ZT Series Thermoelectric Cooler

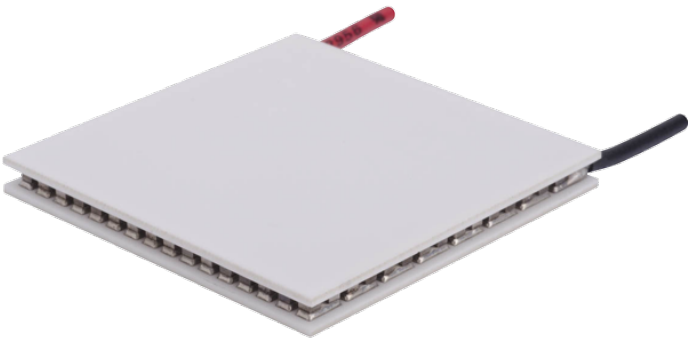
The ZT8-12-F1-4040-TB-EP-W8 is a high performance thermoelectric cooler that achieves a higher temperature differential than standard single stage thermoelectric coolers. It has a maximum Qc of 72.6 Watts when ΔT = 0 and a maximum ΔT of 71.7 °C at Qc = 0.

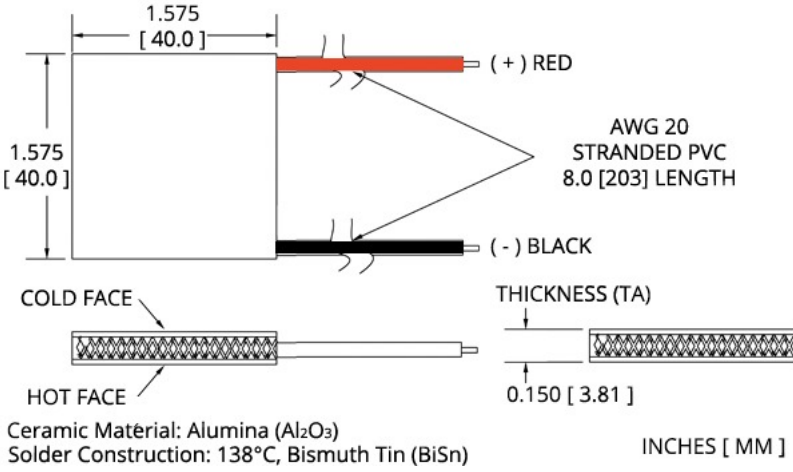
Features

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

Applications

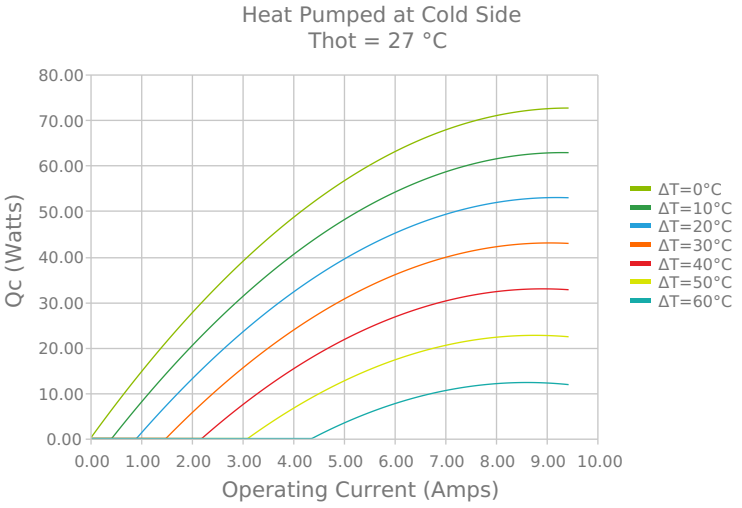
- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems
- Peltier Cooling for Digital
- Light Processors

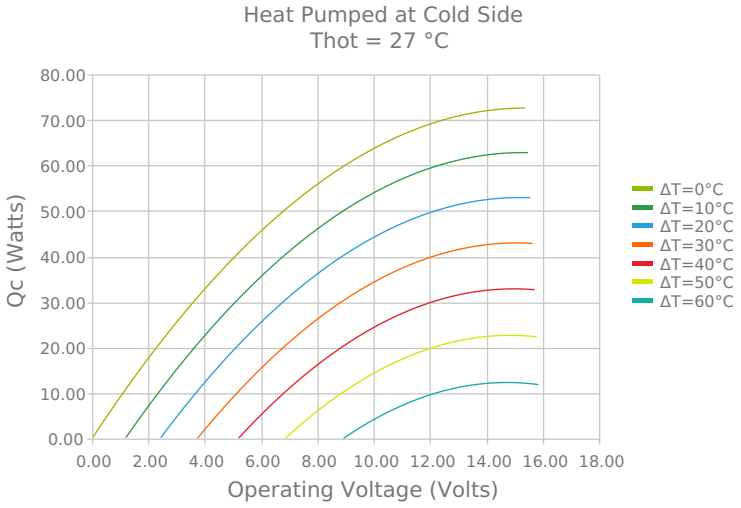


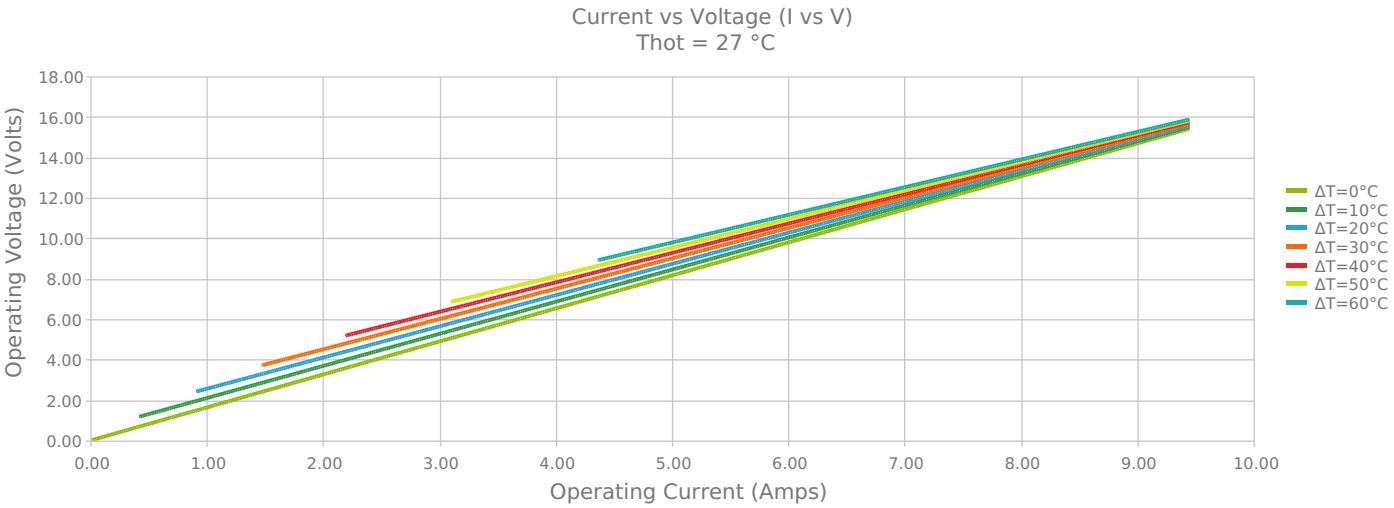


Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

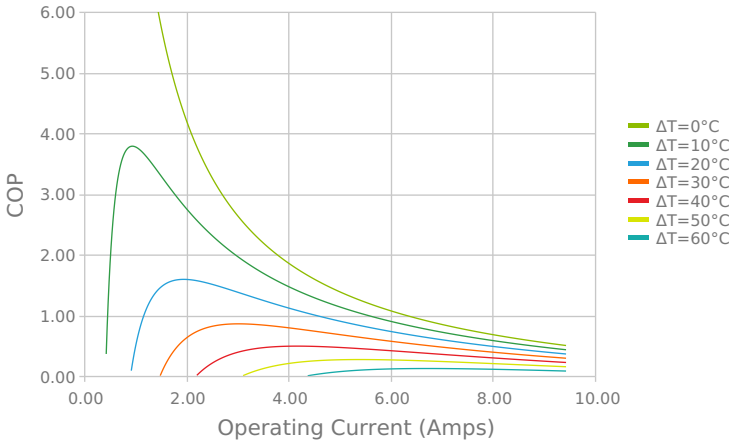
ELECTRICAL AND THERMAL PERFORMANCE



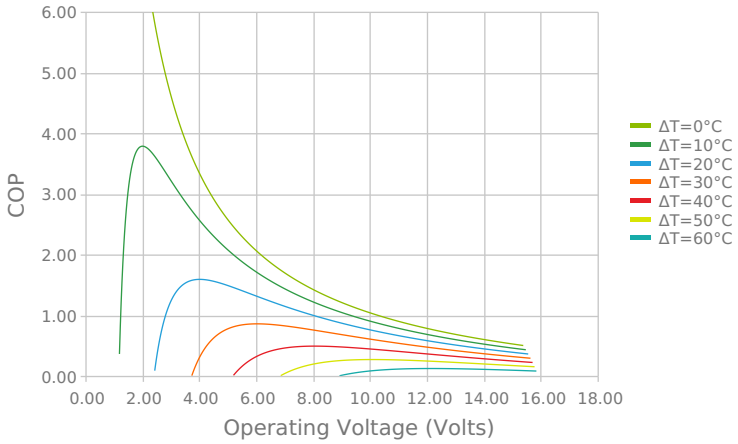



Current vs Voltage (I vs V)
Thot = 27 °C
Operating Voltage (Volts)
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Operating Current (Amps)
ΔT=0°C
ΔT=10°C
ΔT=20°C
ΔT=30°C
ΔT=40°C
ΔT=50°C
ΔT=60°C

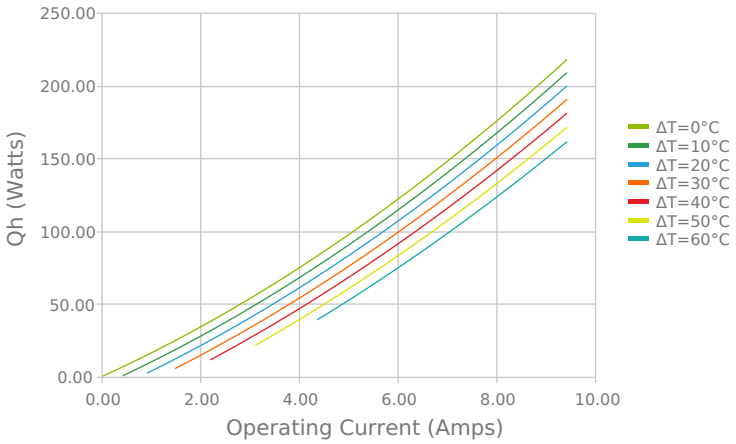
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



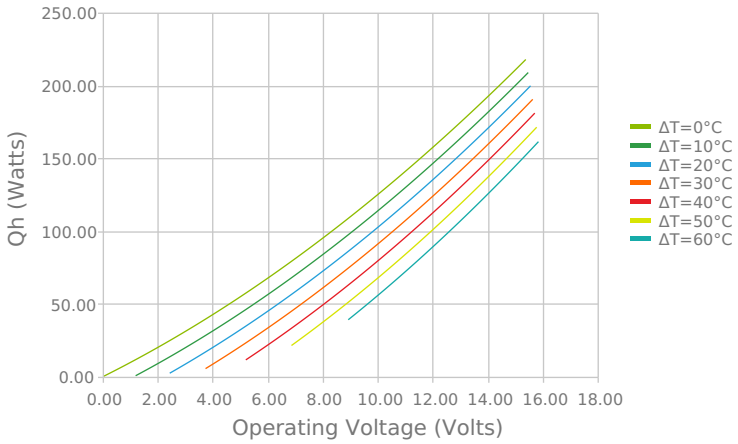
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



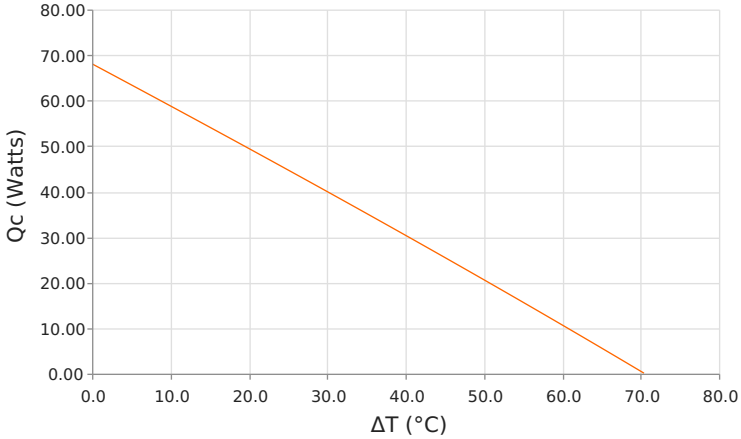
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



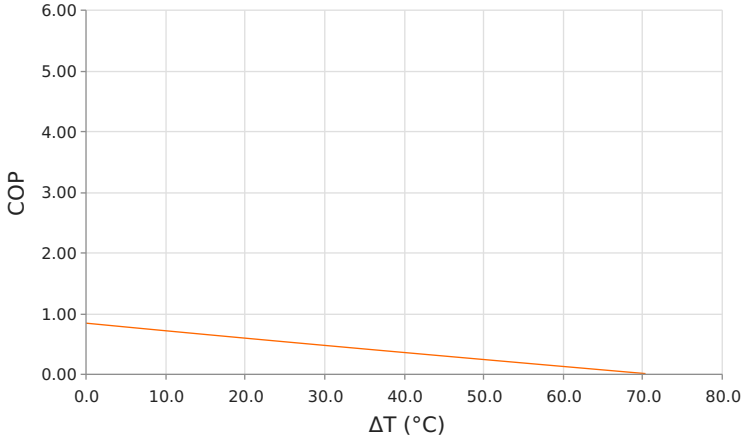
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 7.1 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 7.1 Amps



SPECIFICATIONS*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	72.6 Watts	74.6 Watts	78.1 Watts
ΔTmax (Qc = 0)	71.7°C	74.8°C	80.4°C
Imax (I @ ΔTmax)	8.4 Amps	8.3 Amps	8.2 Amps
Vmax (V @ ΔTmax)	14.6 Volts	15.1 Volts	16.2 Volts
Module Resistance	1.63 Ohms	1.70 Ohms	1.84 Ohms
Max Operating Temperature	80 °C		
Weight	26.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TB	3.810 ±0.013 mm 0.150 ± 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 Imax or Vmax when operating module
3. Reference assembly guidelines for recommended installation

Date: 04/24/2020