

Liquid Series Thermoelectric Cooler Assembly

The DL-210-24-00 thermoelectric cooler assembly offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through a cold block and dissipated thru a second liquid heat exchanger. 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 265 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.

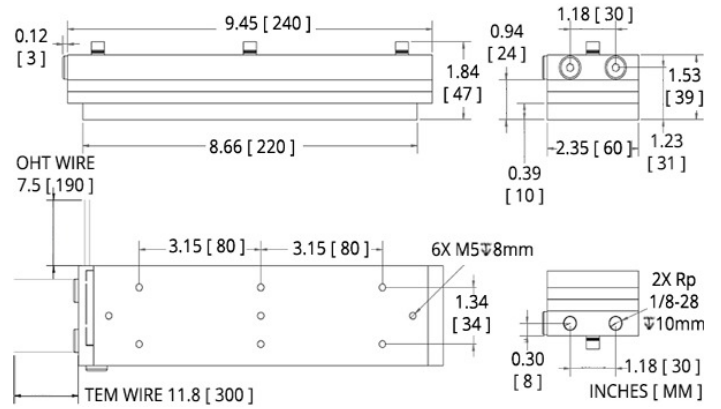


Features

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

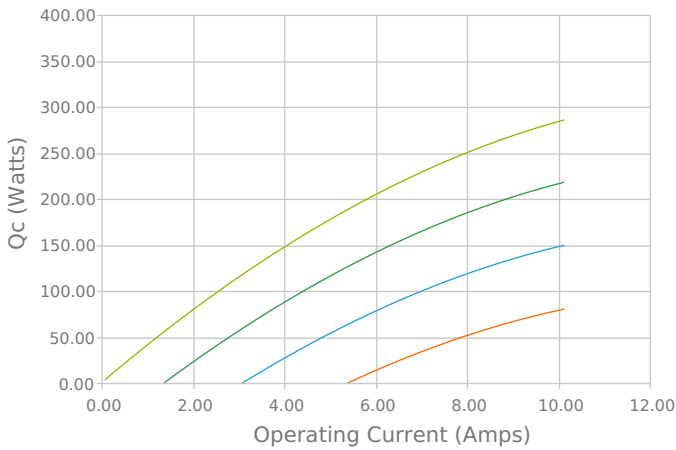
Applications

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

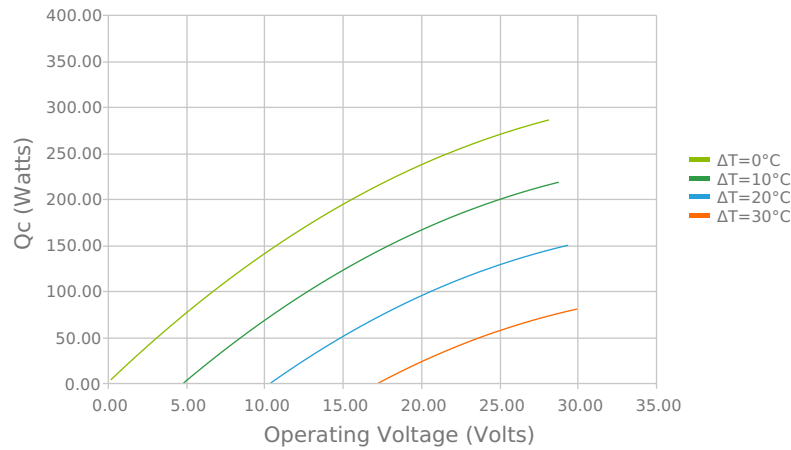


Electrical and Thermal Performance

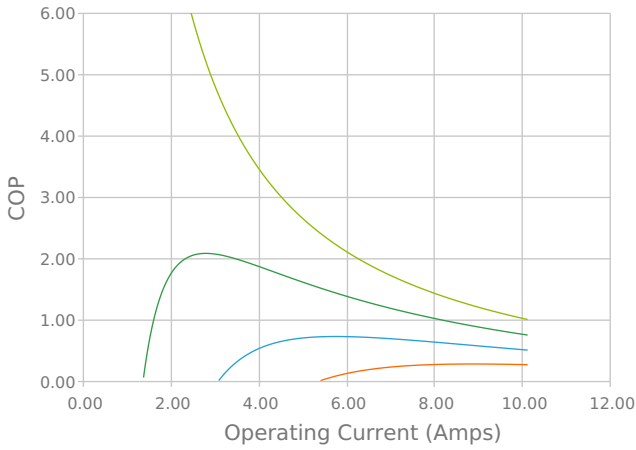
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C



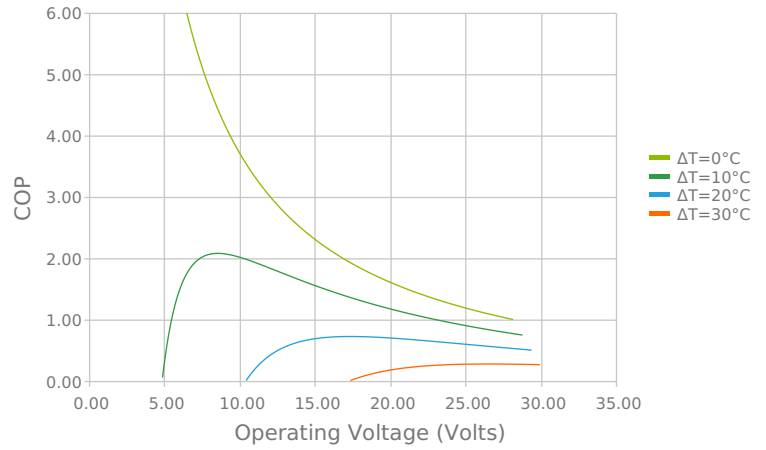
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C



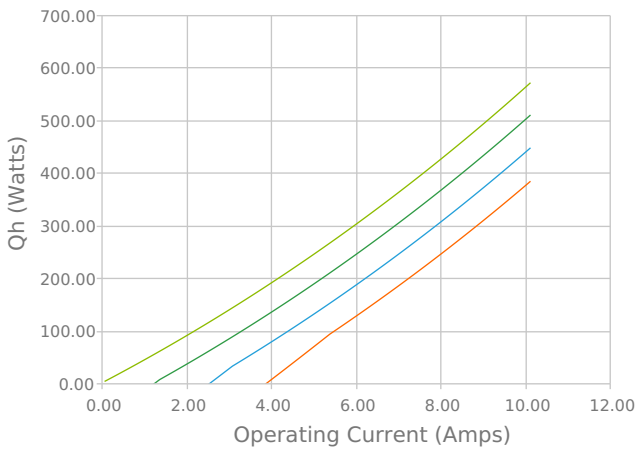
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{ambient} = 35^{\circ}C$



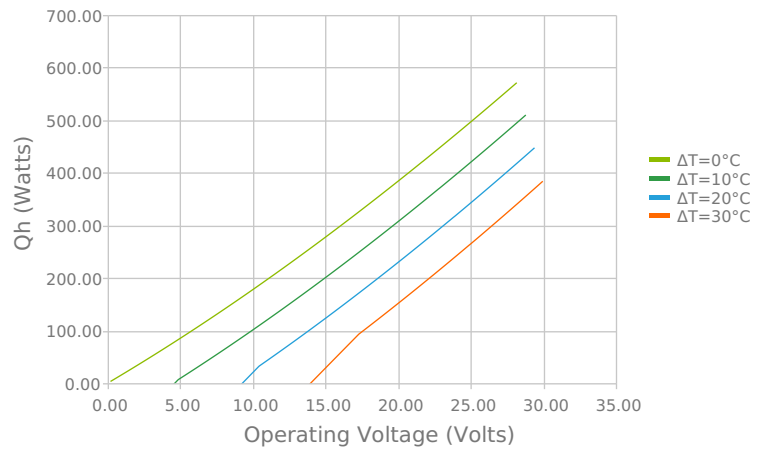
Coefficient of Performance (COP = Q_c/P_{in})
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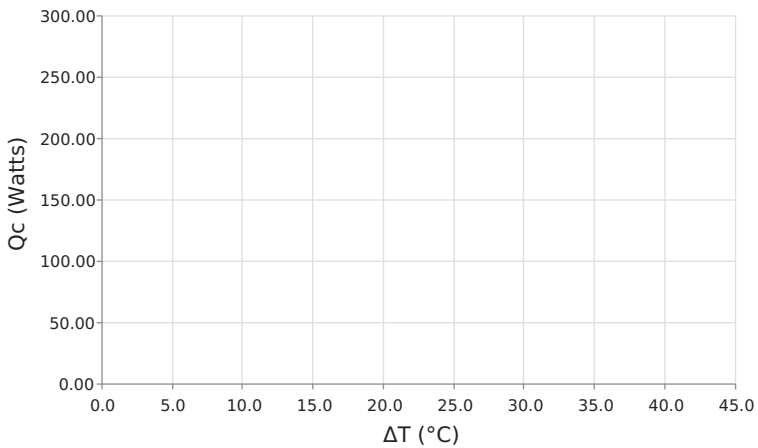
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{ambient} = 35^{\circ}C$



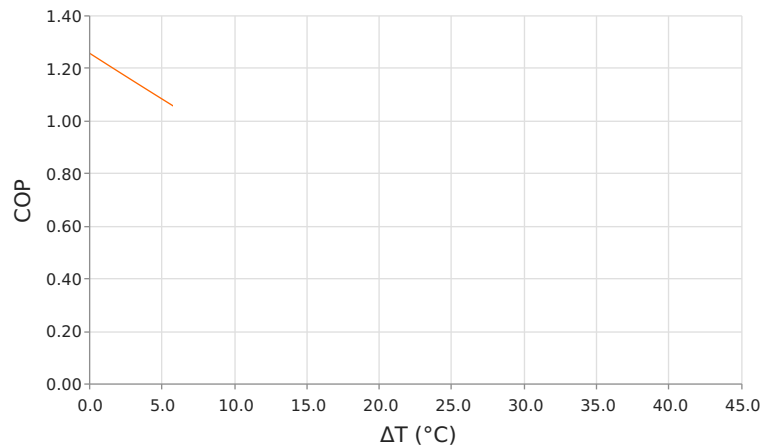
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{ambient} = 35^{\circ}C$

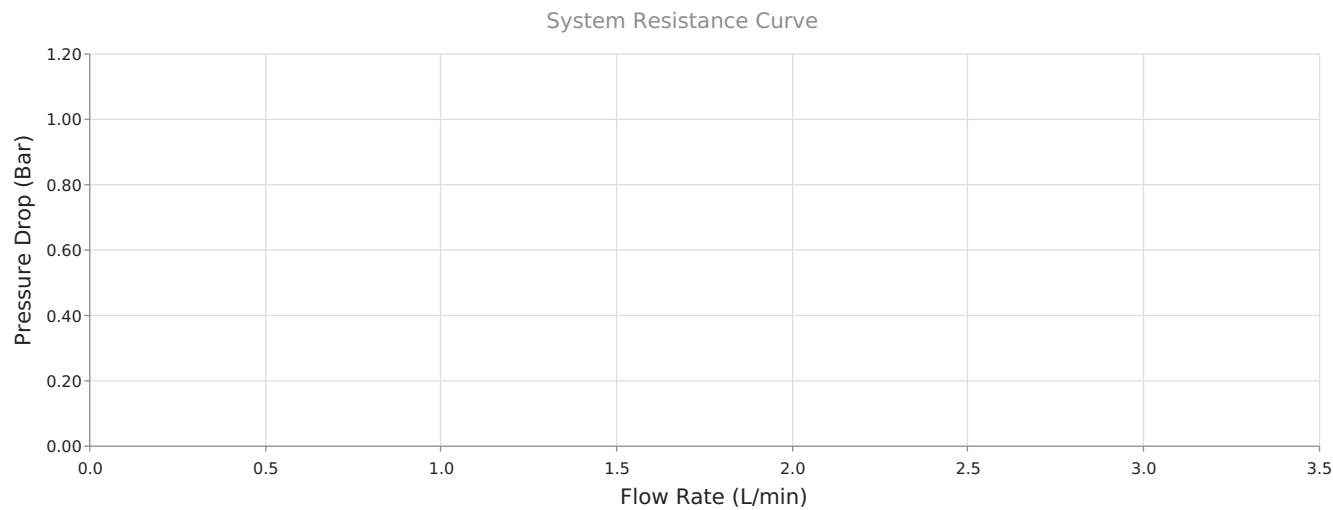


Heat Pumped at Cold Side (Q_c)
 $V_{operating} = 24 \text{ Volts}$ | $I_{operating} = 8.73 \text{ Amps}$



Coefficient of Performance (COP = Q_c/P_{in})
 $V_{operating} = 24 \text{ Volts}$ | $I_{operating} = 8.73 \text{ Amps}$

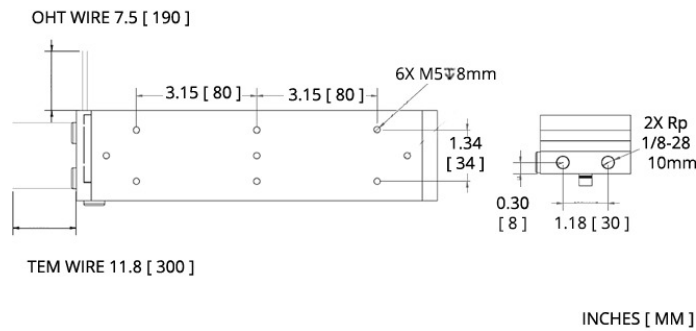




Specifications

Heat Transfer Mechanism, Cold Side	Direct - Conduction
Heat Transfer Mechanism, Hot Side	Liquid - Forced Convection
Operating Temperature Range	-40°C to 62°C
Supply Voltage	24.0 VDC nominal / 28.0 VDC maximum
Current Draw	7.8 A running / 8.5 A startup
Power Supply	221.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	750 VDC
Over-Temp Thermostat (Hot and Cold Side Heat Sink)	75°C ±5°C (hot side heat sink)
Weight	1.30 kg
Panel Mounting	Flush Mount

Mounting Hole Location



Electrical Connections

TEM+ : **Red**
TEM - : Black

Wire Size: 18 AWG

The overheat protection (OHT) bimetal thermostat has a maximum current of 8 Amps. For systems 8 Amps or less, the thermostat can be connected directly in series with thermoelectric modules (TEMs). Otherwise connect the TEMs to the power source through a relay of suitable rating which state is controlled with the bimetal thermostat.

Notes

¹Cold block requires insulation to minimize moisture buildup under dew point conditions.

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