

Tunnel Series Thermoelectric Cooler Assembly

The DAT-105-24-02 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 Q_c of 106 Watts when $\Delta T = 0$ and a maximum ΔT of 33 °C at $Q_c = 0$.

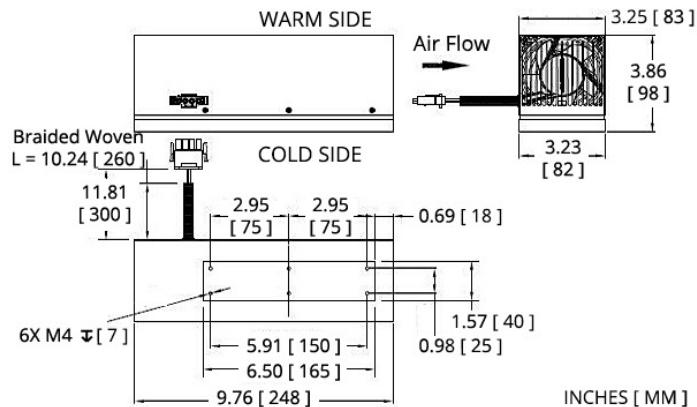


Features

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

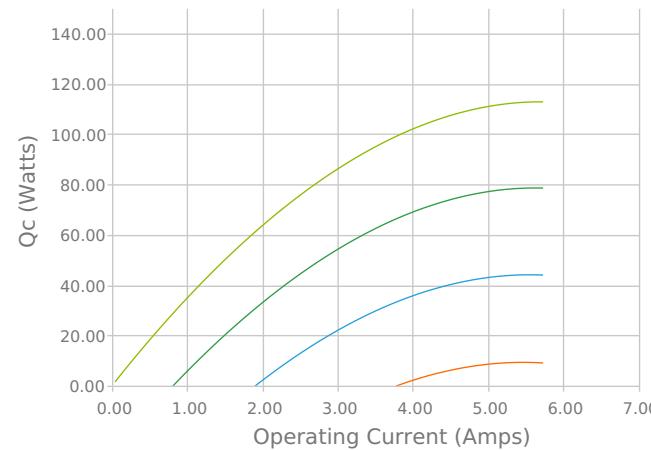
Applications

- 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

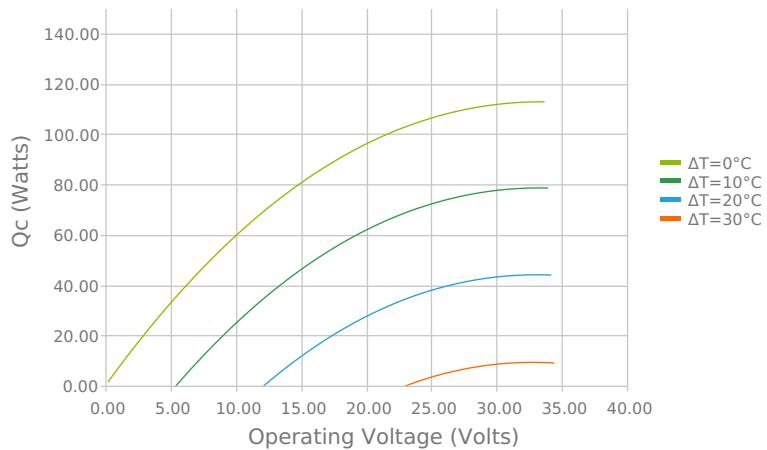


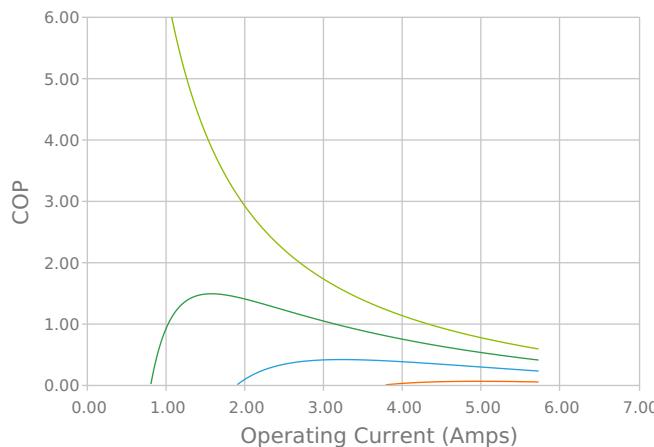
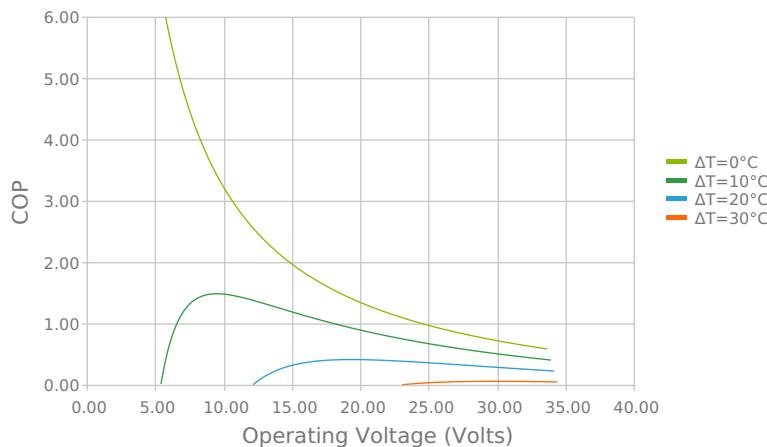
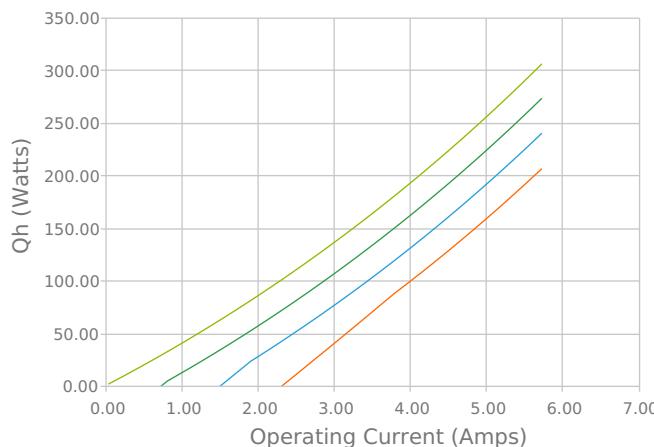
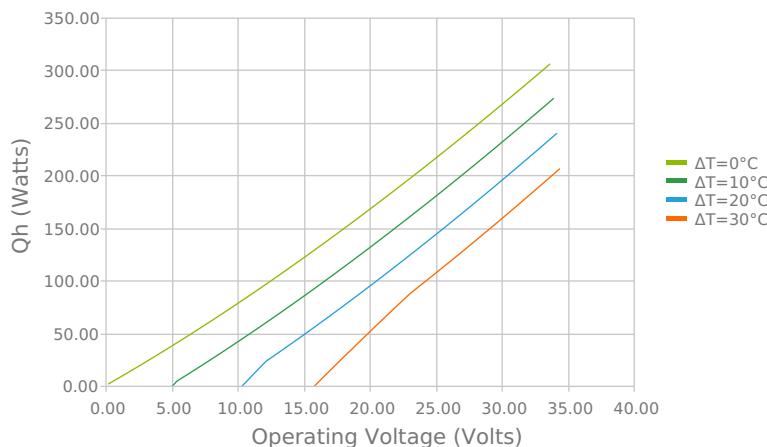
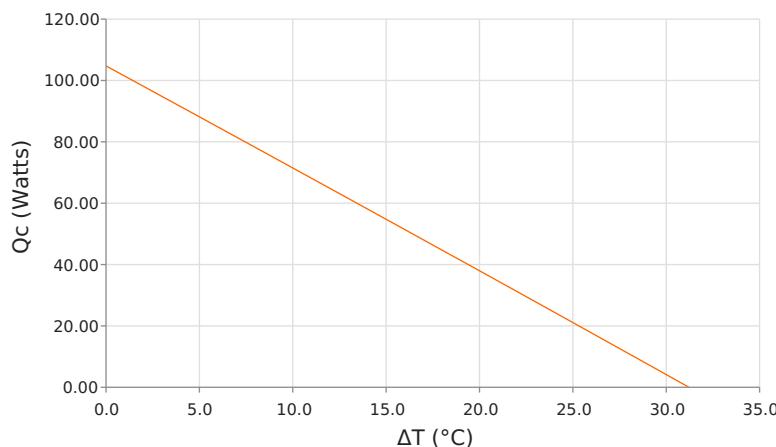
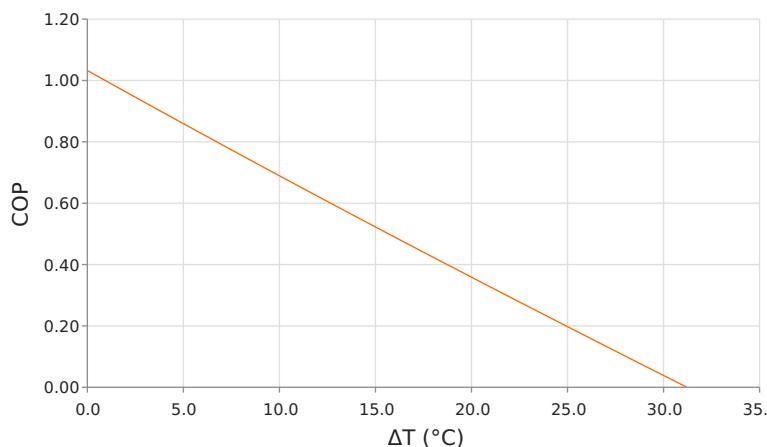
ELECTRICAL AND THERMAL PERFORMANCE

Heat Pumped at Cold Side (Q_c)
Tambient = 35°C | Tcontrol = 20°C



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Coefficient of Performance (COP = Q_c/P_{in})
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Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
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Heat Pumped at Cold Side (Q_c)
 Voperating = 24.06 Volts | Ioperating = 4.24 Amps

Coefficient of Performance (COP = Q_c/P_{in})
 Voperating = 24.06 Volts | Ioperating = 4.24 Amps


SPECIFICATIONS

Operating Temperature Range

-10°C to 50°C

Supply Voltage

24.0 VDC nominal / 28.0 VDC maximum

Current Draw

4.9 A running / 5.7 A startup

Power Supply

114.0 Watts

Performance Tolerance

10%

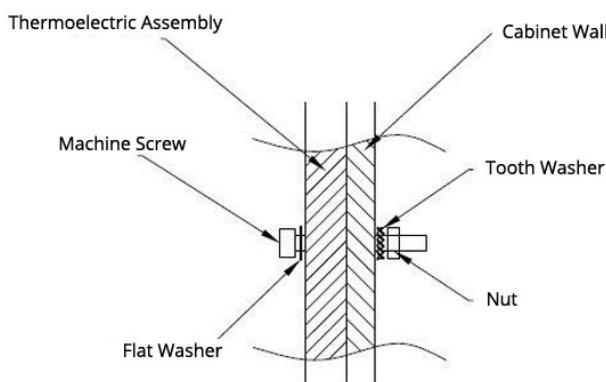
Fan MTBF

50,000 hours

Weight

1.70 kg

MOUNTING HOLE LOCATION



WIRING SCHEMATIC

| PIN # | OBJECT | WIRE SIZE | COLOR | SUPPLIED CONNECTOR | | MATING CONNECTOR | |
|-------|----------------|-----------|-------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | | PLUG | PIN | RECEPTACLE | SOCKET |
| 1 | TEM + | AWG #18 | Red | | | | |
| 2 | TEM - | | Black | | | | |
| 3 | FAN HOT SIDE + | AWG #20 | White | | | | |
| 4 | FAN HOT SIDE - | | Green | TE Connectivity 350779-1 | TE Connectivity 350547-1 | TE Connectivity 350780-1 | TE Connectivity 350550-1 |

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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