

**Liquid Series Thermoelectric Cooler Assembly**

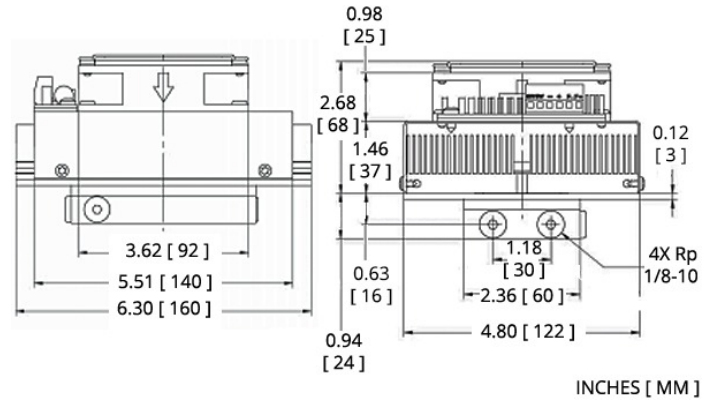
The LA-045-24-02 thermoelectric cooler assembly offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through a liquid heat exchanger and dissipated thru a high density heat sink equipped with an air ducted shroud and brand name fan. The thermoelectric modules are custom designed to achieve a high coefficient of performance (COP) to minimize power consumption. It has a maximum Qc of 47 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 42 °C at Qc = 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

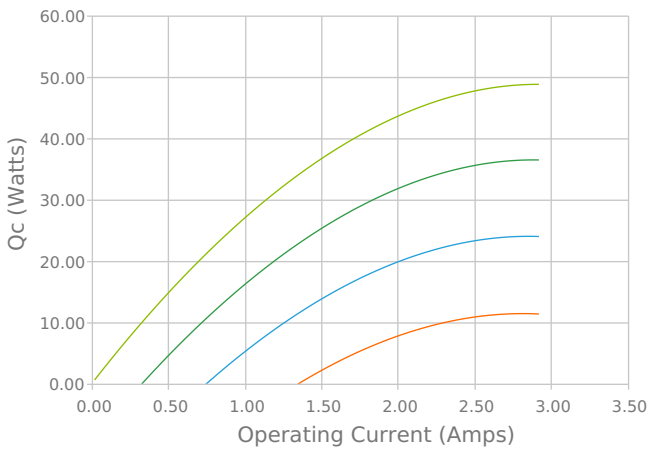
**Applications**

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

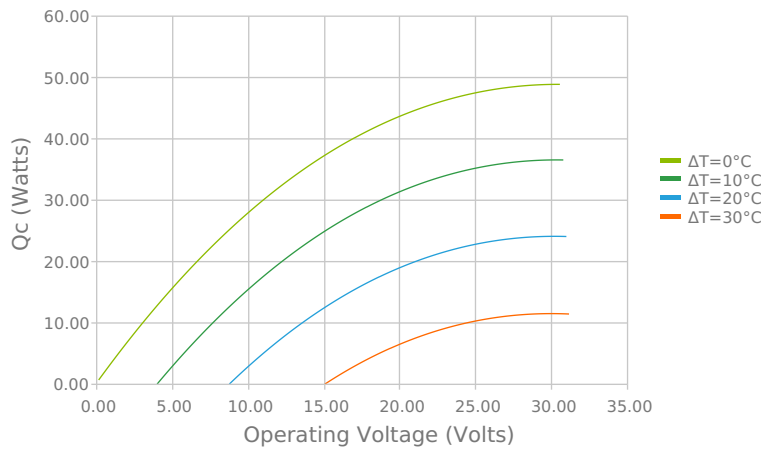


**ELECTRICAL AND THERMAL PERFORMANCE**

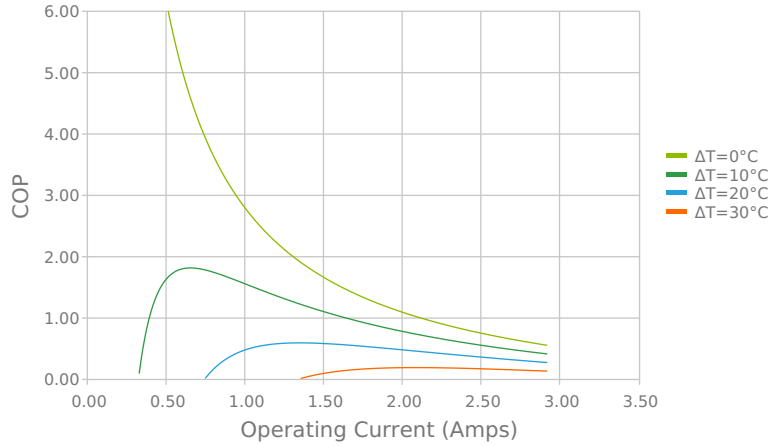
Heat Pumped at Cold Side (Qc)  
 Tambient = 35°C | Tcontrol = 20°C



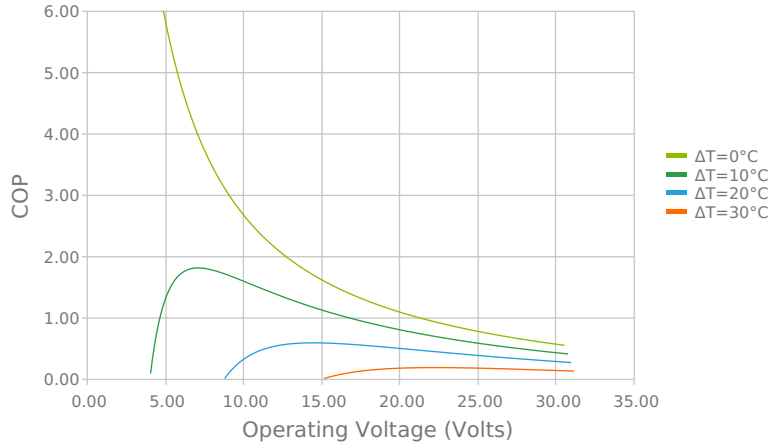
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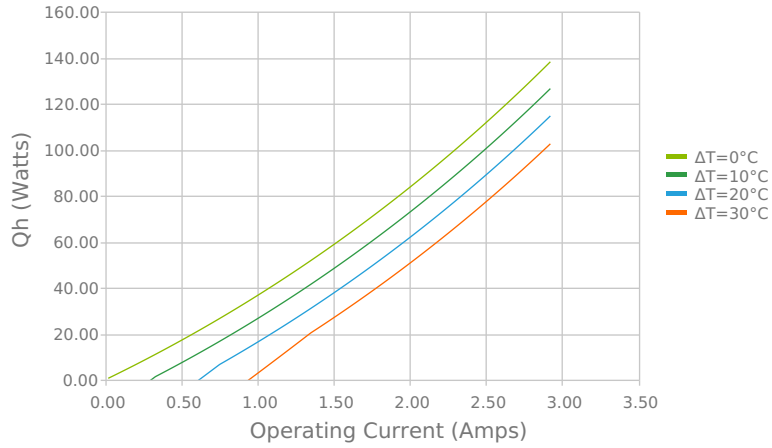
Coefficient of Performance (COP = Qc/Pin)  
 Tambient = 35°C | Tcontrol = 20°C



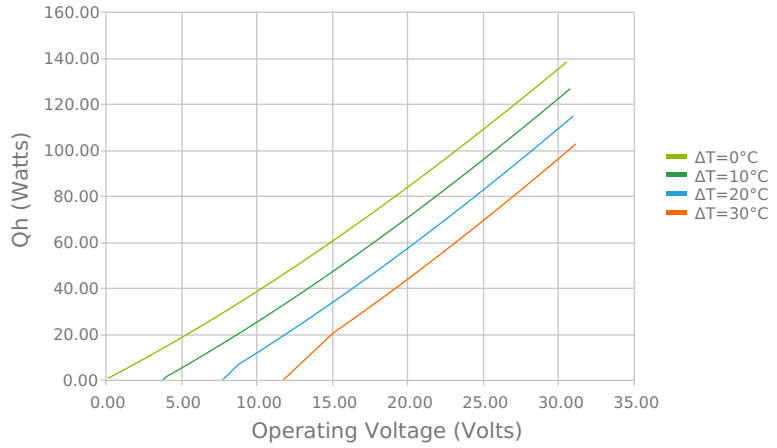
Coefficient of Performance (COP = Qc/Pin)  
 Tambient = 35°C | Tcontrol = 20°C



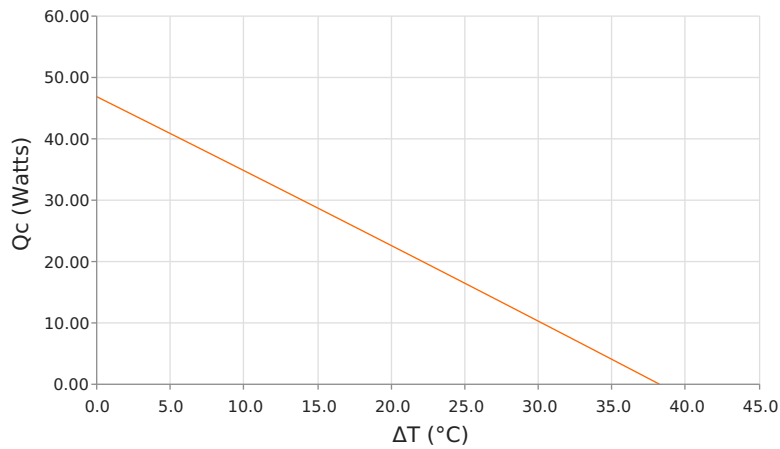
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



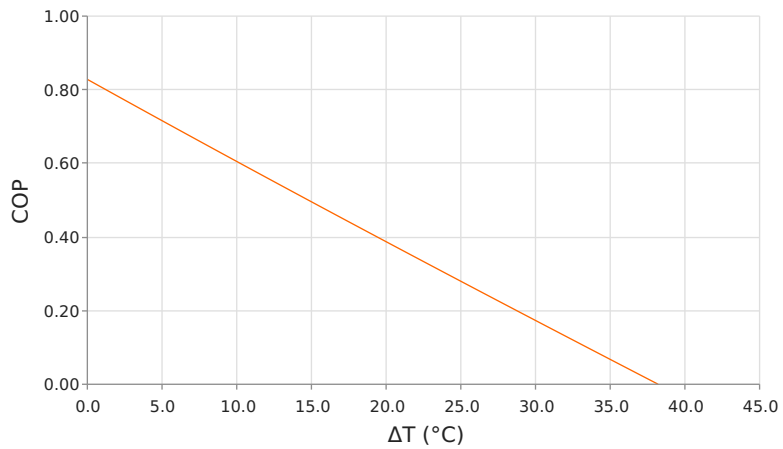
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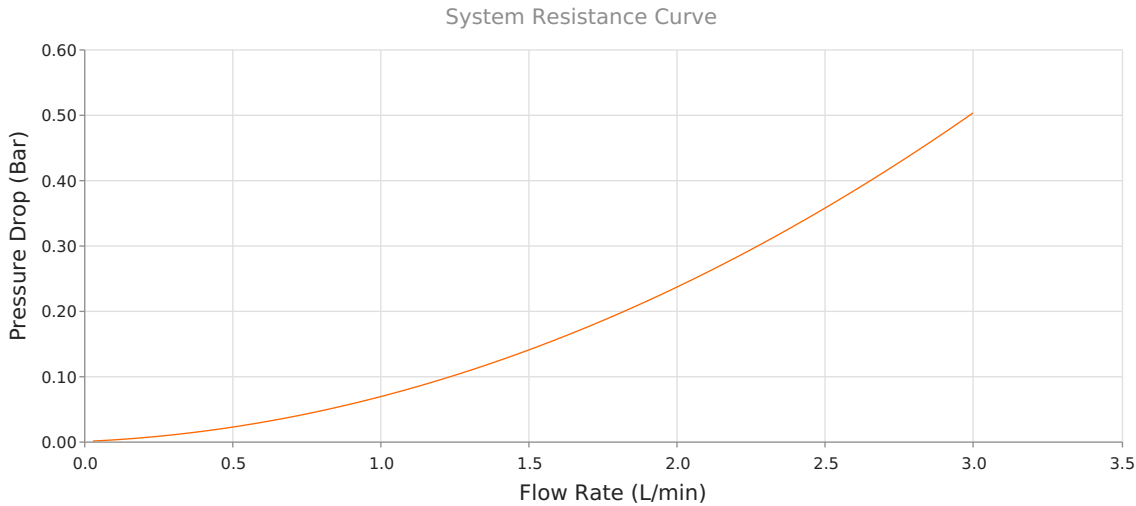


Heat Pumped at Cold Side (Qc)  
 Voperating = 24.06 Volts | Ioperating = 2.36 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Voperating = 24.06 Volts | Ioperating = 2.36 Amps



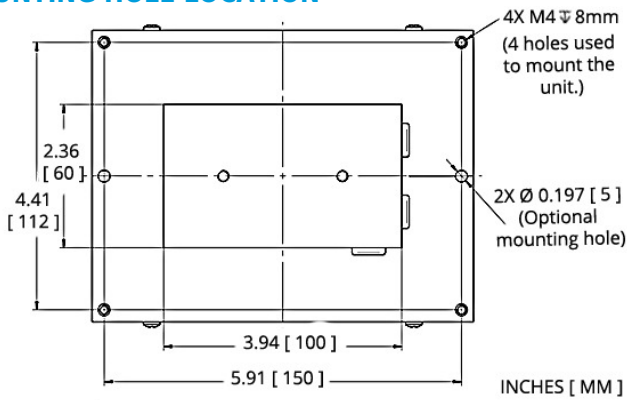


## SPECIFICATIONS

- Operating Temperature Range**
- Supply Voltage**
- Current Draw**
- Power Supply**
- Performance Tolerance**
- Fan MTBF**
- Weight**

-10°C to 48°C
24.0 VDC nominal / 30.0 VDC maximum
2.8 A running / 3.2 A startup
60.0 Watts
10%
50,000 hours
1.30 kg

## MOUNTING HOLE LOCATION

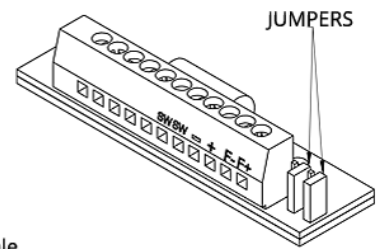


## ELECTRICAL CONNECTIONS

- " + " : + TEM
- " - " : - TEM
- " F+ " : + FAN(S)
- " F- " : - FAN(S)

To use single supply:  
Lift the jumpers and rotate 90° to short-out the pin pairs.  
Connect the unit to " + " & " - ".

Warning: Single supply not applicable in heating mode or with PWM-regulation.



## 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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