Tunnel Series Thermoelectric Cooler Assembly

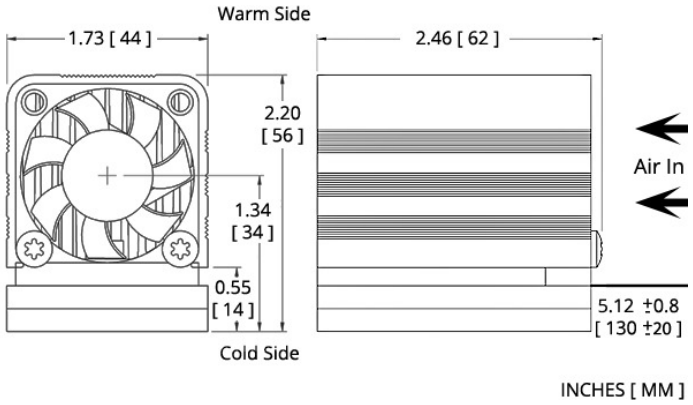
The DA-011-05-02 is a thermoelectric based air conditioner designed to temperature control small chambers used in analytical and medical diagnostic instruments. The unique design offers premium fans pushing air across-high density heat sinks to minimize the number of air flow paths required to operate. The design utilizes custom thermoelectric modules to maximize cooling capacity with a high coefficient of performance. Moisture resistant insulation is used to keep condensation from penetrating the thermoelectric module cavity. The unit operates on DC and is designed for an indoor lab use environment. It has a maximum Qc of 11 Watts when ΔT = 0 and a maximum ΔT of 48 °C at Qc = 0.

Features

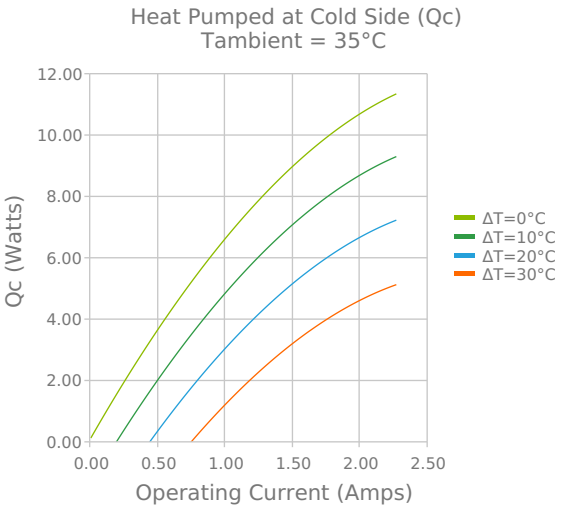
- Compact design
- Precise temperature control
- Reliable solid-state operation
- DC operation
- RoHS-compliant

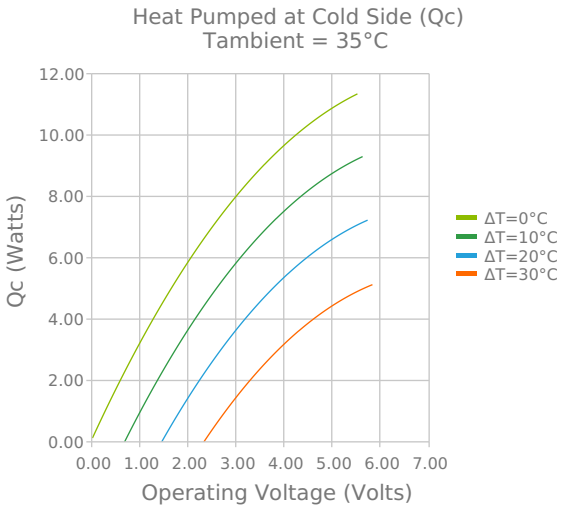
Applications

- Thermoelectric Coolers and Assemblies for Medical Applications
- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- High-Performance Liquid Chromatography (HPLC)
- Thermal Management Solutions for Beverage Cooling
- Heating and Cooling for Liquid Chromatography Systems

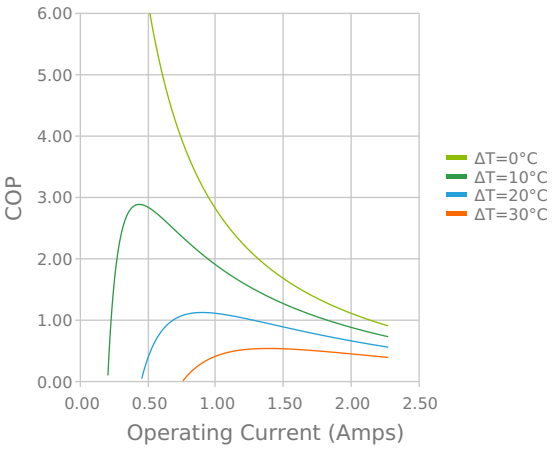


Electrical and Thermal Performance





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



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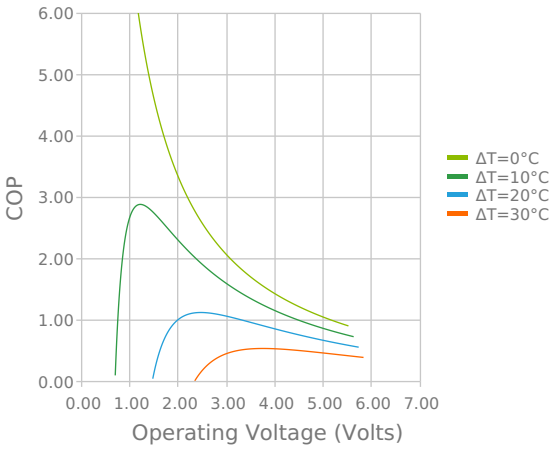
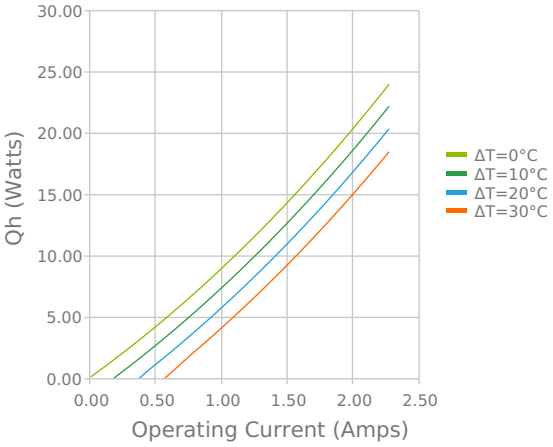


Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Tambient = 35°C



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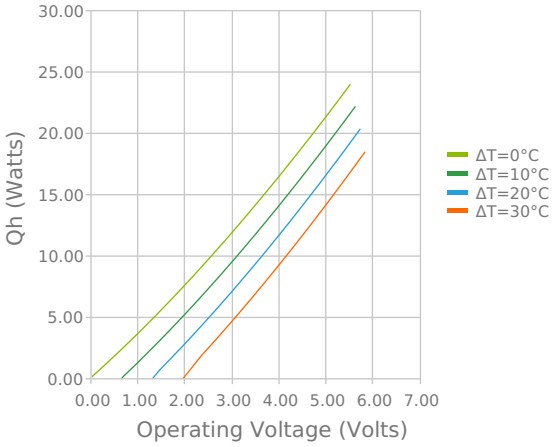
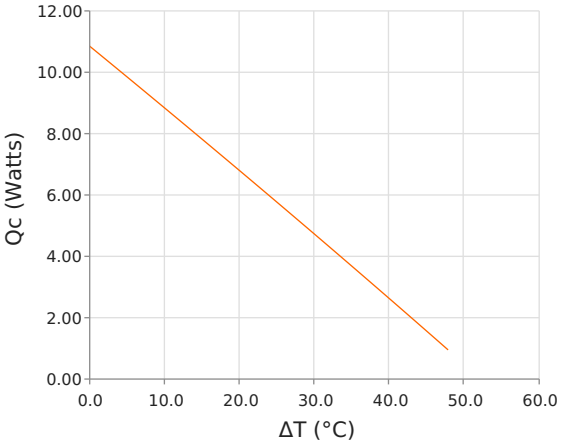


Heat Pumped at Cold Side (Qc)
Voperating = 5 Volts | Ioperating = 2.08 Amps



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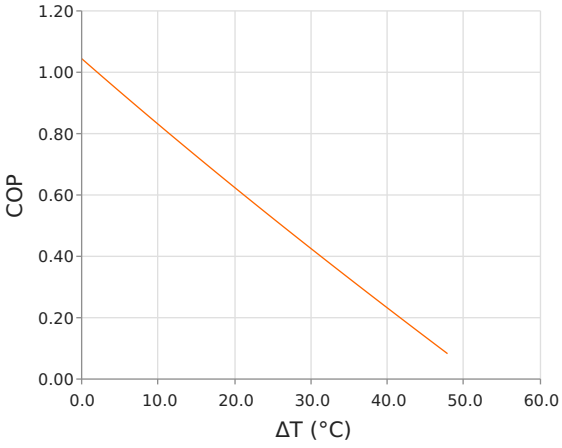
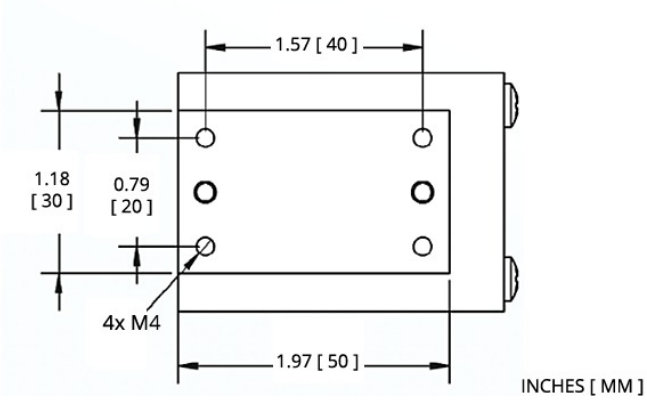


Specifications

Heat Transfer Mechanism, Cold Side	Direct - Conduction
Heat Transfer Mechanism, Hot Side	Air - Forced Convection
Operating Temperature Range	-10°C to 55°C
Supply Voltage	5.0 VDC nominal / 5.5 VDC maximum
Current Draw	2.2 A running / 2.7 A startup
Power Supply	11.0 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 +" : RED
"TEM - " : BLACK
" F+ " : +RED
" F - " : - BLACK OR BLUE

Notes

[1]For indoor use only

Revision: 00 Date: 06-01-2022

Print Date: 05-12-2025