

Liquid Series Thermoelectric Cooler Assembly

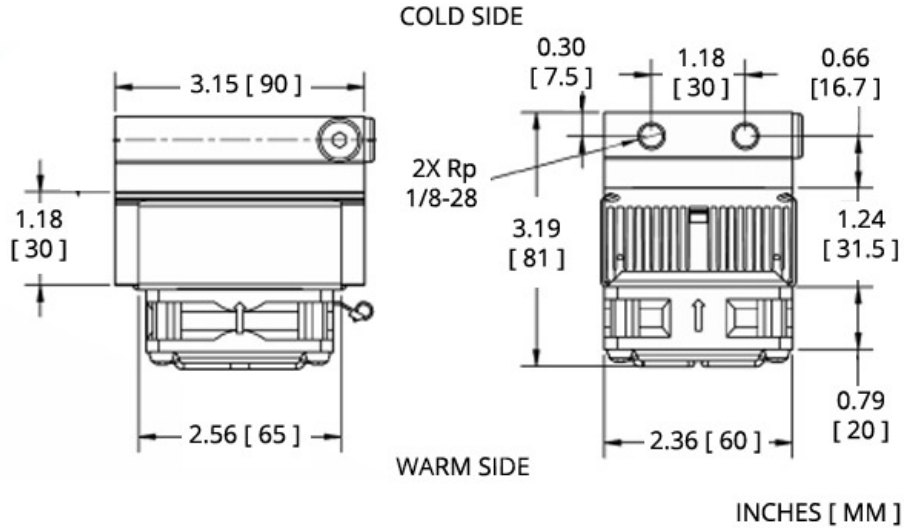
The LA-024-12-02 thermoelectric cooler assembly offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through a liquid heat exchanger and dissipated thru a high density heat sink equipped with an air ducted shroud and brand name fan. The thermoelectric modules are custom designed to achieve a high coefficient of performance (COP) to minimize power consumption. It has a maximum Q_c of 24 Watts when $\Delta T = 0$ and a maximum ΔT of 42 °C at $Q_c = 0$. The liquid heat exchanger is designed to accommodate distilled water with glycol. Corrosion resistant turbulators are enclosed inside channels to increase heat transfer. Mating port adaptors are sold separately.

Features

- Compact design
- Precise temperature control
- Reliable solid-state operation
- DC operation
- RoHS-compliant

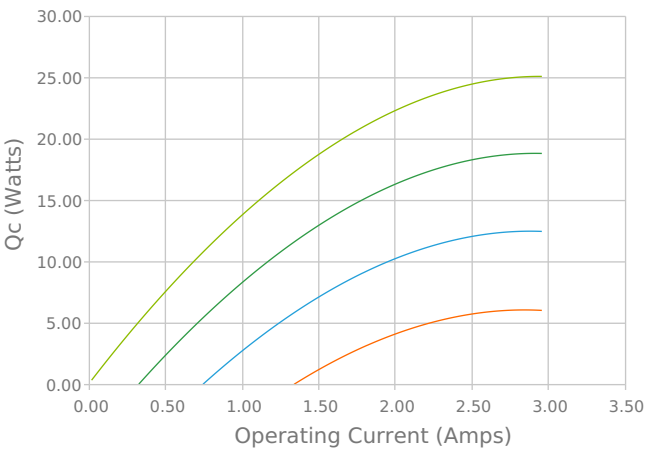
Applications

- Medical Diagnostics
- Industrial Lasers
- Medical Lasers
- Analytical Instrumentation

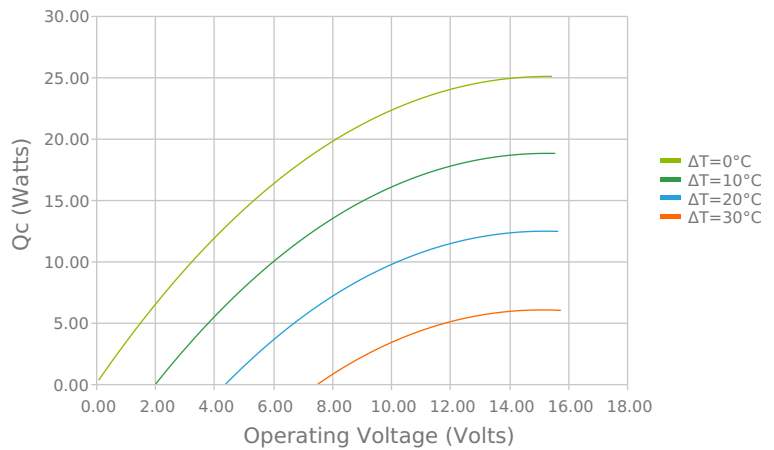


ELECTRICAL AND THERMAL PERFORMANCE

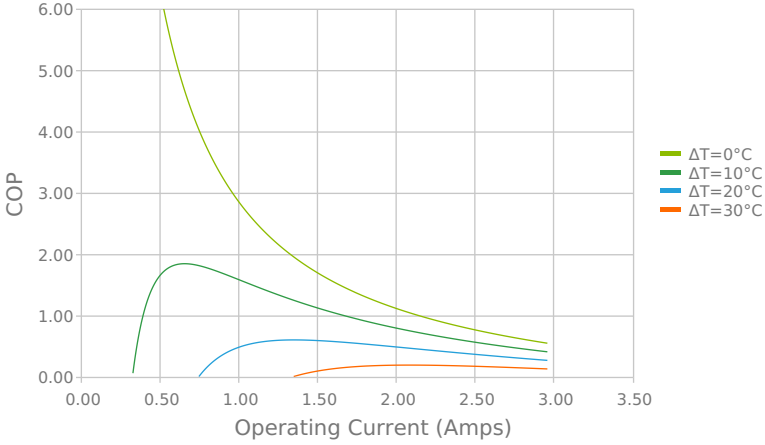
Heat Pumped at Cold Side (Q_c)
 $T_{ambient} = 35^\circ C$ | $T_{control} = 20^\circ C$



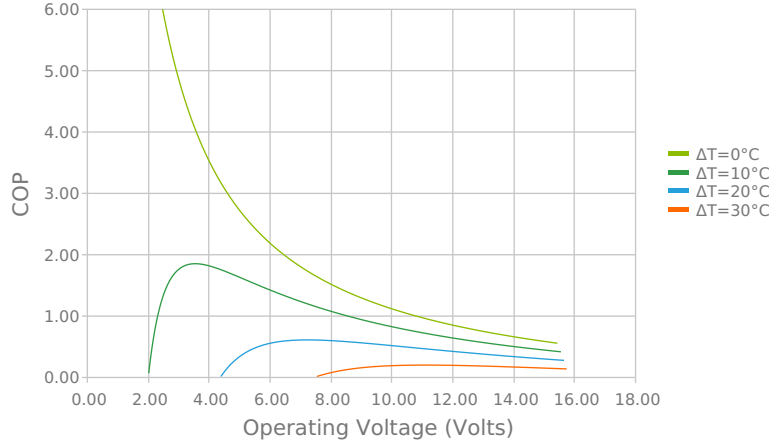
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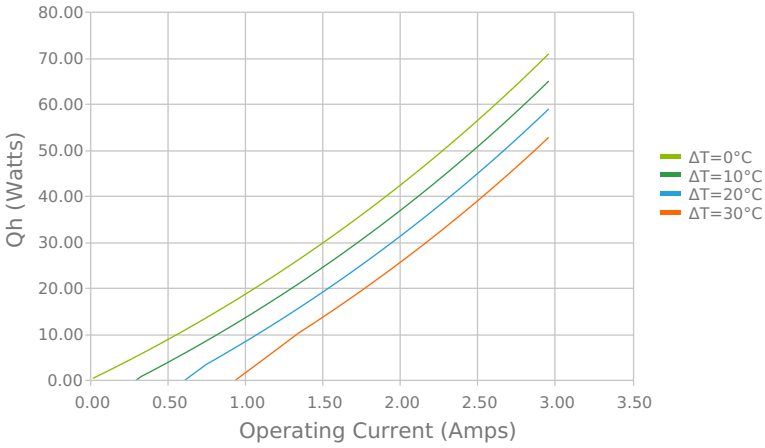
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C | Tcontrol = 20°C



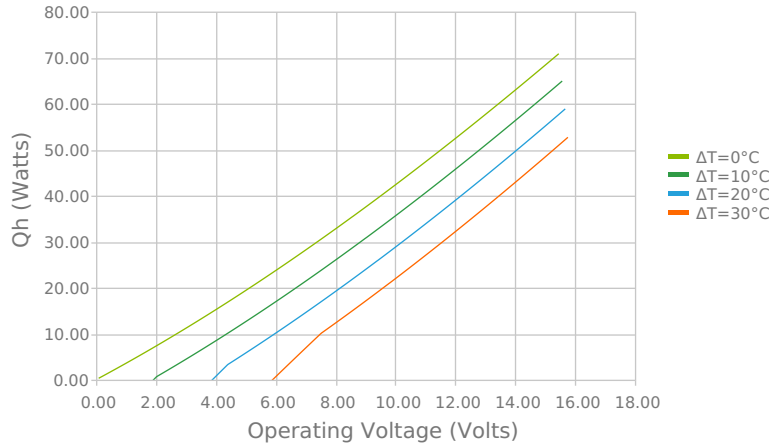
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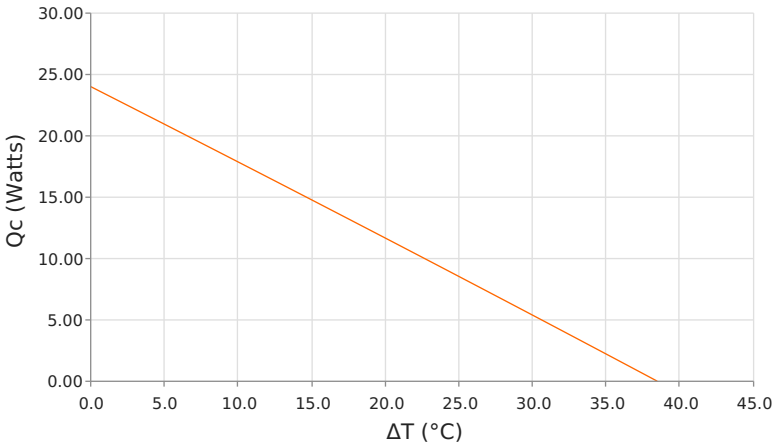
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



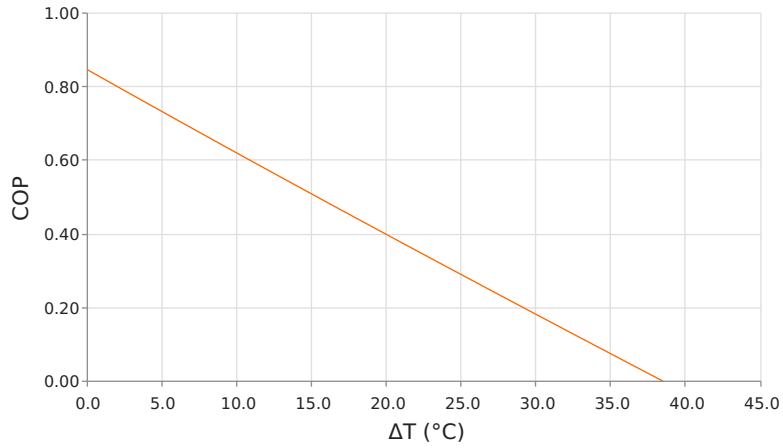
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
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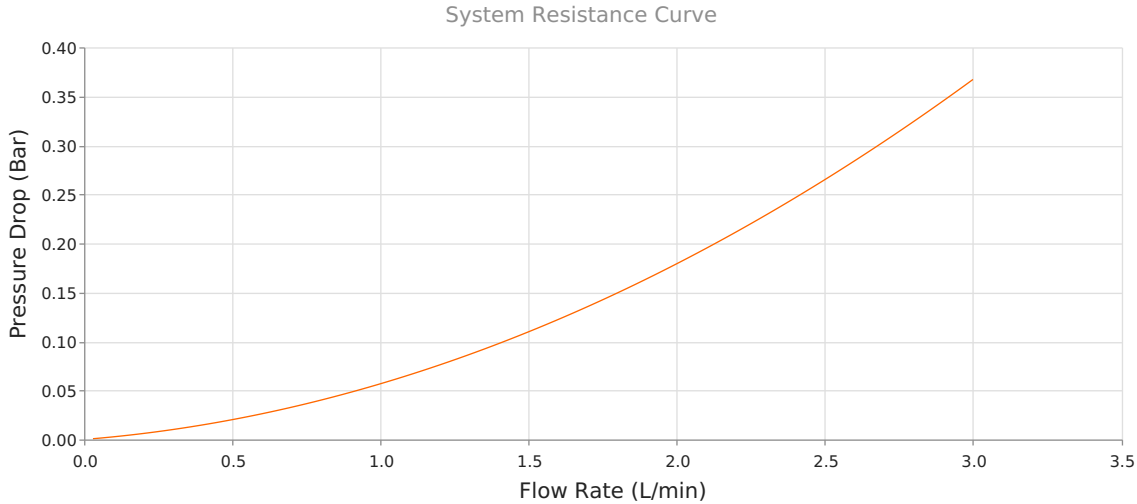


Heat Pumped at Cold Side (Qc)
 Voperating = 12.02 Volts | Ioperating = 2.37 Amps



Coefficient of Performance (COP = Qc/Pin)
 Voperating = 12.02 Volts | Ioperating = 2.37 Amps





SPECIFICATIONS

Operating Temperature Range

Supply Voltage

Current Draw

Power Supply

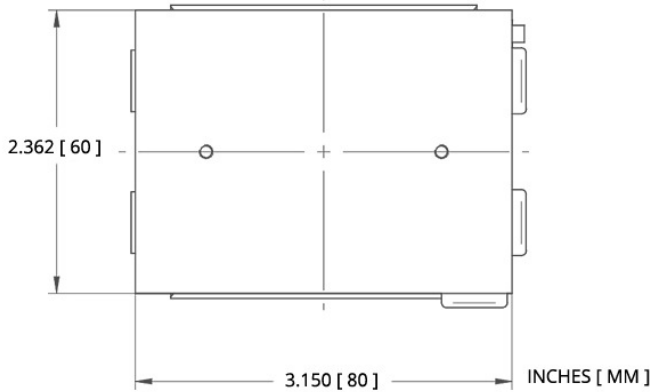
Performance Tolerance

Fan MTBF

Weight

-10°C to 48°C
12.0 VDC nominal / 15.0 VDC maximum
2.2 A running / 2.8 A startup
29.0 Watts
10%
50,000 hours
0.50 kg

MOUNTING HOLE LOCATION



ELECTRICAL CONNECTIONS

TEM+ : Pink
 TEM - : Green
 FAN+ : Purple
 FAN - : Blue

NOTES

¹For indoor use only

²Turbulators are mounted inside liquid channels to create turbulent flow

³Cold block requires insulation to minimize moisture buildup under dew point conditions.

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