

### Ceramic Plate Series Thermoelectric Cooler

The CP10-63-05-L1-RT-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 16.4 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 70.5 °C at  $Q_c = 0$ .

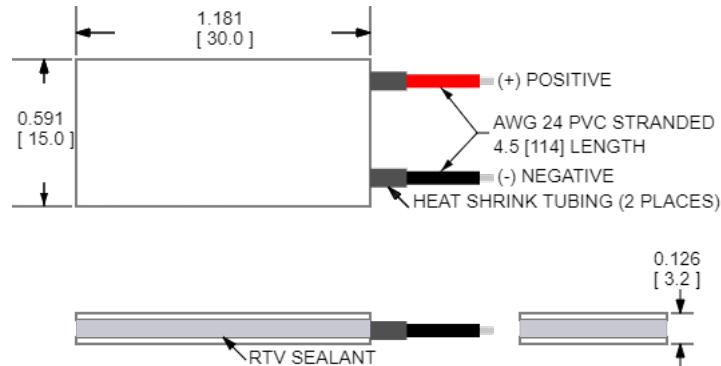


### Features

- 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:  $\text{Al}_2\text{O}_3$

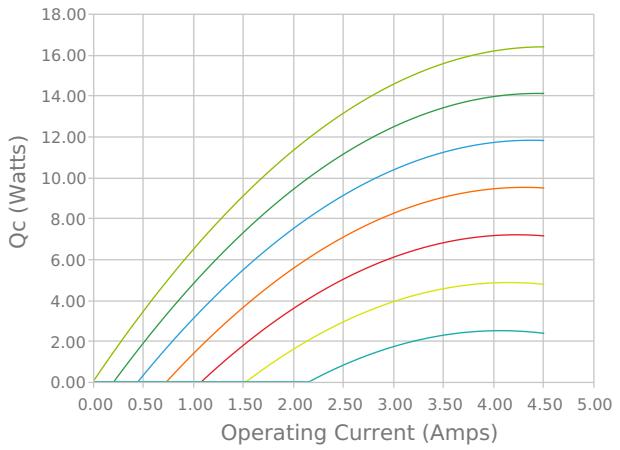
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [ MM ]

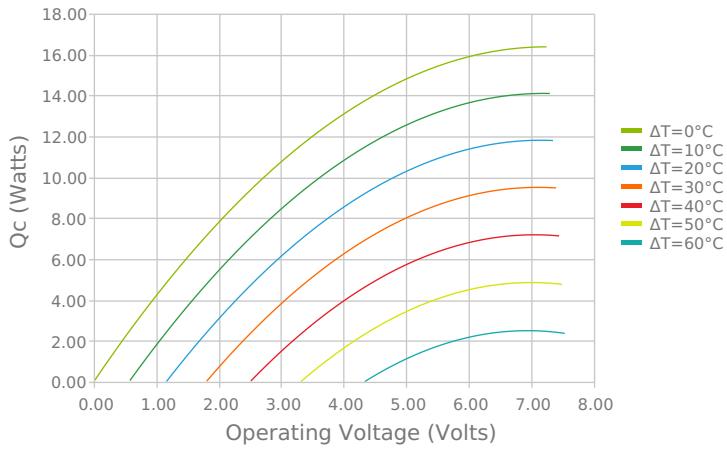
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

## ELECTRICAL AND THERMAL PERFORMANCE

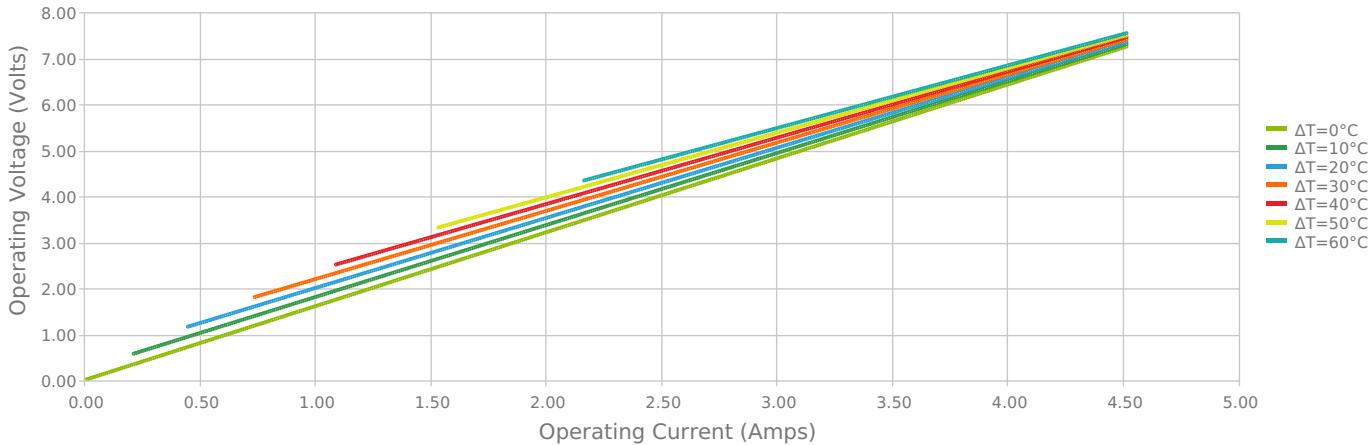
Heat Pumped at Cold Side  
 $T_{\text{hot}} = 27^\circ\text{C}$

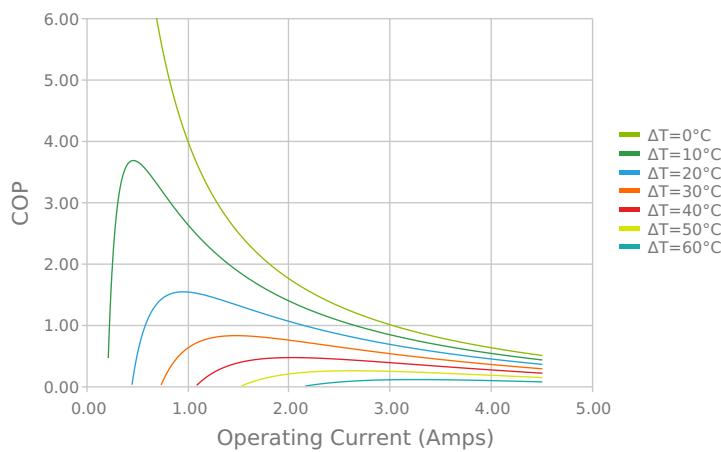
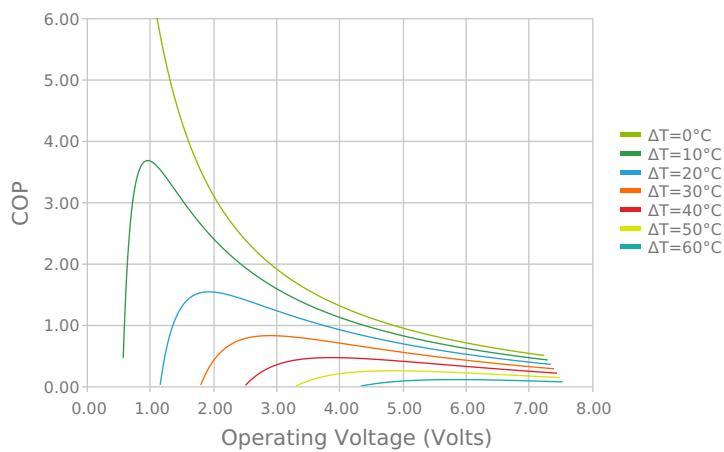
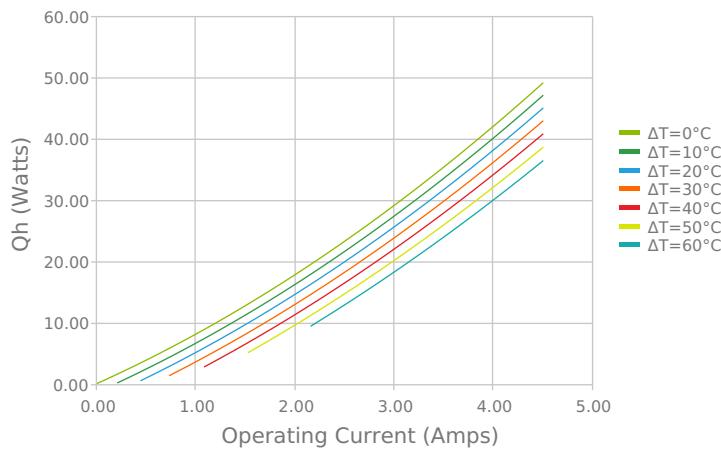
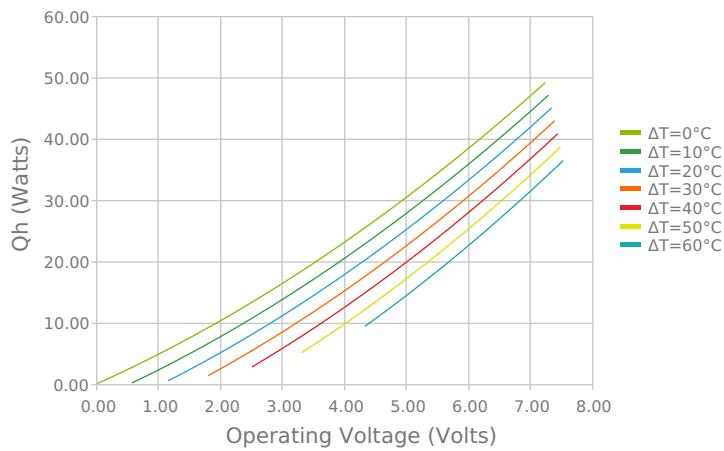
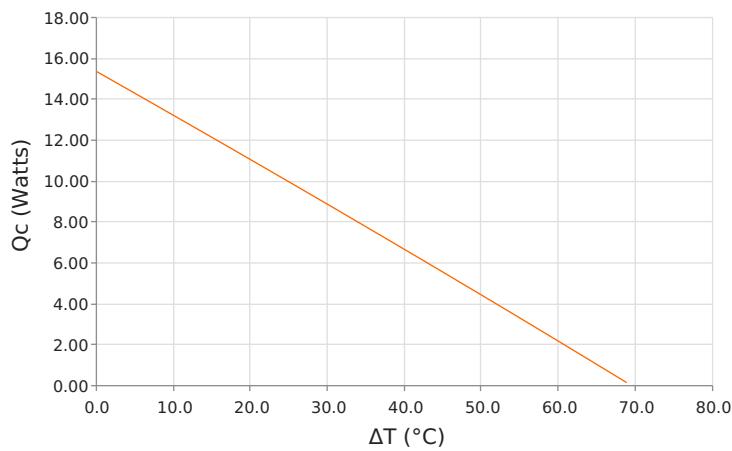
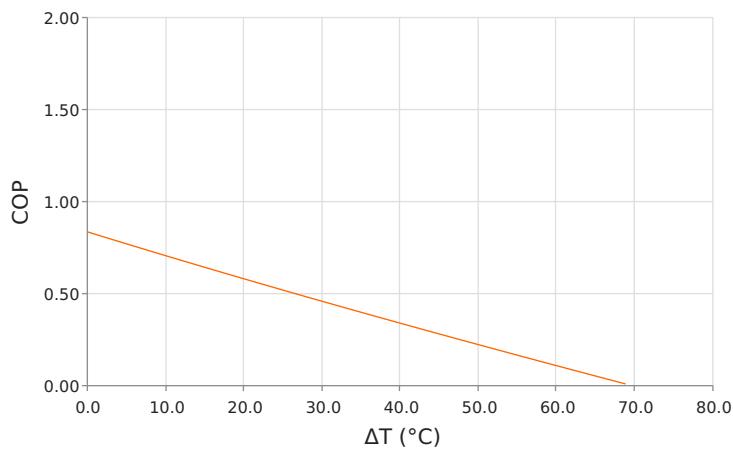


Heat Pumped at Cold Side  
 $T_{\text{hot}} = 27^\circ\text{C}$



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



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
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 Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
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 $T_{hot} = 27^\circ C$ 

 Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 27^\circ C$  | Current = 3.4 Amps

 Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27^\circ C$  | Current = 3.4 Amps


## SPECIFICATIONS\*

	27.0 °C	35.0 °C	50.0 °C
<b>Qcmax (ΔT = 0)</b>	16.4 Watts	16.9 Watts	17.8 Watts
<b>ΔTmax (Qc = 0)</b>	70.5°C	73.5°C	78.8°C
<b>I<sub>max</sub> (I @ ΔT<sub>max</sub>)</b>	4.0 Amps	4.0 Amps	3.9 Amps
<b>V<sub>max</sub> (V @ ΔT<sub>max</sub>)</b>	6.9 Volts	7.1 Volts	7.6 Volts
<b>Module Resistance</b>	1.61 Ohms	1.67 Ohms	1.80 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	5.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L1	3.200 ± 0.025 mm 0.126 ± 0.0010 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	114.3 mm 4.50 in

## SEALING OPTIONS

Suffix	Sealant	Color	Temp Range	Description
RT	RTV	Translucent or White	-60 to 204°C	Non-corrosive, silicone adhesive

## 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
4. Solder tinning also available on metallized ceramics

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