

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 Q_c of 12 Watts when $\Delta T = 0$ and a maximum ΔT of 50 °C at $Q_c = 0$.

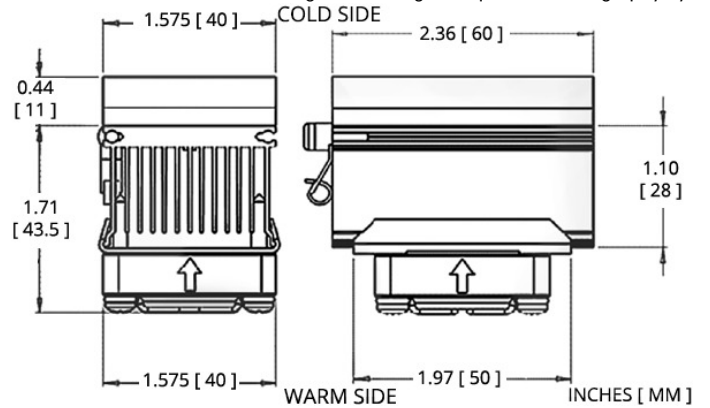


Features

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

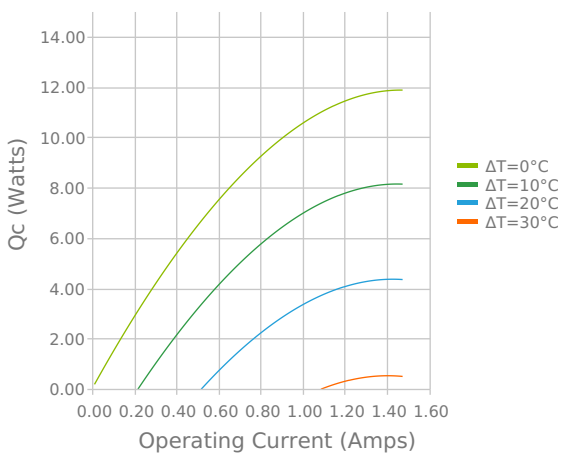
Applications

- 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

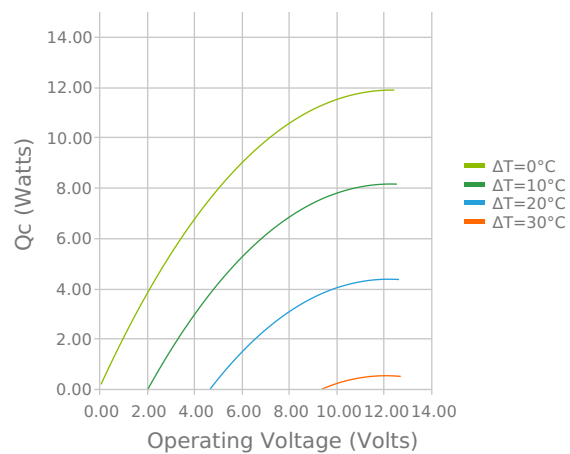


Electrical and Thermal Performance

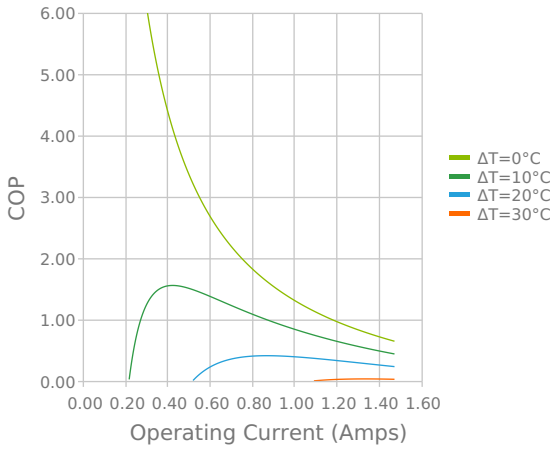
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C



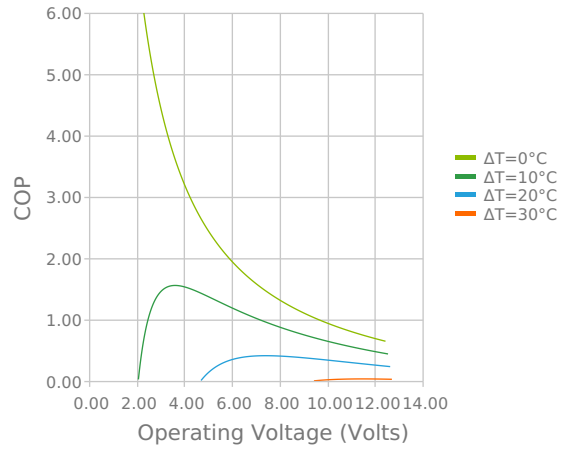
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C



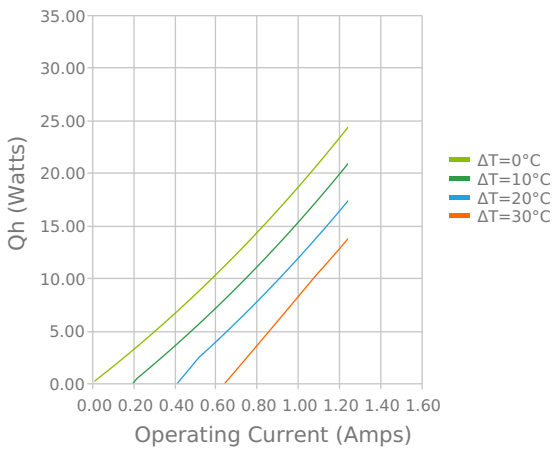
Coefficient of Performance (COP = Q_c/P_{in})
Tambient = 35°C



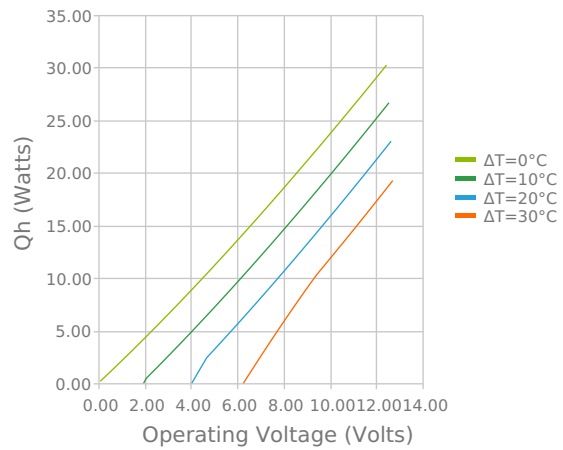
Coefficient of Performance (COP = Q_c/P_{in})
Tambient = 35°C



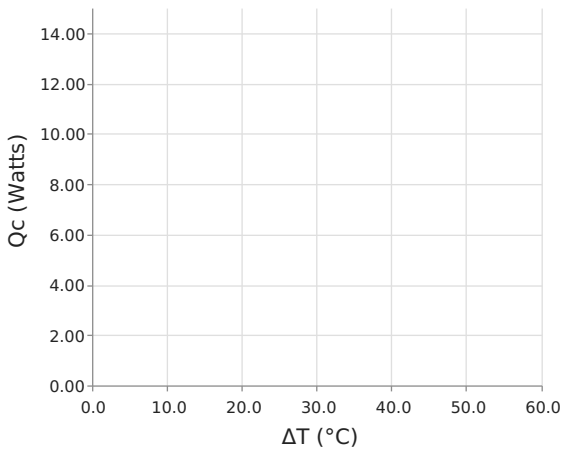
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Tambient = 35°C



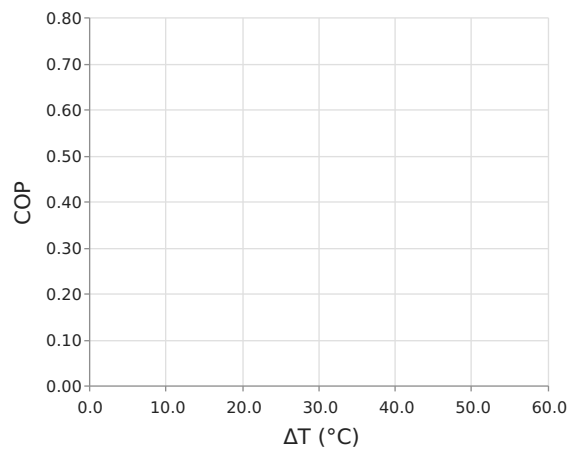
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Tambient = 35°C



Heat Pumped at Cold Side (Q_c)
Voperating = 12 Volts | Ioperating = 1.43 Amps



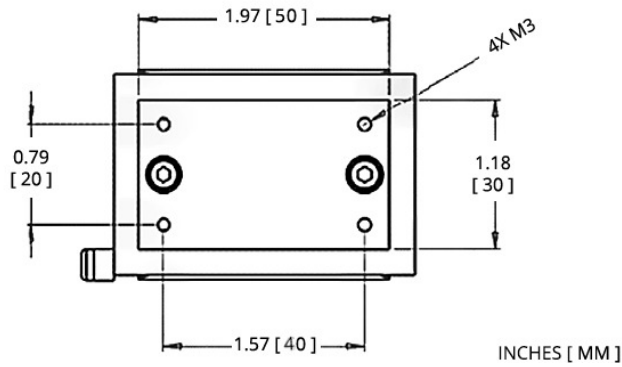
Coefficient of Performance (COP = Q_c/P_{in})
Voperating = 12 Volts | Ioperating = 1.43 Amps



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	12.0 VDC nominal / 15.0 VDC maximum
Current Draw	1.8 A running / 2.3 A startup
Power Supply	22.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	No Testing
Fan MTBF	50000 hours
Weight	0.20 kg
Panel Mounting	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

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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