

**HiTemp ETX Series Thermoelectric Cooler**

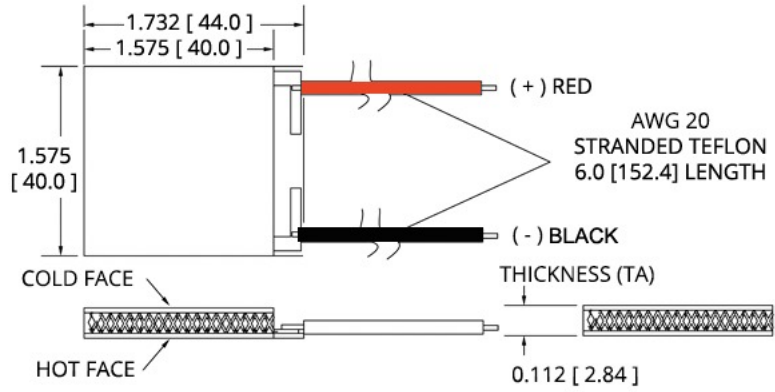
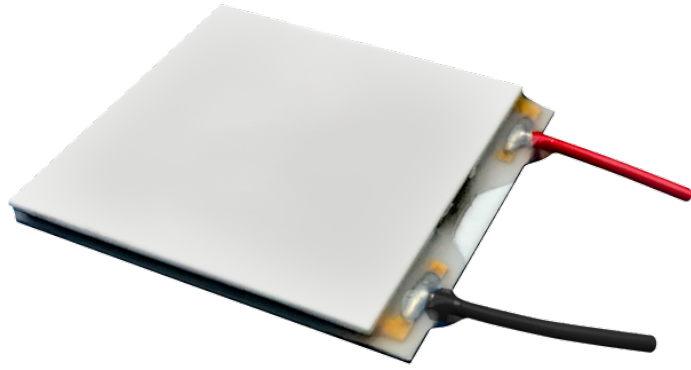
The ETX15-12-F2-4040-TA-RT-W6 high temperature, high-performance Thermoelectric Cooler uses Laird's enhanced Thermoelectric Module construction preventing performance degrading copper diffusion, which is common in standard grade Thermoelectric Coolers operating in high temperature environments exceeding 80 °C. It has a maximum Qc of 142.8 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



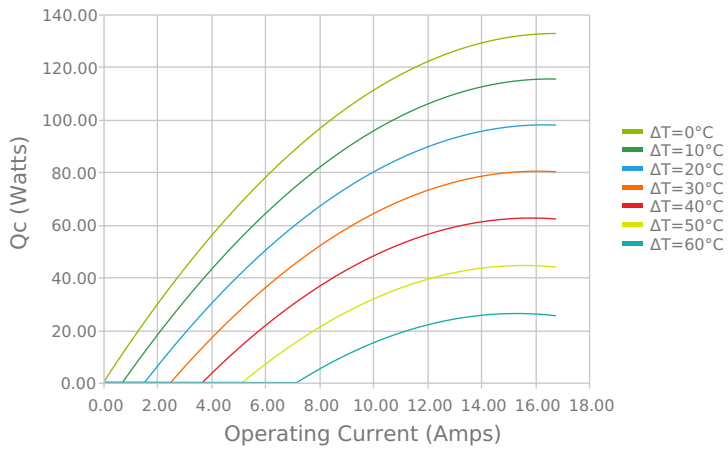
Ceramic Material: Alumina ( $Al_2O_3$ )  
 Solder Construction: 232°C, SbSn

INCHES [ MM ]

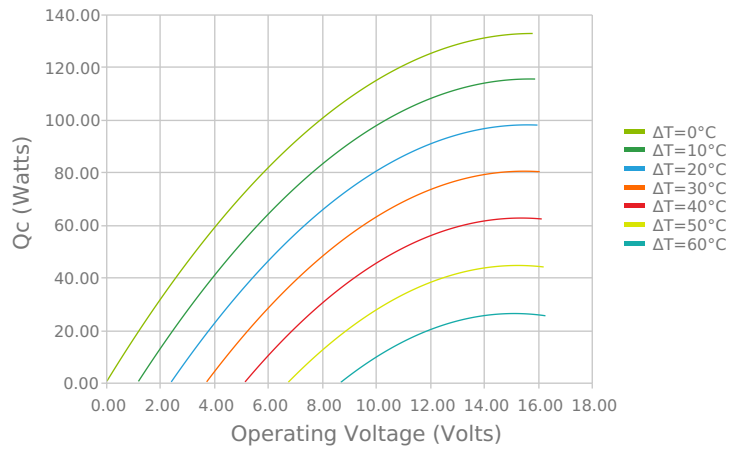
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

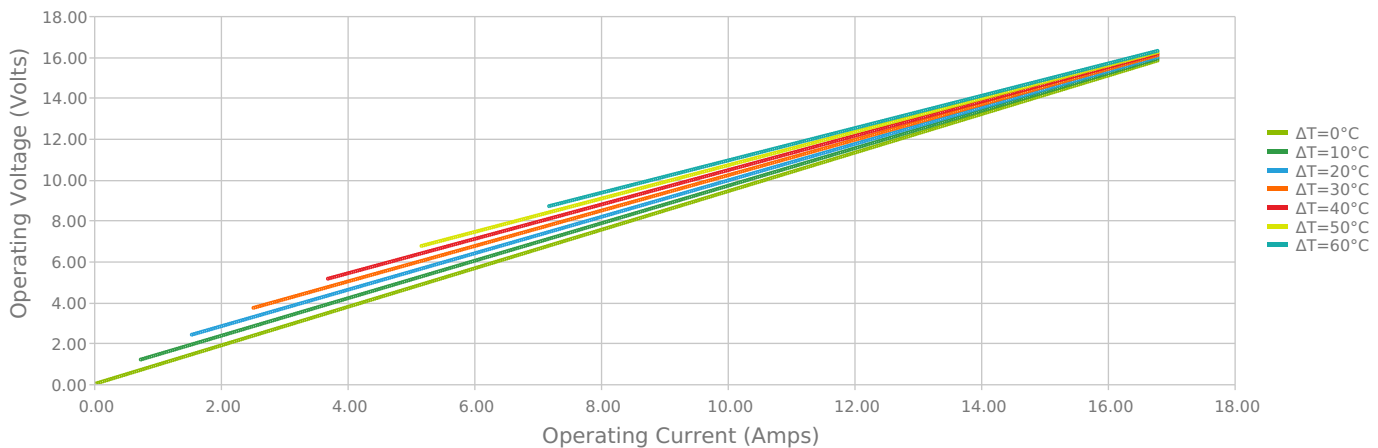
Heat Pumped at Cold Side  
 $T_{hot} = 85\text{ °C}$



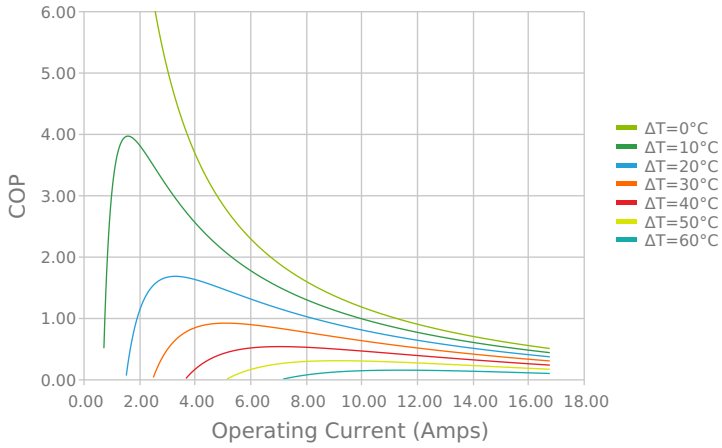
Heat Pumped at Cold Side  
 $T_{hot} = 85\text{ °C}$



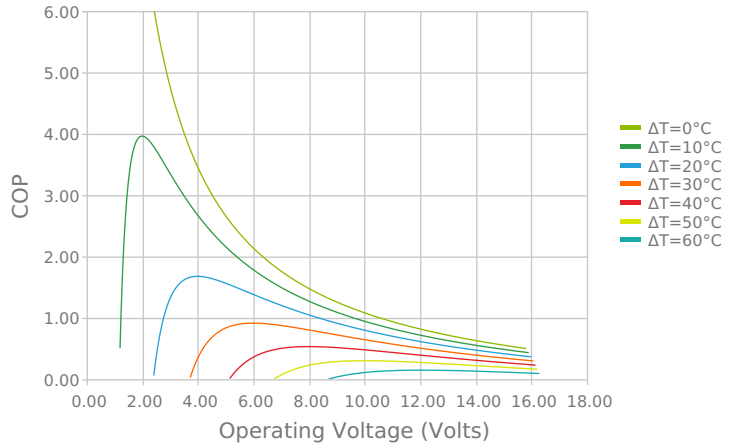
Current vs Voltage (I vs V)  
 $T_{hot} = 85\text{ °C}$



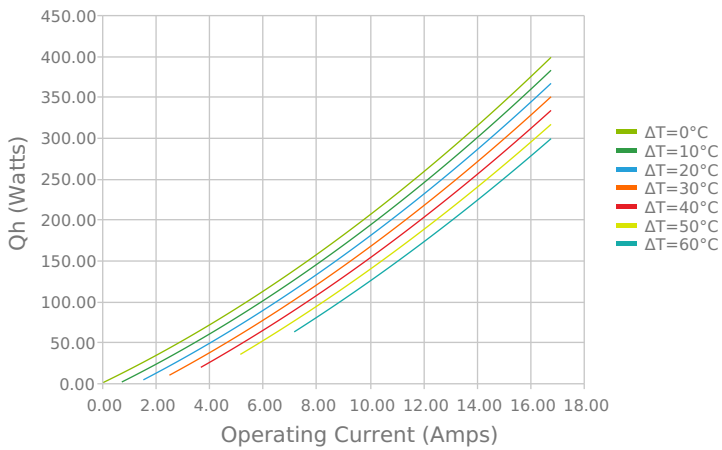
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 85 °C



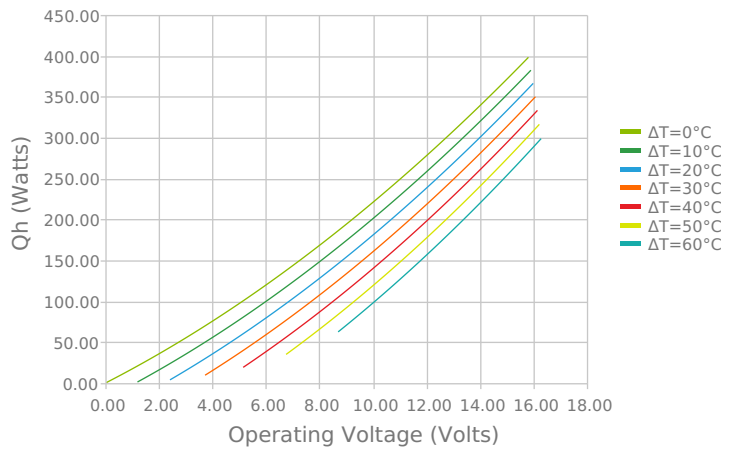
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 85 °C



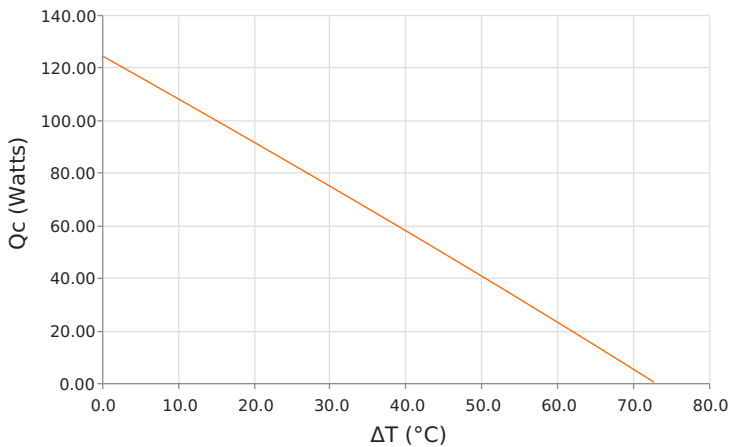
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 85 °C



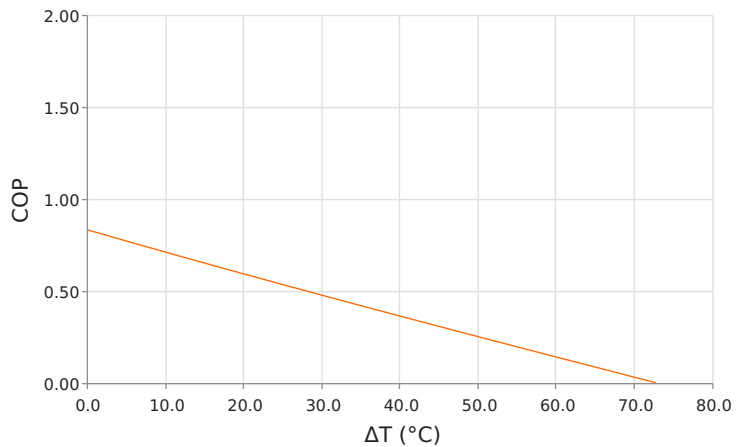
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 85 °C



Heat Pumped at Cold Side (Qc)  
 Thot = 85 °C | Current = 12.6 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Thot = 85 °C | Current = 12.6 Amps



## SPECIFICATIONS\*

Hot Side Temperature	50.0 °C	85.0 °C	110.0 °C
<b>Q<sub>cmax</sub> (ΔT = 0)</b>	142.8 Watts	154.5 Watts	159.3 Watts
<b>ΔT<sub>max</sub> (Q<sub>c</sub> = 0)</b>	83.2°C	95.3°C	102.0°C
<b>I<sub>max</sub> (I @ ΔT<sub>max</sub>)</b>	14.6 Amps	14.1 Amps	13.8 Amps
<b>V<sub>max</sub> (V @ ΔT<sub>max</sub>)</b>	16.6 Volts	19.1 Volts	20.8 Volts
<b>Module Resistance</b>	1.06 Ohms	1.24 Ohms	1.35 Ohms
<b>Max Operating Temperature</b>	150 °C		
<b>Weight</b>	20.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	2.845 ±0.254 mm 0.112 ± 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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Date: 07/30/2020