

## Liquid Series Thermoelectric Cooler Assembly

The LA-024-24-02 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  $\Delta T$  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.

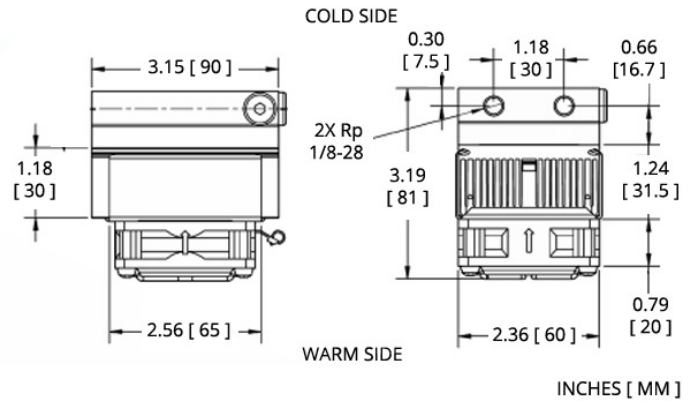


## Features

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

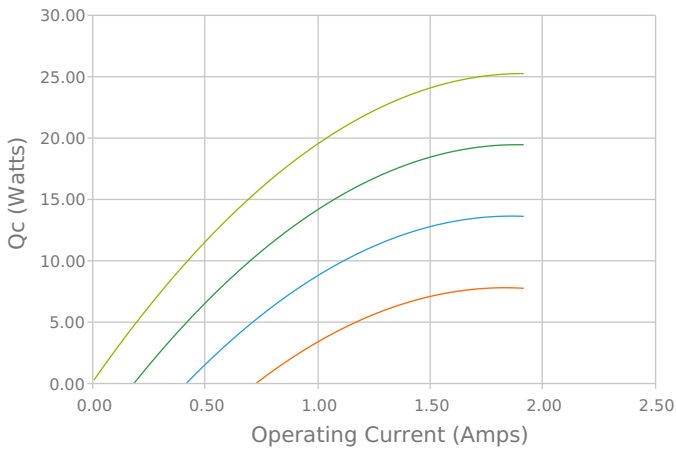
## Applications

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

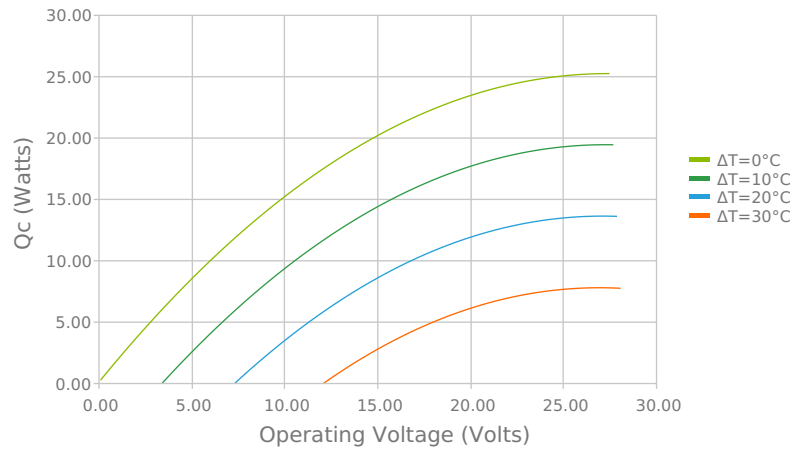


## Electrical and Thermal Performance

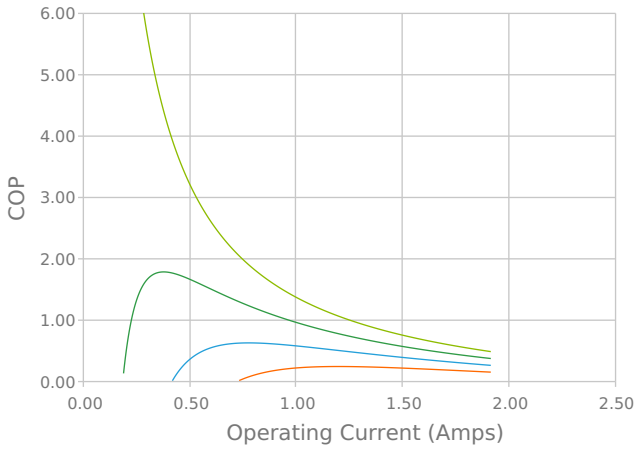
Heat Pumped at Cold Side ( $Q_c$ )  
Tambient = 35°C



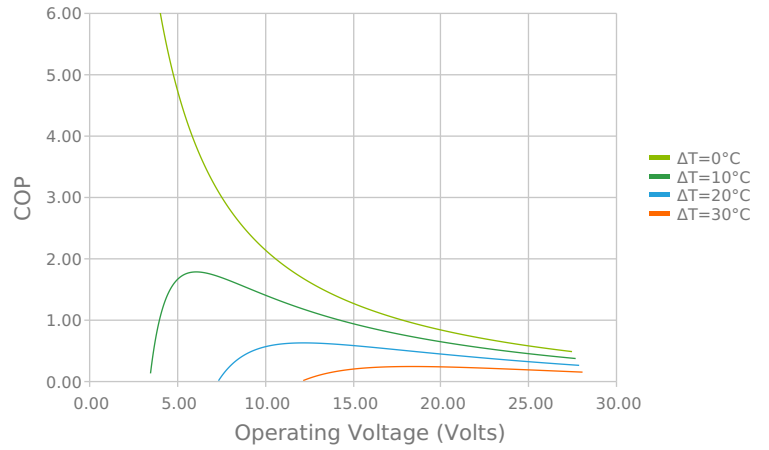
Heat Pumped at Cold Side ( $Q_c$ )  
Tambient = 35°C



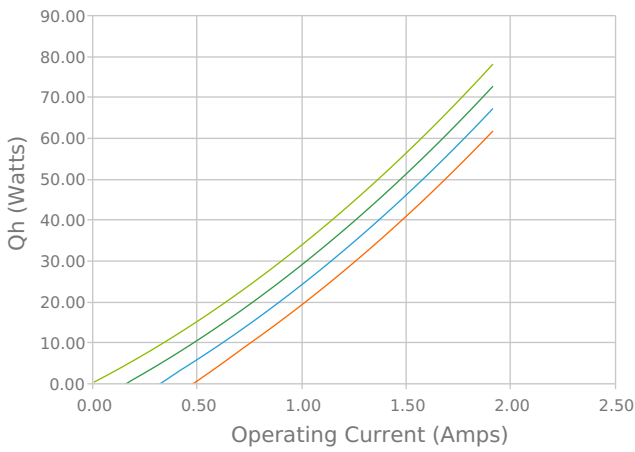
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



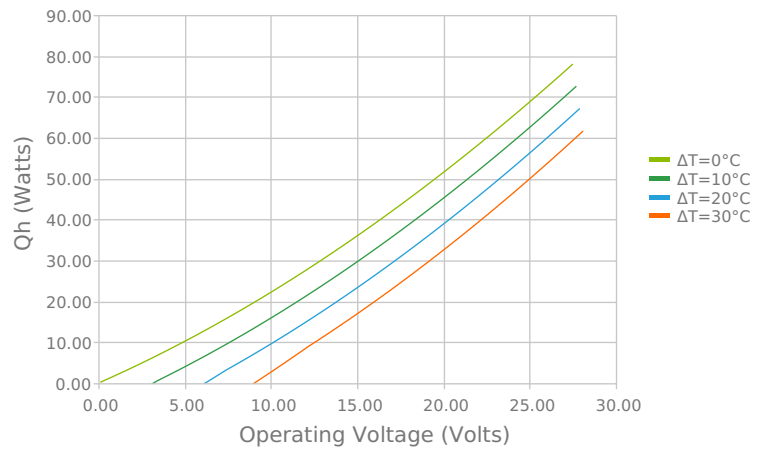
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



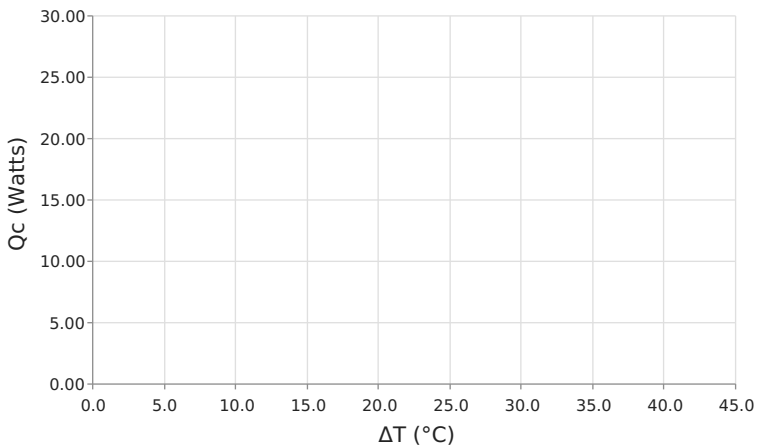
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



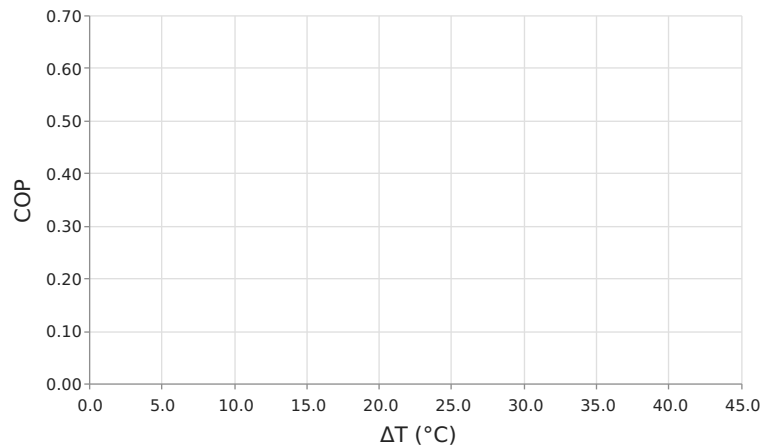
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$

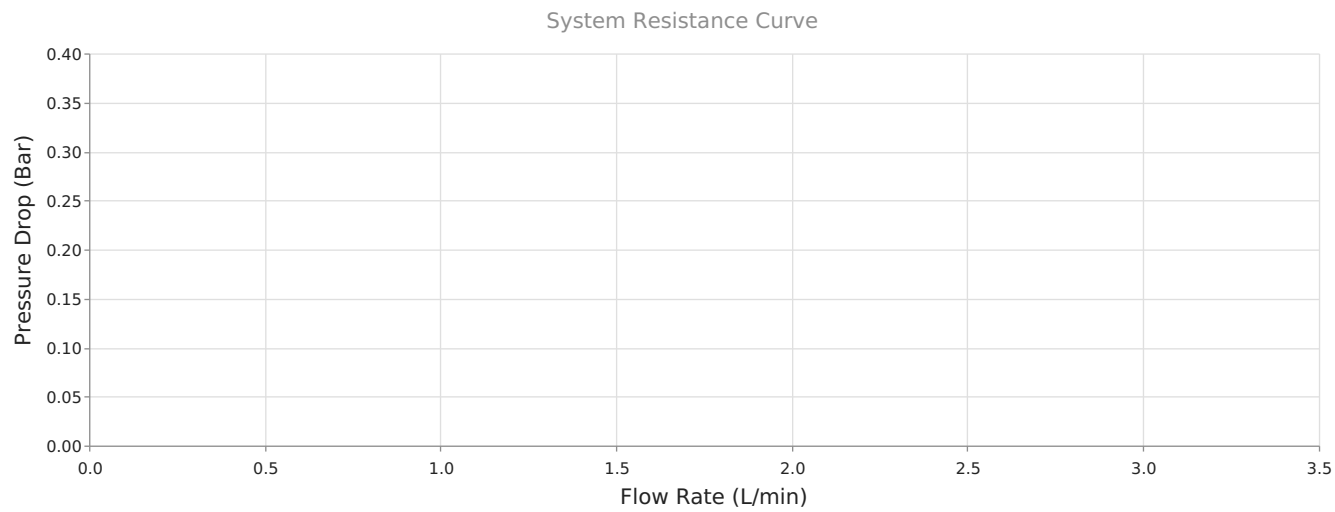


Heat Pumped at Cold Side ( $Q_c$ )  
 $V_{operating} = 24$  Volts |  $I_{operating} = 1.68$  Amps



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $V_{operating} = 24$  Volts |  $I_{operating} = 1.68$  Amps

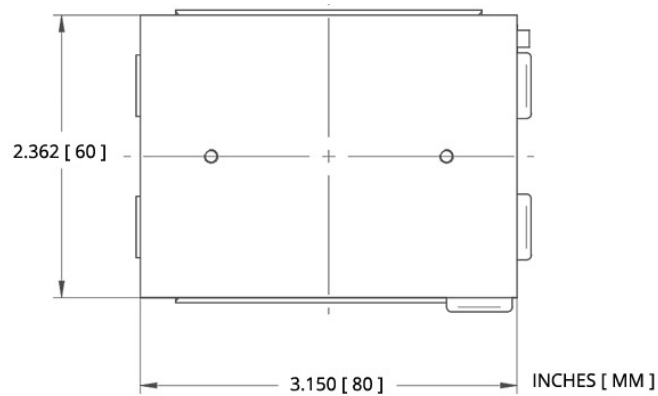




Specifications

Heat Transfer Mechanism, Cold Side	Liquid - Forced Convection
Heat Transfer Mechanism, Hot Side	Air - Forced Convection
Operating Temperature Range	-10°C to 48°C
Supply Voltage	24.0 VDC nominal / 30.0 VDC maximum
Current Draw	1.4 A running / 1.7 A startup
Power Supply	34.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	No Testing
Fan MTBF	50000 hours
Weight	0.50 kg
Panel Mounting	Flush Mount

# Mounting Hole Location



# Electrical Connections

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

## Notes

<sup>1</sup> For indoor use only
<sup>2</sup> Turbulators are mounted inside liquid channels to create turbulent flow
<sup>3</sup> Cold block requires insulation to minimize moisture buildup under dew point conditions.

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