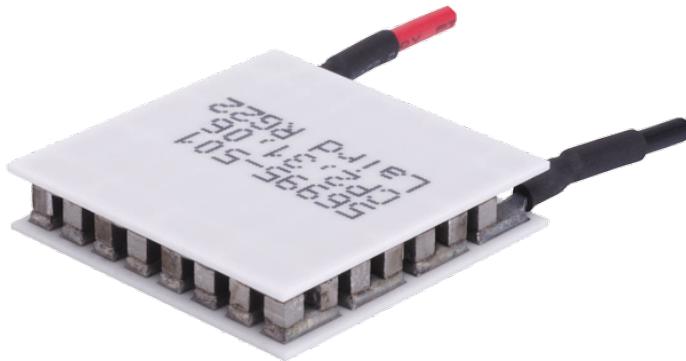


### Ceramic Plate Series Thermoelectric Cooler

The CP2-31-06-L1-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 28.8 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 70.5 °C at  $Q_c = 0$ .

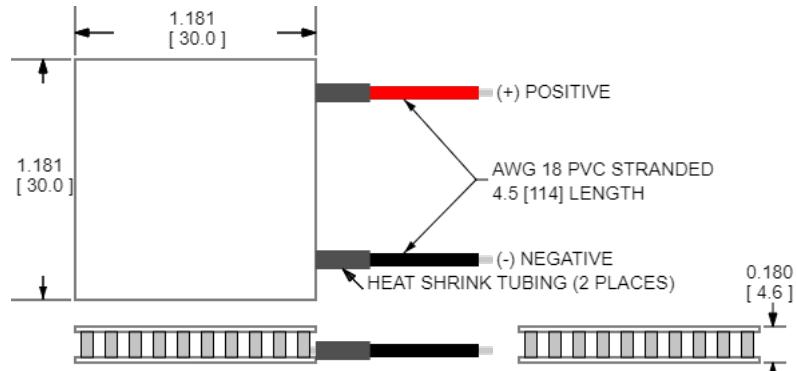


### Features

- 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

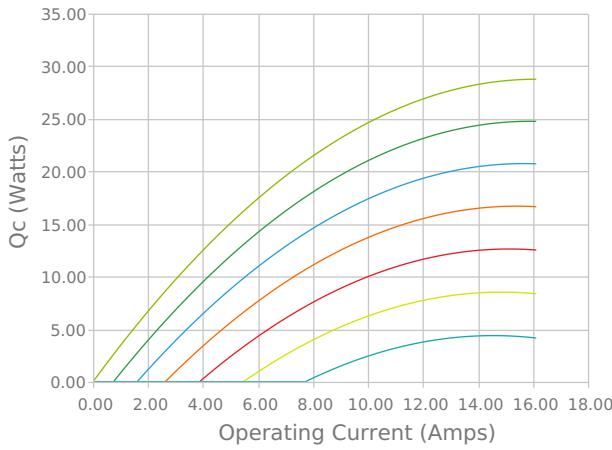


CERAMIC MATERIAL:  $\text{Al}_2\text{O}_3$   
SOLDER CONSTRUCTION: 138°C, BiSn

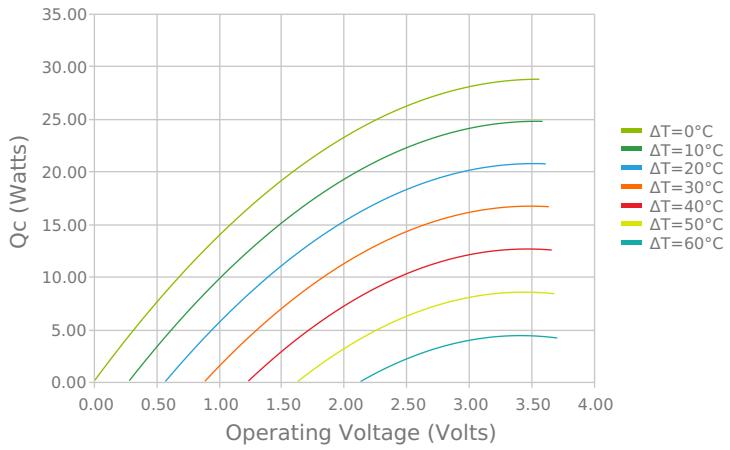
INCHES [ MM ]

## ELECTRICAL AND THERMAL PERFORMANCE

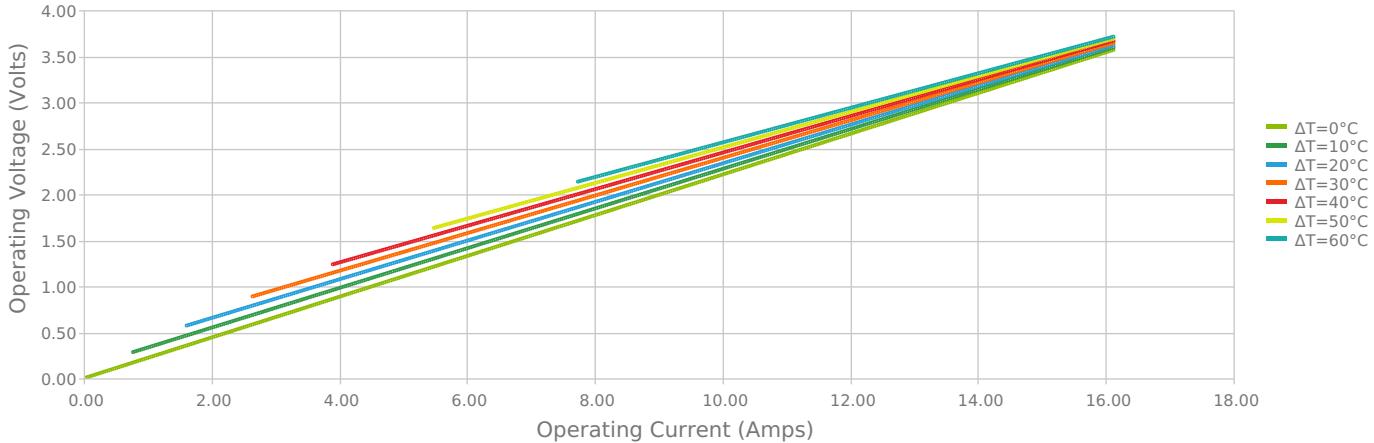
Heat Pumped at Cold Side  
 $T_{\text{hot}} = 27^\circ\text{C}$

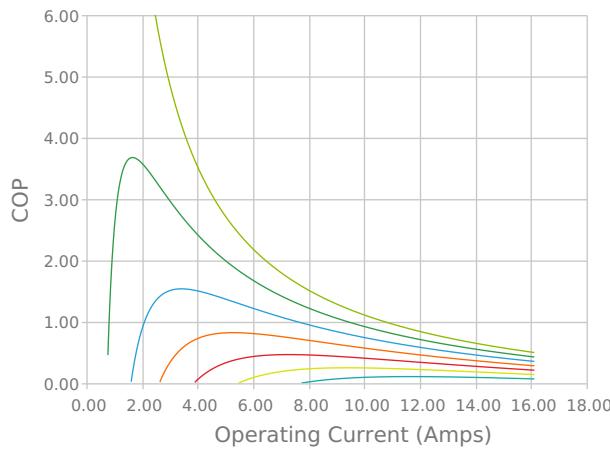
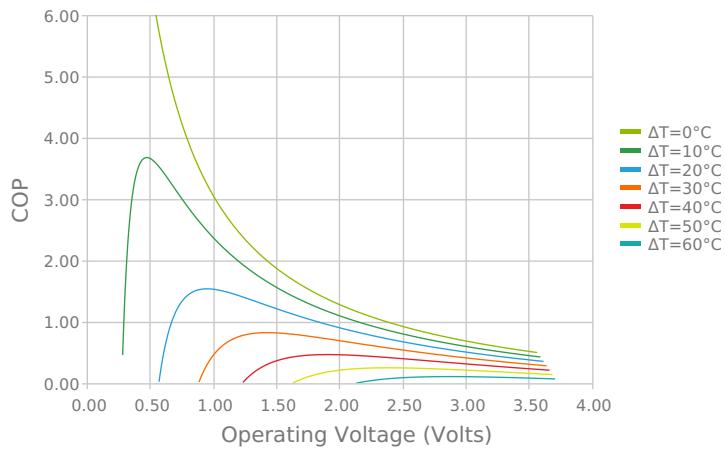
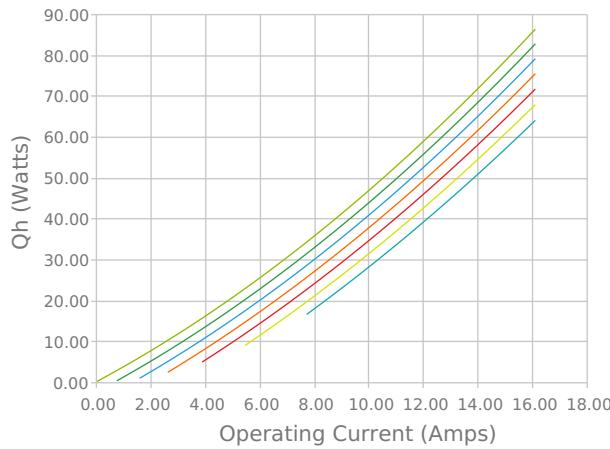
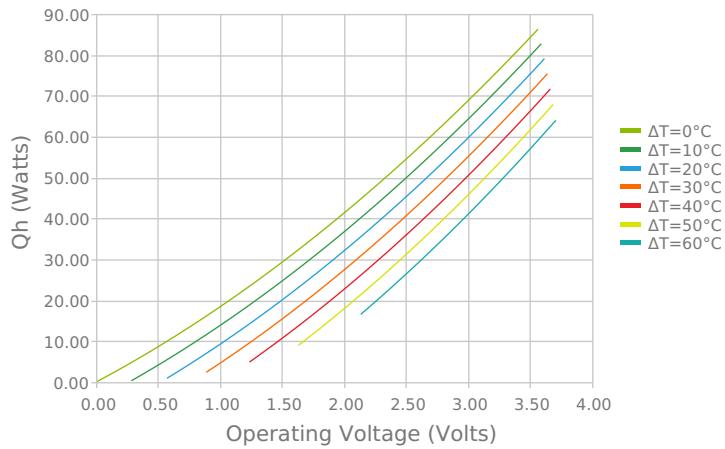
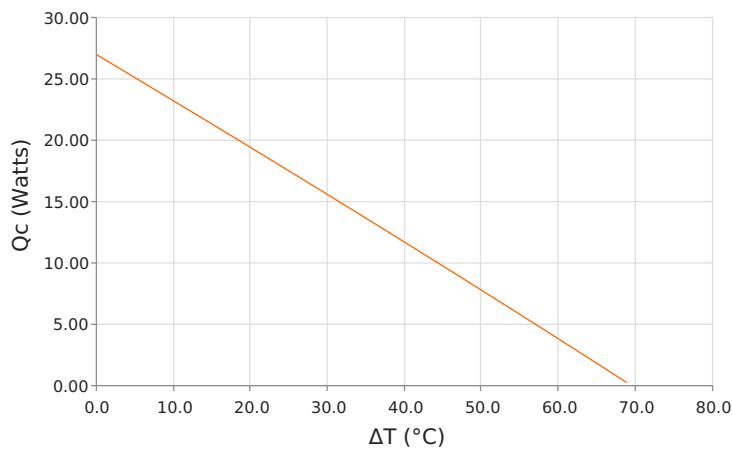
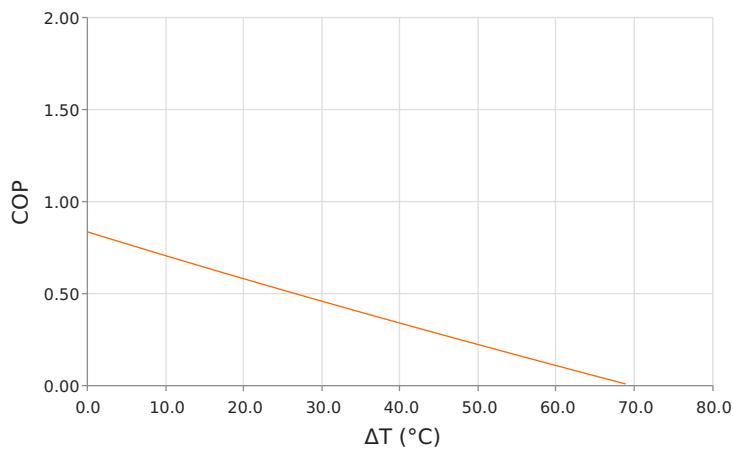


Heat Pumped at Cold Side  
 $T_{\text{hot}} = 27^\circ\text{C}$



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



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

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

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

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

 Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 27^\circ C$  | Current = 12.1 Amps

 Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27^\circ C$  | Current = 12.1 Amps


## SPECIFICATIONS\*

	27.0 °C	35.0 °C	50.0 °C
<b>Qcmax (ΔT = 0)</b>	28.8 Watts	29.6 Watts	31.2 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>	14.2 Amps	14.2 Amps	14.0 Amps
<b>V<sub>max</sub> (V @ ΔT<sub>max</sub>)</b>	3.4 Volts	3.5 Volts	3.8 Volts
<b>Module Resistance</b>	0.22 Ohms	0.23 Ohms	0.25 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	18.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L1	4.572 ± 0.025 mm 0.180 ± 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
	None			No sealing specified

## 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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Date: 12/14/2021