

### PowerCool Series Thermoelectric Cooler Assembly

The DA-280-24-02 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 283 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 45 °C at  $Q_c = 0$ .

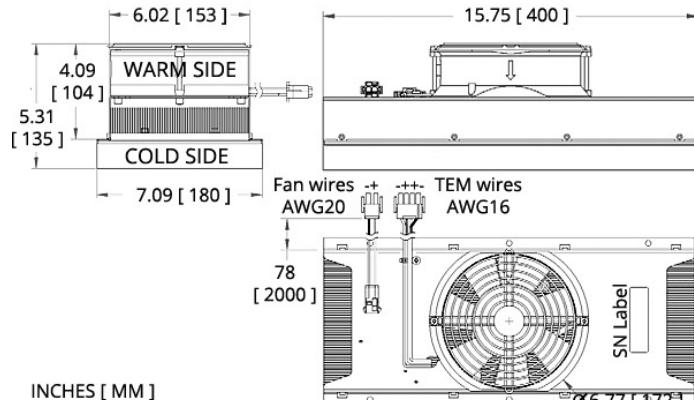


### Features

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

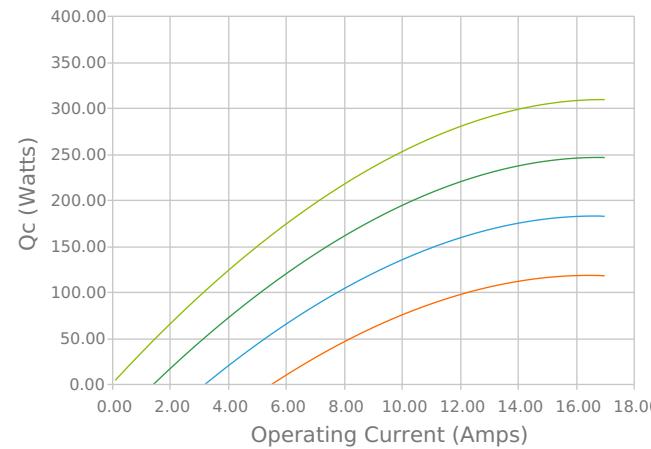
### Applications

- 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

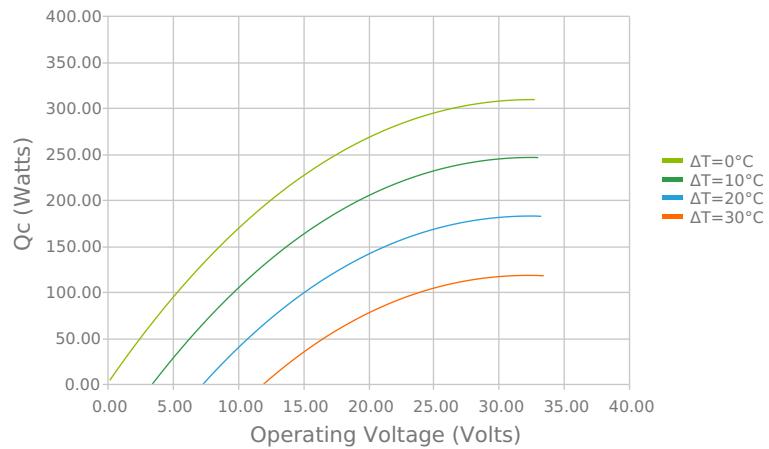


## ELECTRICAL AND THERMAL PERFORMANCE

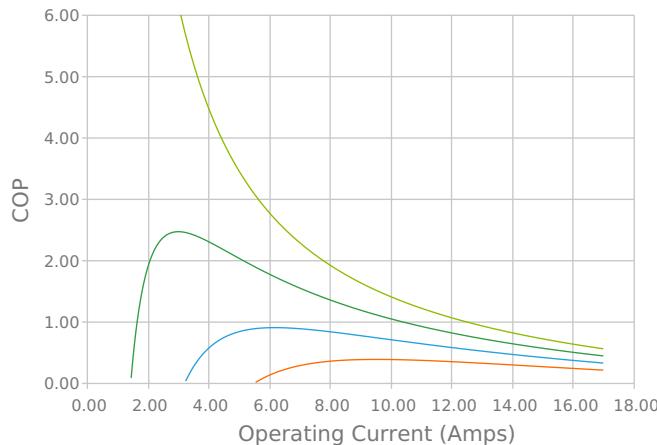
Heat Pumped at Cold Side ( $Q_c$ )  
Tambient = 35°C | Tcontrol = 20°C



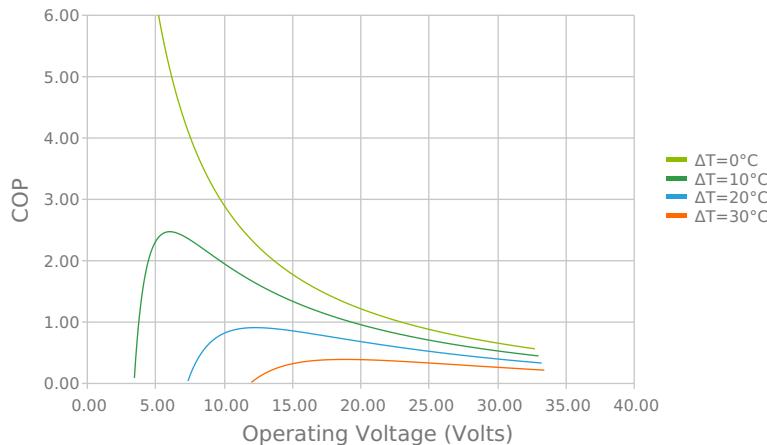
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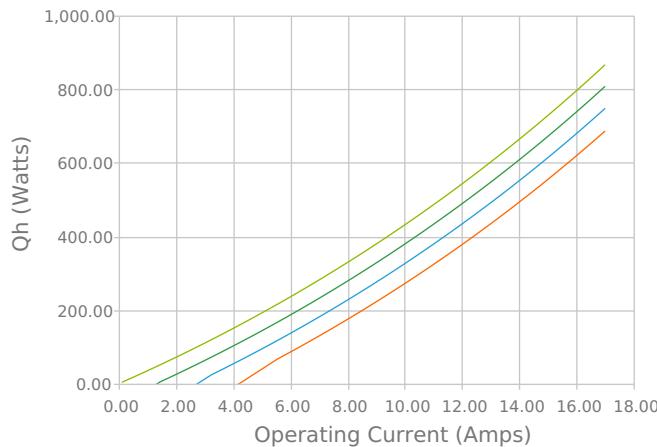
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
T<sub>ambient</sub> = 35°C | T<sub>control</sub> = 20°C



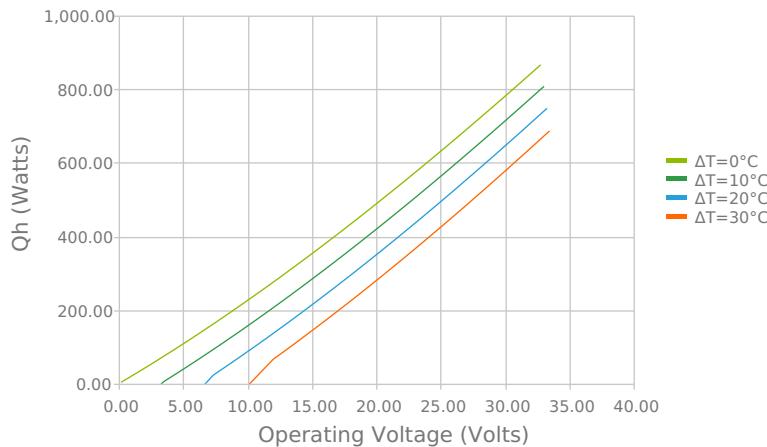
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
T<sub>ambient</sub> = 35°C | T<sub>control</sub> = 20°C



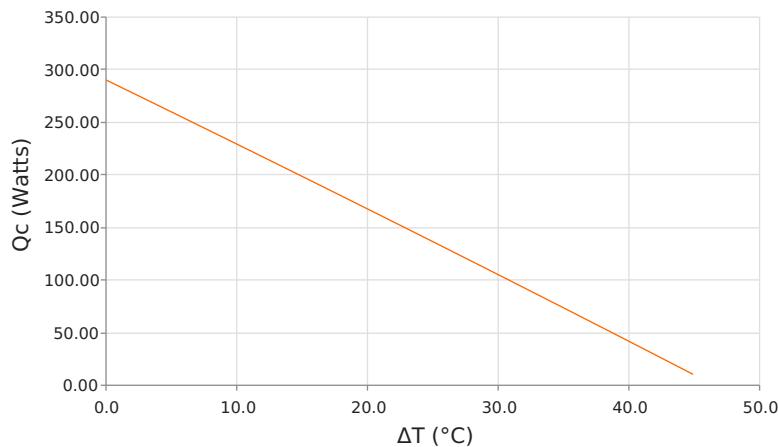
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
T<sub>ambient</sub> = 35°C | T<sub>control</sub> = 20°C



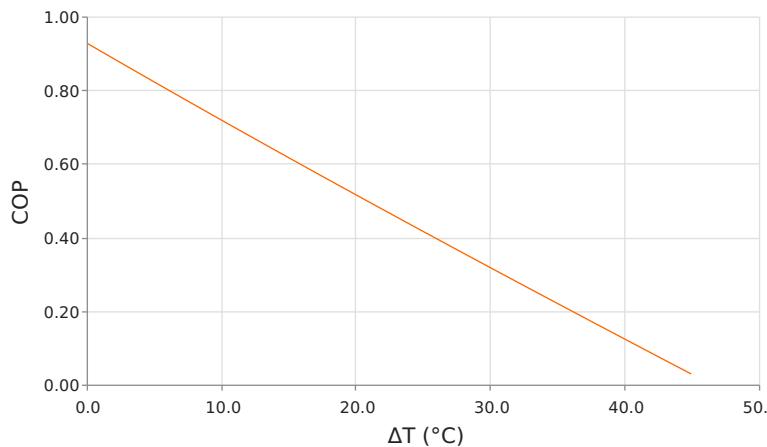
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
T<sub>ambient</sub> = 35°C | T<sub>control</sub> = 20°C



Heat Pumped at Cold Side ( $Q_c$ )  
V<sub>operating</sub> = 24.02 Volts | I<sub>operating</sub> = 13.01 Amps



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
V<sub>operating</sub> = 24.02 Volts | I<sub>operating</sub> = 13.01 Amps



## SPECIFICATIONS

**Operating Temperature Range**

-20°C to 55°C

**Supply Voltage**

24.0 VDC nominal / 28.0 VDC maximum

**Current Draw**

12.3 A running / 14.8 A startup

**Power Supply**

295.0 Watts

**Performance Tolerance**

10%

**Fan MTBF**

50,000 hours

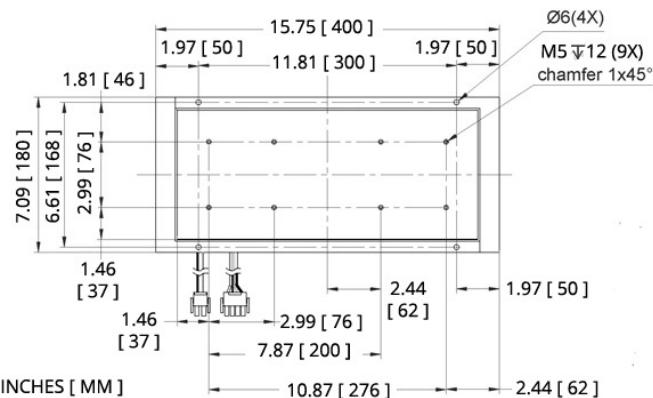
**Sound Level (1 m distance)**

60 dBA

**Weight**

6.12 kg

## MOUNTING HOLE LOCATION

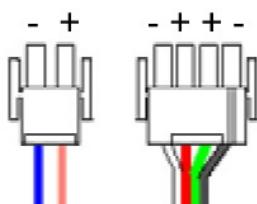


## WIRING SCHEMATIC

### ELECTRICAL CONNECTIONS:

Fan wiring  
AWG20

TEM Wiring  
AWG16



Warning: Do not reverse current or use PWM-regulation on fan supply.

## NOTES

<sup>1</sup>For indoor use only

<sup>2</sup>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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