

**Liquid Series Thermoelectric Cooler Assembly**

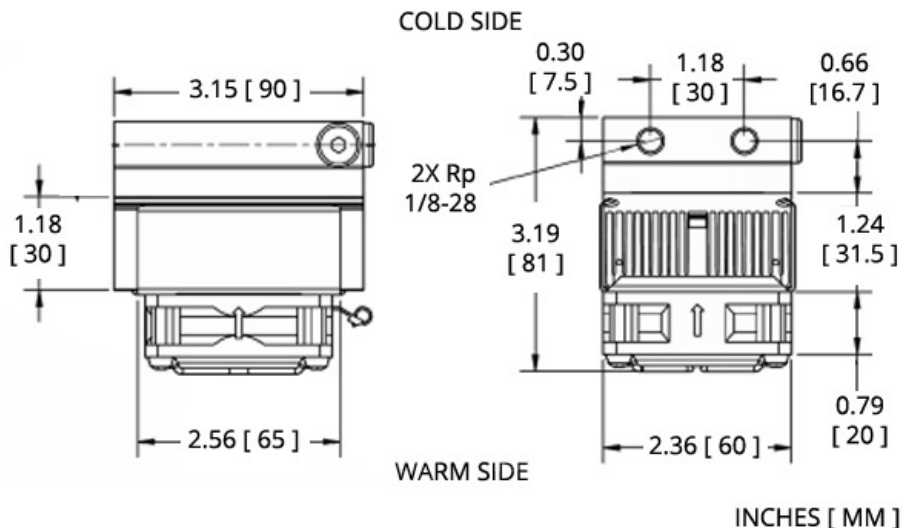
The LA-024-12-02 thermoelectric assembly (TEA) offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through a liquid heat exchanger and dissipated thru a high density heat sink equipped with an air ducted shroud and brand name fan. The thermoelectric modules are custom designed to achieve a high coefficient of performance (COP) to minimize power consumption. It has a maximum  $Q_c$  of 22 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 36 °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**

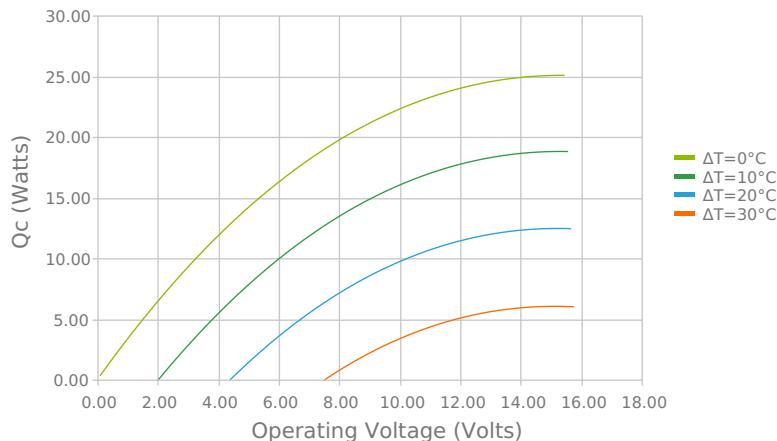
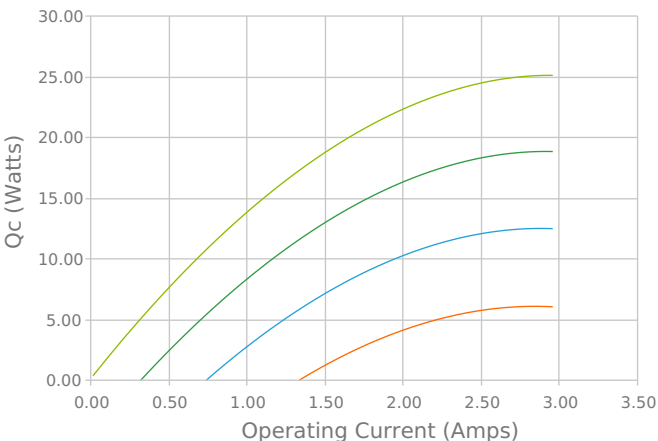
- Medical Diagnostics
- Industrial Lasers
- Medical Lasers
- Analytical Instrumentation



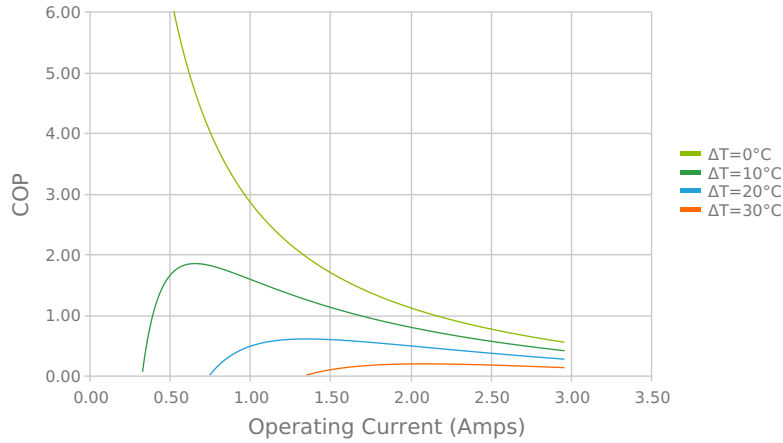
**ELECTRICAL AND THERMAL PERFORMANCE**

Heat Pumped at Cold Side ( $Q_c$ )  
 Tambient = 35°C | Tcontrol = 20°C

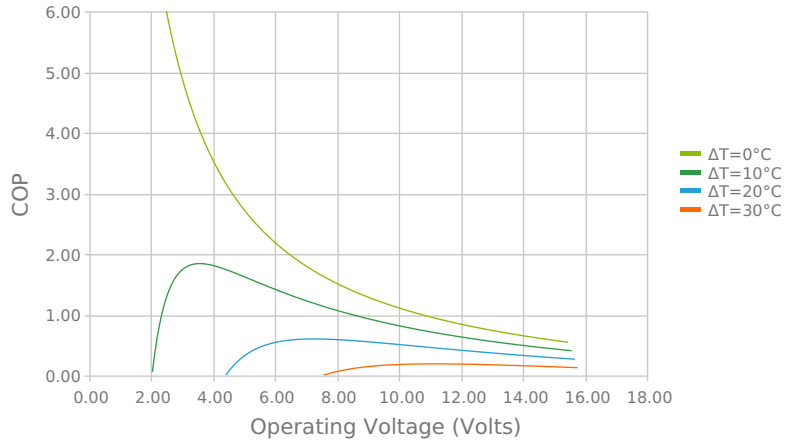
Heat Pumped at Cold Side ( $Q_c$ )  
 Tambient = 35°C | Tcontrol = 20°C



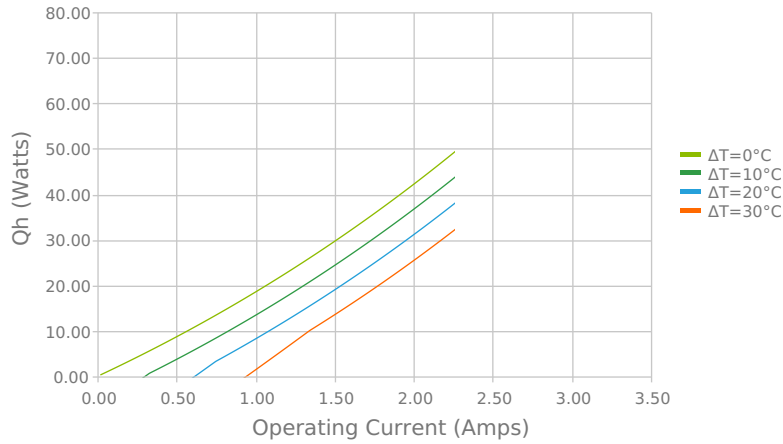
Coefficient of Performance (COP = Qc/Pin)  
 Tambient = 35°C | Tcontrol = 20°C



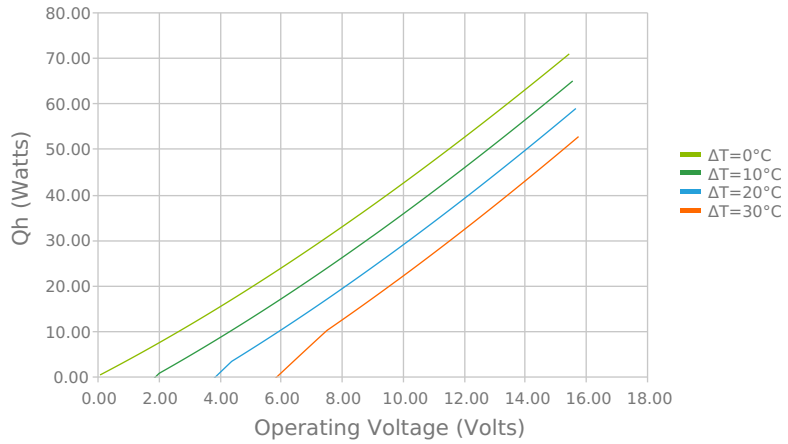
Coefficient of Performance (COP = Qc/Pin)  
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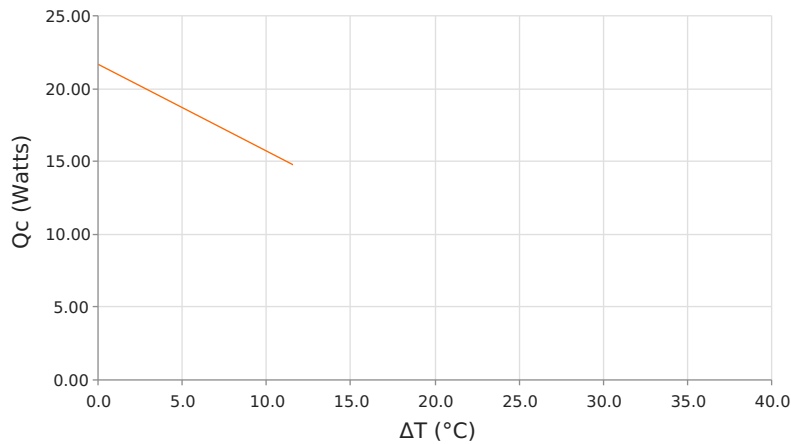
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



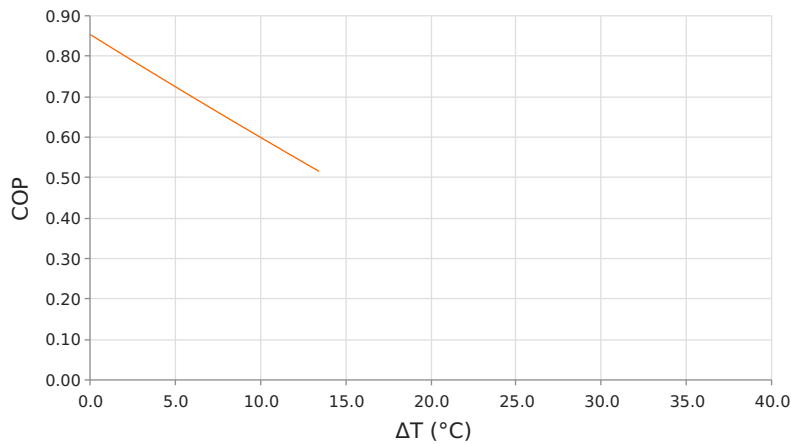
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)  
 Voperating = 12 Volts | Ioperating = 2.4 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Voperating = 12 Volts | Ioperating = 2.4 Amps



## SPECIFICATIONS

<b>Operating Temperature Range</b>	-10 °C to 48°C
<b>Supply Voltage</b>	12.0 VDC nominal / 15.0 VDC maximum
<b>Current Draw</b>	2.2 A running / 2.8 A startup
<b>Power Supply</b>	29.0 Watts
<b>Performance Tolerance</b>	10%
<b>Fan MTBF</b>	50,000 hours
<b>Weight</b>	0.50 kg

## 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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