

## PowerCool Series Thermoelectric Cooler Assembly

The DA-044-12-02 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  $Q_c$  of 42 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 41 °C at  $Q_c = 0$ .

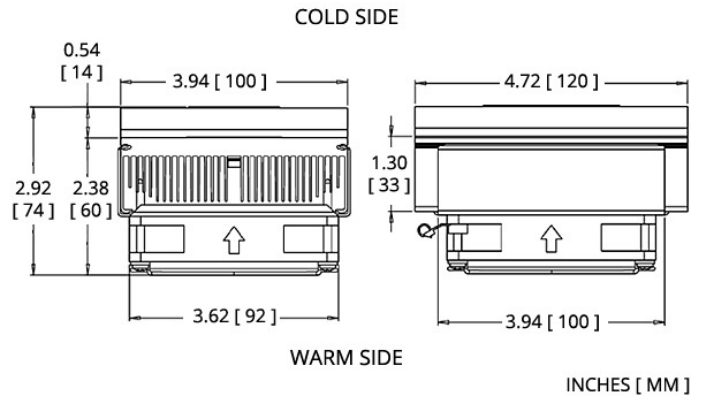


## Features

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

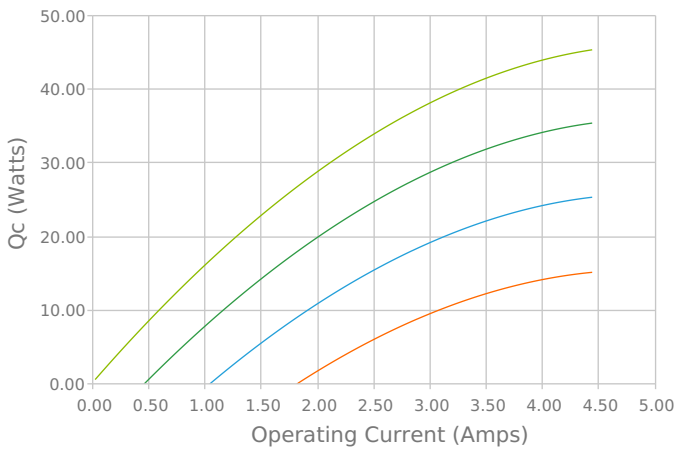
## Applications

- 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

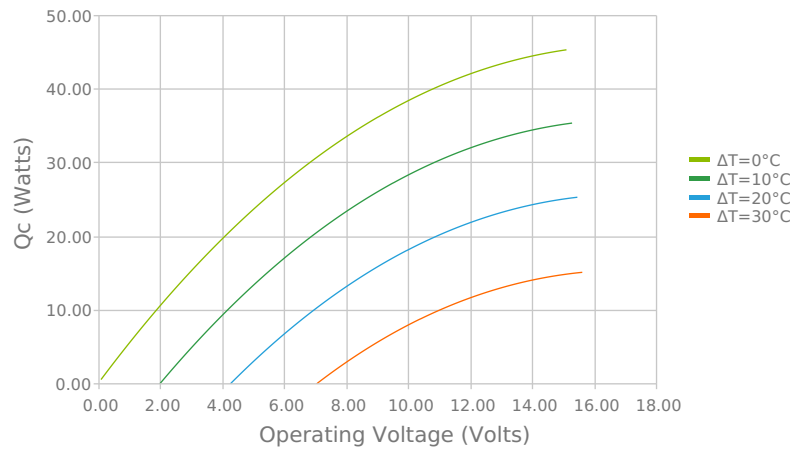


## Electrical and Thermal Performance

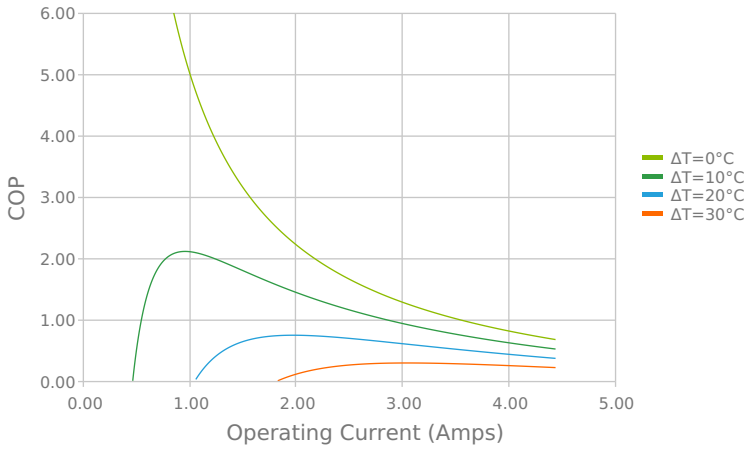
Heat Pumped at Cold Side ( $Q_c$ )  
Tambient = 35°C



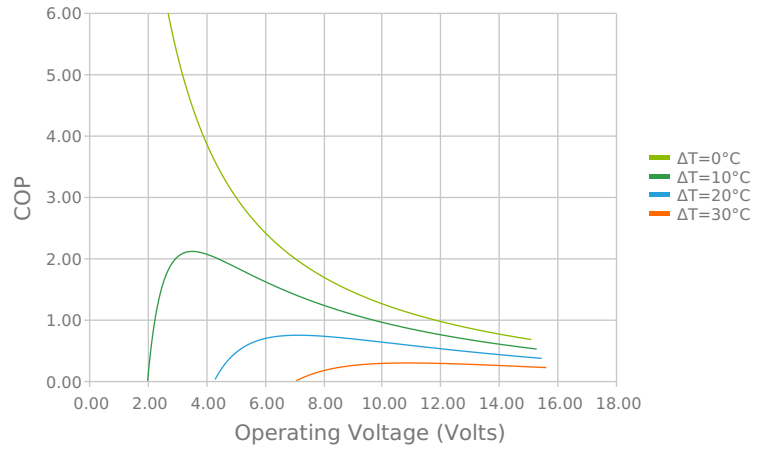
Heat Pumped at Cold Side ( $Q_c$ )  
Tambient = 35°C



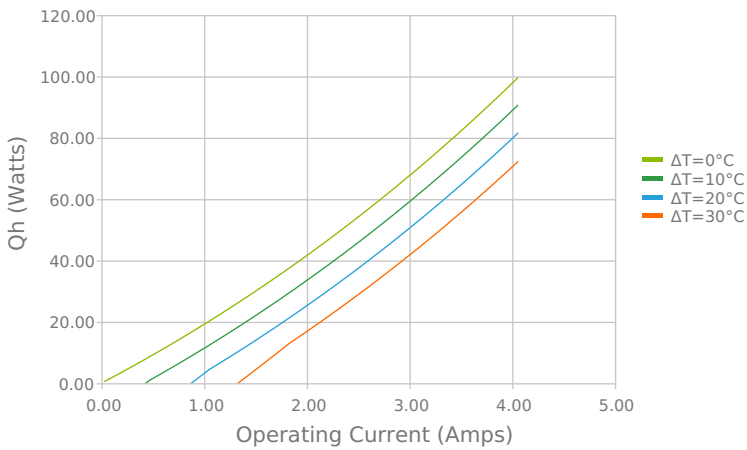
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
Tambient = 35°C



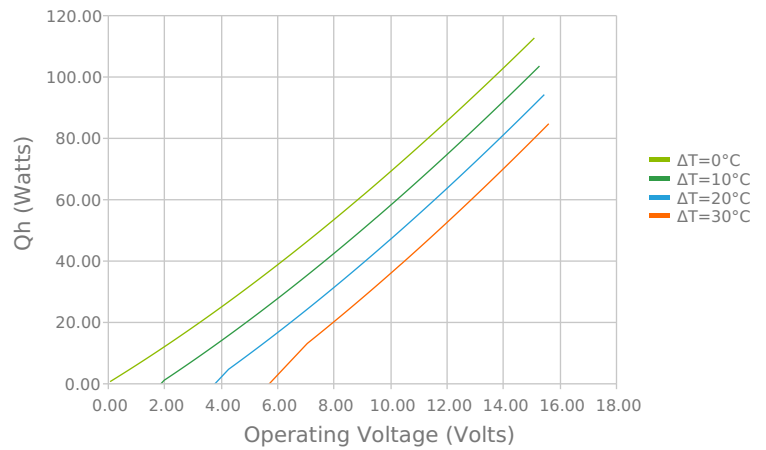
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
Tambient = 35°C



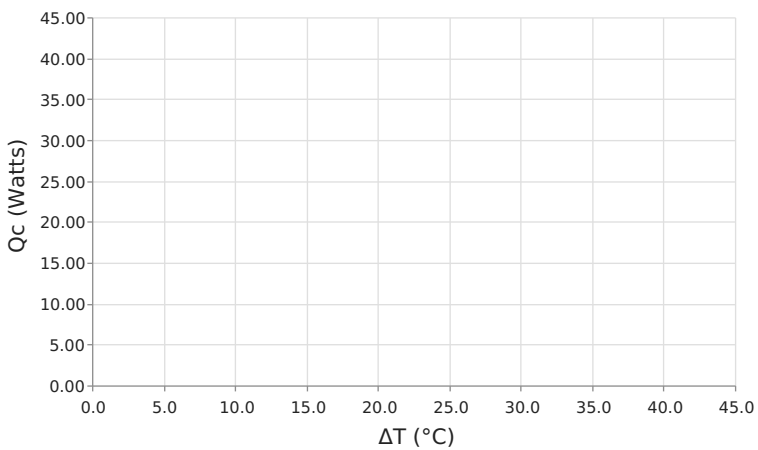
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
Tambient = 35°C



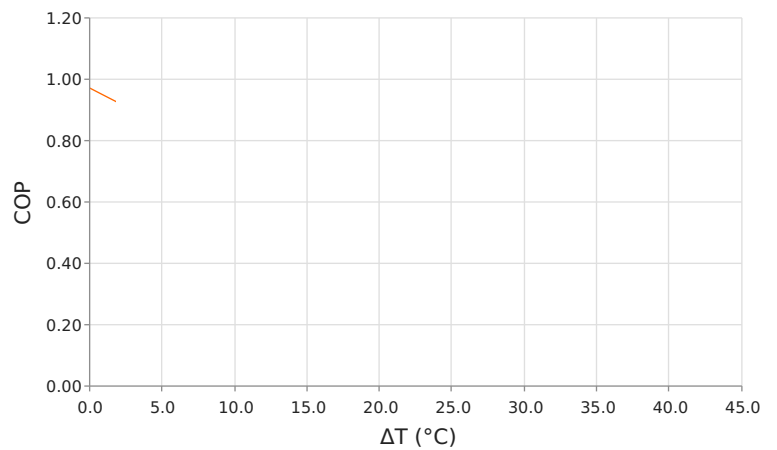
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
Tambient = 35°C



Heat Pumped at Cold Side ( $Q_c$ )  
Voperating = 12 Volts | Ioperating = 3.61 Amps



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
Voperating = 12 Volts | Ioperating = 3.61 Amps

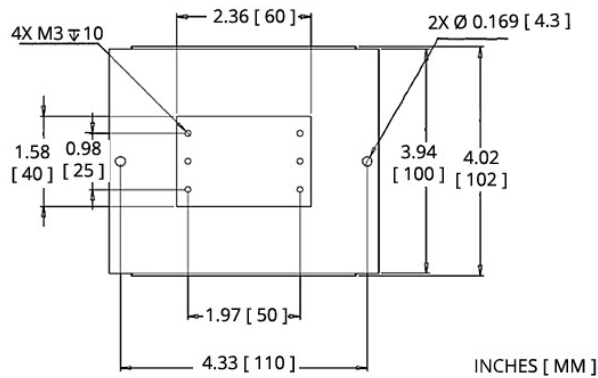


Specifications

Heat Transfer Mechanism, Cold Side	Direct - Conduction
Heat Transfer Mechanism, Hot Side	Air - Forced Convection
Operating Temperature Range	-10°C to 46°C
Supply Voltage	12.0 VDC nominal / 15.0 VDC maximum
Current Draw	3.8 A running / 4.7 A startup
Power Supply	46.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	No Testing
Fan MTBF	50000 hours
Weight	0.60 kg
Panel Mounting	Flush Mount

Mounting Hole  
Location

Wiring Schematic



ELECTRICAL CONNECTIONS:		
ITEM	Wire Color	Crimp Ferrule Color
TEM+	Red	White
TEM -	Black	White
FAN+	Red	Blue
FAN -	Black	Blue

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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Revision: 01 Date: 04-30-2024

Print Date: 05-12-2025