

Ceramic Plate Series Thermoelectric Cooler

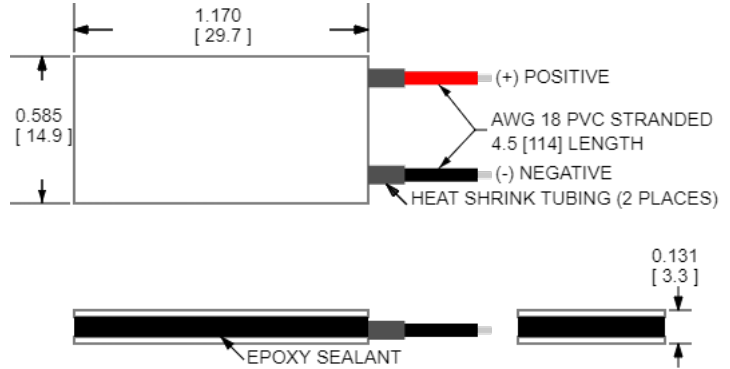
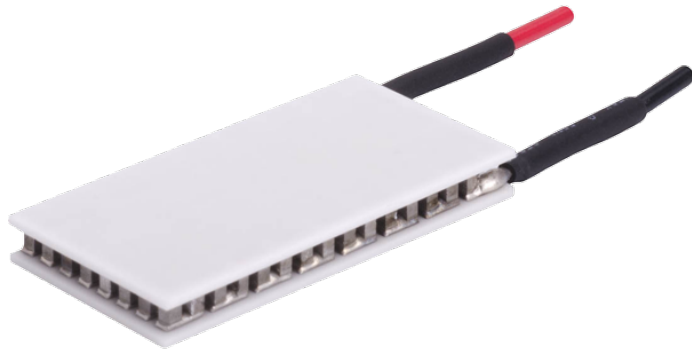
The CP14-35-045-L-EP-W4.5 is a high-performance and highly reliable standard Thermoelectric Cooler. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics. It has a maximum Q_c of 19.7 Watts when $\Delta T = 0$ and a maximum ΔT of 70.5 °C at $Q_c = 0$.

Features

- Compact geometric sizes
- DC Operation
- RoHS-compliant

Applications

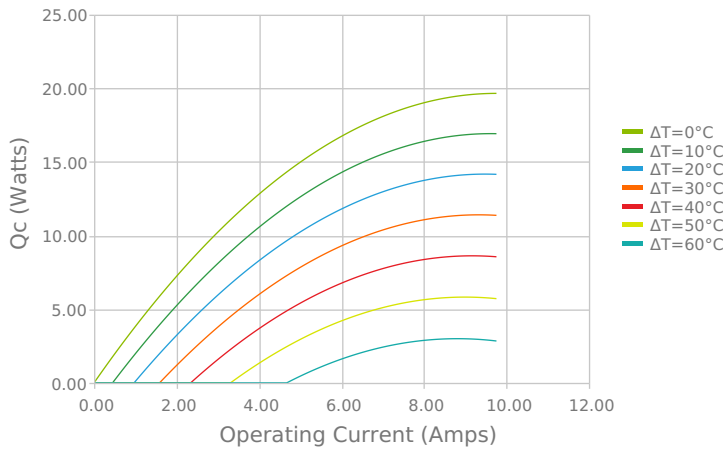
- Thermoelectric Coolers for Reagent Storage
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Cooling for Centrifuges
- Heads-Up Displays, Imaging Sensors
- Peltier Cooling for Machine Vision



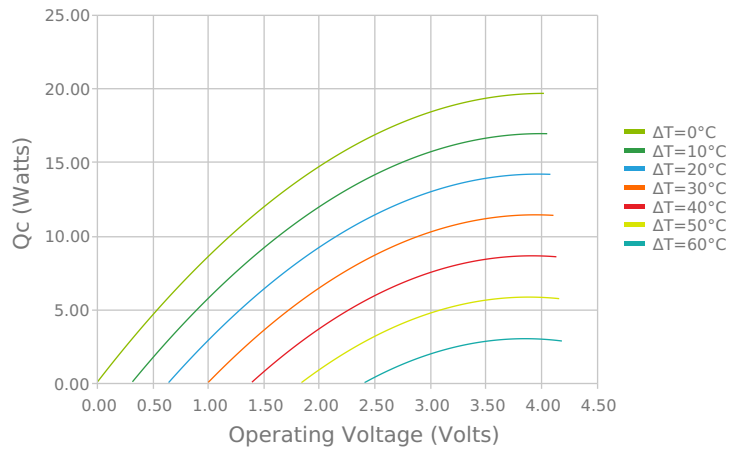
CERAMIC MATERIAL: Al_2O_3
 SOLDER CONSTRUCTION: 138°C, BiSn
 INCHES [MM]
 Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

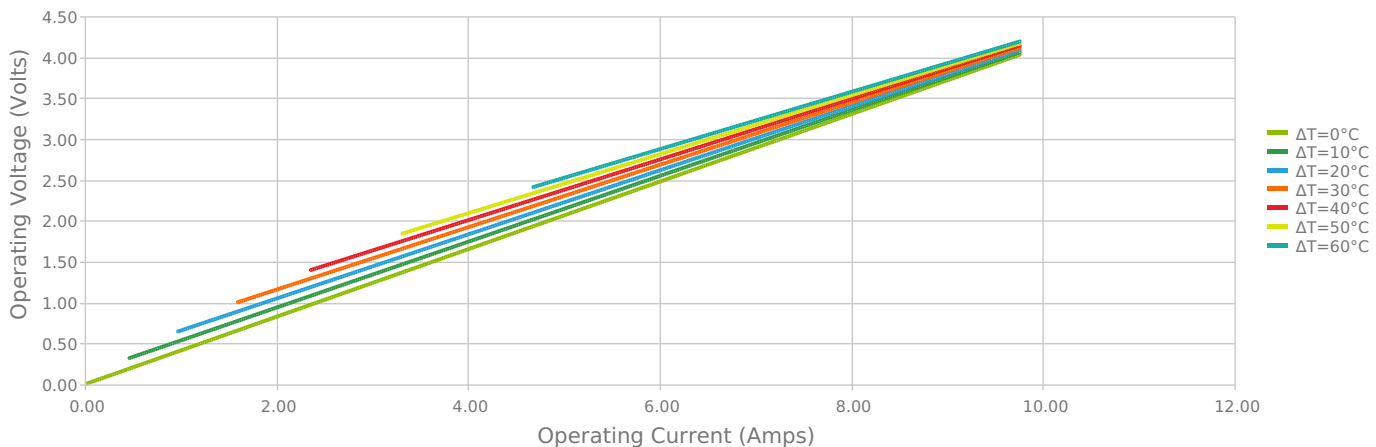
Heat Pumped at Cold Side
 $Thot = 27\text{ °C}$



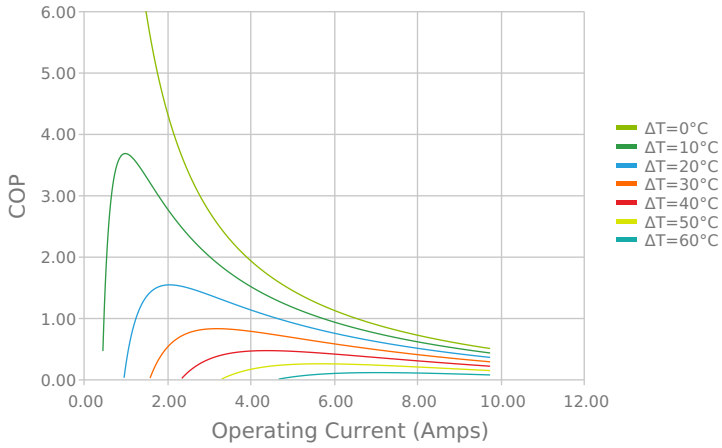
Heat Pumped at Cold Side
 $Thot = 27\text{ °C}$



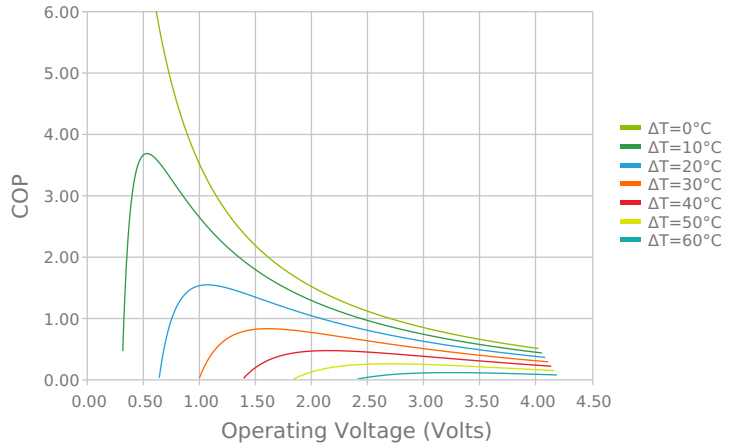
Current vs Voltage (I vs V)
 $Thot = 27\text{ °C}$



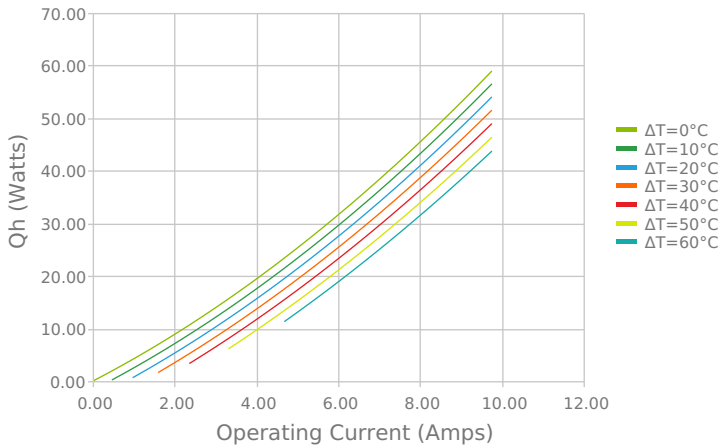
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



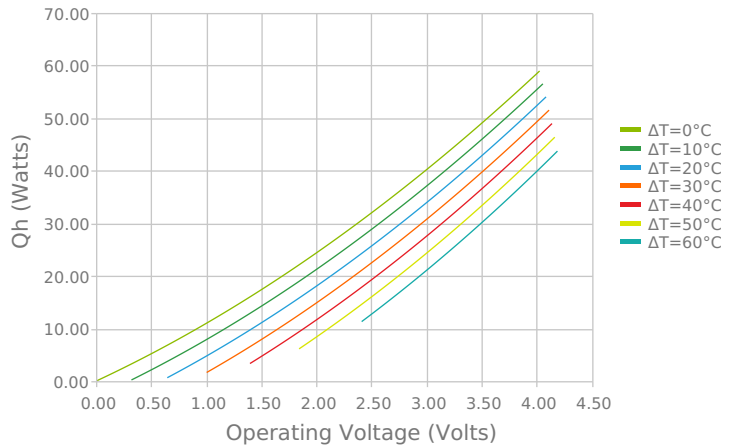
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



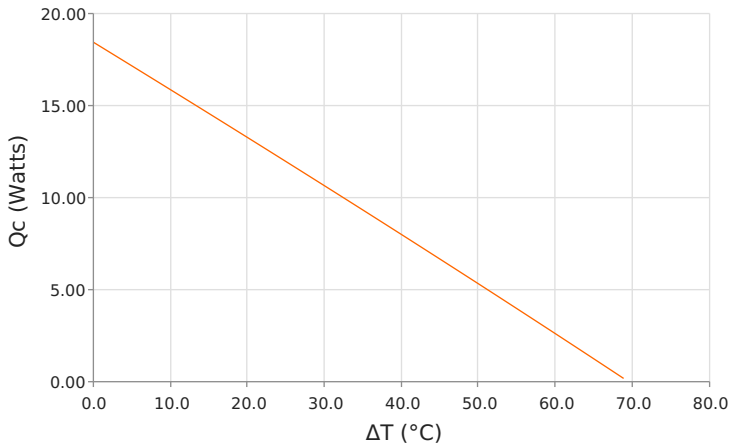
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



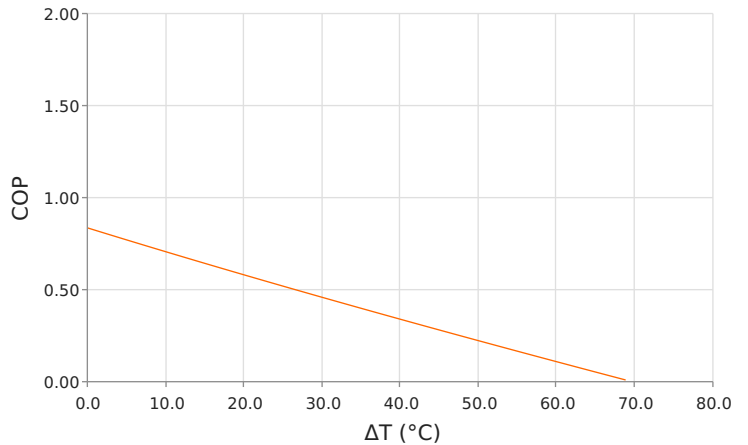
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)
 Thot = 27 °C | Current = 7.3 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C | Current = 7.3 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 ($\Delta T = 0$)	19.7 Watts	20.3 Watts	21.3 Watts
ΔT_{max} ($Q_c = 0$)	70.5°C	73.5°C	78.8°C
I _{max} (I @ ΔT_{max})	8.6 Amps	8.6 Amps	8.5 Amps
V _{max} (V @ ΔT_{max})	3.8 Volts	4.0 Volts	4.2 Volts
Module Resistance	0.41 Ohms	0.43 Ohms	0.46 Ohms
Max Operating Temperature	80 °C		
Weight	7.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L	3.327 ± 0.254 mm 0.131 ± 0.0100 in	0.004 mm / 0.004 mm 0.00015 in / 0.00015 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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Date: 05/25/2021