

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 24°C and the power required to hold cold water temperatures at 10°C and to hold the hot water temperature at 80°C (for hot models only) is recorded. Results are as follows

Standby Power Consumption (Cook & Cold): 90 Watt.hours of electricity per day  
Standby Power Consumption (Hot & Cold): 720 Watt.hours of electricity per day

### Average Power Consumption:

- At standard office conditions (21°C air temperature), the water cooler is capable of producing a maximum of
  - 20.0 litres of cold water per hour
  - 7.9 litres of hot water per hour
- To produce 20.0 litres of cold water, the unit will consume approximately 100 Watt.hours of electricity
  - In order to produce 1 litre of cold water, the unit will consume 5.0 Watt.hours of electricity (i.e. 100 Watt.hours / 20.0 litres)
- To produce 7.9 litres of hot water, the unit will consume approximately 500 Watt.hours of electricity
  - In order to produce 1 litre of hot water, the unit will consume 63.3 Watt.hours of electricity (i.e. 500 Watt.hours / 7.9 litres)

### Cook & Cold Units (P1PVKY / P1PVCDKY)

- Total power required to produce X litres of cold water per day:
  - **5X + 90 Watt.hours**
  - (i.e. standby power consumption + power to chill X litres of water)



## Power Consumption – Kalix Coolers.

## TECHNICAL BULLETIN

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- For example, to produce 8 litres of cold water per day, the water cooler will consume  $8 \times 5 + 90 = 130$  Watt.hours of electricity

**Hot & Cold Units (P1PVHSY / P1PVCDHSY)**

- Total power required to produce X litres of cold water & Y litres of hot water per day:
  - **$5X + 63.3Y + 720$  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  $(8 \times 5) + (5 \times 63.3) + 720 = 1,077$  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.