Tunnel Series DAT-029-12-02
MFG Part Number: 387000866

Tunnel Series Thermoelectric Cooler Assembly

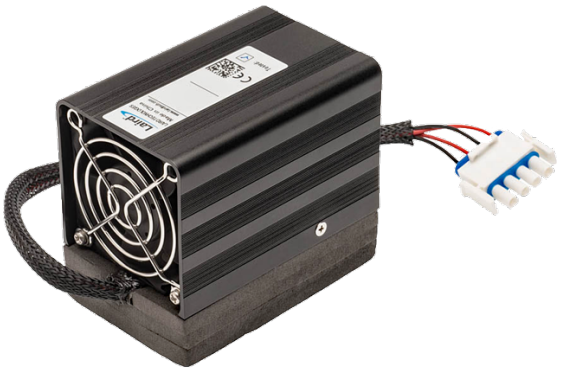
The DAT-029-12-02 is a thermoelectric based air conditioner designed to temperature control small chambers used in analytical and medical diagnostic instruments. The unique design offers premium fans pushing air across-high density heat sinks to minimize the number of air flow paths required to operate. 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 29 Watts when ΔT = 0 and a maximum ΔT of 40 °C at Qc = 0.

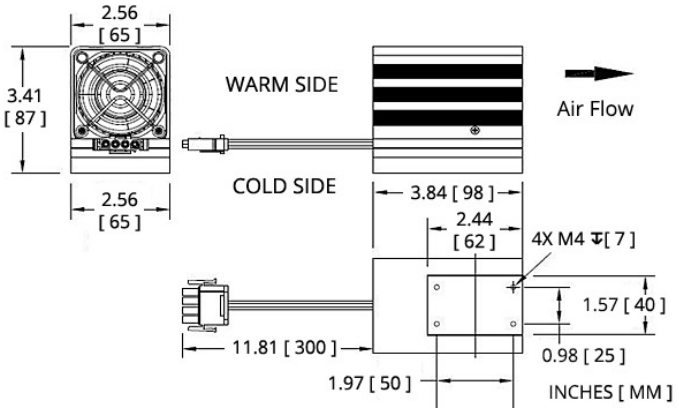
Features

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

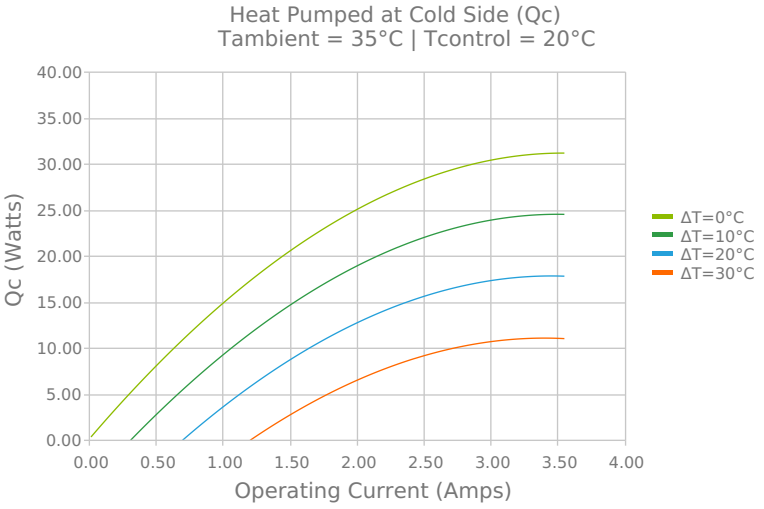
Applications

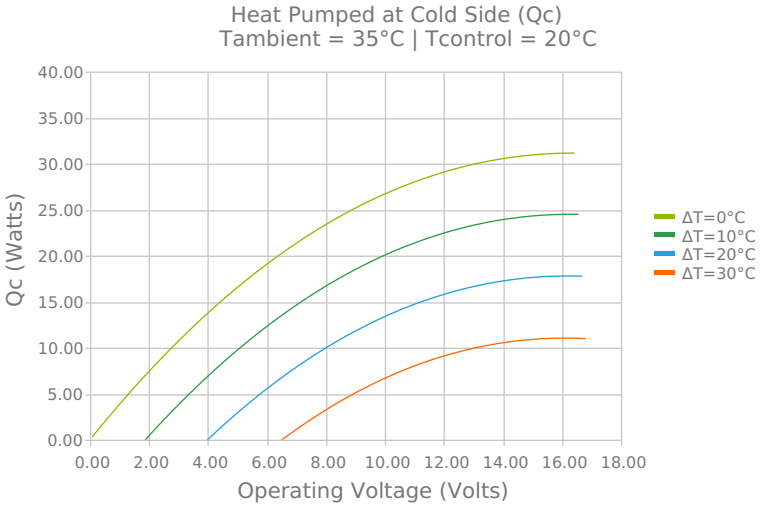
- Thermoelectric Coolers and Assemblies for Medical Applications
- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- High-Performance Liquid Chromatography (HPLC)
- Thermal Management Solutions for Beverage Cooling
- Heating and Cooling for Liquid Chromatography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



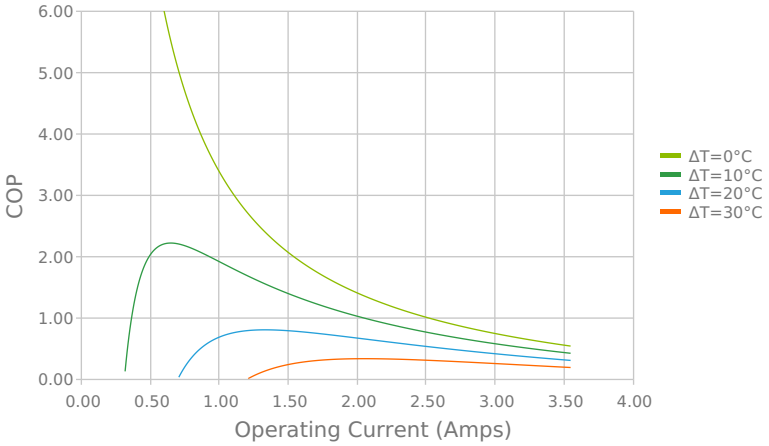


ELECTRICAL AND THERMAL PERFORMANCE

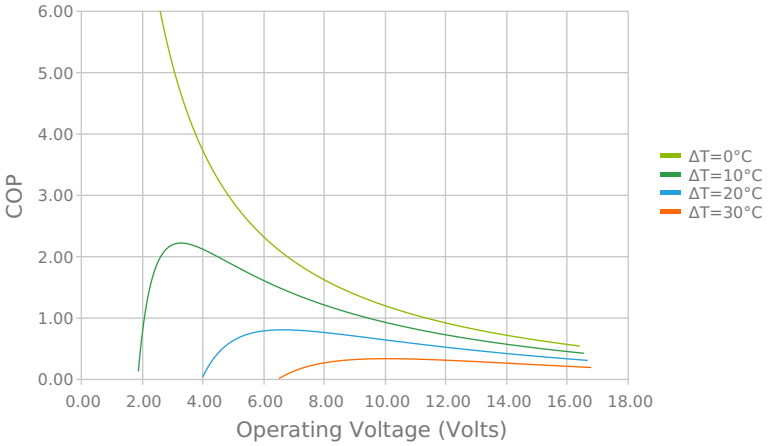




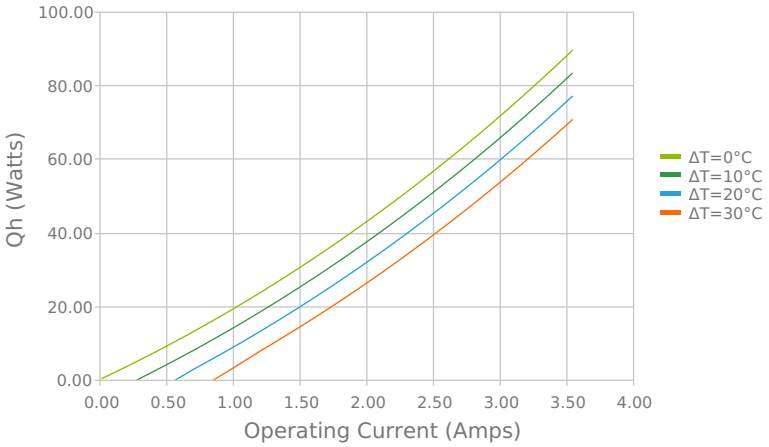
Coefficient of Performance (COP = Qc/Pin)
Tambient = 35°C | Tcontrol = 20°C



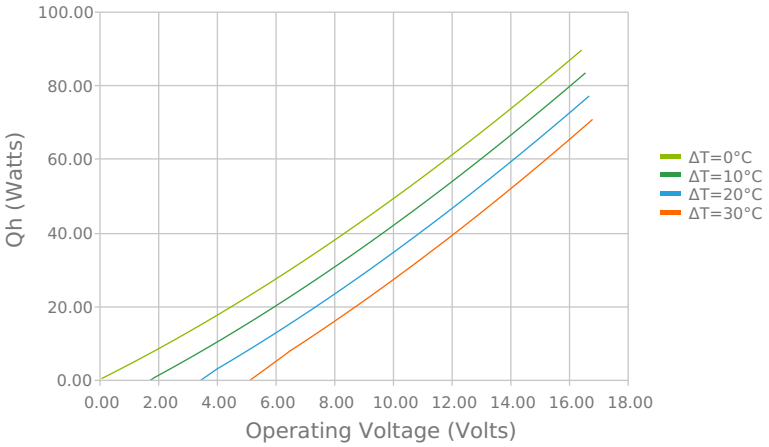
Coefficient of Performance (COP = Qc/Pin)
Tambient = 35°C | Tcontrol = 20°C



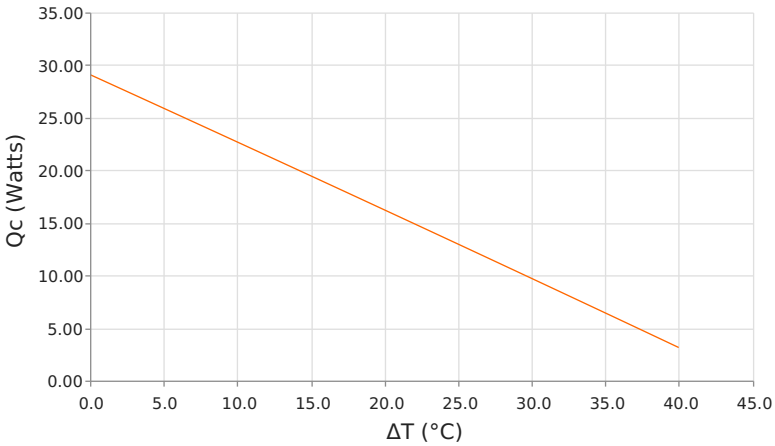
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Tambient = 35°C | Tcontrol = 20°C



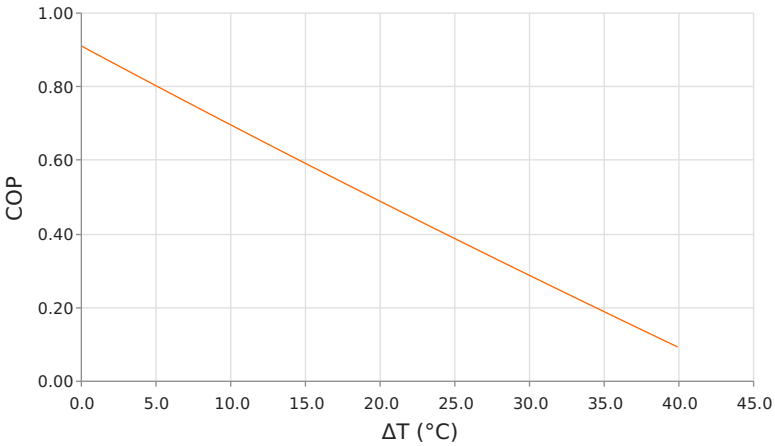
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)
Voperating = 12.02 Volts | Ioperating = 2.66 Amps



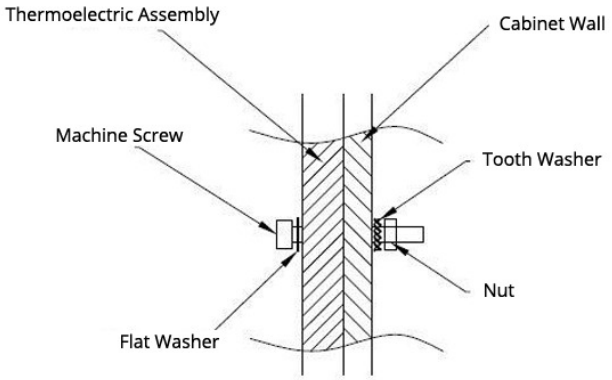
Coefficient of Performance (COP = Qc/Pin)
Voperating = 12.02 Volts | Ioperating = 2.66 Amps



SPECIFICATIONS

Heat Transfer Mechanism, Cold Side	Direct - Conduction
Heat Transfer Mechanism, Hot Side	Air - Forced Convection
Operating Temperature Range	-10°C to 50°C
Supply Voltage	12.0 VDC nominal / 15.0 VDC maximum
Current Draw	2.7 A running / 3.2 A startup
Power Supply	34.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	750 VDC
Fan MTBF	50,000 hours
Weight	0.52 kg
Panel Mounting	6-M4 deep 7 mm Holes on the cold block

MOUNTING HOLE LOCATION



WIRING SCHEMATIC

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

NOTES

[1]For indoor use only

[2]Units 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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