

**HiTemp ETX Series Thermoelectric Cooler**

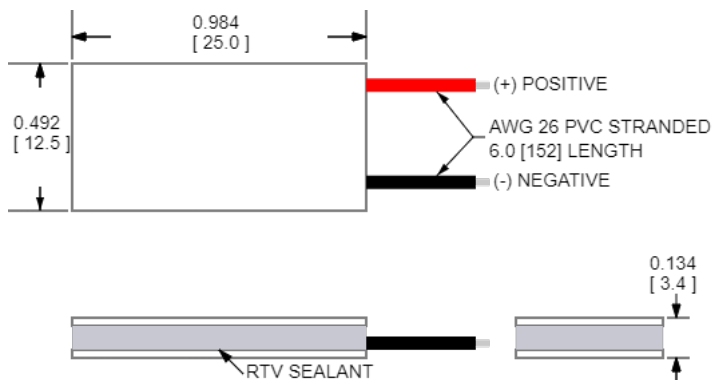
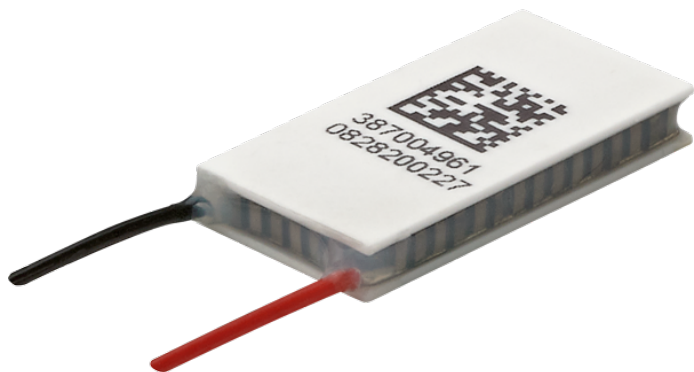
The ETX2-6-F1-1225-TA-RT-W6 high temperature, high-performance thermoelectric cooler uses Laird Thermal Systems' enhanced thermoelectric module construction preventing performance degrading diffusion, which is common in standard grade thermoelectric coolers operating in high temperature environments exceeding 80 °C. It has a maximum Qc of 10.2 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
- Heating and Cooling for Liquid Chromatography Systems
- Thermoelectric Cooling for Security Cameras

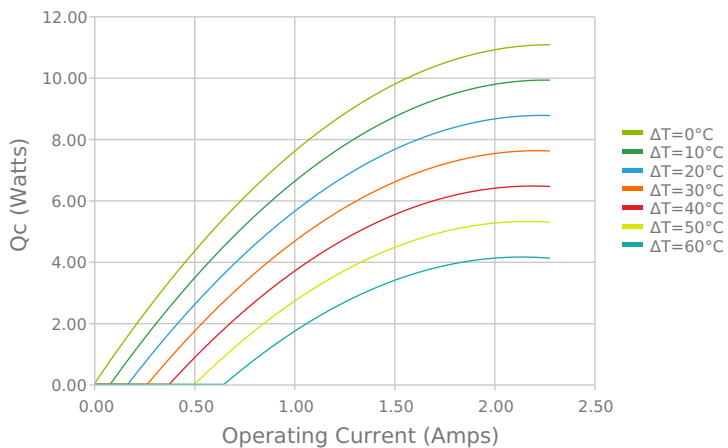


CERAMIC MATERIAL: Al<sub>2</sub>O<sub>3</sub>  
 SOLDER CONSTRUCTION: 232°C, SbSn  
 Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

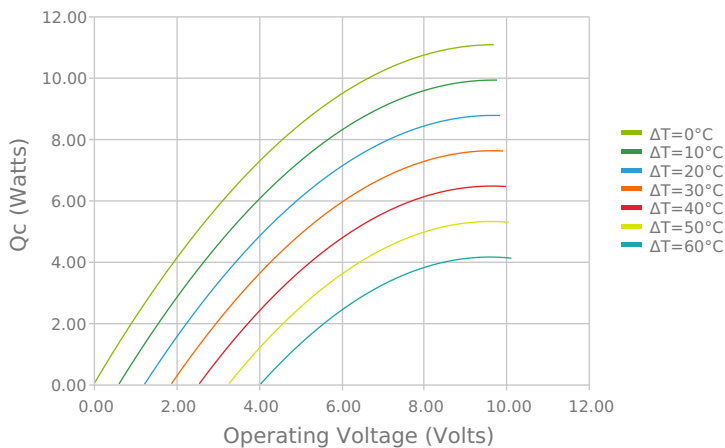
INCHES [ MM ]

**ELECTRICAL AND THERMAL PERFORMANCE**

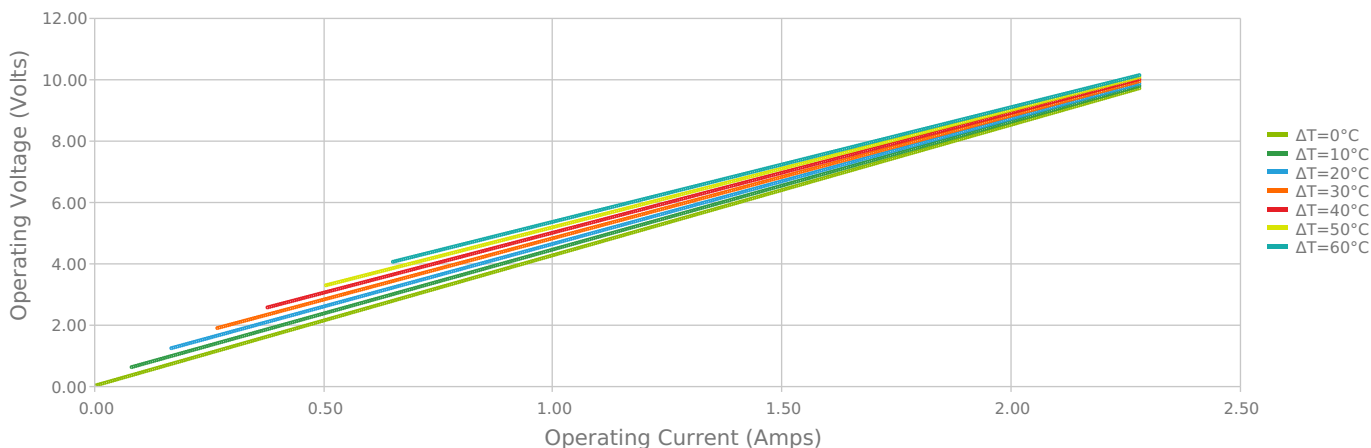
Heat Pumped at Cold Side  
 Thot = 85 °C



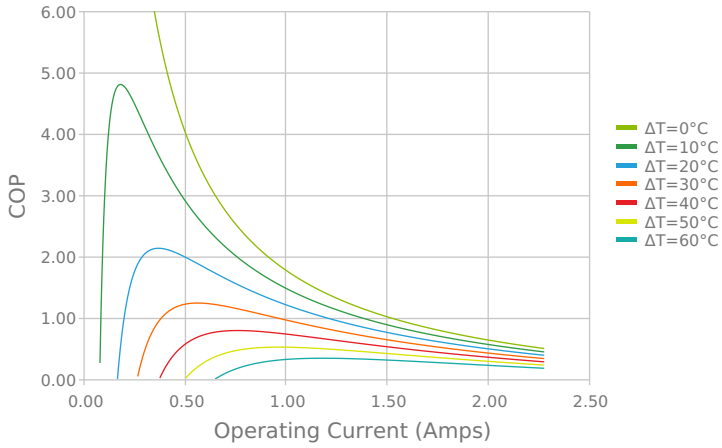
Heat Pumped at Cold Side  
 Thot = 85 °C



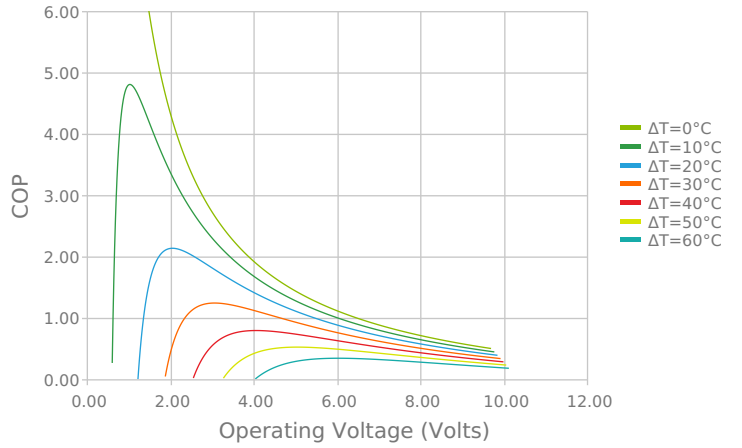
Current vs Voltage (I vs V)  
 Thot = 85 °C



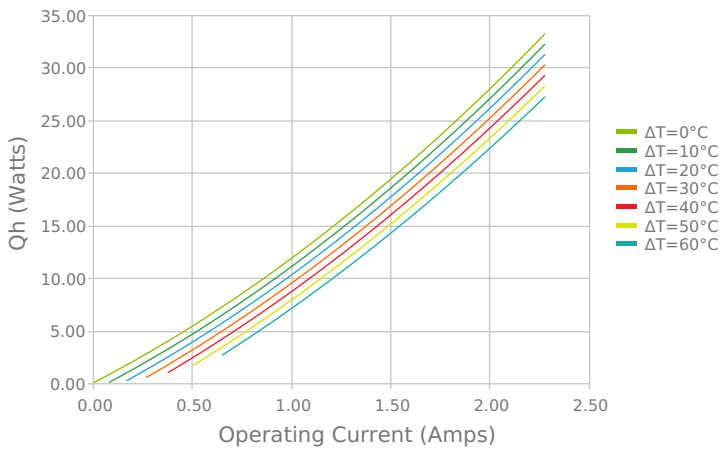
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 85 °C



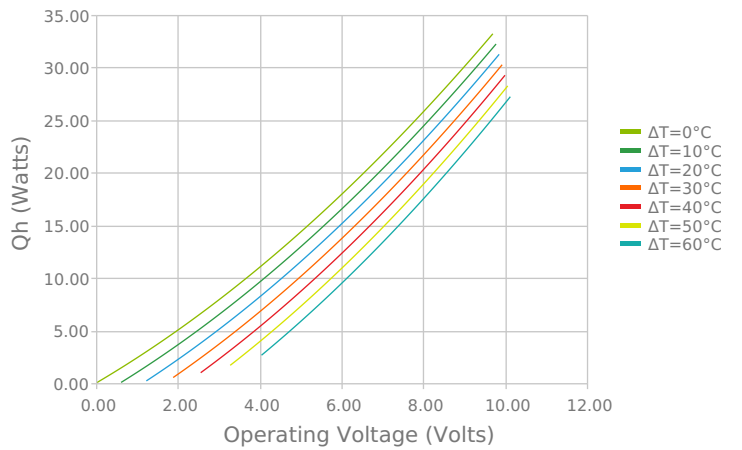
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 85 °C



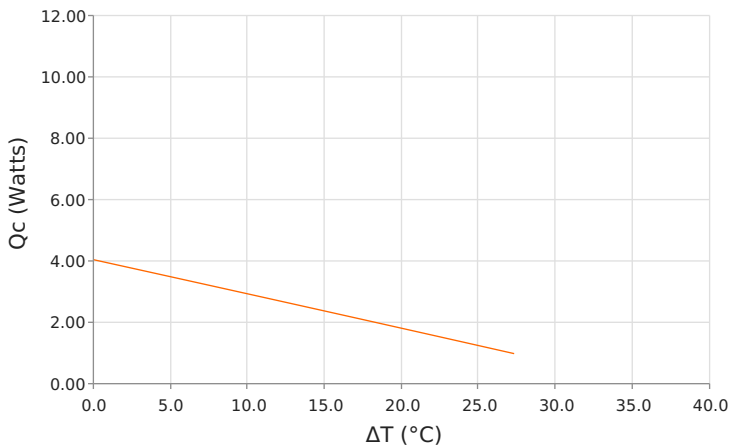
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 85 °C



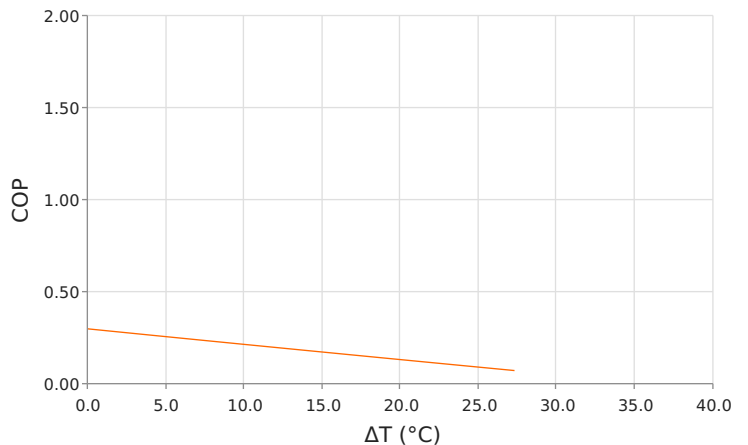
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 85 °C



Heat Pumped at Cold Side (Qc)  
 Thot = 85 °C | Current = 1.7 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Thot = 85 °C | Current = 1.7 Amps



## SPECIFICATIONS\*

| Hot Side Temperature                                      | 50.0 °C     | 85.0 °C    | 110.0 °C   |
|---|-------------|------------|------------|
| <b>Qcmax (<math>\Delta T = 0</math>)</b>                  | 10.2 Watts  | 11.1 Watts | 11.4 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>  | 2.1 Amps    | 2.0 Amps   | 2.0 Amps   |
| <b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>  | 8.2 Volts   | 9.5 Volts  | 10.3 Volts |
| <b>Module Resistance</b>                                  | 3.64 Ohms   | 4.25 Ohms  | 4.65 Ohms  |
| <b>Max Operating Temperature</b>                          | 150 °C      |            |            |
| <b>Weight</b>   | 4.0 gram(s) |            |            |

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

| Suffix | Thickness                            | Flatness / Parallelism                     | Hot Face | Cold Face | Lead Length         |
|--------|--------------------------------------|--|----------|-----------|---------------------|
| TA     | 3.400 ±0.025 mm<br>0.134 ± 0.0010 in | 0.025 mm / 0.025 mm<br>0.001 in / 0.001 in | Lapped   | Lapped    | 152.4 mm<br>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: 12/14/2021

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