

**PowerCool Series Thermoelectric Cooler Assembly**

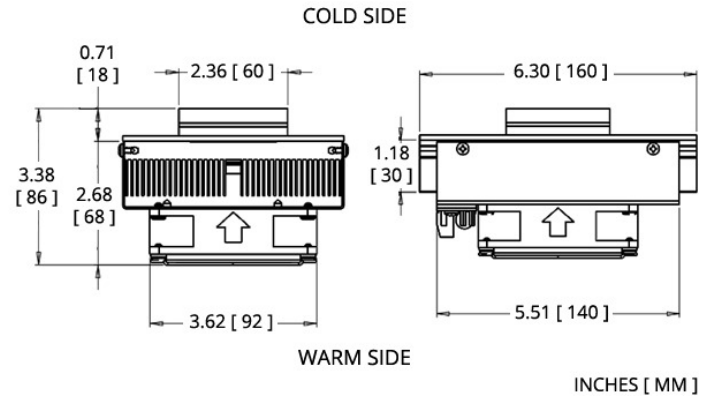
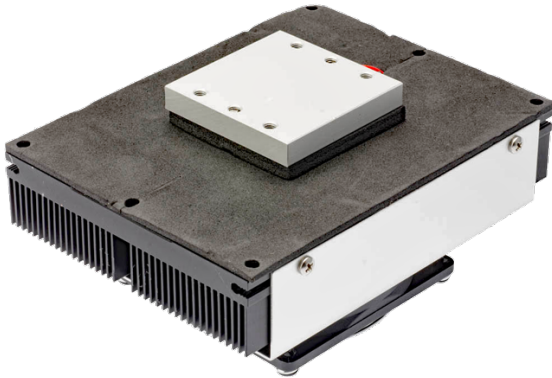
The DA-045-12-02 is a Direct-to-Air Thermoelectric Cooler Assembly that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via conduction. Heat is absorbed through a cold plate and dissipated thru a high density heat exchanger equipped with an air ducted shroud and brand name fan. It has a maximum Qc of 48 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 50 °C at Qc = 0.

**Features**

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

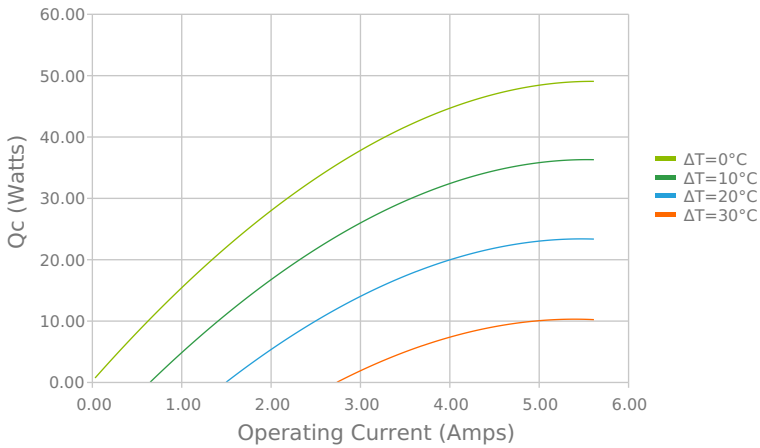
**Applications**

- Medical Diagnostic and Analytical Instrumentation
- Thermoelectric Coolers and Assemblies for Medical Applications
- Liquid Cooling Options for PET and SPECT Scanners
- Cooling for Centrifuges
- High-Performance Liquid Chromatography (HPLC)
- Heating and Cooling for Liquid Chromatography Systems

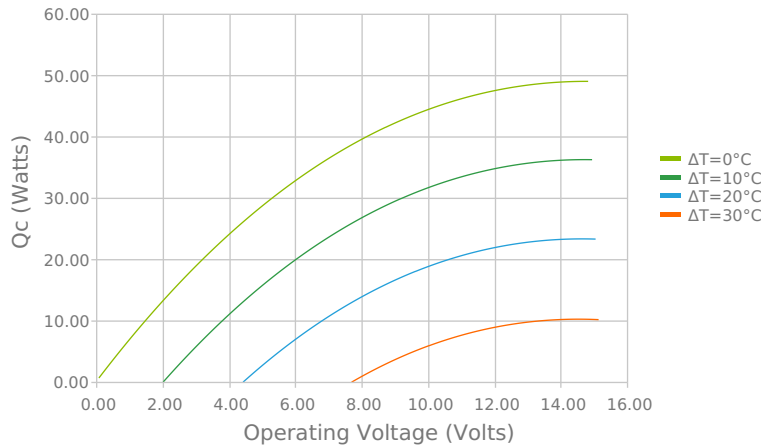


**ELECTRICAL AND THERMAL PERFORMANCE**

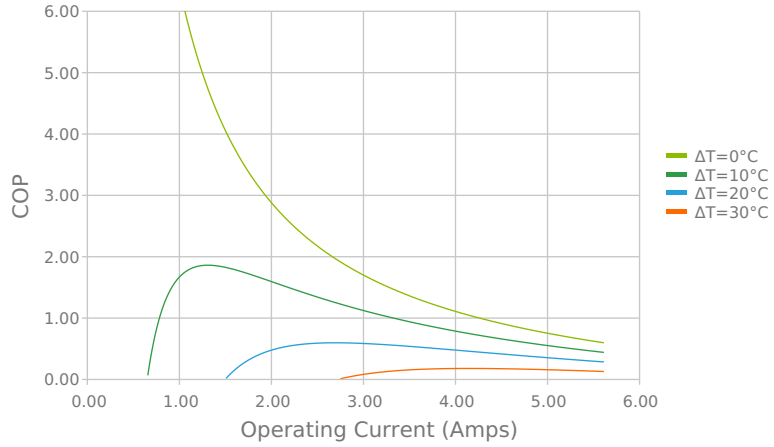
Heat Pumped at Cold Side (Qc)  
 Tambient = 35°C | Tcontrol = 20°C



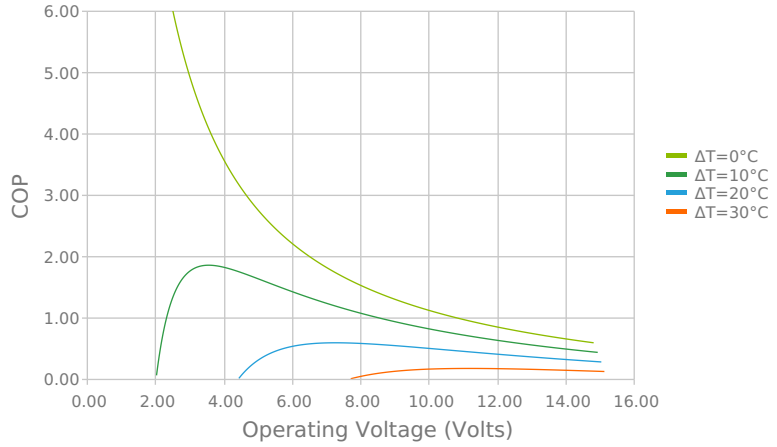
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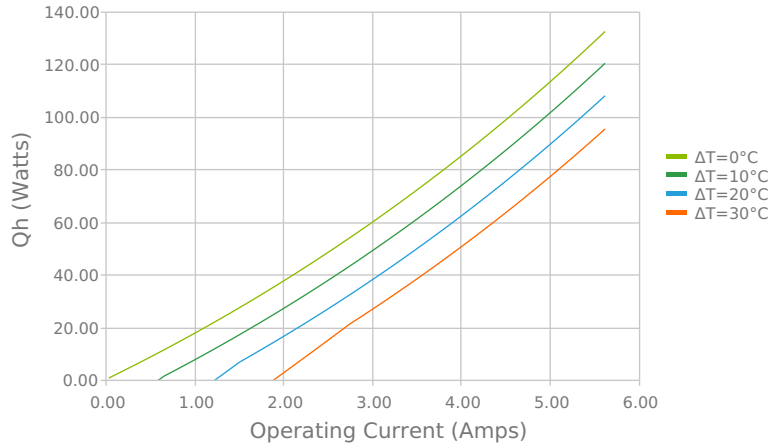
Coefficient of Performance (COP = Qc/Pin)  
 Tambient = 35°C | Tcontrol = 20°C



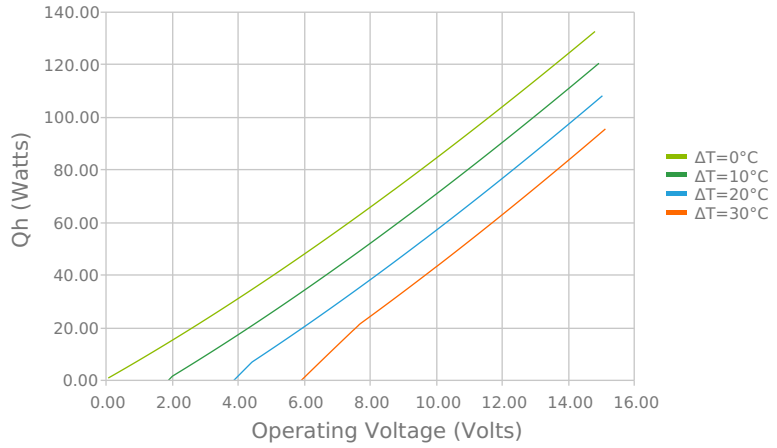
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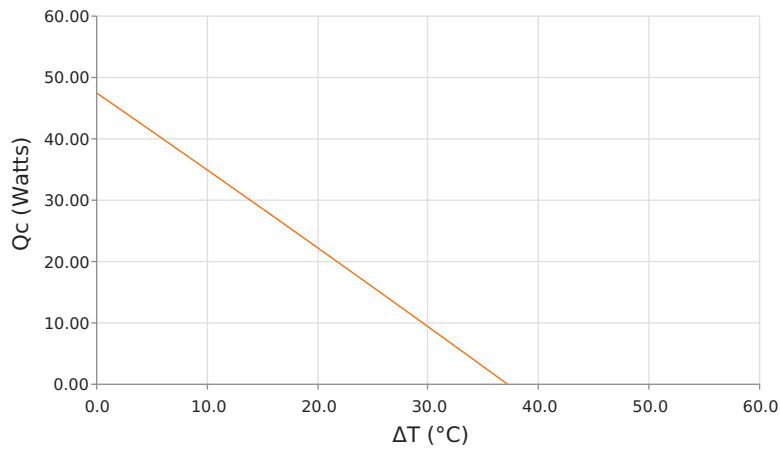
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



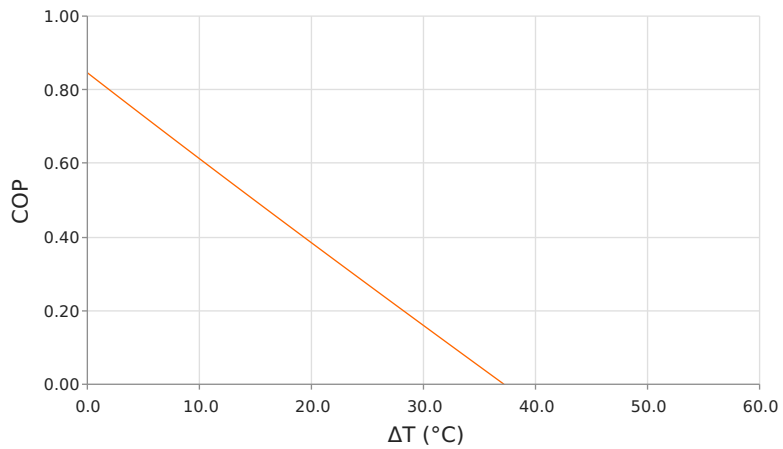
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)  
 Voperating = 12.03 Volts | Ioperating = 4.69 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Voperating = 12.03 Volts | Ioperating = 4.69 Amps

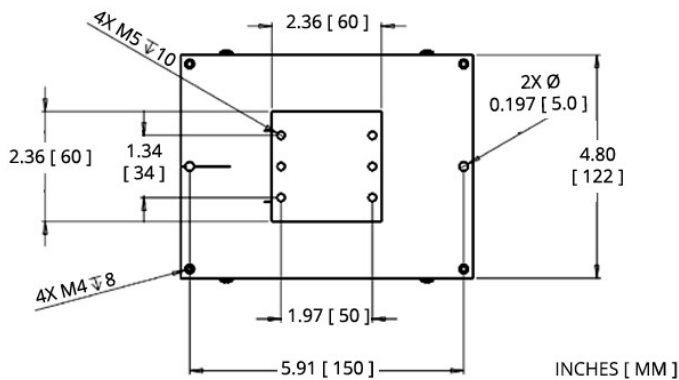


## SPECIFICATIONS

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

-10°C to 46°C
12.0 VDC nominal / 15.0 VDC maximum
6.1 A running / 7.0 A startup
73.0 Watts
10%
50,000 hours
1.20 kg

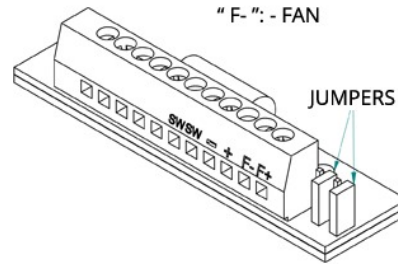
## MOUNTING HOLE LOCATION



## WIRING SCHEMATIC

### ELECTRICAL CONNECTIONS:

- " + " : + TEM
- " - " : - TEM
- " F+ " : + FAN
- " F- " : - FAN



To use a separate supply for TEMs and FANs: Mount jumpers to not short-cut the pin pairs.

To use a single supply for TEMs and FANs: Mount jumpers to short-cut 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>Units are generally maintenance free, however occasionally it is recommended to clean the heat sinks and fans of debris. This is best done with compressed air.

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