

### PowerCool Series Thermoelectric Cooler Assembly

The DA-014-12-02 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 12 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 50 °C at Qc = 0.

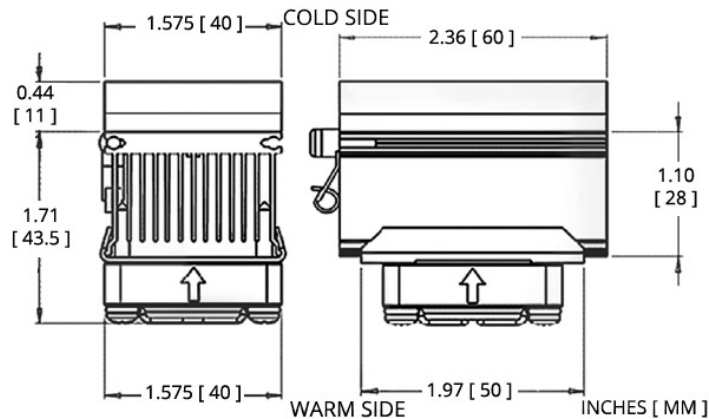


### Features

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

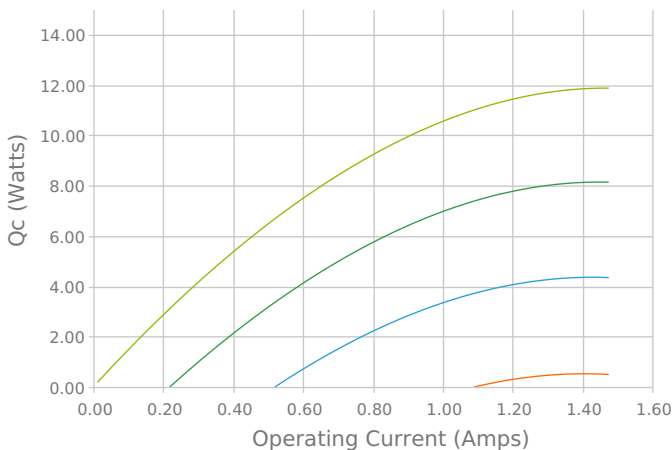
### Applications

- 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

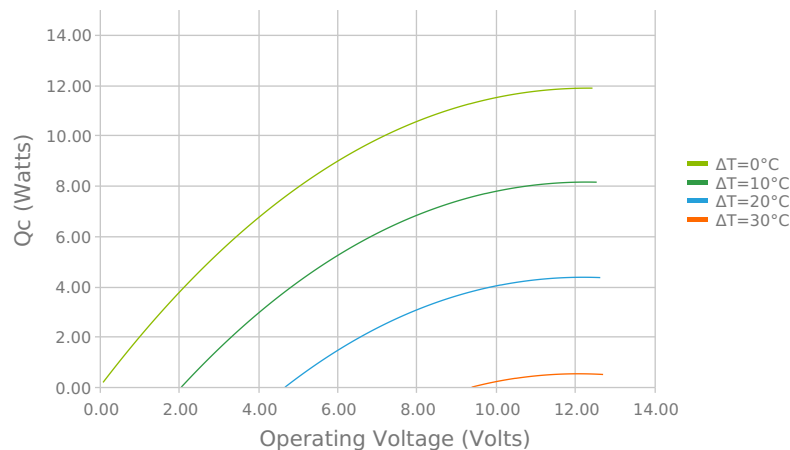


## ELECTRICAL AND THERMAL PERFORMANCE

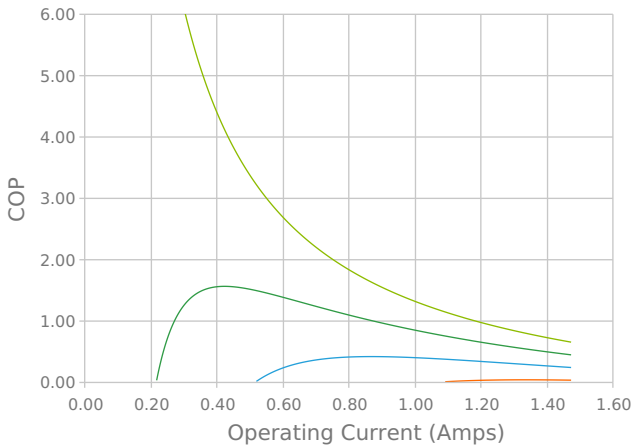
Heat Pumped at Cold Side (Qc)  
Tambient = 35°C



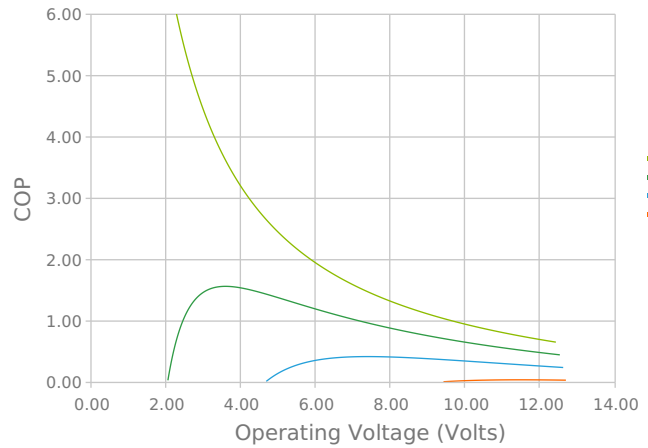
Heat Pumped at Cold Side (Qc)  
Tambient = 35°C



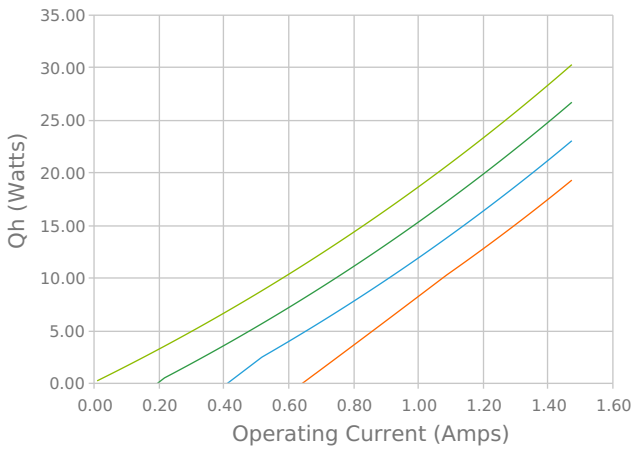
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



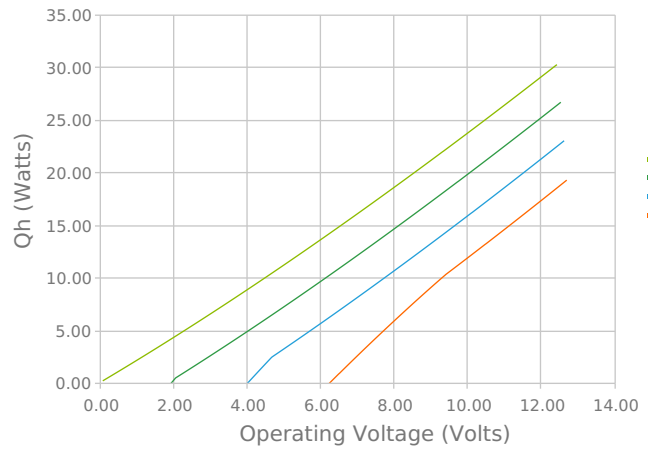
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



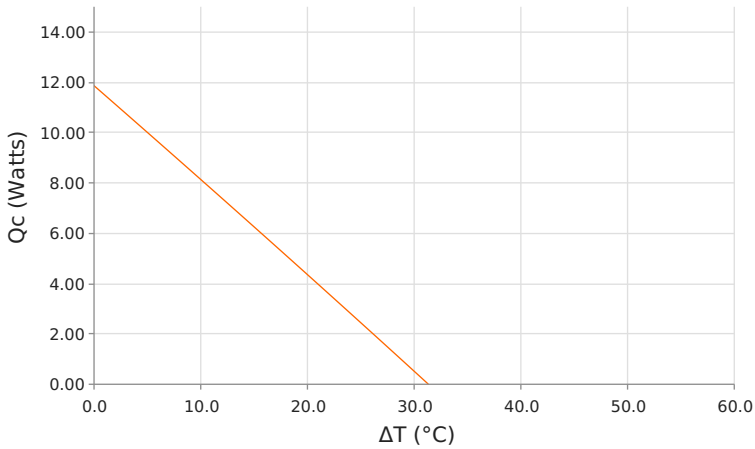
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



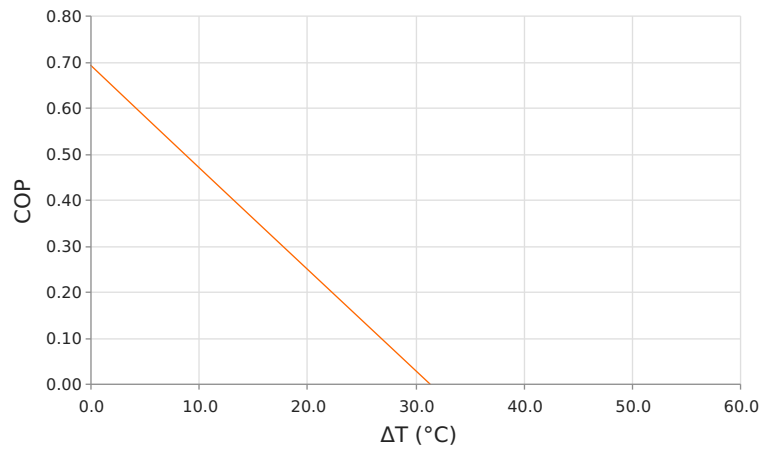
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{ambient} = 35^{\circ}C$



Heat Pumped at Cold Side ( $Q_c$ )  
 $V_{operating} = 12 \text{ Volts} \mid I_{operating} = 1.43 \text{ Amps}$



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $V_{operating} = 12 \text{ Volts} \mid I_{operating} = 1.43 \text{ Amps}$



## SPECIFICATIONS

**Heat Transfer Mechanism, Cold Side**

**Heat Transfer Mechanism, Hot Side**

**Operating Temperature Range**

**Supply Voltage**

**Current Draw**

**Power Supply**

**Performance Tolerance**

**Hi-Pot Testing**

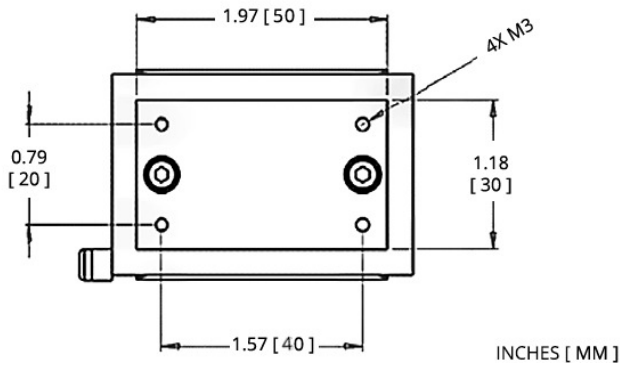
**Fan MTBF**

**Weight**

**Panel Mounting**

Direct - Conduction
Air - Forced Convection
-10°C to 44°C
12.0 VDC nominal / 15.0 VDC maximum
1.8 A running / 2.3 A startup
22.0 Watts
10%
No Testing
50000 hours
0.20 kg
Flush Mount

## MOUNTING HOLE LOCATION



## WIRING SCHEMATIC

### ELECTRICAL CONNECTIONS:

TEM+ : Purple  
 TEM - : Blue  
 FAN+ : Brown  
 FAN - : Gray

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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