

PowerCool Series Thermoelectric Cooler Assembly

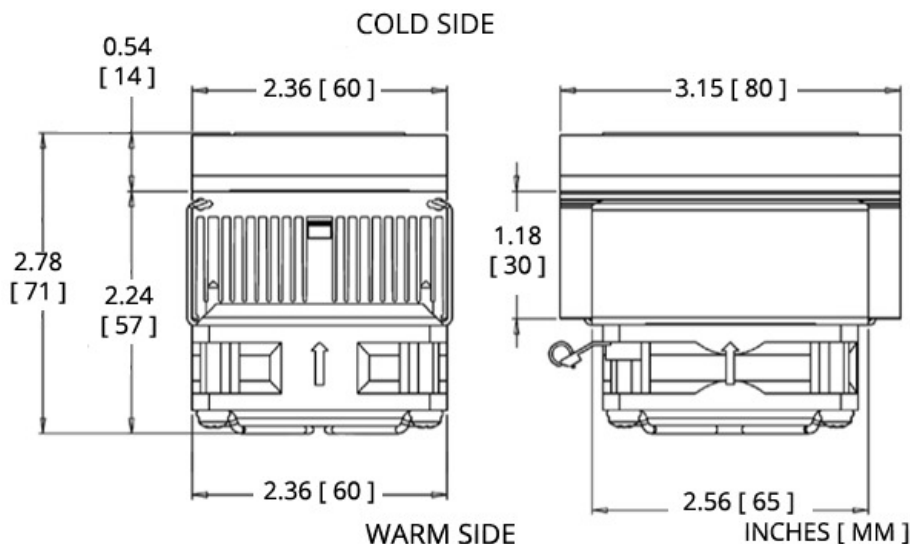
The DA-024-12-02 is a Direct-to-Air Thermoelectric Cooler Assembly that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via conduction. Heat is absorbed through a cold plate and dissipated thru a high density heat exchanger equipped with an air ducted shroud and brand name fan. It has a maximum Q_c of 24 Watts when $\Delta T = 0$ and a maximum ΔT of 44 °C at $Q_c = 0$.

Features

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

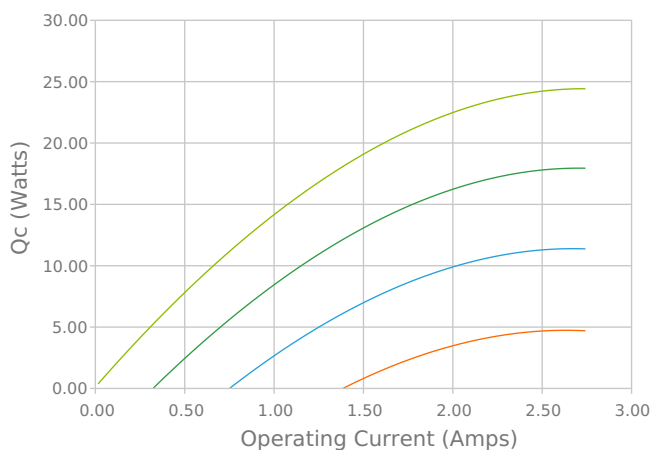
Applications

- 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

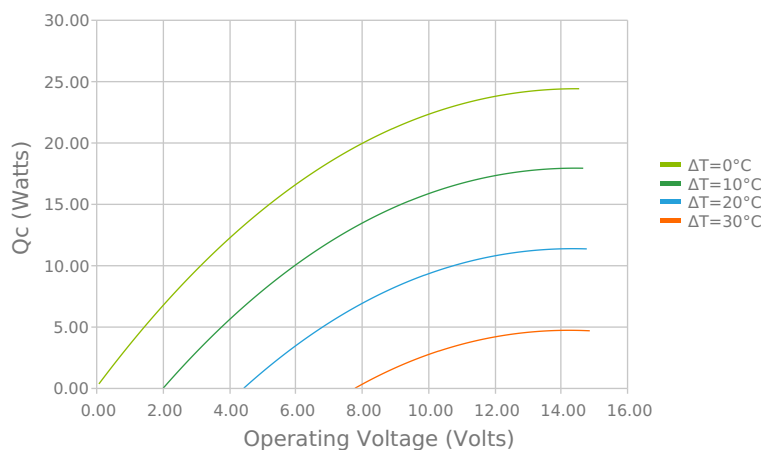


ELECTRICAL AND THERMAL PERFORMANCE

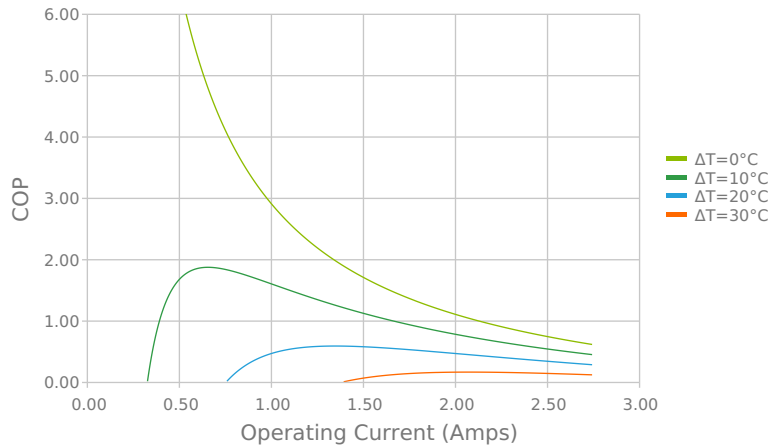
Heat Pumped at Cold Side (Q_c)
 $T_{\text{ambient}} = 35^\circ\text{C}$ | $T_{\text{control}} = 20^\circ\text{C}$



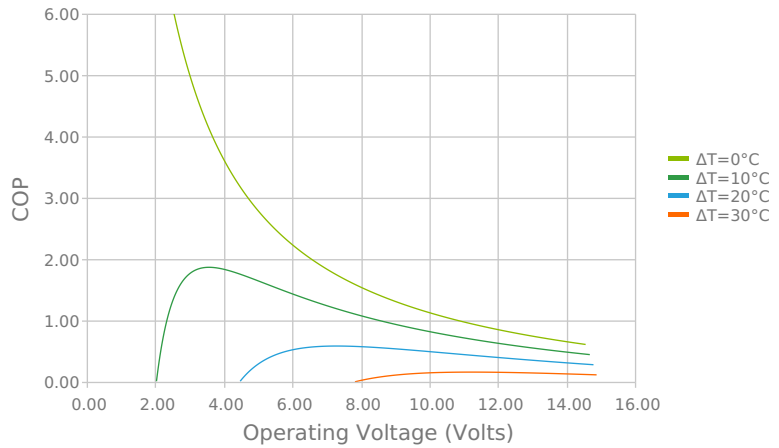
Heat Pumped at Cold Side (Q_c)
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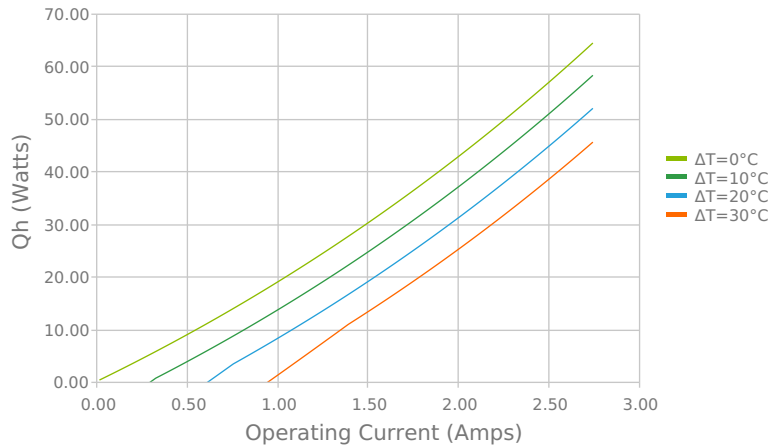
Coefficient of Performance (COP = Q_c/P_{in})
T_{ambient} = 35°C | T_{control} = 20°C



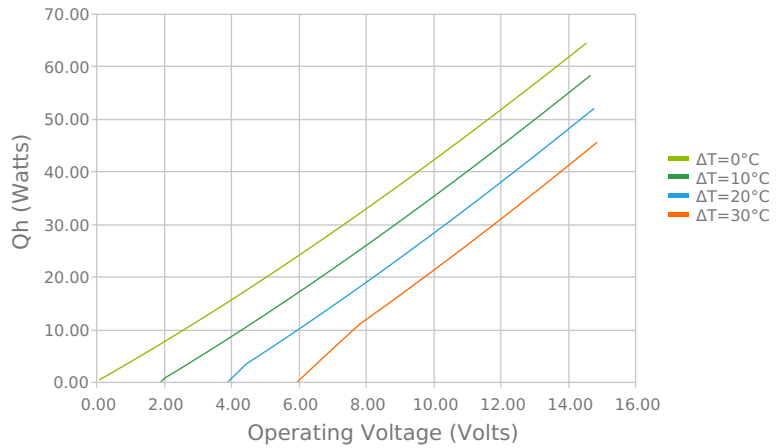
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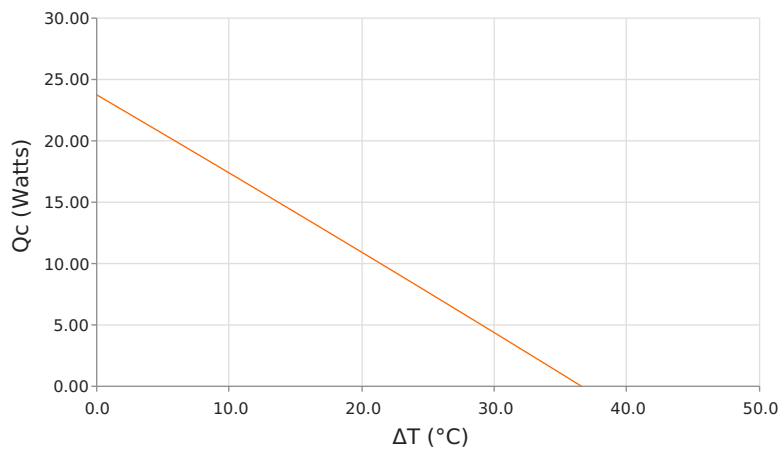
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
T_{ambient} = 35°C | T_{control} = 20°C



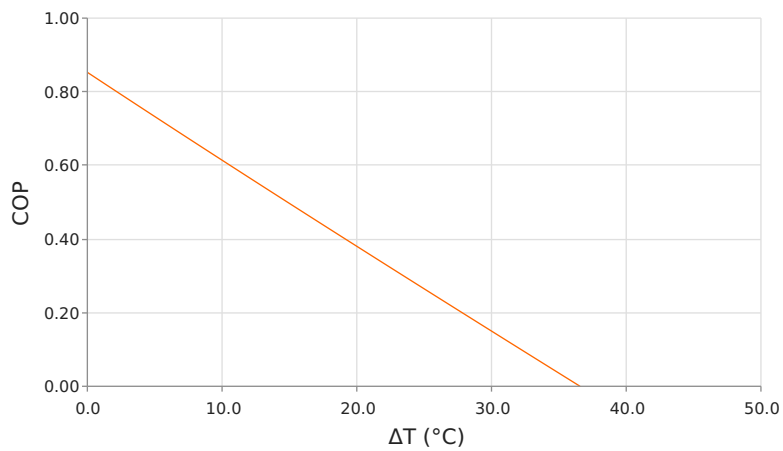
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
T_{ambient} = 35°C | T_{control} = 20°C



Heat Pumped at Cold Side (Q_c)
V_{operating} = 12.02 Volts | I_{operating} = 2.33 Amps



Coefficient of Performance (COP = Q_c/P_{in})
V_{operating} = 12.02 Volts | I_{operating} = 2.33 Amps



SPECIFICATIONS

Operating Temperature Range

Supply Voltage

Current Draw

Power Supply

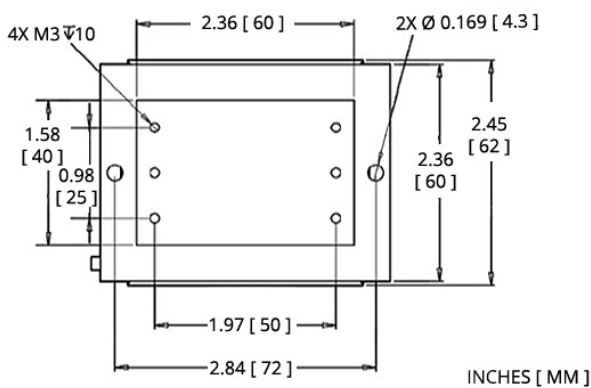
Performance Tolerance

Fan MTBF

Weight

-10°C to 48°C
12.0 VDC nominal / 15.0 VDC maximum
2.4 A running / 2.8 A startup
29.0 Watts
10%
50,000 hours
0.30 kg

MOUNTING HOLE LOCATION



WIRING SCHEMATIC

ELECTRICAL CONNECTIONS:

TEM+ : Pink
 TEM - : Green
 FAN+ : Purple
 FAN - : Blue

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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