

## WL Series Liquid Cooling System

The WL500 is a re-circulating liquid to air heat exchanger that offers dependable, compact performance by removing large amounts of heat from a liquid circuit. The coolant is re-circulated using a high pressure pump to assure maximum flow rate. Heat from coolant is absorbed by a radiant heat exchanger and dissipated into the ambient environment using brand name fan. Manual adjustments can be made to control flow switch. Customized features are available, however, MOQ applies.

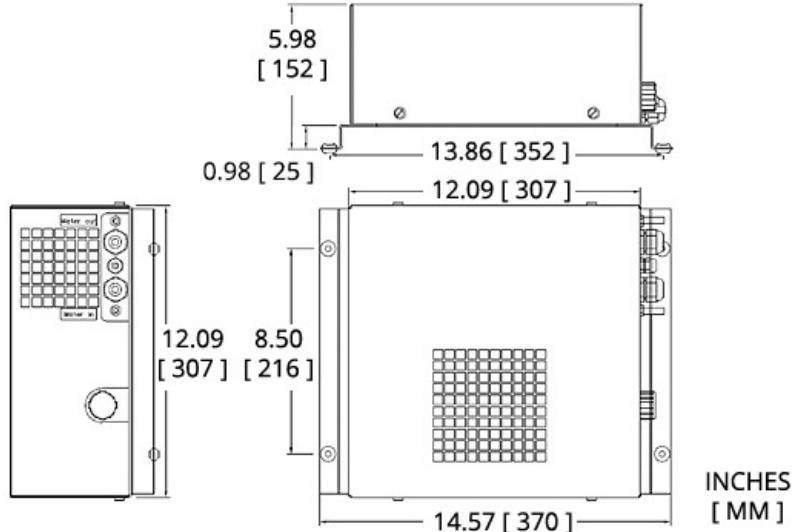


### Features

- Cooling to ambient
- High heat pumping capacity
- Compact form factor
- Long life operation

### Applications

- Cooling Particle Accelerators: Linear Accelerators and Cyclotrons
- Semiconductor Fabrication Equipment Cooling
- X-ray Cooling in Industrial Scanners



## Fluid Operating Points

### 100% Water

Cooling Power (Qc) = 500 Watts  
Thermal Conductance = 36.1 W/°C  
ΔT (Ambient-Coolant)\* = 13.9 °C  
ΔT (Outlet-Inlet)\*\* @ 2.3 L/min = 3.1 °C

### 60/40 Water-Glycol

Cooling Power (Qc) = 500 Watts  
Thermal Conductance = 30.7 W/°C  
ΔT (Ambient-Coolant)\* = 16.3 °C  
ΔT (Outlet-Inlet)\*\* @ 2.3 L/min = 3.4 °C

### 70/30 Water-Glycol

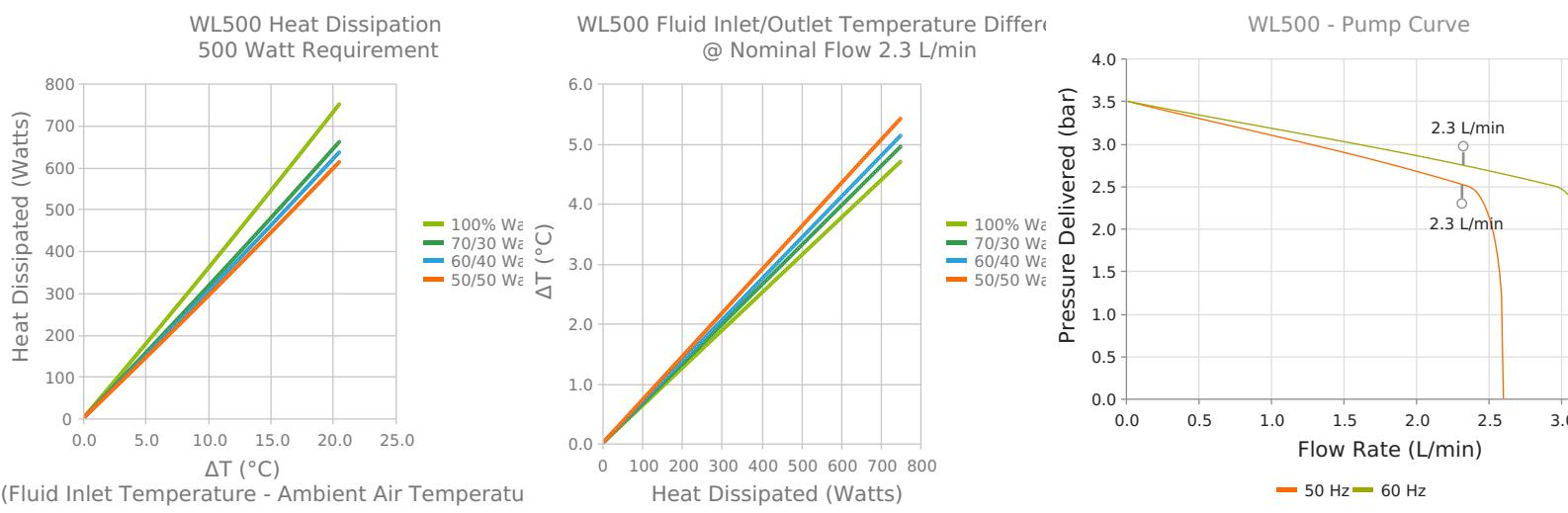
Cooling Power (Qc) = 500 Watts  
Thermal Conductance = 31.8 W/°C  
ΔT (Ambient-Coolant)\* = 15.7 °C  
ΔT (Outlet-Inlet)\*\* @ 2.3 L/min = 3.3 °C

### 50/50 Water-Glycol

Cooling Power (Qc) = 500 Watts  
Thermal Conductance = 29.6 W/°C  
ΔT (Ambient-Coolant)\* = 16.9 °C  
ΔT (Outlet-Inlet)\*\* @ 2.3 L/min = 3.6 °C

\* ΔT (Ambient-Coolant) is the temperature difference between the ambient temperature and the coolant temperature that is at the outlet of the heat exchanger during steady-state operation. This temperature difference would initially be 0 and increase to the steady state value under load. This would also be the temperature at the inlet to the application.

\*\* ΔT (Outlet-Inlet) is the temperature difference between the inlet temperature and the outlet temperature of the application at the nominal coolant flow. More flow (application pressure drop less than nominal) would necessarily mean a smaller ΔT.



# Technical Specifications

## Performance

<b>Nominal Cooling Capacity</b>	500 W
<b>Nominal Operating Flowrate (60 Hz)</b>	2.3 L/min @ 2.7 Bar
<b>Nominal Operating Flowrate (50 Hz)</b>	2.3 L/min @ 2.5 Bar

## Operation

<b>Coolant</b>	Water or Water/Glycol
<b>Operating Temperature</b>	5°C to 40°C
<b>Storage temperature range (w/o coolant)</b>	-25°C to 70°C
<b>Humidity range</b>	20% to 80%
<b>Storage Humidity range</b>	5% to 95%, non-condensing
<b>Input Voltage</b>	230 VAC
<b>Frequency</b>	50/60 Hz
<b>Current</b>	< 1.2 Amps
<b>Noise</b>	< 60 dB(A)
<b>Flow Switch Open</b>	≤ 0.9 L/min
<b>Input Power Connection</b>	Terminal Block
<b>Maximum Forward Pressure</b>	3 Bar

## Physical

<b>Height</b>	151 mm
<b>Length</b>	370 mm
<b>Width</b>	307 mm
<b>Weight</b>	11 kg
<b>Coolant Capacity</b>	1.7 Liters
<b>Couplings</b>	Press fit (8 mm ID hose)

Features	Applications
<b>Compact design</b>	Medical imaging systems
<b>Reliable operation</b>	Photonics laser systems
<b>Adjustable flow switch</b>	X-Ray scanning systems
<b>Bypass valve protection</b>	Semiconductor fabrication

## Notes

Check coolant level regularly. For optimal cooling performance, coolant level should always be above MIN fill level.  
Hose selection should be of material and thickness to support pressure resistance and coolant type.  
Wall mountable. Four mounting holes are available to accommodate S6 fixing and 5 X 40 mm machine screws.  
Multiple cord plug options available to accommodate regional socket outlet requirements. Consult with Laird Technologies on cord plug selection.

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