

**HiTemp ETX Series Thermoelectric Cooler**

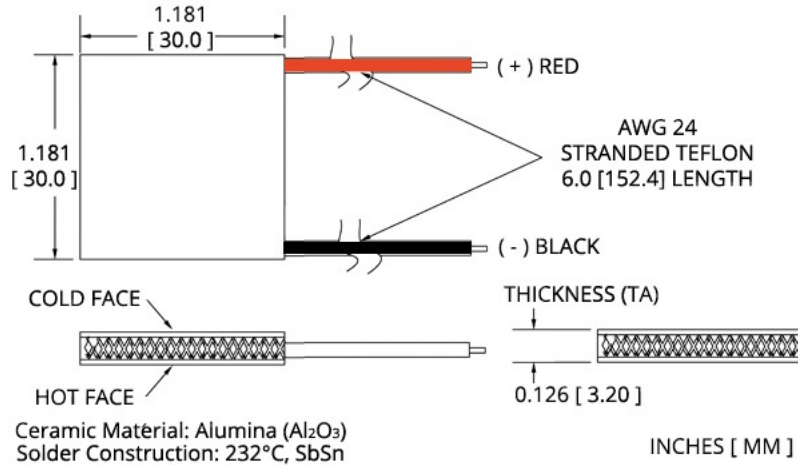
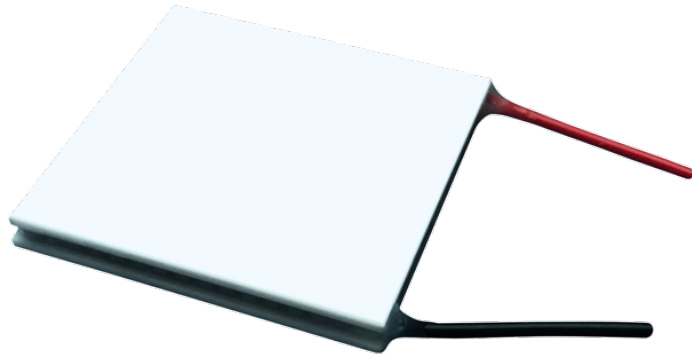
The ETX6-12-F1-3030-TA-RT-W6 high temperature, high-performance Thermoelectric Cooler uses Laird's enhanced Thermoelectric Module construction preventing performance degrading copper diffusion, which is common in standard grade Thermoelectric Coolers operating in high temperature environments exceeding 80 °C. It has a maximum Qc of 59.4 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 83.2 °C at Qc = 0.

**Features**

- High-temperature operation
- Reliable solid-state
- No sound or vibration
- Environmentally-friendly
- RoHS-compliant

**Applications**

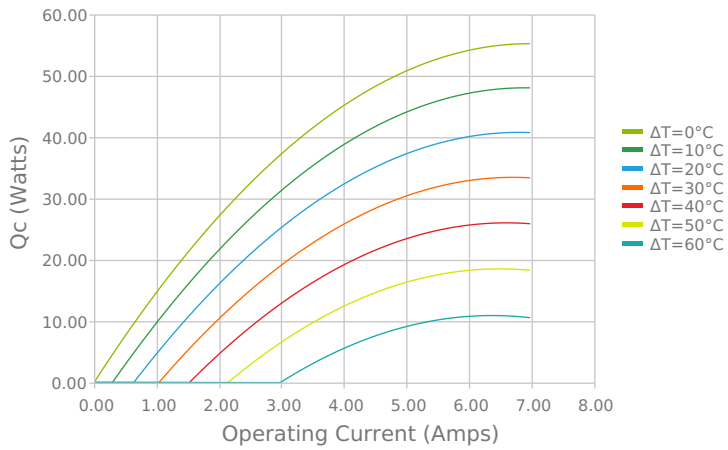
- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems
- Peltier Cooling for Digital
- Light Processors



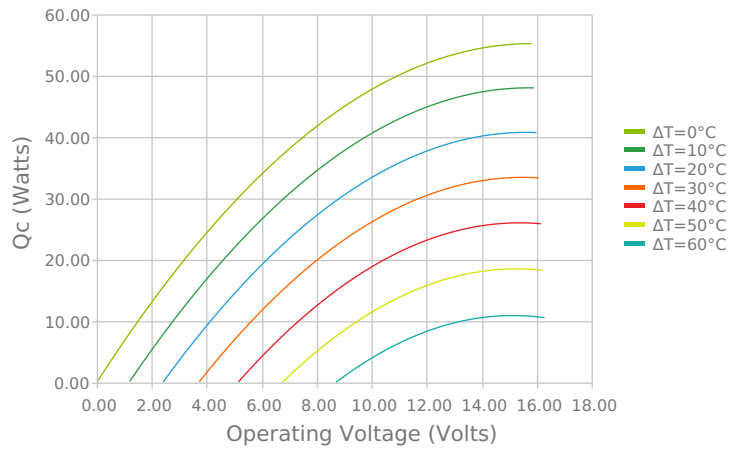
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

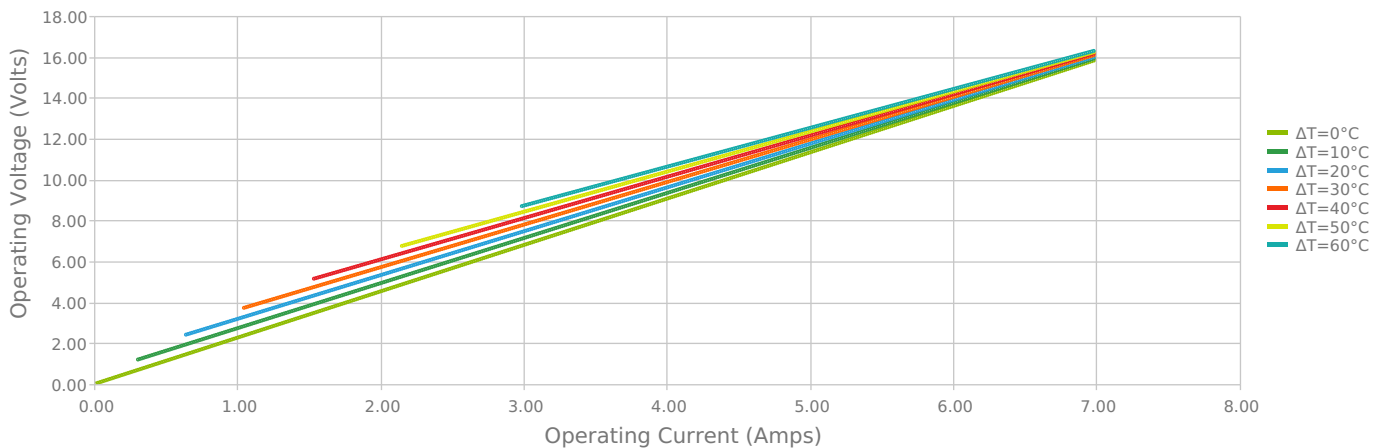
Heat Pumped at Cold Side  
 Thot = 85 °C



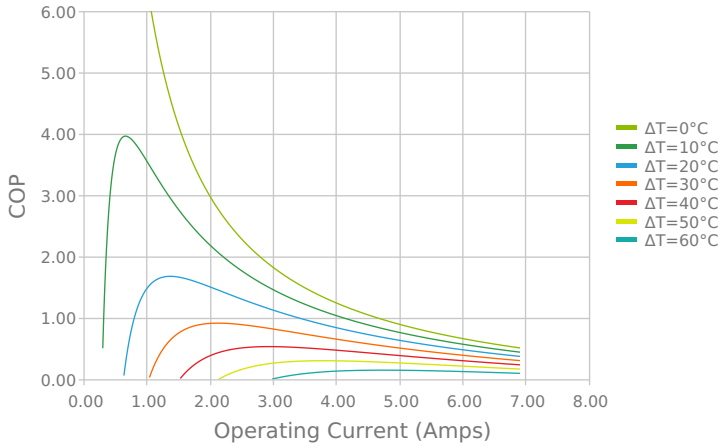
Heat Pumped at Cold Side  
 Thot = 85 °C



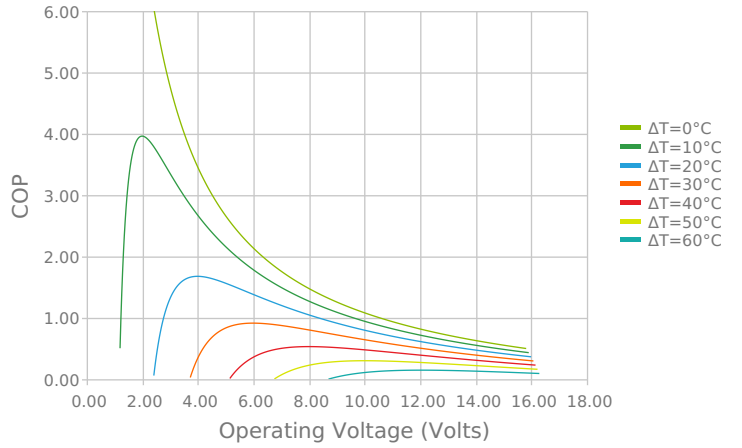
Current vs Voltage (I vs V)  
 Thot = 85 °C



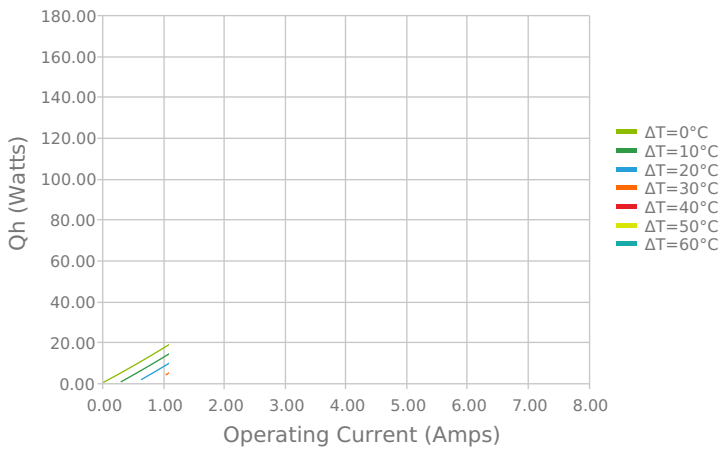
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85\text{ }^\circ\text{C}$



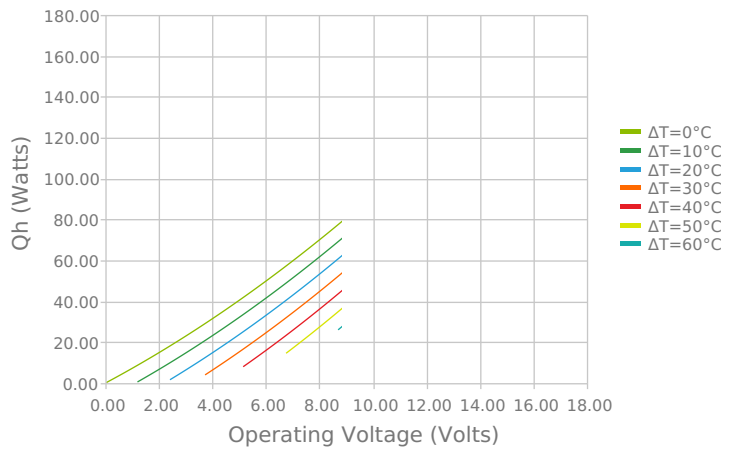
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85\text{ }^\circ\text{C}$



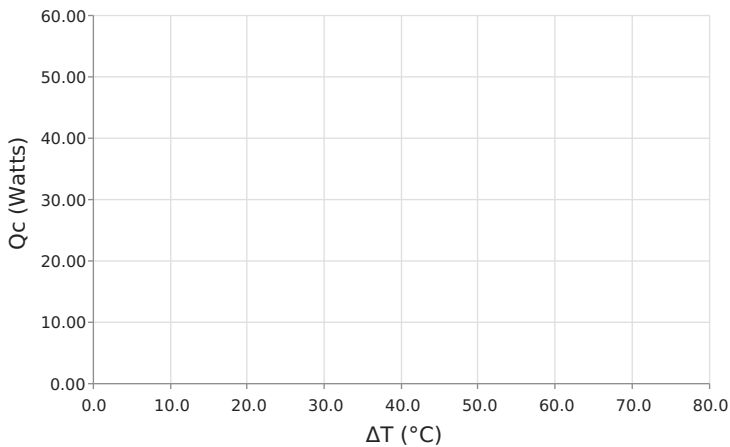
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 85\text{ }^\circ\text{C}$



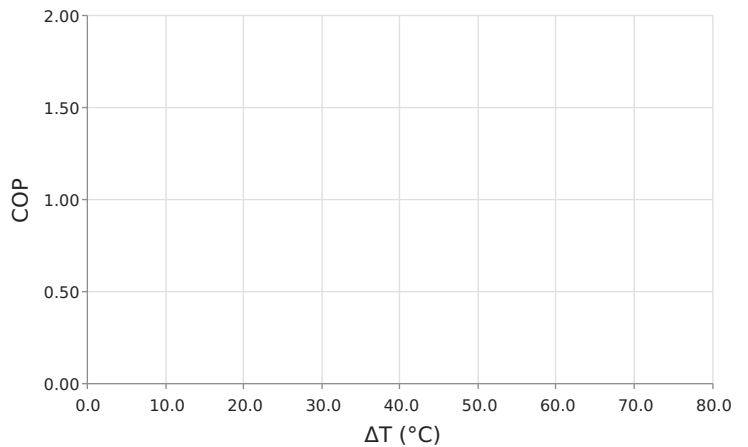
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 85\text{ }^\circ\text{C}$



Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 85\text{ }^\circ\text{C}$  | Current = 5.2 Amps



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85\text{ }^\circ\text{C}$  | Current = 5.2 Amps



## SPECIFICATIONS\*

Hot Side Temperature	50.0 °C	85.0 °C	110.0 °C
<b>Qcmax (<math>\Delta T = 0</math>)</b>	59.4 Watts	64.3 Watts	66.3 Watts
<b><math>\Delta T_{max}</math> (<math>Q_c = 0</math>)</b>	83.2°C	95.3°C	102.0°C
<b>I<sub>max</sub> (I @ <math>\Delta T_{max}</math>)</b>	6.1 Amps	5.9 Amps	5.7 Amps
<b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>	16.6 Volts	19.1 Volts	20.8 Volts
<b>Module Resistance</b>	2.55 Ohms	2.97 Ohms	3.26 Ohms
<b>Max Operating Temperature</b>	150 °C		
<b>Weight</b>	13.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	3.200 ± 0.254 mm 0.126 ± 0.010 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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