

Ceramic Plate Series Thermoelectric Cooler

The CP12-161-04-L2-EP-W4.5 is a high-performance and highly reliable standard Thermoelectric Cooler. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics. It has a maximum Q_c of 76.3 Watts when $\Delta T = 0$ and a maximum ΔT of 70.5 °C at $Q_c = 0$.

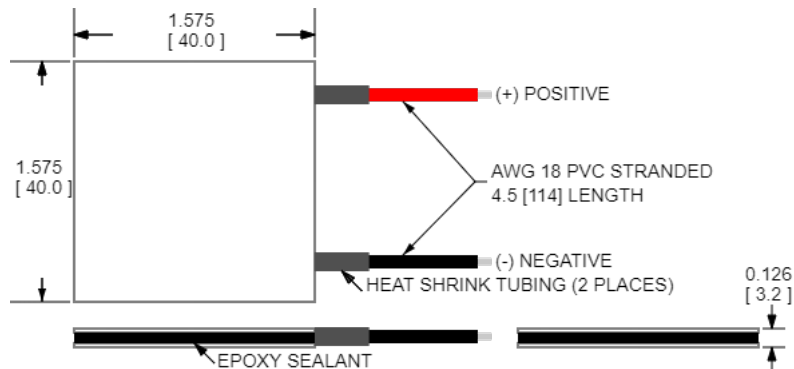


Features

- Compact geometric sizes
- DC Operation
- RoHS-compliant

Applications

- Thermoelectric Coolers for Reagent Storage
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Cooling for Centrifuges
- Heads-Up Displays, Imaging Sensors
- Peltier Cooling for Machine Vision



CERAMIC MATERIAL: Al_2O_3

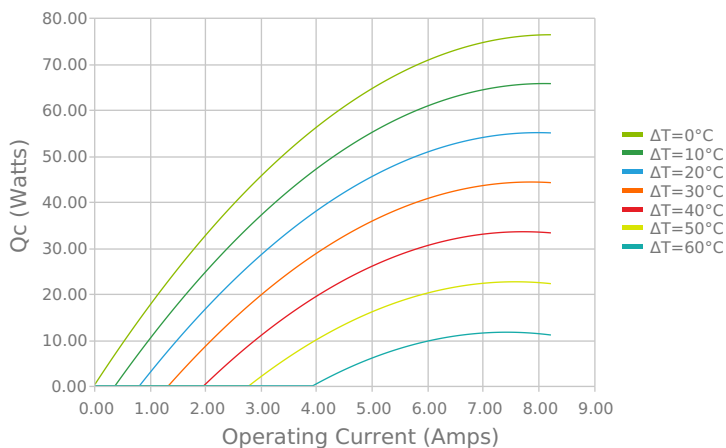
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [MM]

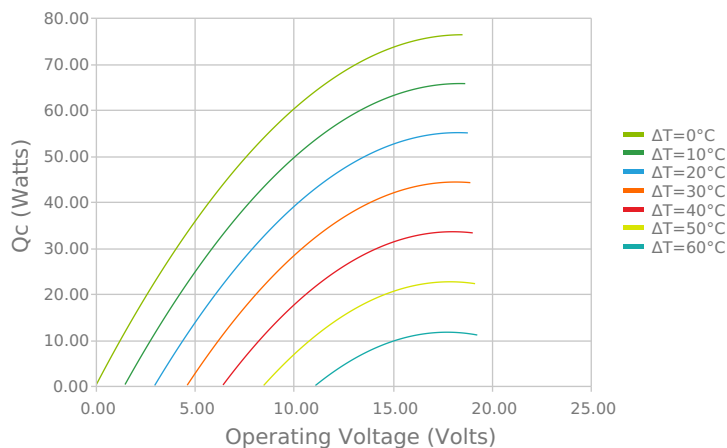
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

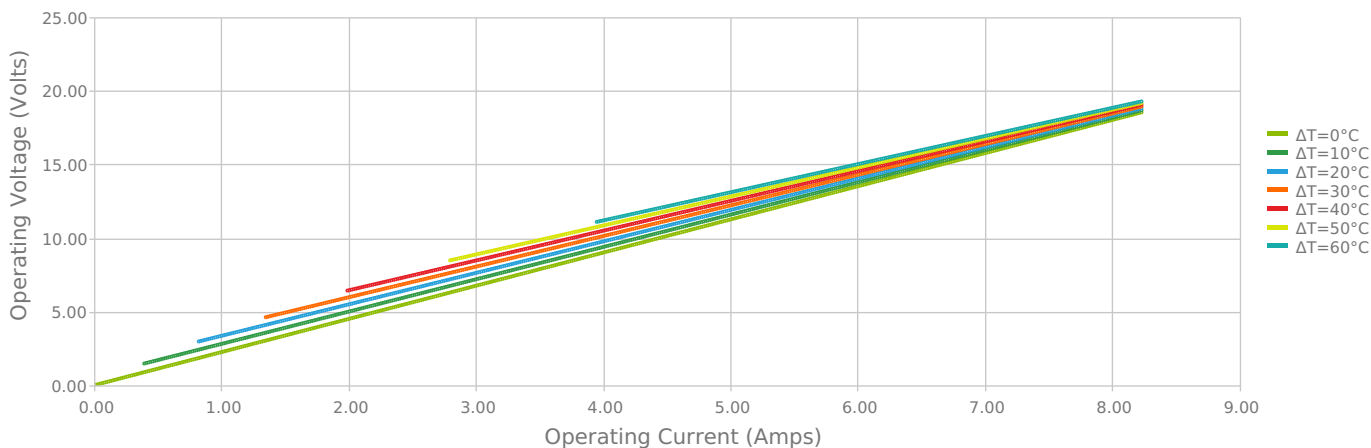
Heat Pumped at Cold Side
 $T_{hot} = 27^\circ C$



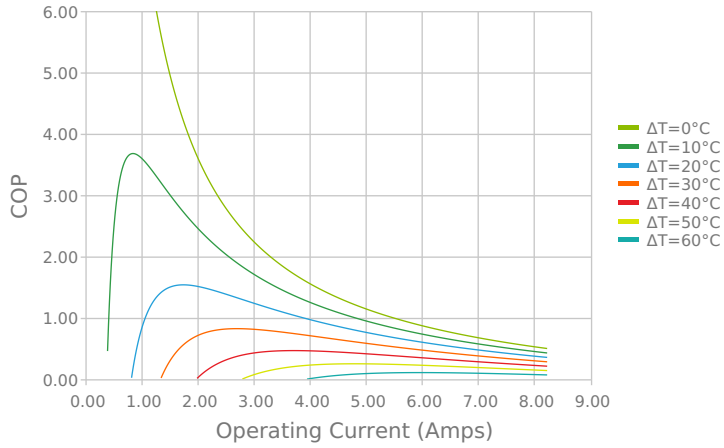
Heat Pumped at Cold Side
 $T_{hot} = 27^\circ C$



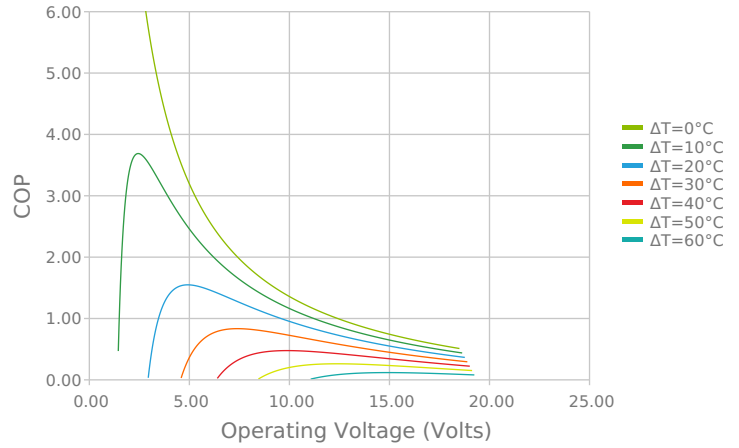
Current vs Voltage (I vs V)
 $T_{hot} = 27^\circ C$



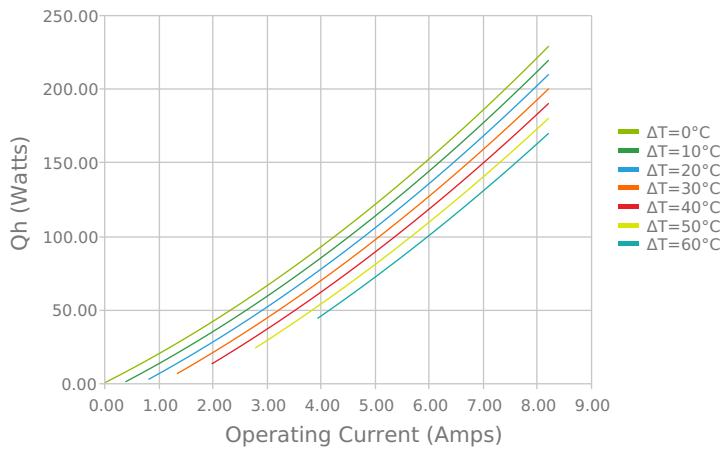
Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C



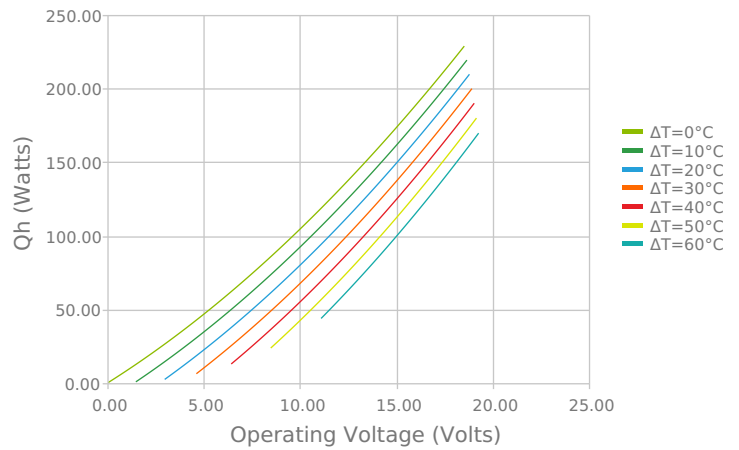
Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C



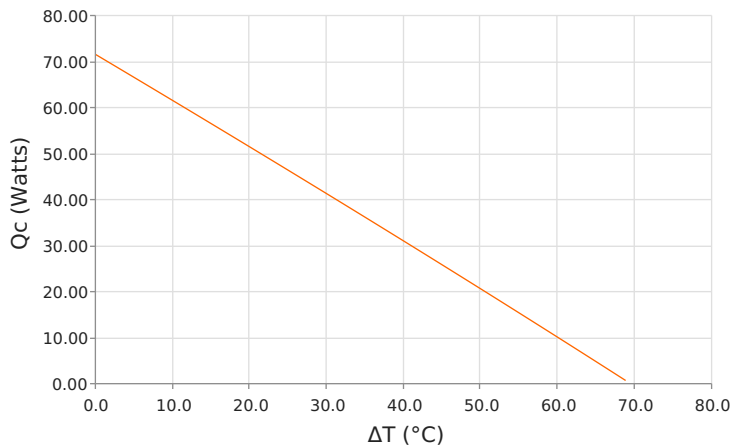
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Thot = 27 °C



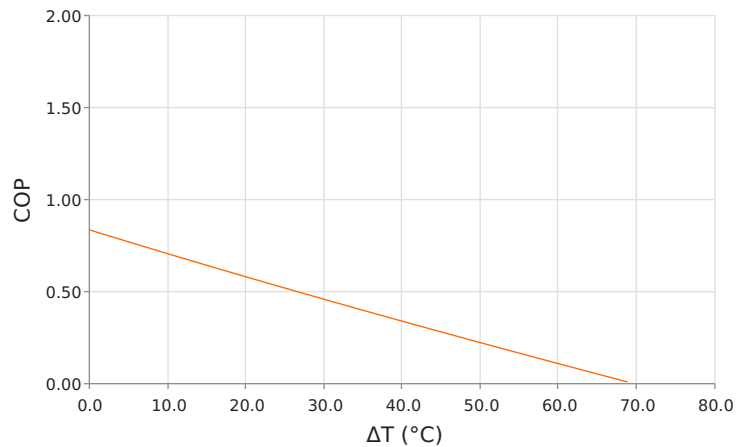
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Thot = 27 °C



Heat Pumped at Cold Side (Q_c)
Thot = 27 °C | Current = 6.2 Amps



Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C | Current = 6.2 Amps



SPECIFICATIONS*

Hot Side Temperature

Qcmax ($\Delta T = 0$)

ΔT_{max} ($Q_c = 0$)

I_{max} (I @ ΔT_{max})

V_{max} (V @ ΔT_{max})

Module Resistance

Max Operating Temperature

Weight

	27.0 °C	35.0 °C	50.0 °C
Qcmax ($\Delta T = 0$)	76.3 Watts	78.6 Watts	82.7 Watts
ΔT_{max} ($Q_c = 0$)	70.5°C	73.5°C	78.8°C
I _{max} (I @ ΔT_{max})	7.3 Amps	7.2 Amps	7.2 Amps
V _{max} (V @ ΔT_{max})	17.6 Volts	18.3 Volts	19.5 Volts
Module Resistance	2.25 Ohms	2.34 Ohms	2.52 Ohms
Max Operating Temperature	80 °C		
Weight	19.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L2	3.200 ±0.013 mm 0.126 ± 0.0005 in	0.013 mm / 0.013 mm 0.0005 in / 0.0005 in	Lapped	Lapped	114.3 mm 4.50 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_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics

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