Power Consumption – Fixed Stainless Reservoir Water Coolers

The power consumption of a water cooler is dependent on two main conditions:

- Ambient temperature
- Usage of the cooler

There are a number of different methods of estimating the power consumption of a water cooler. These can be summarised as:

- Standby Energy Consumption
- Average Power Consumption

Standby Energy Consumption:
There is no European standard for measuring standby energy consumption. OASIS uses the American "Energy Star" protocol for this purpose. Standby Energy consumption is defined as the power to "dead cycle" the water cooler – i.e. power is connected to the cooler and no hot or cold water is drawn from the cooler. The cooler is located in a room that is controlled at a temperature of 24ºC and the power required to hold cold water temperatures at 10ºC and to hold the hot water temperature at 80ºC (for hot models only) is recorded. Results are as follows

Standby Power Consumption (Cook & Cold):	136 Watt.hours of electricity per day
Standby Power Consumption (Hot & Cold):	725 Watt.hours of electricity per day

Average Power Consumption:

- At standard office conditions (21ºC air temperature), the water cooler is capable of producing a maximum of
  - 5.0 litres of cold water per hour
  - 7.2 litres of hot water per hour

- To produce 5 litres of cold water, the unit will consume approximately 80 Watt.hours of electricity
  - In order to produce 1 litre of cold water, the unit will consume 16 Watt.hours of electricity (i.e. 80 Watt.hours / 5.0 litres)

- To produce 7.2 litres of hot water, the unit will consume approximately 450 Watt.hours of electricity
  - In order to produce 1 litre of hot water, the unit will consume 62.5 Watt.hours of electricity (i.e. 450 Watt.hours / 7.2 litres)

Cook & Cold Units

- Total power required to produce X litres of cold water per day:
  - **16X + 136 Watt.hours**
  - (i.e. standby power consumption + power to chill X litres of water)

- For example, to produce 8 litres of cold water per day, the water cooler will consume 8 x 16 + 136 = 264 Watt.hours of electricity

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Hot & Cold Units

- Total power required to produce X litres of cold water & Y litres of hot water per day:
  - **16X + 62.5Y + 725 Watt.hours**
  - (i.e. standby power consumption + power to chill X litres of water + power to heat Y litres of water)

- For example, to produce 8 litres of cold & 5 litres of hot water per day, the water cooler will consume (8 x 16) + (5 x 62.5) + 725 = 1,165 Watt.hours of electricity

General Comment:

- 1000 Watt.hours = 1 kW.hr

- To convert to an average running cost for a cooler, simply multiply the figure in "kW.hours" by the unit cost of electricity.