BTU/hr basis compared to fossil fuel based pool heaters such as gas heaters. Therefore, Electroheat heat pumps require longer operation to accomplish the desired temperature.

Between 10°C to 18°C, it will increase your water temperature by 3°C to 5.5°C a day. Over 21°C you should obtain an increase up to 0.8°C a hour and over 26°C up to 1.1°C an hour depending on the size of the pool, the size of the heat pump, the water temperature, and the ambient air temperature at the moment of operation.

Even though the Electroheat may require longer operation, it will still heat the pool far more economically.

## HOW DOES ELECTROHEAT COMPARE WITH SOLAR HEATING AND GAS HEATING?

### Solar

- Fuelled by the power of the sun, solar heating systems are a low-cost method of heating up your pool water.
- As solar heating is reliant on the sun, they are best used to extend the swimming season.
- Virtually no operating costs, just the cost of electricity to pump pool water through the solar absorber on the roof.

### Gas heaters

- Gas heaters are the fastest method for heating your pool, providing a comfortable temperature for swimming on demand. Gas is best for heating pools or spas for short periods of time.
- Gas heaters can easily maintain any desired temperature regardless of the weather.
- Gas heaters are effective, but expensive to operate.

### Heat pumps

- Heat pumps may not heat up the swimming pool as fast as gas heaters, but are more energy efficient.
- Heat pumps require a small amount of electricity; its heat energy source is extracted from the ambient air.

## Performance Specifications

<b>Nominal Power Output (kW)*</b>	<b>12</b>	<b>25</b>
Nominal Heating Capacity BTU*	41,000	85,000
Power Output Heating: Air 26 C / Water 26 C / RH 80%	6.6 / 8.6 / 11.2	15.5 / 22.7 / 25.2
COP	7.9 / 5.8 / 4.4	7.2 / 6.2 / 5.8
Compressor Speed	low / med / high	low / med / high
Power Output Cooling: Air 35 C / Water 27 C / RH 47%	-	14.5
COP	-	2.8
Compressor Speed	-	High
Supply Voltage (VAC)	240	240
Supply Voltage Phase	Single Phase	Single Phase
Max. Power Consumption (kW/h)	2.4	4.7
Max. Unit Running Amperage (AMP)	13	27
Fan Full Load Amps (FLA)	0.65	0.8
Breaker or Fuse (AMP)	20	40
Min. / Max. Ambient Air Temperature (C)	> 0 / 40	-5 / 43
Min. / Max. water inlet temp (C)	10 / 40	1 / 40
Water Connections (mm)	40mm slip	
Water Connection Centres (mm)	290	360
Water Bypass Type	External Field Install	
Min. / Max. Water Flow Rate LPM	115 - 160	160 - 250
Weight (kg)	43	120
Dimensions W x L x H (mm)	636 x 714 x 973	950 x 900 x 1150
Refrigerant	R410A	
Fast Evaporator De-icing	Yes	

Related products:

Electroheat MKIV and Plus ranges - Pool heat pumps standard range.

Electroheat Pro range - Pool heat pumps for commercial applications.

## Sizing chart to heat your pool to 28 °C

			Model		
			Regional average daytime temperatures Between September to April		
Pool Size (m)	Surface Area (m <sup>2</sup> )	Litres	Over 24°C	17°C to 21°C	10°C to 15°C
3 X 7	21	Up to 29400	12kW	12kW	25kW
4 X 7	28	Up to 39200	12kW	12kW	25kW
4 X 8	32	Up to 44800	12kW	25kW	2 X 25kW
4 X 9	36	Up to 50400	12kW	25kW	2 X 25kW
5 X 9	45	Up to 63000	12kW	25kW	2 X 25kW
5 X 10	50	Up to 70000	12kW	25kW	2 X 25kW
5 X 11	55	Up to 75000	25kW	25kW	2 X 25kW

Note: Heat pump sizing is influenced by ambient temperature, humidity, night time temperature, pool location, wind factor and water features. The recommended sizing accounts for use of a pool cover. Therefore, any under sizing of the heater for your pool heating requirements is not the responsibility of Waterco.

## Clearance



## Dimensions



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