

PowerCool Series Thermoelectric Cooler Assembly

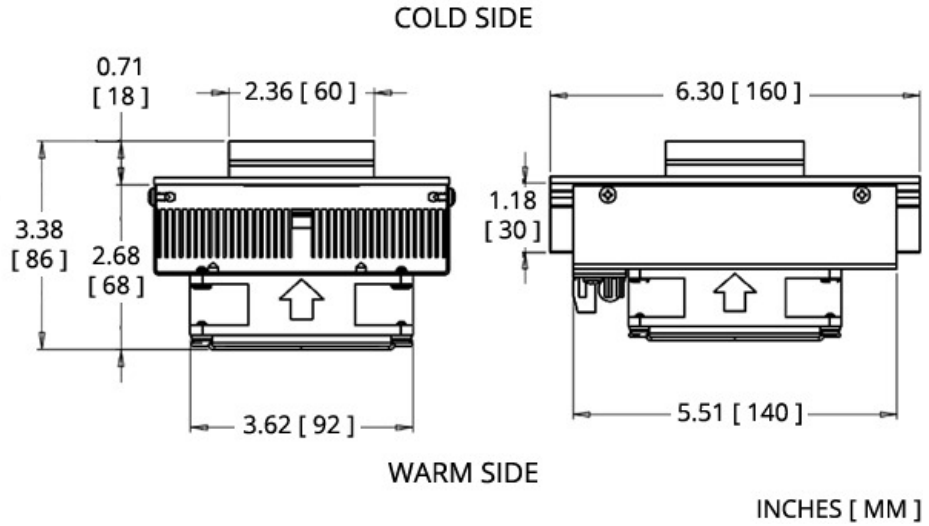
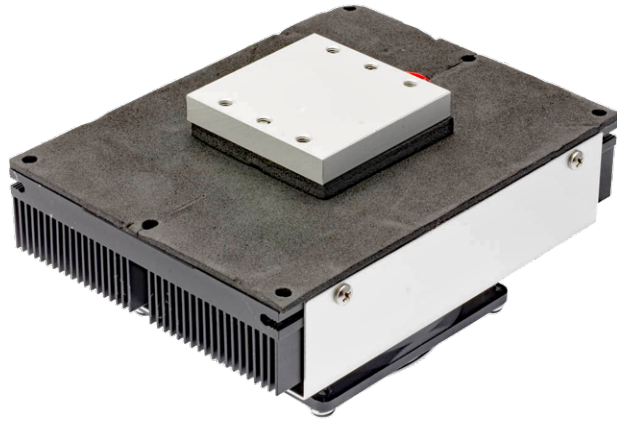
The DA-045-24-02 is a Direct-to-Air Thermoelectric Cooler Assembly that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via conduction. Heat is absorbed through a cold plate and dissipated thru a high density heat exchanger equipped with an air ducted shroud and brand name fan. It has a maximum Q_c of 48 Watts when $\Delta T = 0$ and a maximum ΔT of 49 °C at $Q_c = 0$.

Features

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

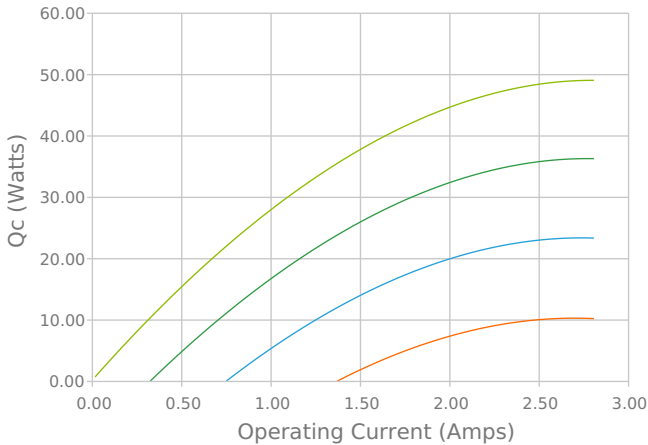
Applications

- 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

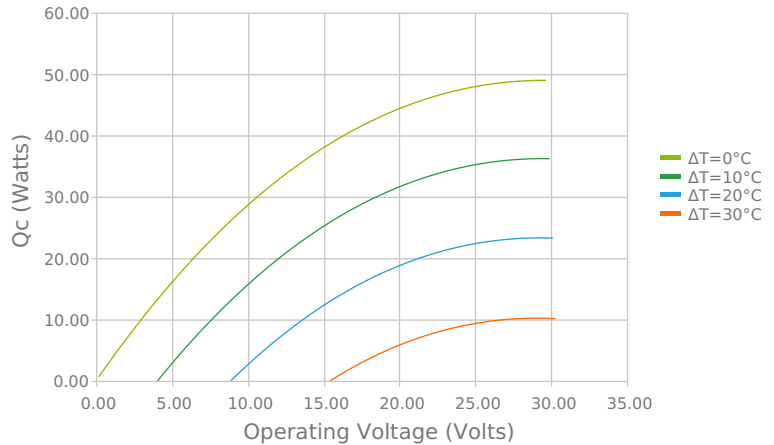


ELECTRICAL AND THERMAL PERFORMANCE

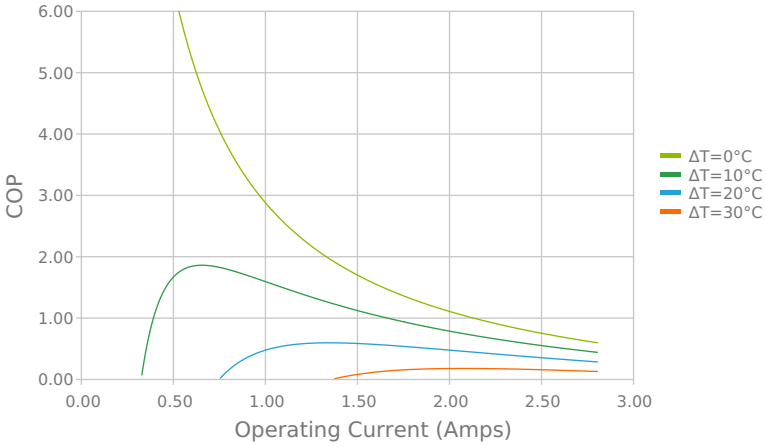
Heat Pumped at Cold Side (Q_c)
 $T_{ambient} = 35^\circ C$ | $T_{control} = 20^\circ C$



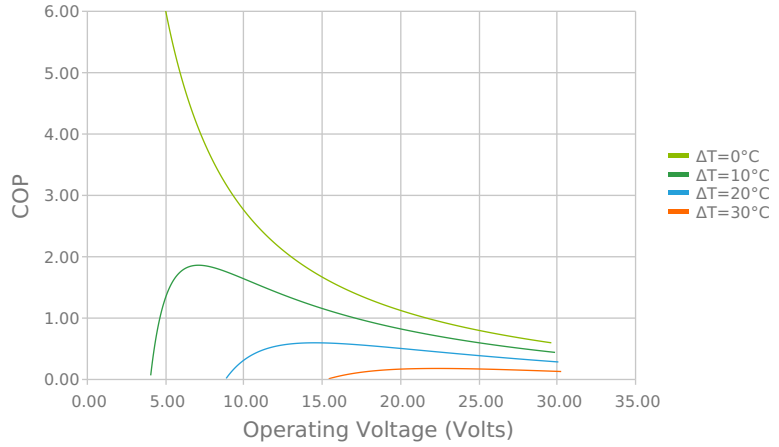
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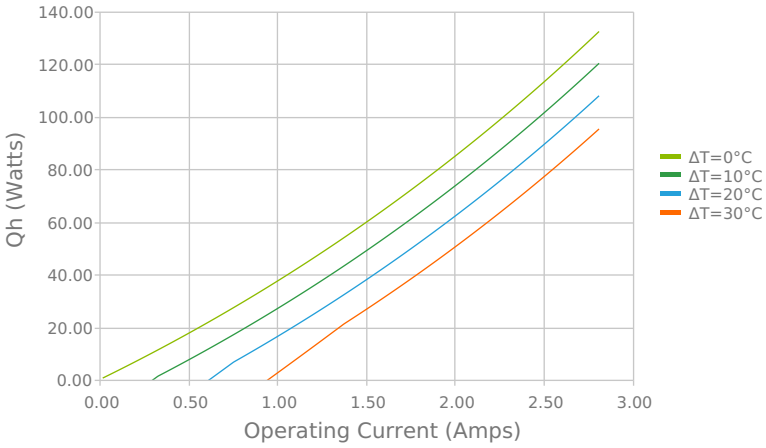
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C | Tcontrol = 20°C



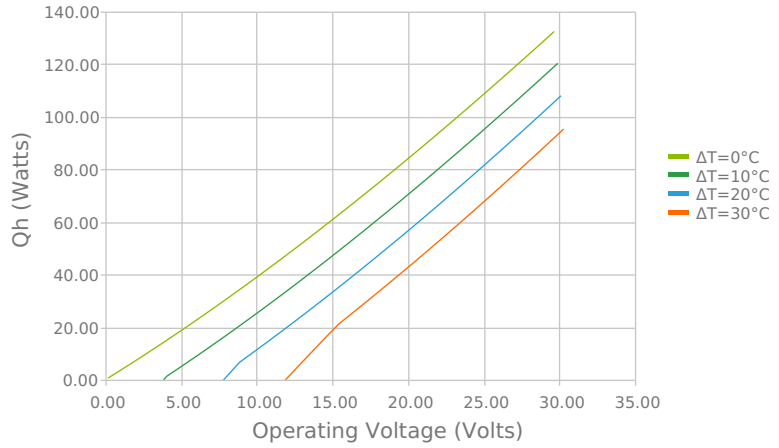
Coefficient of Performance (COP = Qc/Pin)
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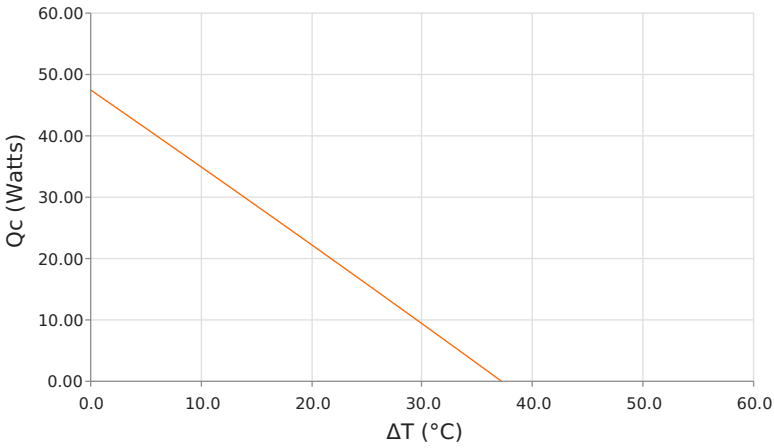
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



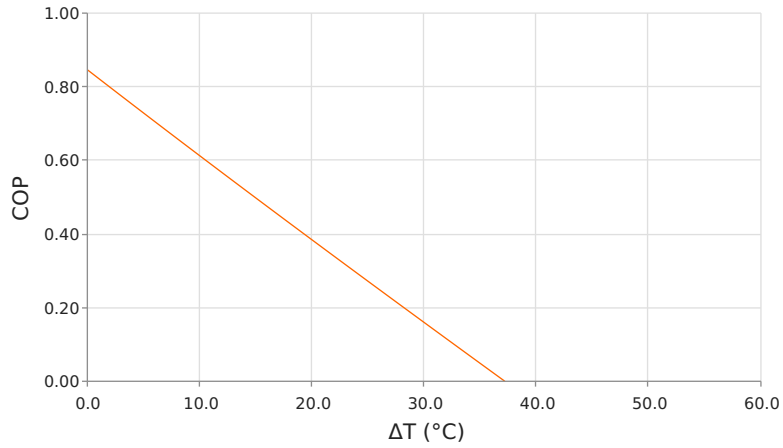
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)
 Voperating = 24.06 Volts | Ioperating = 2.34 Amps



Coefficient of Performance (COP = Qc/Pin)
 Voperating = 24.06 Volts | Ioperating = 2.34 Amps

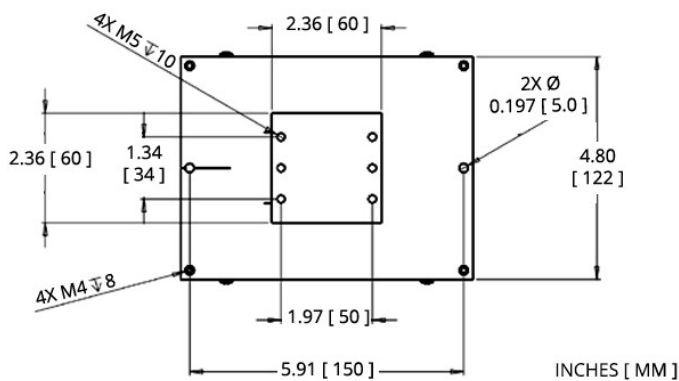


SPECIFICATIONS

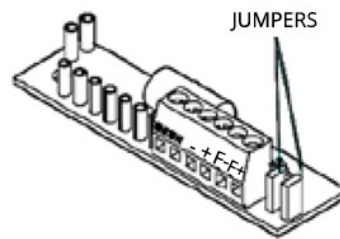
- Operating Temperature Range**
- Supply Voltage**
- Current Draw**
- Power Supply**
- Performance Tolerance**
- Fan MTBF**
- Weight**

-10°C to 46°C
24.0 VDC nominal / 30.0 VDC maximum
2.5 A running / 3.5 A startup
60.0 Watts
10%
50,000 hours
1.20 kg

MOUNTING HOLE LOCATION



WIRING SCHEMATIC



ELECTRICAL CONNECTIONS:

- " + " : + TEM
- " - " : - TEM
- " F+ " : + FAN(S)
- " F- " : - FAN(S)

To use single supply:
 Lift the jumpers and rotate 90° to short-out the pin pairs.
 Connect the unit to " + " & " - ".

Warning: Single supply not applicable in heating mode or with PWM-regulation.

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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