

WL Series Liquid Cooling System

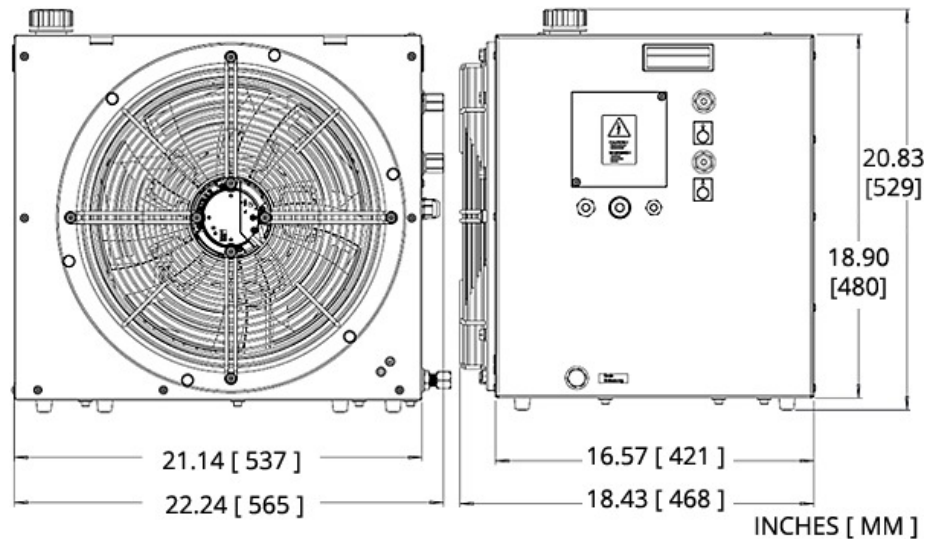
The LA5000 is a recirculating liquid to air heat exchanger that offers dependable, compact performance by removing large amounts of heat from a liquid circuit. The coolant is re-circulated using a high-pressure pump to assure maximum flow rate. Heat from coolant is absorbed by a radiant heat exchanger 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) = 5000 Watts
Thermal Conductance = 474.5 W/°C
 ΔT (Ambient-Coolant)* = 10.5 °C
 ΔT (Outlet-Inlet)** @ 8.3 L/min = 9.6 °C

70/30 Water-Glycol

Cooling Power (Qc) = 5000 Watts
Thermal Conductance = 441.5 W/°C
 ΔT (Ambient-Coolant)* = 11.3 °C
 ΔT (Outlet-Inlet)** @ 8.3 L/min = 10.1 °C

60/40 Water-Glycol

Cooling Power (Qc) = 5000 Watts
Thermal Conductance = 400.4 W/°C
 ΔT (Ambient-Coolant)* = 12.5 °C
 ΔT (Outlet-Inlet)** @ 8.3 L/min = 10.5 °C

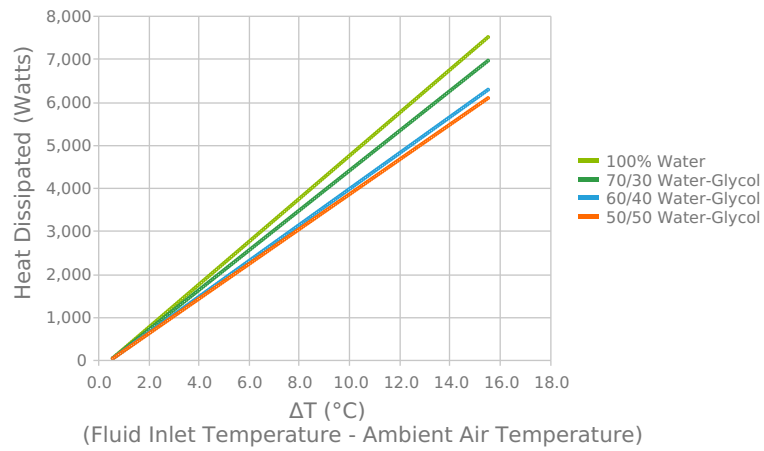
50/50 Water-Glycol

Cooling Power (Qc) = 5000 Watts
Thermal Conductance = 388.4 W/°C
 ΔT (Ambient-Coolant)* = 12.9 °C
 ΔT (Outlet-Inlet)** @ 8.3 L/min = 11.1 °C

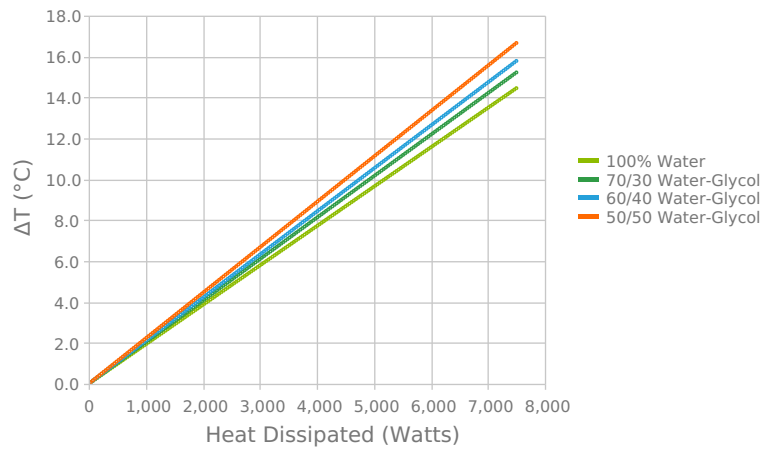
* ΔT (Ambient-Coolant) is the temperature difference between the ambient temperature and the coolant temperature that is at the outlet of the heat exchanger during steady-state operation. This temperature difference would initially be 0 and increase to the steady state value under load. This would also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

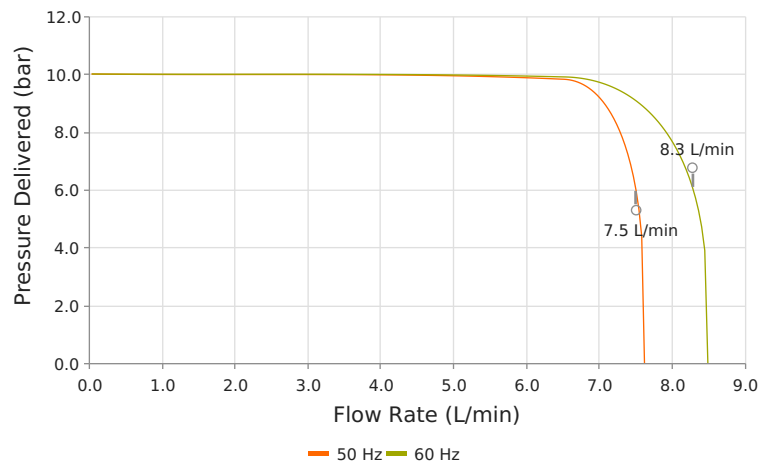
LA5000 Heat Dissipation
 5000 Watt Requirement



LA5000 Fluid Inlet/Outlet Temperature Difference (ΔT)
 @ Nominal Flow 7.47 L/min



LA5000 - Pump Curve



TECHNICAL SPECIFICATIONS

Performance

Nominal Cooling Capacity	5,000 W
Nominal Operating Flowrate (60 Hz)	8.3 L/min @ 6.0 Bar
Nominal Operating Flowrate (50 Hz)	7.5 L/min @ 6.0 Bar

Operation

Coolant	Water or Water/Glycol
Operating Temperature	5°C to 40°C
Storage temperature range (w/o coolant)	-25°C to 70°C
Humidity range	20% to 80%
Storage Humidity range	5% to 95%, non-condensing
Input Voltage	200 - 240 VAC
Frequency	50/60 Hz
Current	< 3.3 Amps
Flow Switch Open	≤ 4 L/min
Maximum Forward Pressure	10 Bar

Physical

Height	529 mm
Length	565 mm
Width	468 mm
Weight	40 kg
Coolant Capacity	6.2 Liters
Couplings	G 3/8 in

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

NOTES

1. Check coolant level regularly. For optimal cooling performance, coolant level should always be above radiator fins.
2. Hose selection should be of material and thickness to support pressure resistance and coolant type.
3. Manual adjustments can be made to control pressure and flow rate.
4. Check pump filter and dust on heat exchanger periodically for cleaning.

Any information furnished by Laird and its agents, whether in specifications, data sheets, product catalogues or otherwise, is believed to be (but is not warranted as being) accurate and reliable, is provided for information only and does not form part of any contract with Laird. All specifications are subject to change without notice. Laird assumes no responsibility and disclaims all liability for losses or damages resulting from use of or reliance on this information. All Laird products are sold subject to the Laird Terms and Conditions of sale (including Laird's limited warranty) in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2019-2022 Laird Thermal Systems, Inc. All rights reserved. Laird™, the Laird Ring Logo, and Laird Thermal Systems™ are trademarks or registered trademarks of Laird Limited or its subsidiaries.

Revision: 00 Date: 08-16-2022

Print Date: 09-14-2022