

**PowerCool Series Thermoelectric Cooler Assembly**

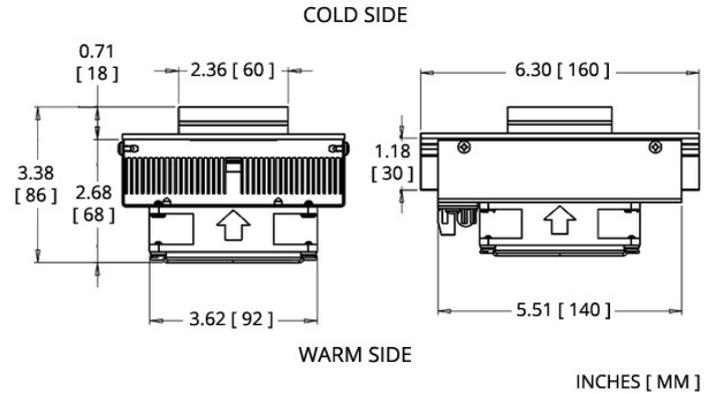
The DA-045-12-02 is a Direct-to-Air Thermoelectric Cooler Assembly that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via conduction. Heat is absorbed through a cold plate and dissipated thru a high density heat exchanger equipped with an air ducted 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

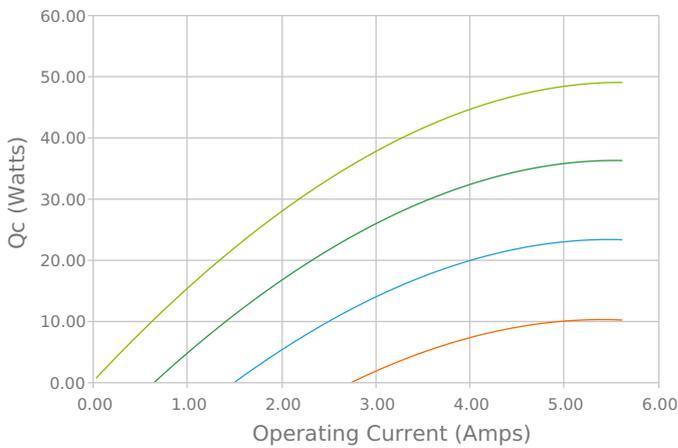
**Applications**

- 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

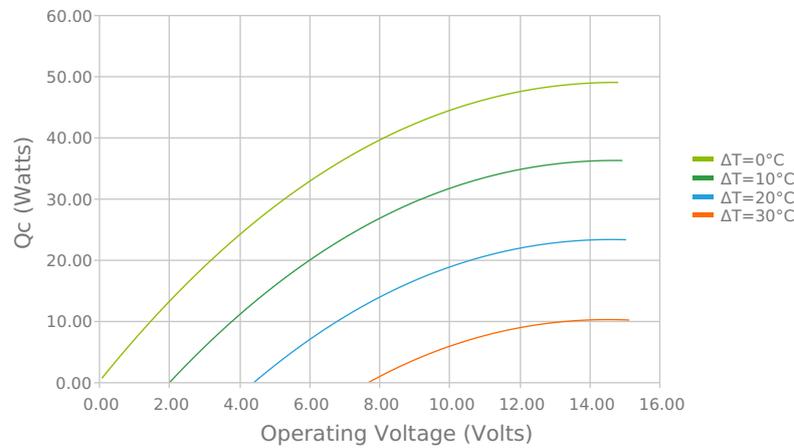


**Electrical and Thermal Performance**

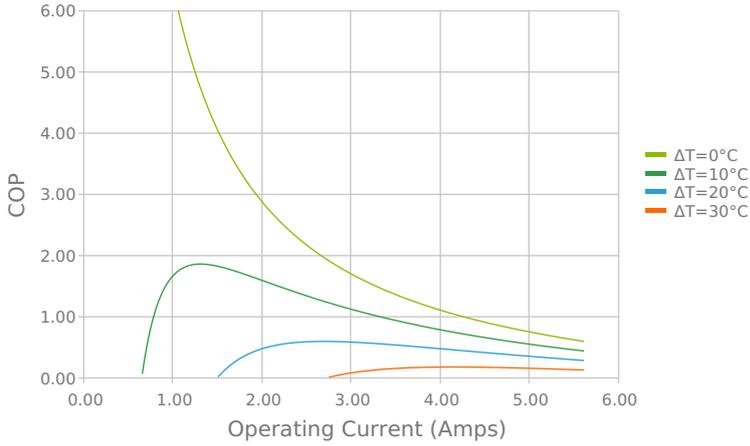
Heat Pumped at Cold Side (Qc)  
Tambient = 35°C



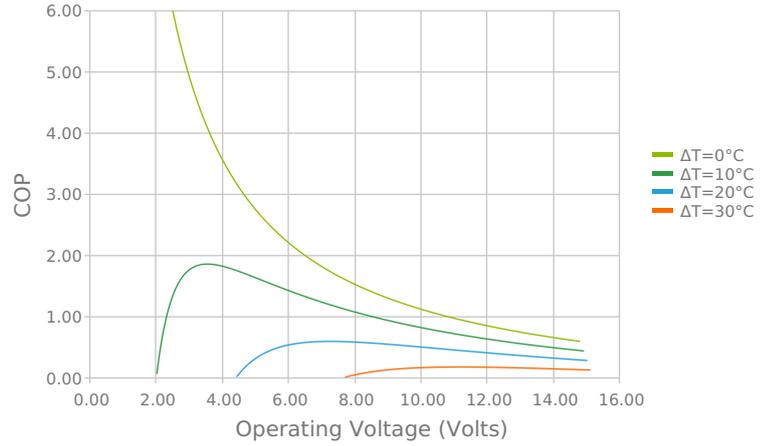
Heat Pumped at Cold Side (Qc)  
Tambient = 35°C



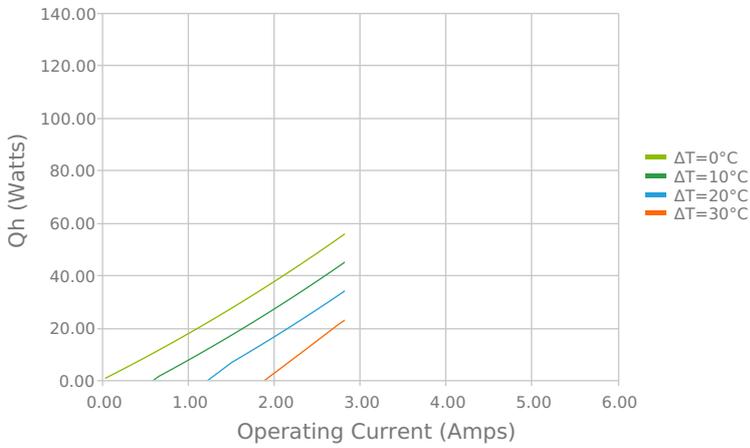
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
Tambient = 35°C



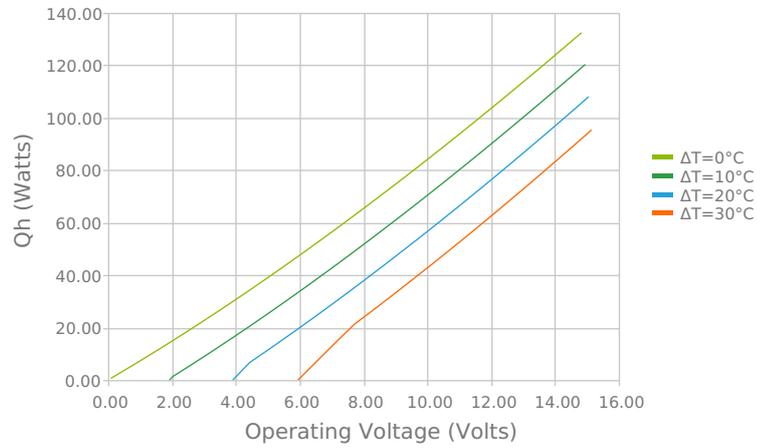
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
Tambient = 35°C



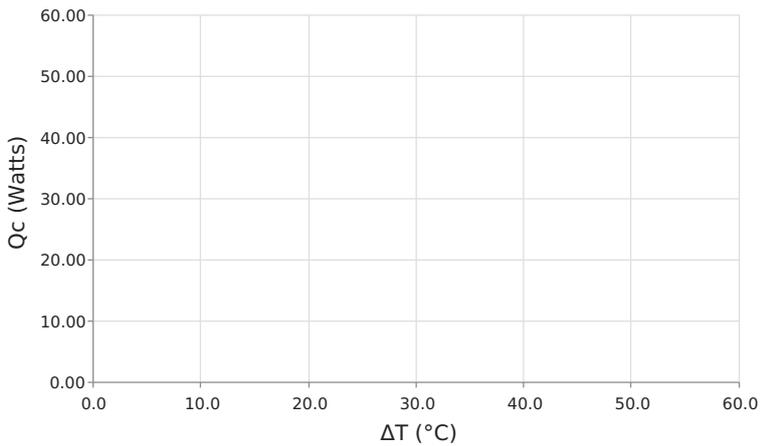
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
Tambient = 35°C



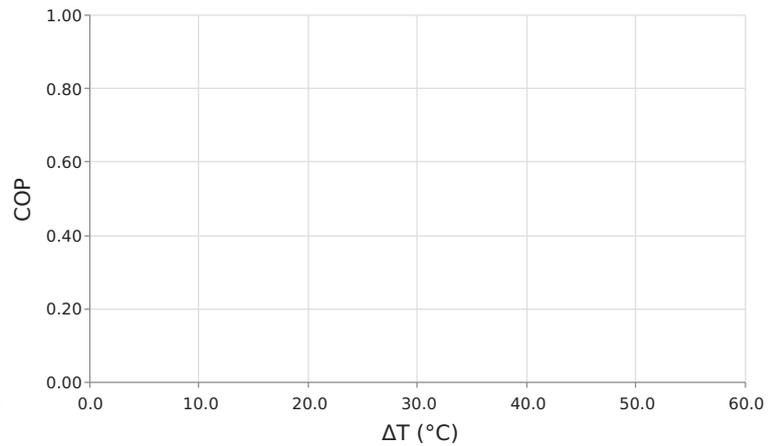
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
Tambient = 35°C



Heat Pumped at Cold Side ( $Q_c$ )  
Voperating = 12 Volts | Ioperating = 4.68 Amps



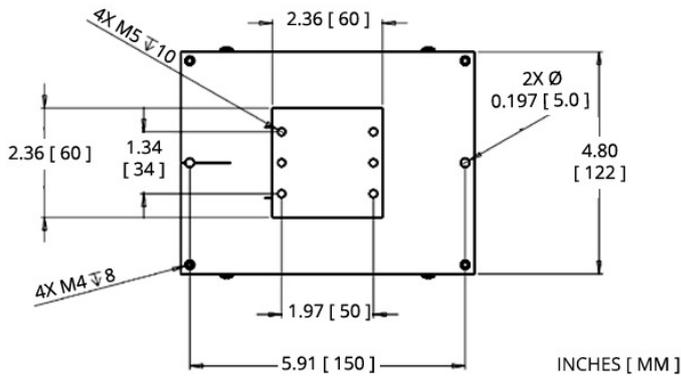
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
Voperating = 12 Volts | Ioperating = 4.68 Amps



## Specifications

<b>Heat Transfer Mechanism, Cold Side</b>	Direct - Conduction
<b>Heat Transfer Mechanism, Hot Side</b>	Air - Forced Convection
<b>Operating Temperature Range</b>	-10°C to 46°C
<b>Supply Voltage</b>	12.0 VDC nominal / 15.0 VDC maximum
<b>Current Draw</b>	6.1 A running / 7.0 A startup
<b>Power Supply</b>	73.0 Watts
<b>Performance Tolerance</b>	10%
<b>Hi-Pot Testing</b>	750 VDC
<b>Fan MTBF</b>	50000 hours
<b>Over-Temp Thermostat (Hot and Cold Side Heat Sink)</b>	75°C ± 5°C (hot side heat sink)
<b>Weight</b>	1.20 kg
<b>Panel Mounting</b>	Flush Mount

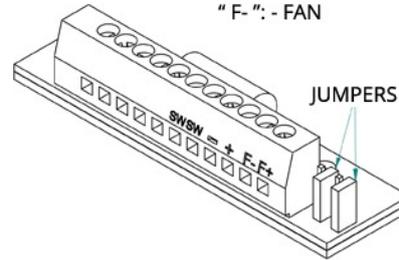
# Mounting Hole Location



# 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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