

PowerCool Series Thermoelectric Cooler Assembly

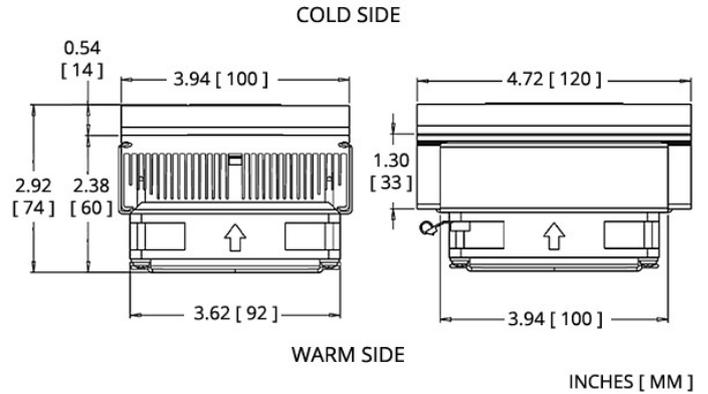
The DA-044-24-02 is a Direct-to-Air Thermoelectric Cooler Assembly that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via conduction. Heat is absorbed through a cold plate and dissipated thru a high density heat exchanger equipped with an air ducted shroud and brand name fan. It has a maximum Qc of 44 Watts when $\Delta T = 0$ and a maximum ΔT of 41 °C at Qc = 0.

Features

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

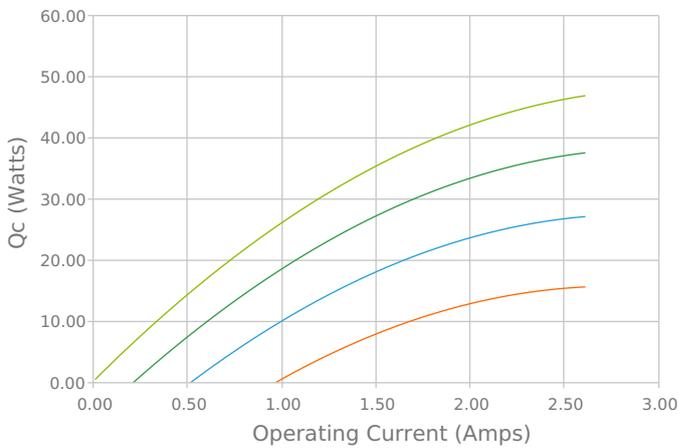
Applications

- 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

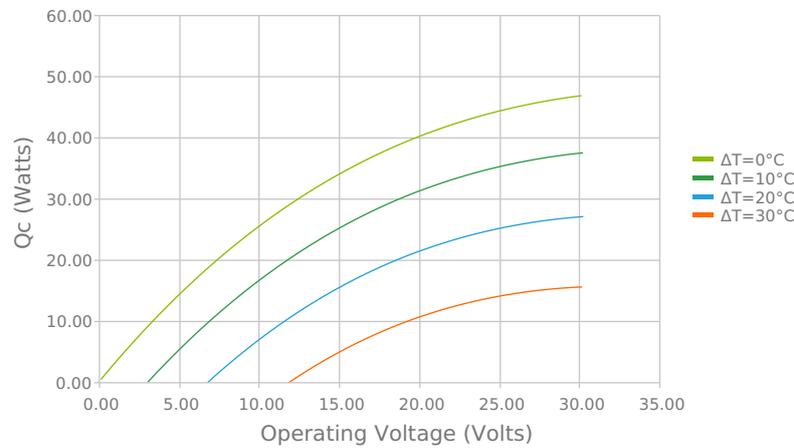


Electrical and Thermal Performance

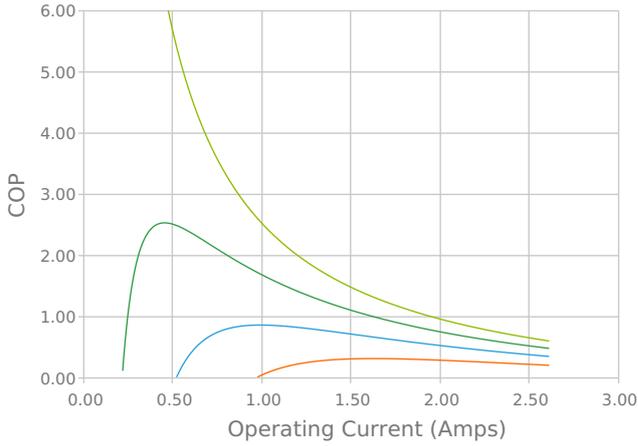
Heat Pumped at Cold Side (Qc)
Tambient = 35°C



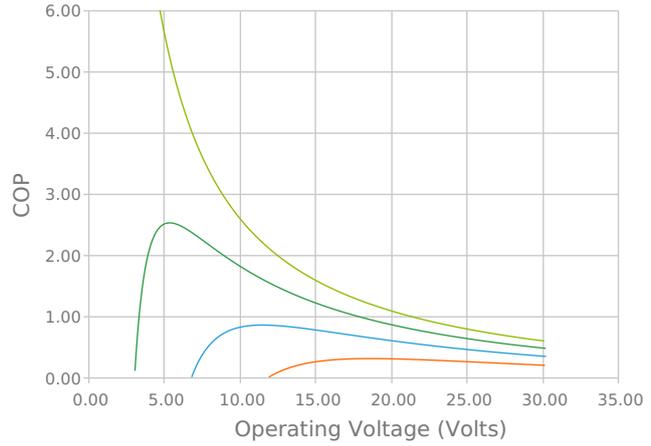
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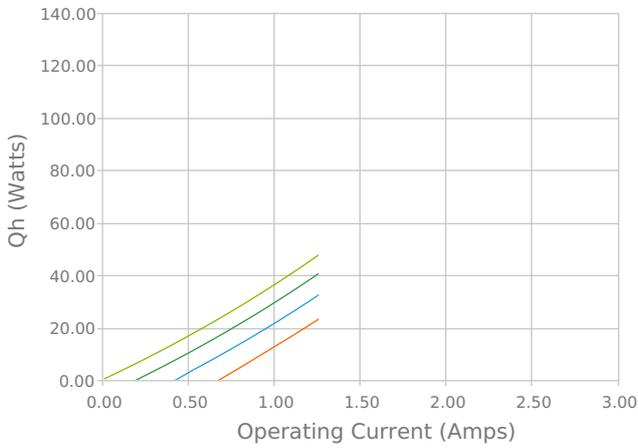
Coefficient of Performance (COP = Q_c/P_{in})
Tambient = 35°C



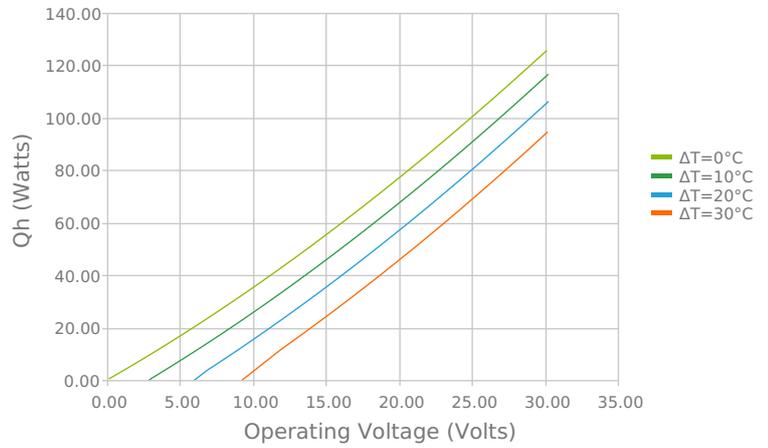
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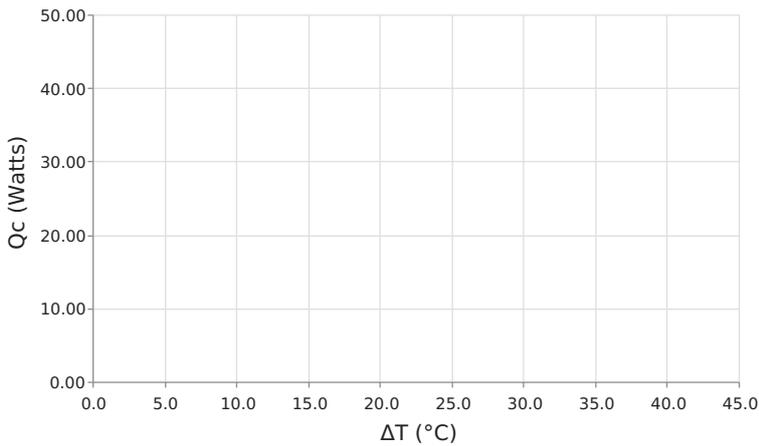
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Tambient = 35°C



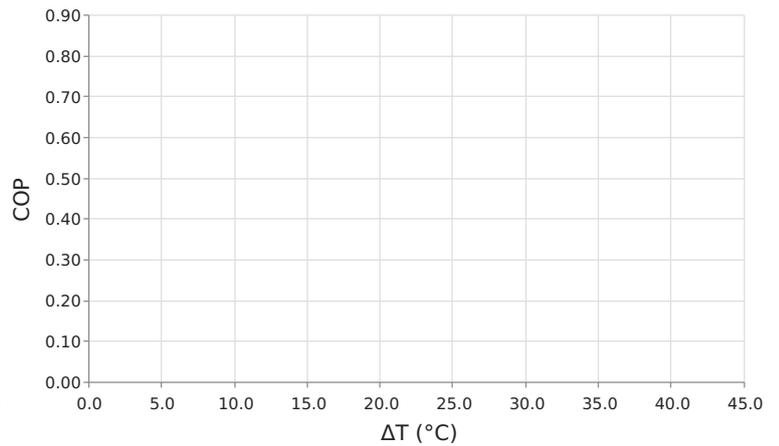
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Tambient = 35°C



Heat Pumped at Cold Side (Q_c)
Voperating = 24 Volts | Ioperating = 2.16 Amps



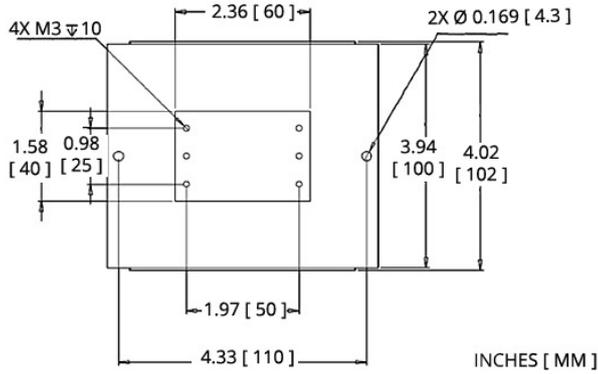
Coefficient of Performance (COP = Q_c/P_{in})
Voperating = 24 Volts | Ioperating = 2.16 Amps



Specifications

| | |
|---|-------------------------------------|
| Heat Transfer Mechanism, Cold Side | Direct - Conduction |
| Heat Transfer Mechanism, Hot Side | Air - Forced Convection |
| Operating Temperature Range | -10°C to 44°C |
| Supply Voltage | 24.0 VDC nominal / 30.0 VDC maximum |
| Current Draw | 2.2 A running / 2.8 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

¹For indoor use only

²Units 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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