TTS
TARK THERMAL SOLUTIONS

HiTemp ETX Series ETX4-3-F1-1515-TA-EP-W6
MFG Part Number: 387004953

HiTemp ETX Series Thermoelectric Cooler

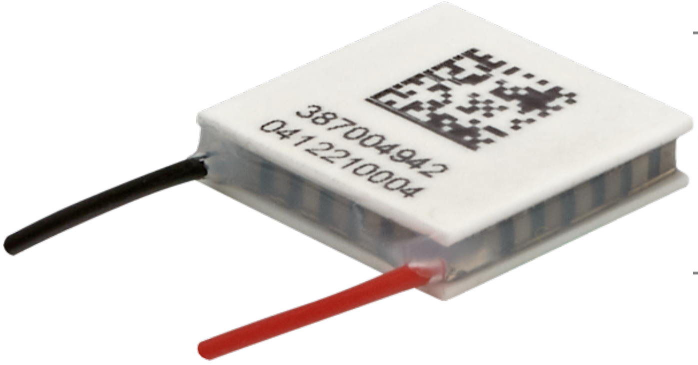
The ETX4-3-F1-1515-TA-EP-W6 high temperature, high-performance thermoelectric cooler uses Laird Thermal Systems' enhanced thermoelectric module construction preventing performance degrading diffusion, which is common in standard grade thermoelectric coolers operating in high temperature environments exceeding 80 °C. It has a maximum Qc of 9.5 Watts when ΔT = 0 and a maximum ΔT of 83.2 °C at Qc = 0.

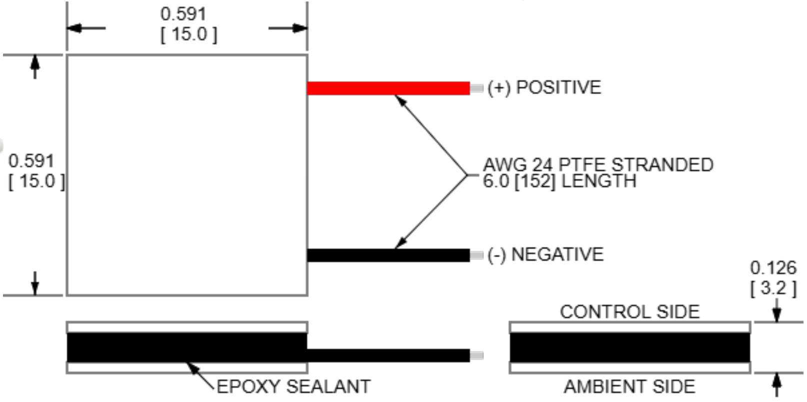
Features

- 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

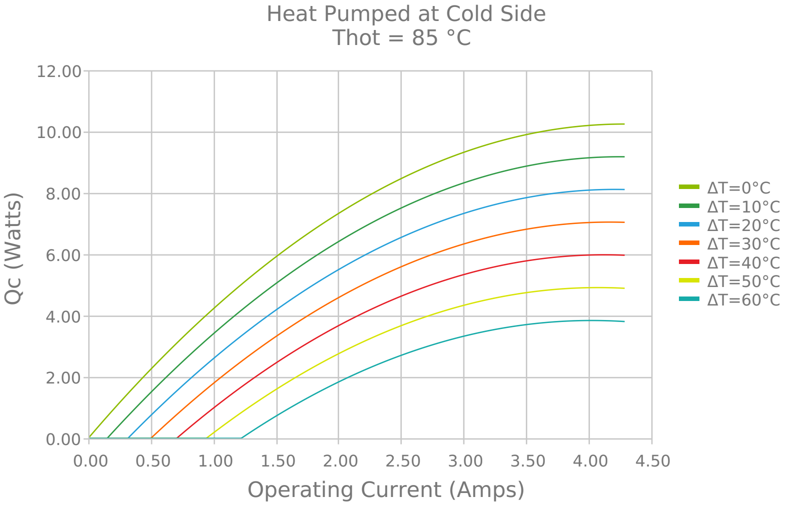


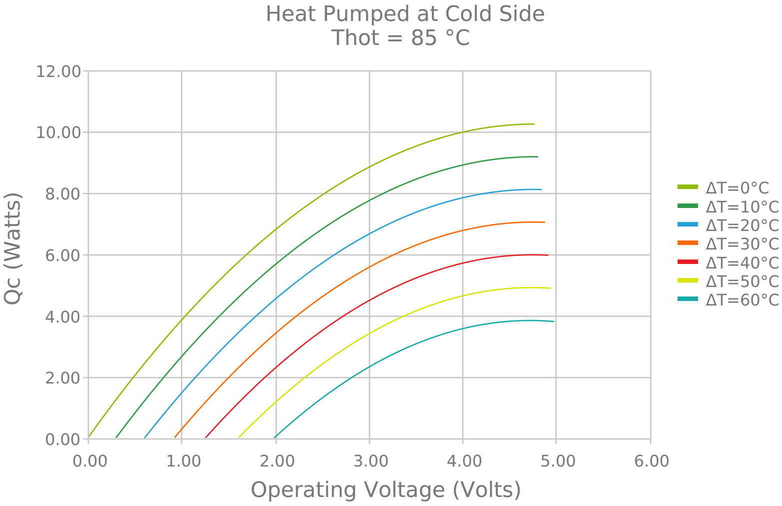


CERAMIC MATERIAL: Al_2O_3
SOLDER CONSTRUCTION: 232°C, SbSn
INCHES [MM]
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

Electrical and Thermal Performance

For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the AMBIENT side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less impactful if located on the side that attaches to the heat exchanger.


Heat Pumped at Cold Side
Thot = 85 °C


Heat Pumped at Cold Side
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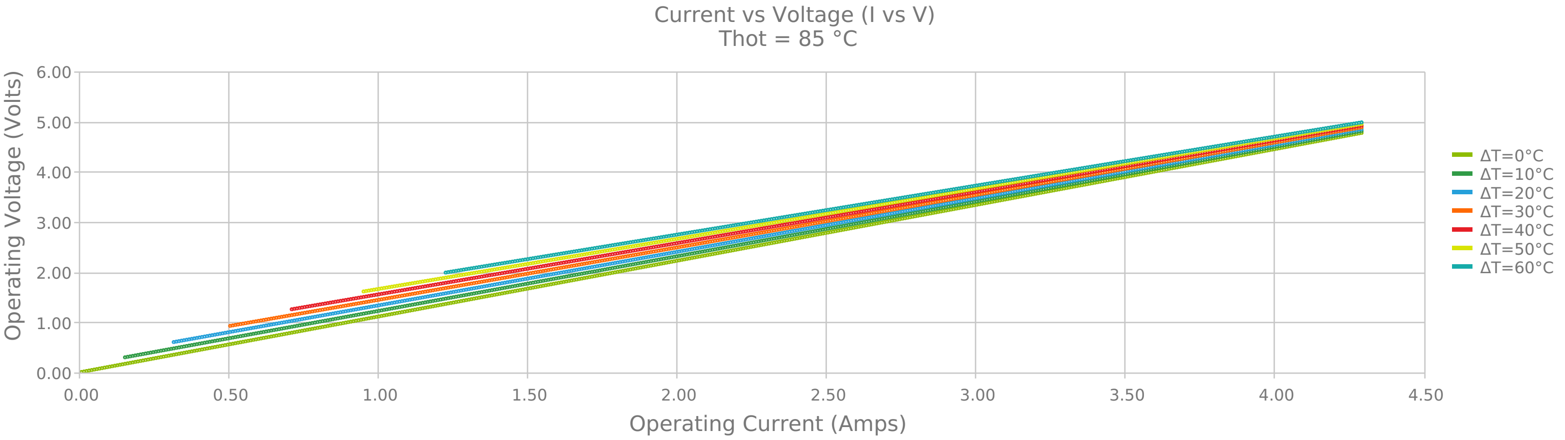
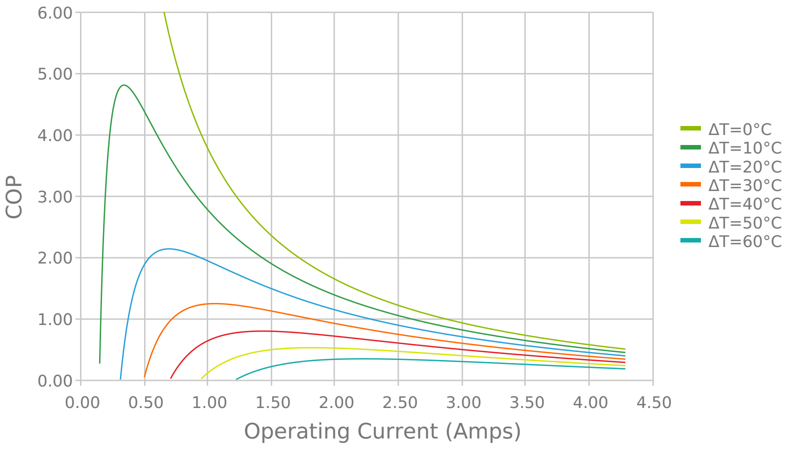
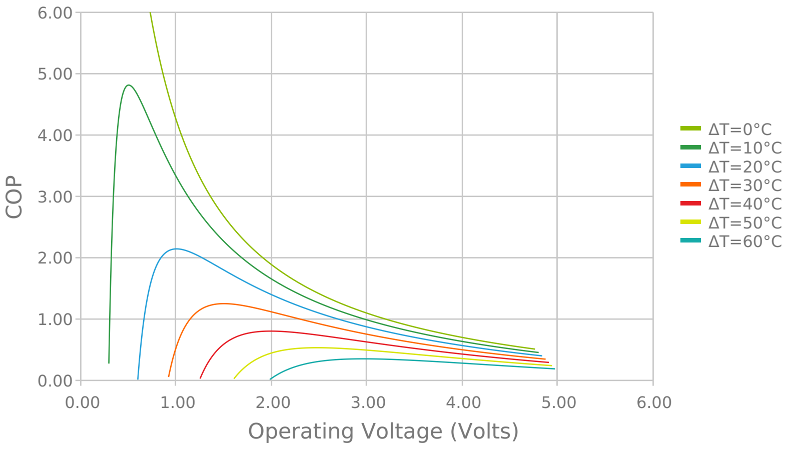

Current vs Voltage (I vs V)
Thot = 85 °C

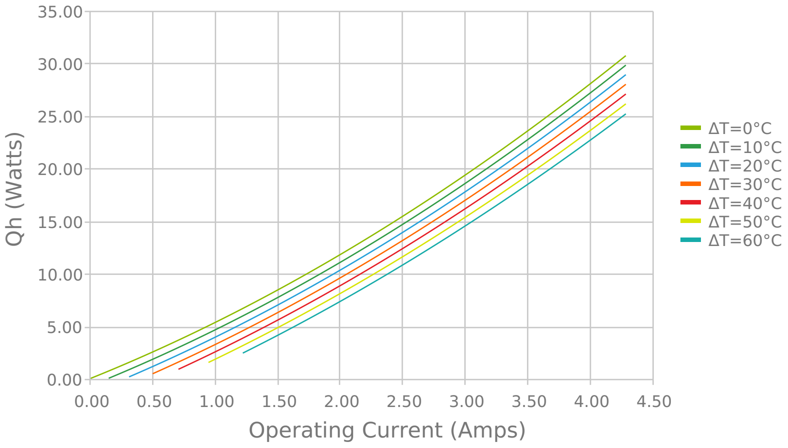
Coefficient of Performance (COP = Qc/Pin)
Thot = 85 °C



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



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



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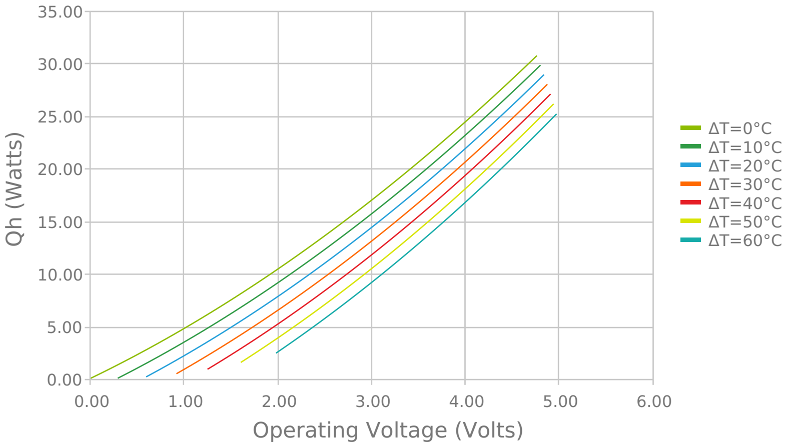
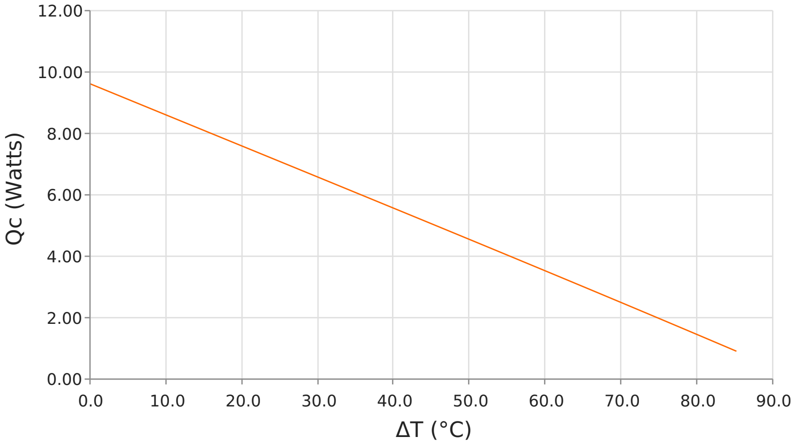
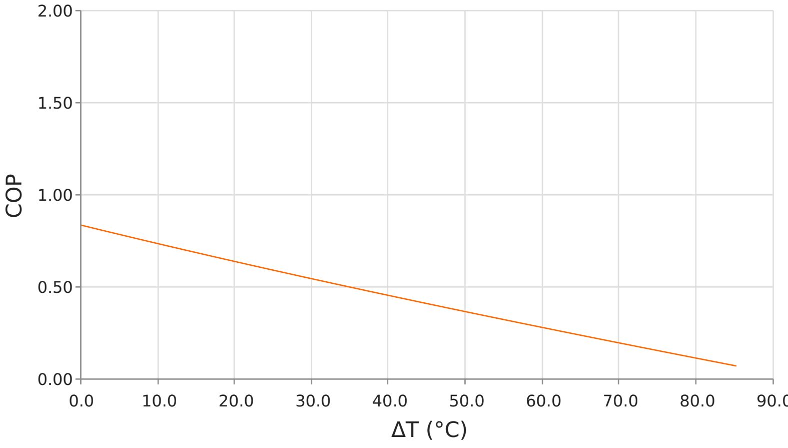


Heat Pumped at Cold Side (Qc)
Thot = 85 °C | Ioperating = 3.2 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 85 °C | Ioperating = 3.2 Amps



Specifications

Hot Side Temperature	**50.0 °C**	**85.0 °C**	**110.0 °C**
Qcmax (ΔT = 0)	9.5 Watts	10.2 Watts	10.6 Watts
ΔTmax (Qc = 0)	83.2°C	95.3°C	102.0°C
Imax (I @ ΔTmax)	4.0 Amps	3.8 Amps	3.7 Amps
Vmax (V @ ΔTmax)	4.1 Volts	4.7 Volts	5.1 Volts
Module Resistance	0.95 Ohms	1.11 Ohms	1.22 Ohms
Max Operating Temperature	150 °C		
Weight	3.0 gram(s)		

Finishing Options

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	3.200 ±0.025 mm 0.126 ± 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
EP	Epoxy	Black	-55 to 150°C	Low density syntactic foam epoxy encapsulant

Notes

Max operating temperature: 150°C
Do not exceed Imax or Vmax when operating module
Reference assembly guidelines for recommended installation

Revision: 00 Date: 06-01-2022

Print Date: 05-13-2025