

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 Q_c of 11 Watts when $\Delta T = 0$ and a maximum ΔT of 48 °C at $Q_c = 0$.

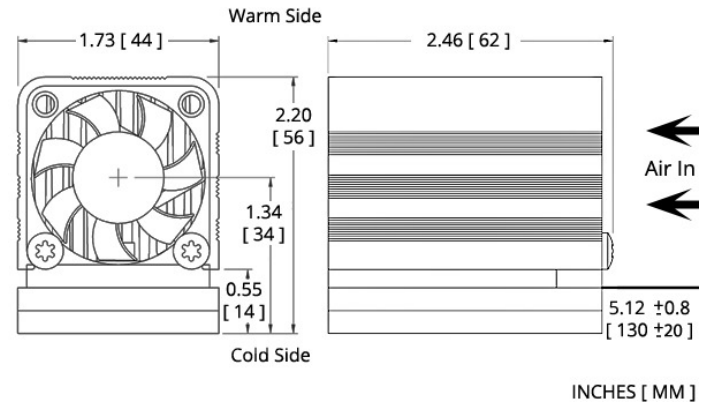


Features

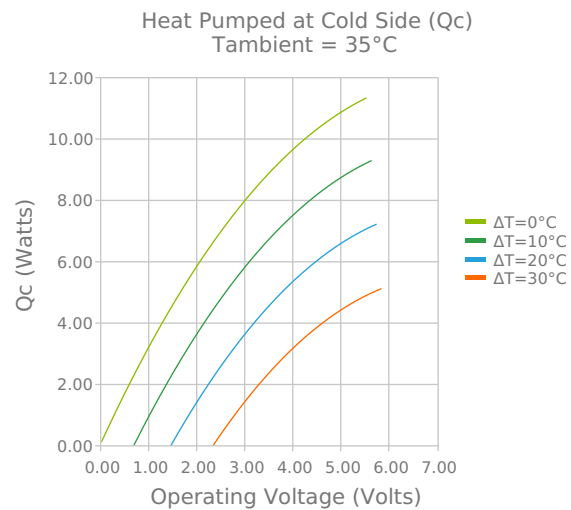
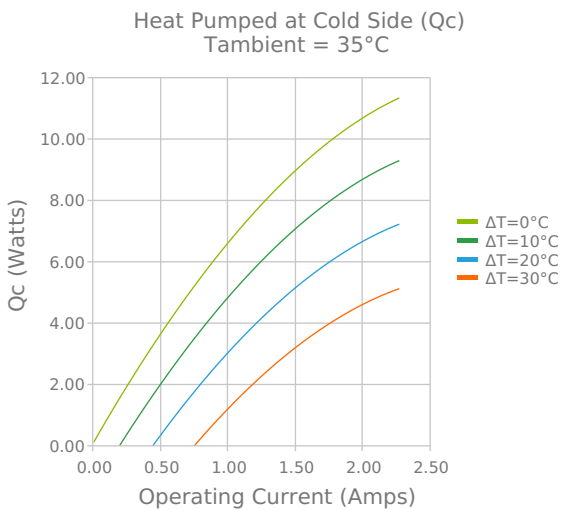
- Compact design
- Precise temperature control
- Reliable solid-state operation
- DC operation
- RoHS-compliant

Applications

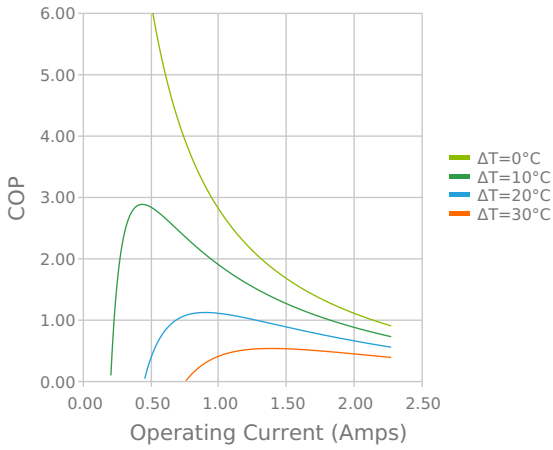
- Thermoelectric Coolers and Assemblies for Medical Applications
- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- High-Performance Liquid Chromatography (HPLC)
- Thermal Management Solutions for Beverage Cooling
- Heating and Cooling for Liquid Chromatography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



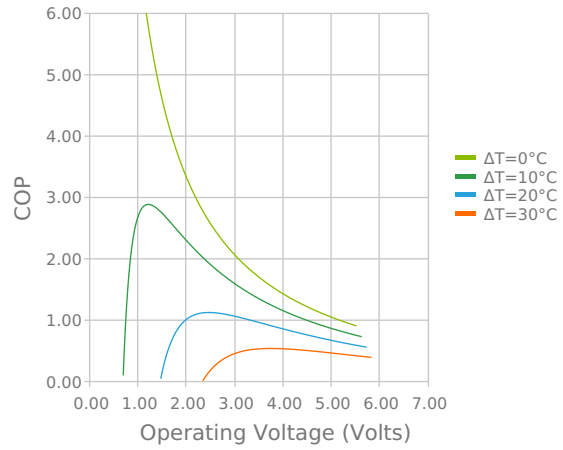
Electrical and Thermal Performance



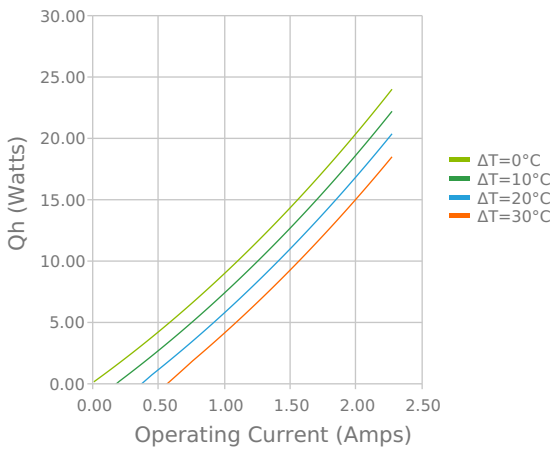
Coefficient of Performance (COP = Q_c/P_{in})
Tambient = 35°C



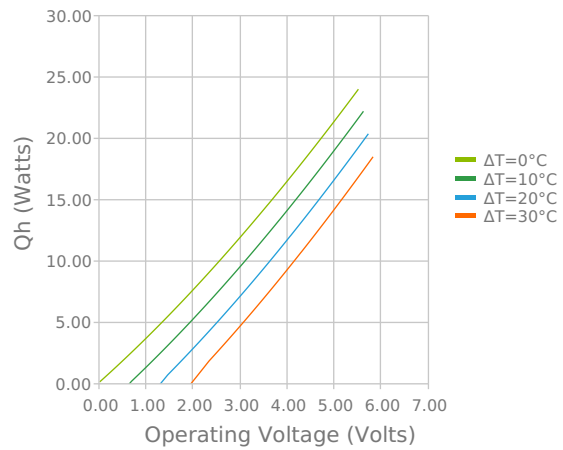
Coefficient of Performance (COP = Q_c/P_{in})
Tambient = 35°C



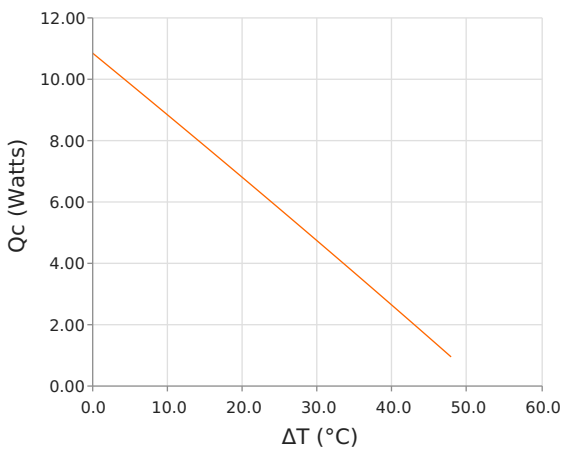
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Tambient = 35°C



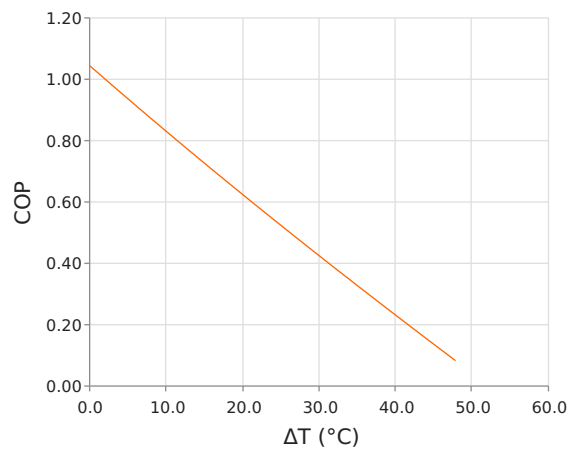
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Tambient = 35°C



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



Coefficient of Performance (COP = Q_c/P_{in})
Voperating = 5 Volts | Ioperating = 2.08 Amps

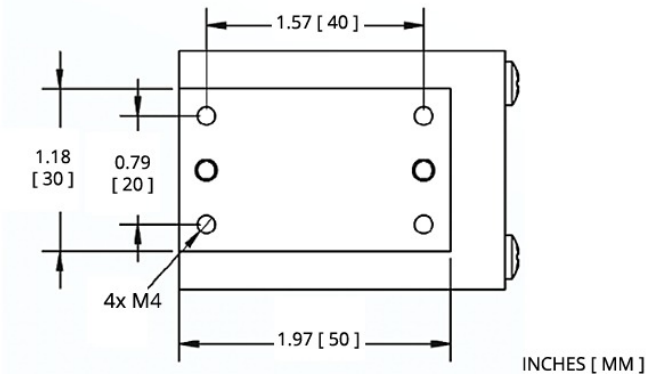


Specifications

| | |
|------------------------------------|-----------------------------------|
| 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

¹For indoor use only

Any information furnished by Tark Thermal Solutions and its agents, whether in specifications, data sheets, product catalogues or otherwise, is believed to be (but is not warranted as being) accurate and reliable, is provided for information only and does not form part of any contract with Tark Thermal Solutions. All specifications are subject to change without notice. Tark Thermal Solutions assumes no responsibility and disclaims all liability for losses or damages resulting from use of or reliance on this information. All Tark products are sold subject to the Tark Thermal Solutions Terms and Conditions of sale (including Tark's limited warranty) in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2025 Tark Thermal Solutions, Inc. All rights reserved.

Revision: 00 Date: 06-01-2022

Print Date: 05-12-2025