

**ZT Series Thermoelectric Cooler**

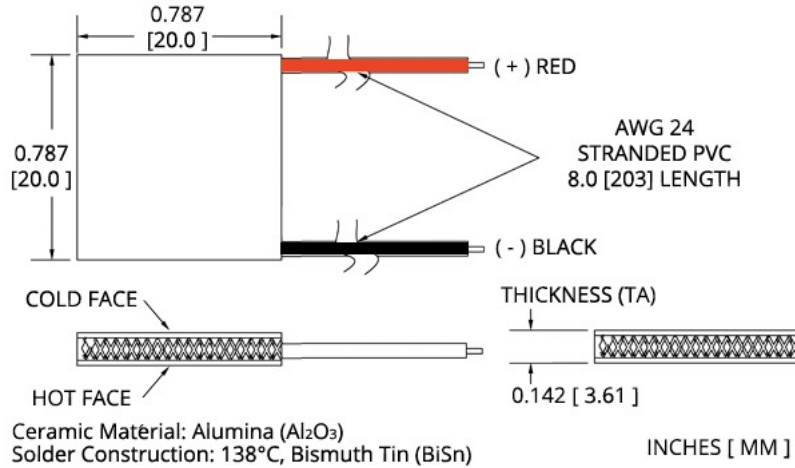
The ZT4-7-F1-2020-TB-EP-W8 is a high performance thermoelectric cooler that achieves a higher temperature differential than standard single stage thermoelectric coolers. It has a maximum  $Q_c$  of 18.6 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 71.7 °C at  $Q_c = 0$ .

**Features**

- High temperature differential
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- DC operation
- RoHS-compliant

**Applications**

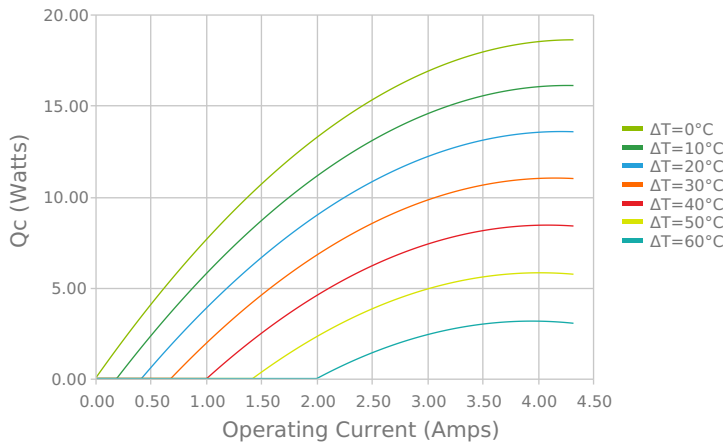
- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems
- Peltier Cooling for Digital
- Light Processors



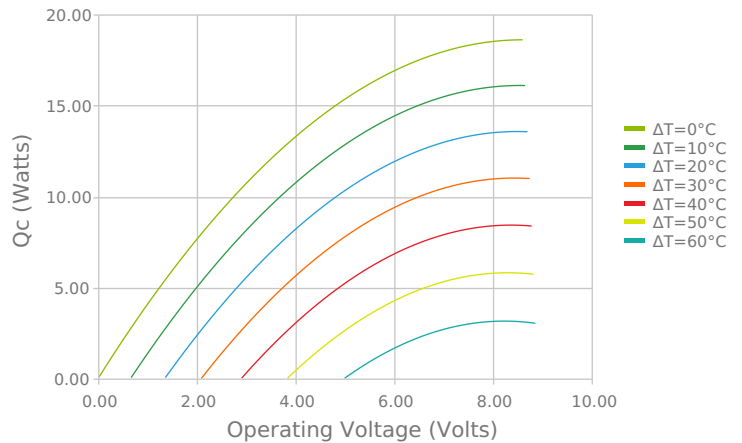
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

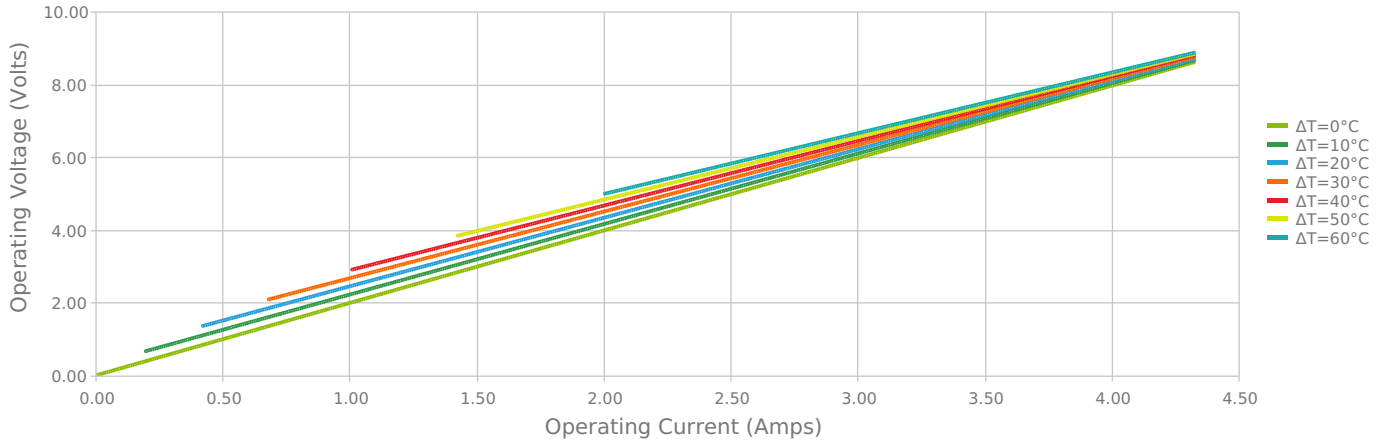
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



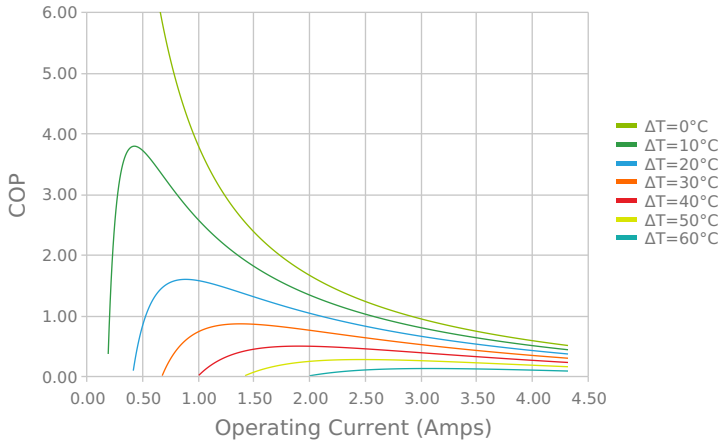
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



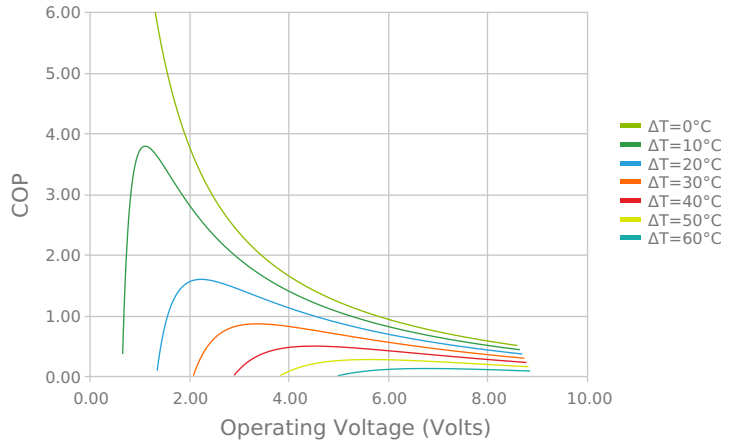
Current vs Voltage (I vs V)  
Thot = 27 °C



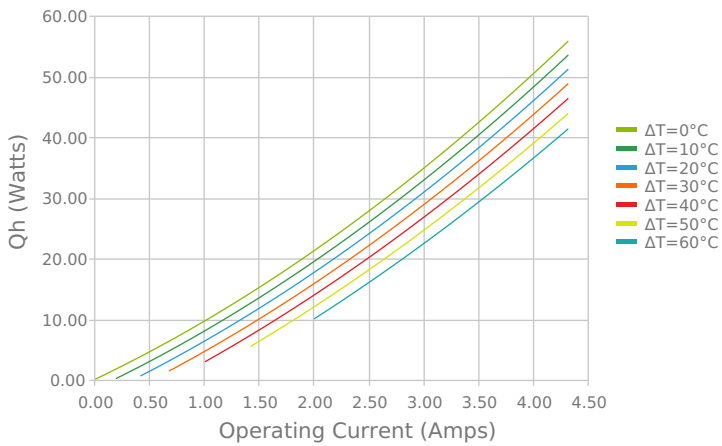
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



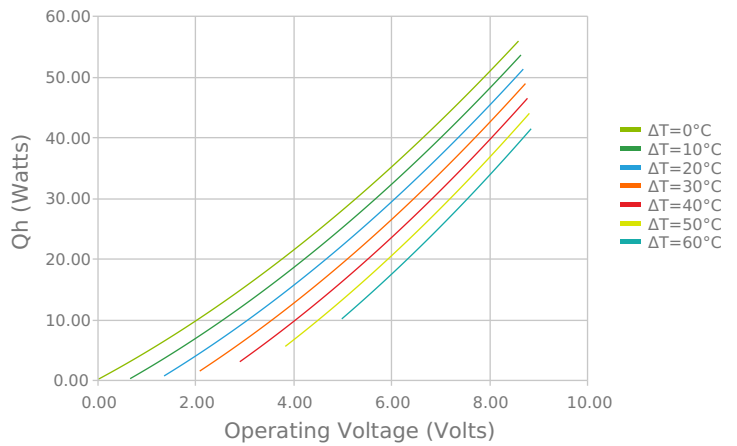
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



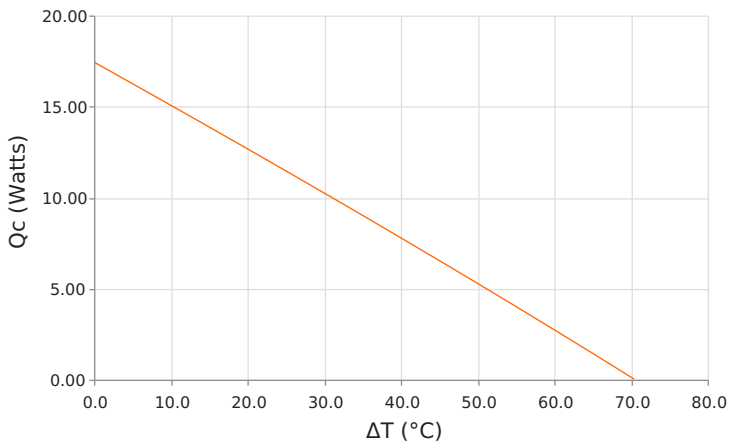
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



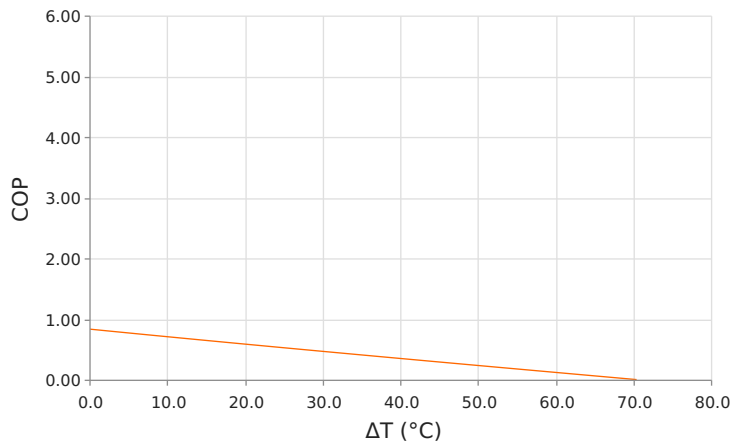
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
Thot = 27 °C | Current = 3.2 Amps



Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C | Current = 3.2 Amps



## SPECIFICATIONS\*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
<b>Qcmax (<math>\Delta T = 0</math>)</b>	18.6 Watts	19.1 Watts	20.0 Watts
<b><math>\Delta T_{max}</math> (<math>Q_c = 0</math>)</b>	71.7°C	74.8°C	80.4°C
<b>I<sub>max</sub> (I @ <math>\Delta T_{max}</math>)</b>	3.9 Amps	3.8 Amps	3.8 Amps
<b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>	8.1 Volts	8.5 Volts	9.0 Volts
<b>Module Resistance</b>	1.99 Ohms	2.08 Ohms	2.24 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	7.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TB	3.610 ±0.013 mm 0.142 ± 0.001 in	0.013 mm / 0.013 mm 0.0005 in / 0.0005 in	Lapped	Lapped	203.2 mm 8.00 in

## SEALING OPTIONS

Suffix	Sealant	Color	Temp Range	Description
EP	Epoxy	Black	-55 to 150°C	Low density syntactic foam epoxy encapsulant

## NOTES

1. Max operating temperature: 80°C
2. Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation

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