

**Cascade Series Thermoelectric Cooler Assembly**

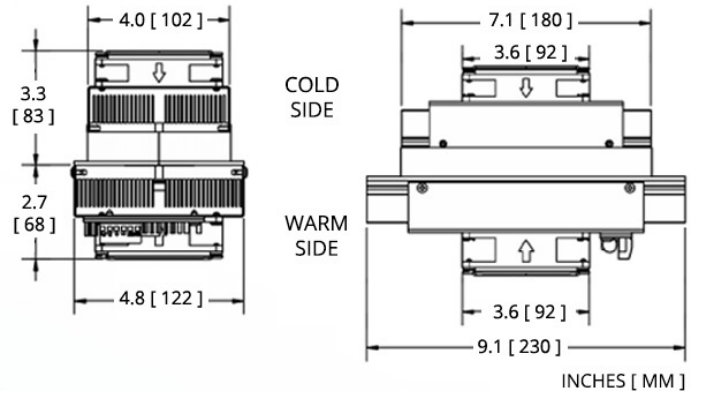
The AAC-050-24-22 is a thermoelectric cooler assembly that offers dependable, compact performance by cooling objects via convection or conduction. Heat is absorbed and dissipated thru high density heat exchangers equipped with air ducted shrouds and brand name fans. The heat pumping action is created by thermoelectric modules that are custom designed multistage cascades to achieve a high temperature differential. Custom configurations are available, however MOQ applies. This product can produce up to 40% more cooling capacity at cold temperatures, surpassing standard product offerings with similar form factors.

**Features**

- High heat pumping capacity at cold temperatures
- Precise temperature control
- Reliable solid-state operation
- Compact design

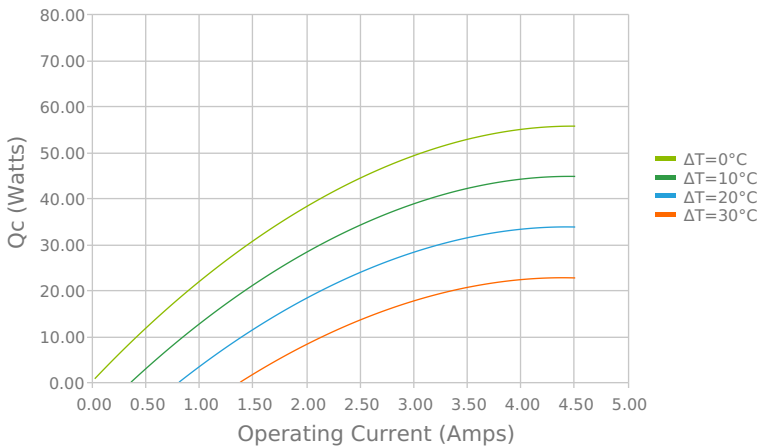
**Applications**

- [Thermoelectric Cooling for CMOS Sensors](#)
- [Heads-Up Displays, Imaging Sensors](#)

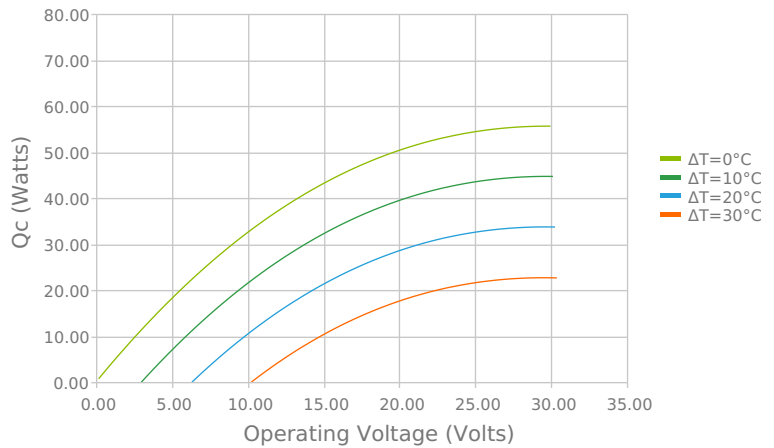


**ELECTRICAL AND THERMAL PERFORMANCE**

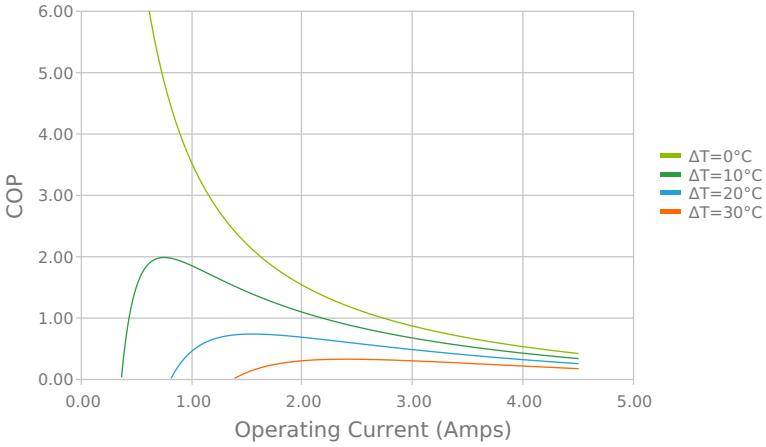
Heat Pumped at Cold Side ( $Q_c$ )  
 Tambient = 35°C | Tcontrol = 20°C



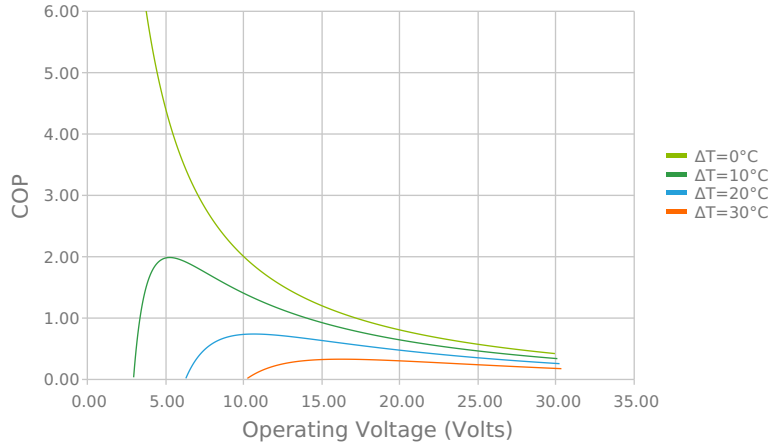
Heat Pumped at Cold Side ( $Q_c$ )  
 Tambient = 35°C | Tcontrol = 20°C



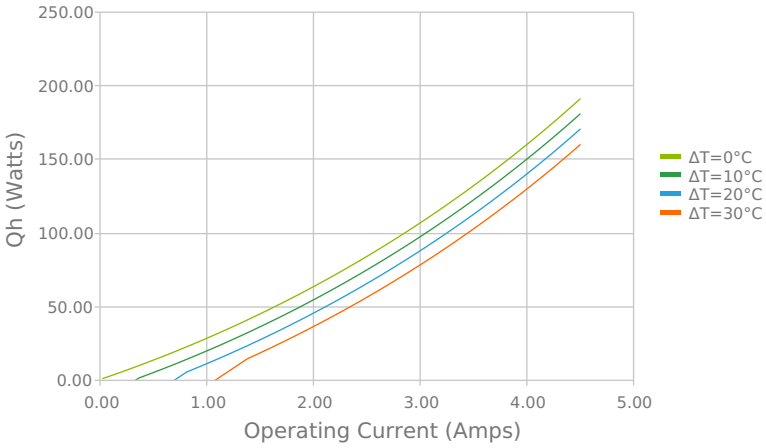
Coefficient of Performance (COP = Qc/Pin)  
 Tambient = 35°C | Tcontrol = 20°C



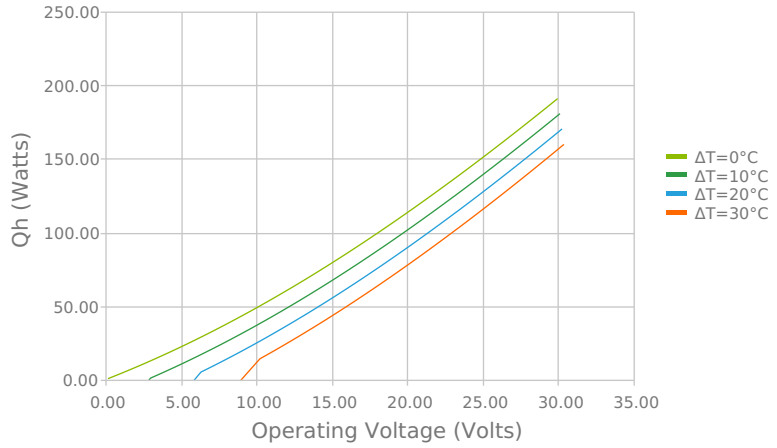
Coefficient of Performance (COP = Qc/Pin)  
 Tambient = 35°C | Tcontrol = 20°C



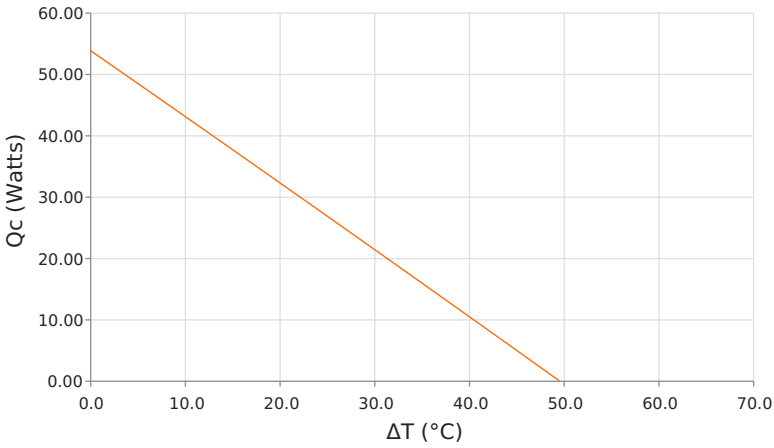
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



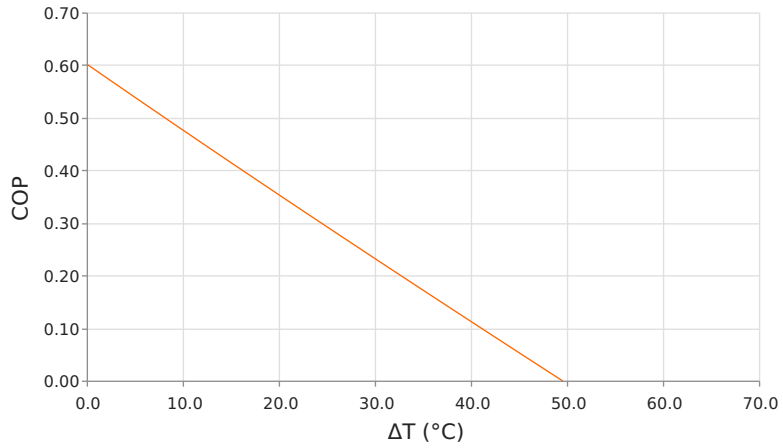
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)  
 Voperating = 24.02 Volts | Ioperating = 3.72 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Voperating = 24.02 Volts | Ioperating = 3.72 Amps

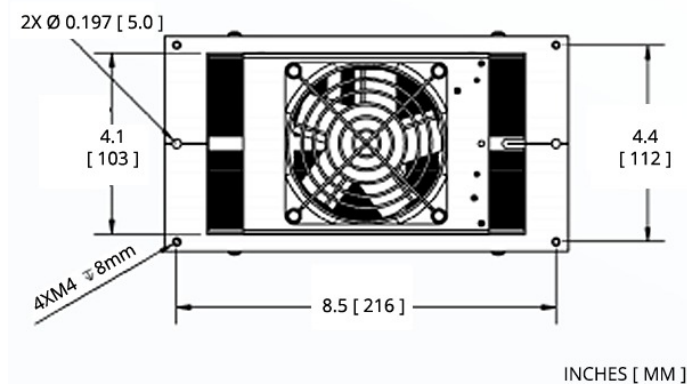


**SPECIFICATIONS**

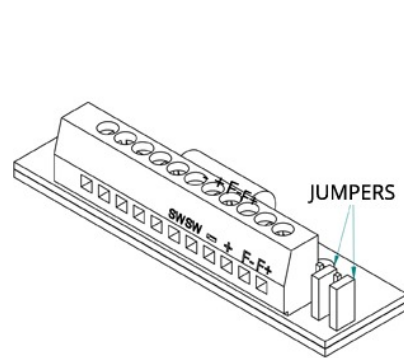
- Operating Temperature Range**
- Supply Voltage**
- Current Draw**
- Power Supply**
- Performance Tolerance**
- Fan MTBF**
- Weight**

-10°C to 47°C
24.0 VDC nominal / 30.0 VDC maximum
4.7 A running / 5.6 A startup
113.0 Watts
10%
50,000 hours
2.70 kg

**MOUNTING HOLE LOCATION**



**WIRING SCHEMATIC**



**ELECTRICAL CONNECTIONS:**

- " + " : + TEM
- " - " : - TEM
- " F+ " : + FAN(S)
- " F- " : - FAN(S)

To use single supply:  
 Lift the jumpers and rotate 90° to short-out the pin pairs.  
 Connect the unit to " + " & " - ".

**Warning:** Single supply not applicable in heating mode or with PWM-regulation.

**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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