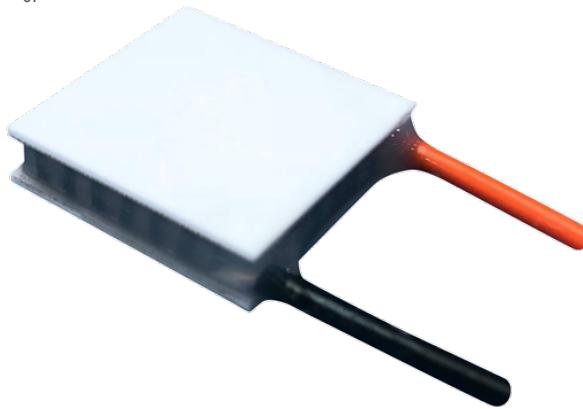


### HiTemp ETX Series Thermolectric Cooler

The ETX7-3-F1-2020-TA-RT-W6 high temperature, high-performance thermoelectric cooler uses Laird Thermal Systems' enhanced thermoelectric module construction preventing performance degrading diffusion, which is common in standard grade thermoelectric coolers operating in high temperature environments exceeding 80 °C. It has a maximum  $Q_c$  of 18.5 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 83.2 °C at  $Q_c = 0$ .

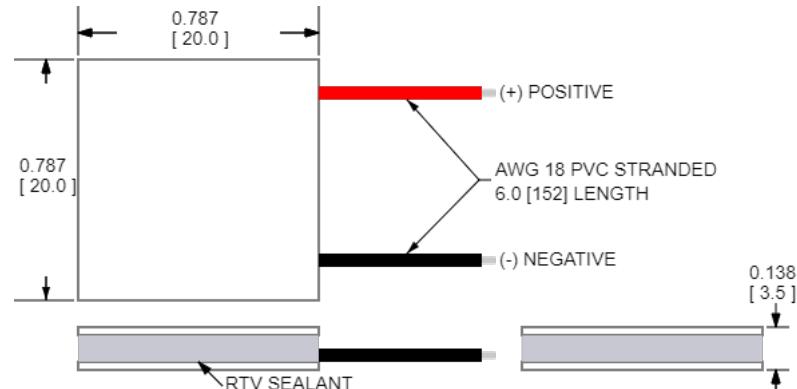


### Features

- High-temperature operation
- Reliable solid-state
- No sound or vibration
- Environmentally-friendly
- 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
- Heating and Cooling for Liquid Chromatography Systems
- Thermoelectric Cooling for Security Cameras



CERAMIC MATERIAL:  $\text{Al}_2\text{O}_3$

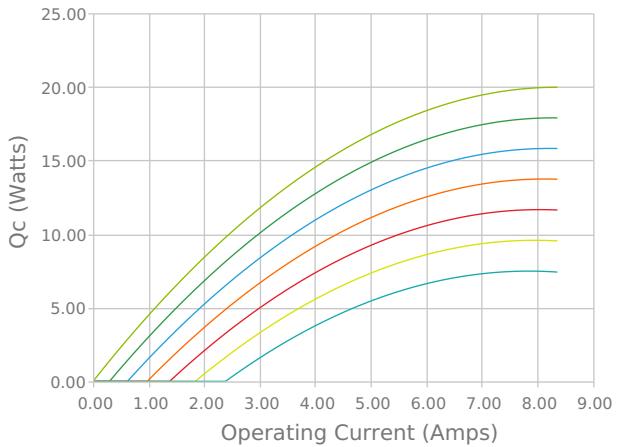
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [ MM ]

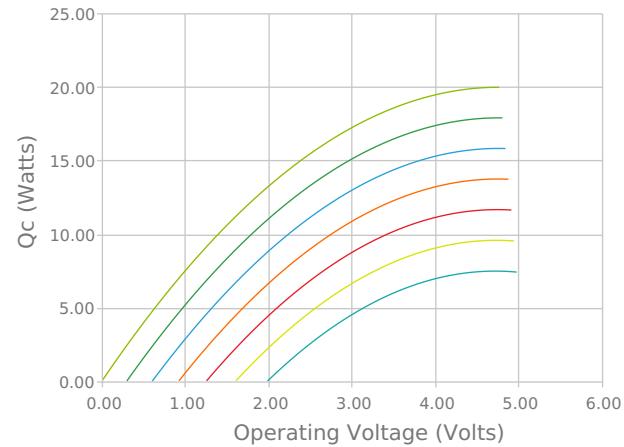
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

## ELECTRICAL AND THERMAL PERFORMANCE

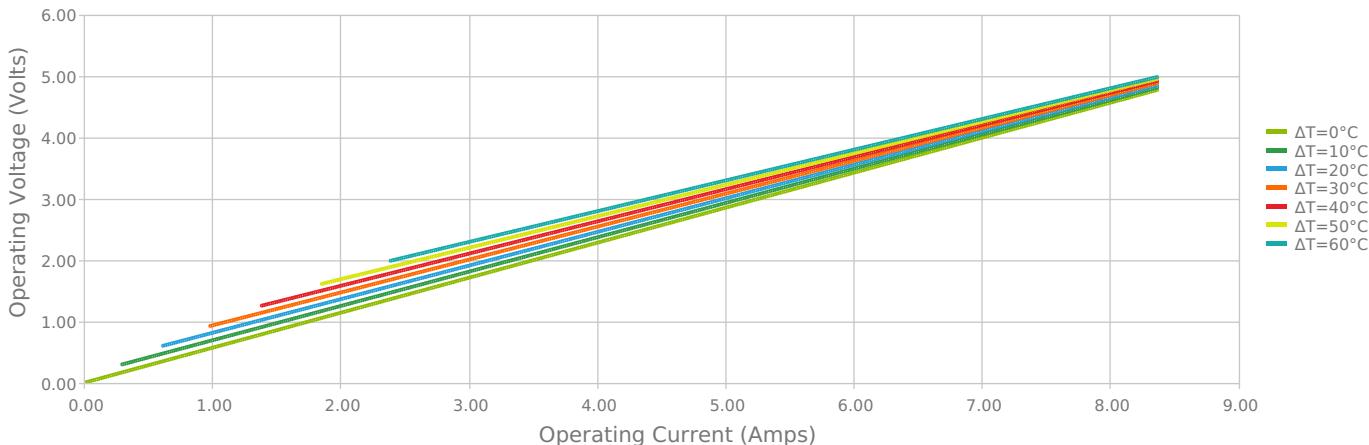
Heat Pumped at Cold Side  
Thot = 85 °C

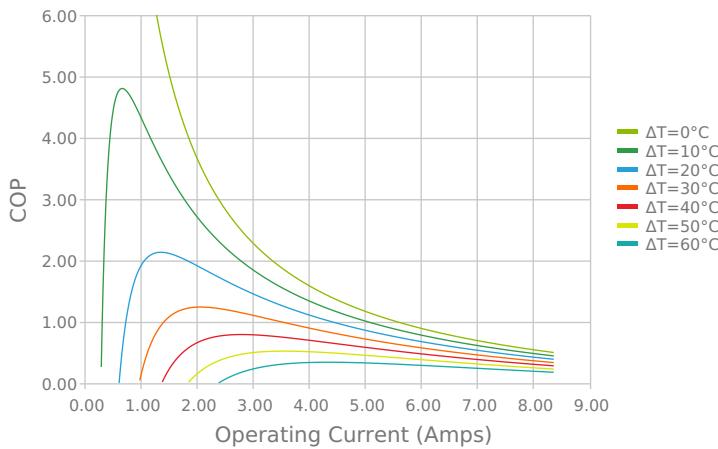
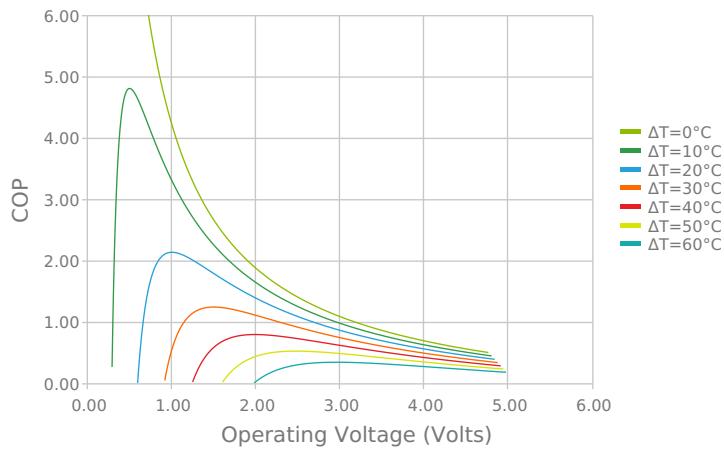
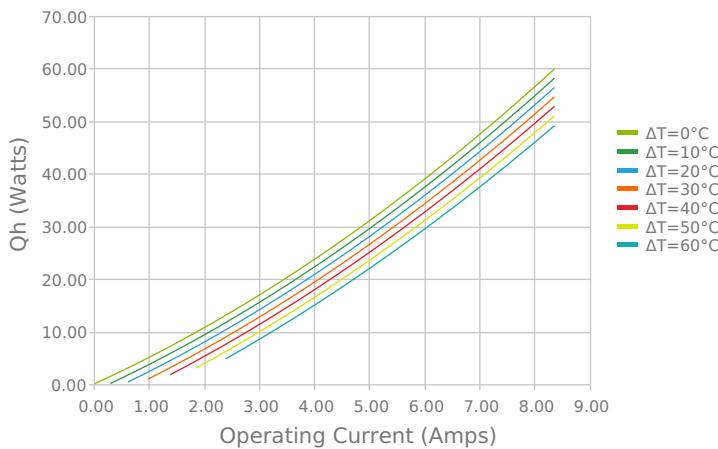
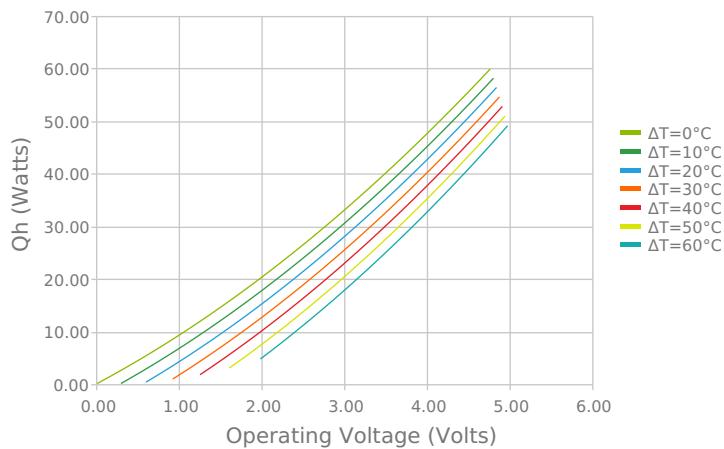
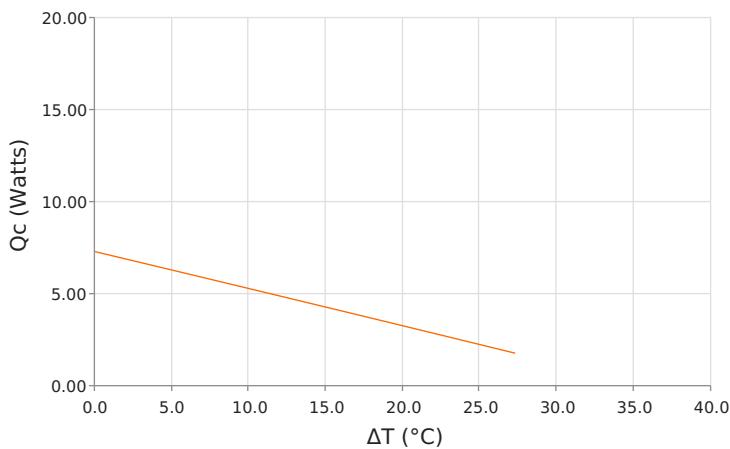
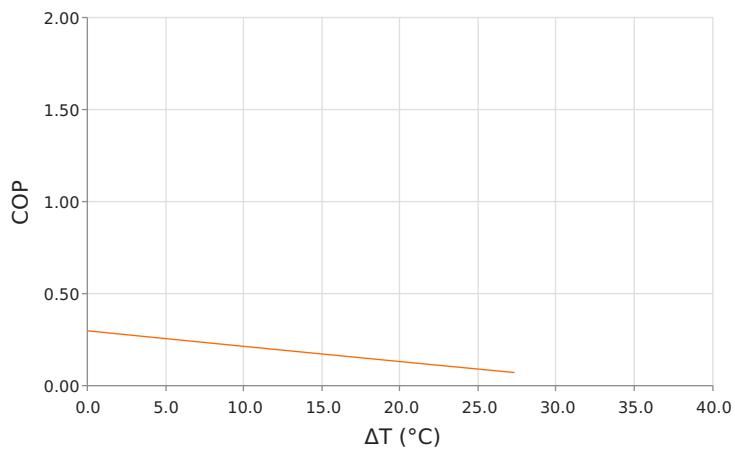


Heat Pumped at Cold Side  
Thot = 85 °C



Current vs Voltage (I vs V)  
Thot = 85 °C



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$ 

 Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$ 

 Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$ 

 Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$ 

 Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 85^\circ\text{C}$  | Current = 6.3 Amps

 Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$  | Current = 6.3 Amps


## SPECIFICATIONS\*

	50.0 °C	85.0 °C	110.0 °C
<b>Qcmax (ΔT = 0)</b>	18.5 Watts	20.0 Watts	20.6 Watts
<b>ΔTmax (Qc = 0)</b>	83.2°C	95.3°C	102.0°C
<b>I<sub>max</sub> (I @ ΔT<sub>max</sub>)</b>	7.7 Amps	7.4 Amps	7.3 Amps
<b>V<sub>max</sub> (V @ ΔT<sub>max</sub>)</b>	4.1 Volts	4.7 Volts	5.1 Volts
<b>Module Resistance</b>	0.49 Ohms	0.57 Ohms	0.62 Ohms
<b>Max Operating Temperature</b>	150 °C		
<b>Weight</b>	7.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	3.510 ±0.025 mm 0.138 ± 0.0010 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	152.4 mm 6.00 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: 150°C
2. Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation

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