

HiTemp ETX Series Thermolectric Cooler

The ETX7-16-F1-4040-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 84.1 Watts when $\Delta T = 0$ and a maximum ΔT of 83.2 °C at $Q_c = 0$.

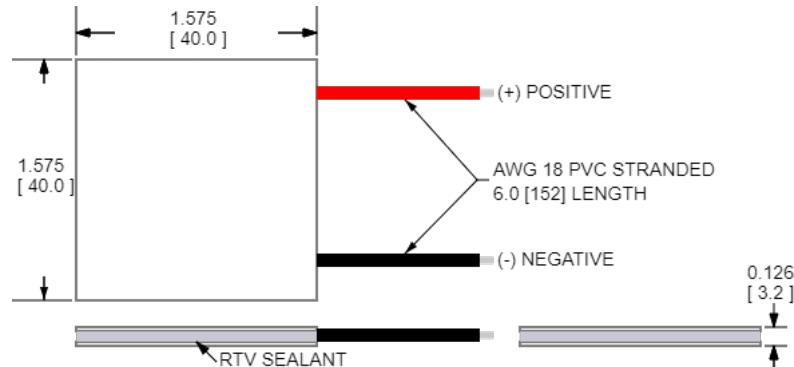


Features

- 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: Al_2O_3

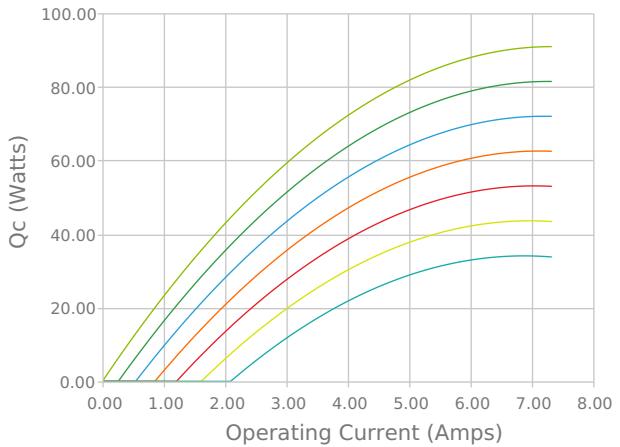
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

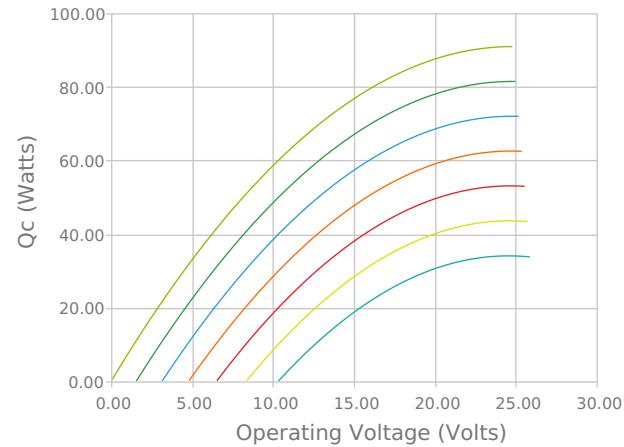
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

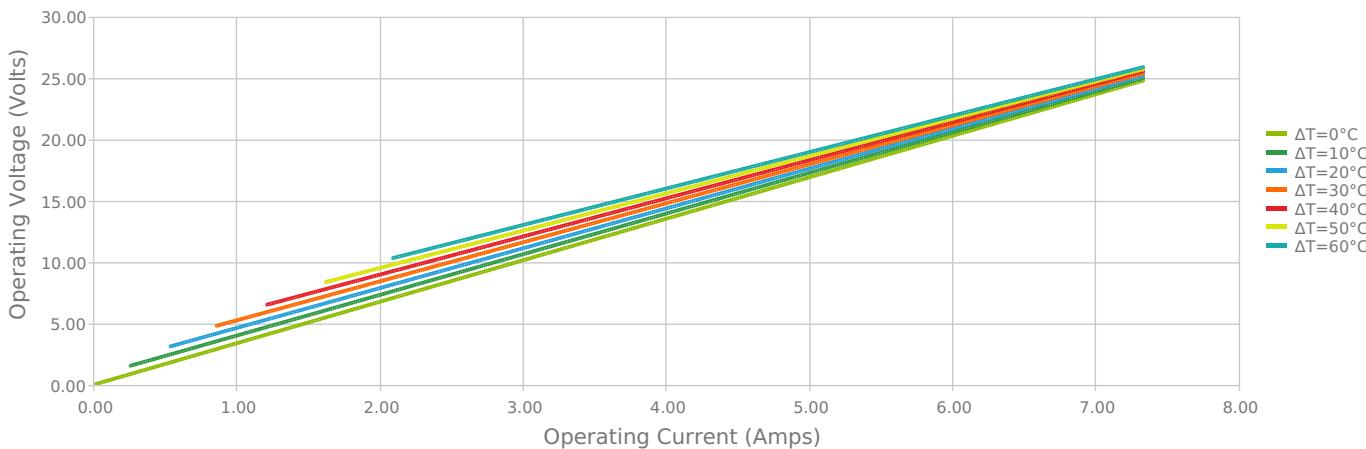
Heat Pumped at Cold Side
Thot = 85 °C

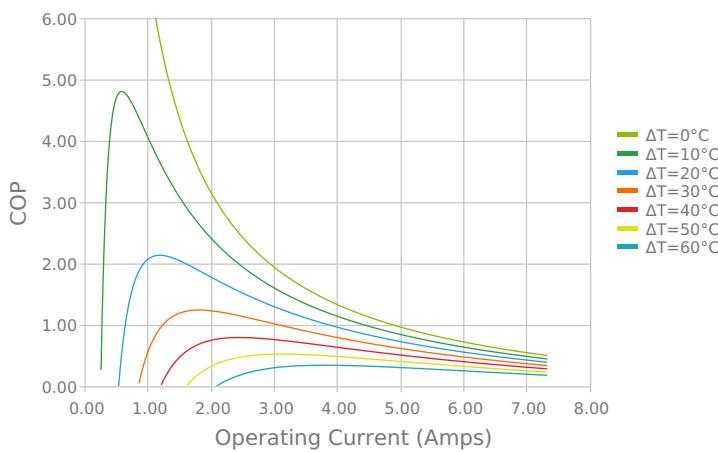
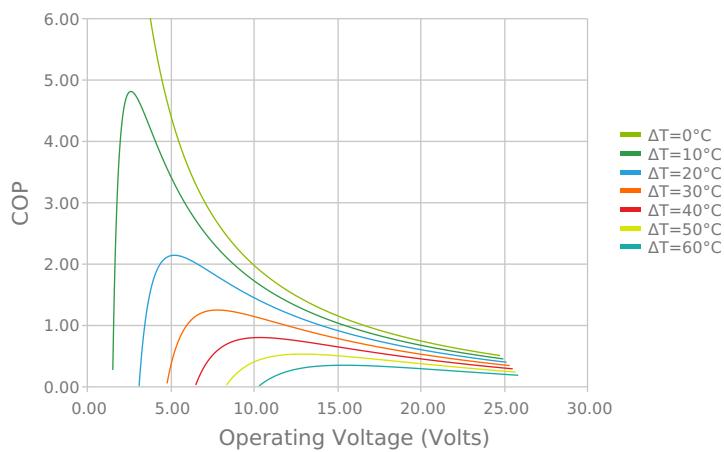
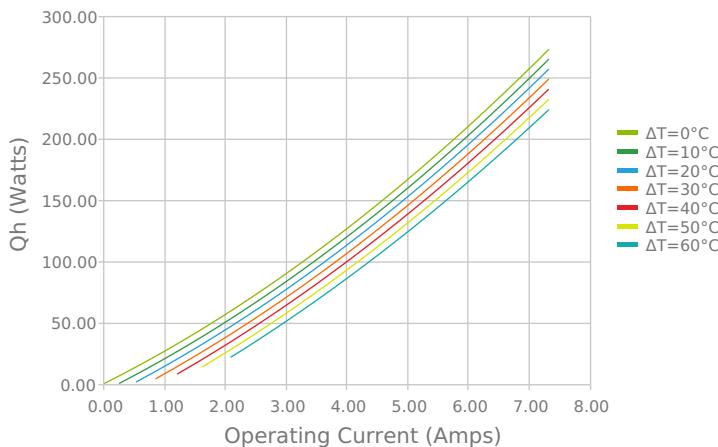
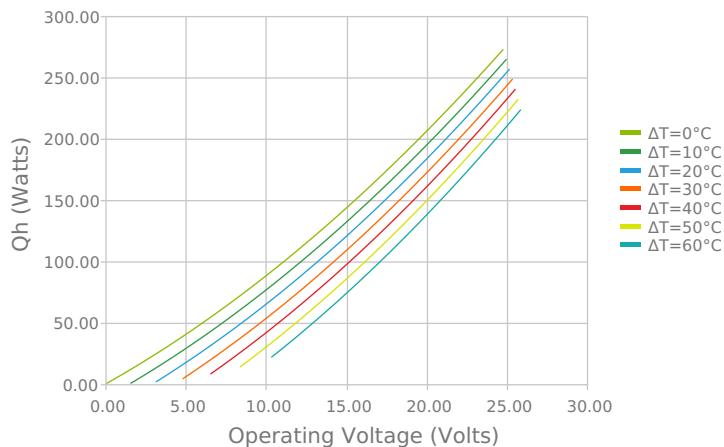
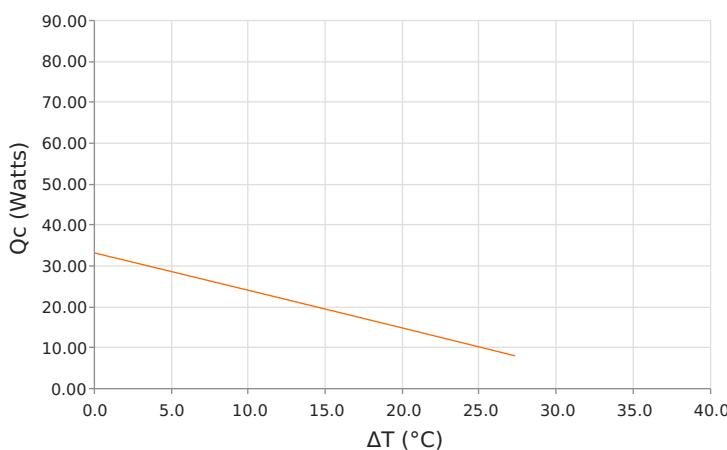
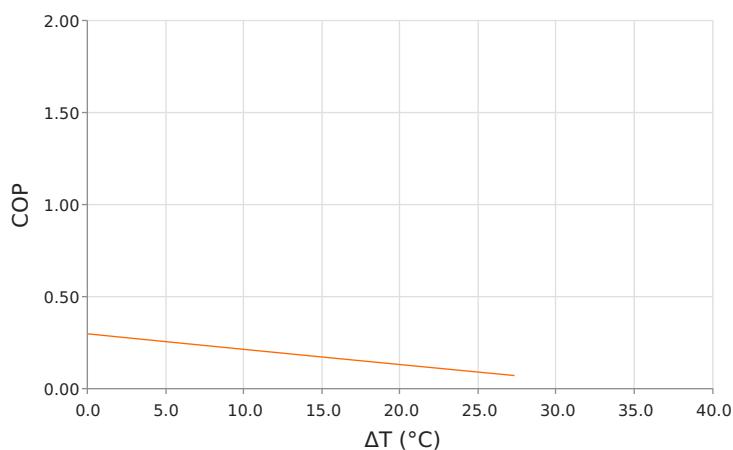


Heat Pumped at Cold Side
Thot = 85 °C



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



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

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

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

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

 Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 85^\circ C$ | Current = 5.5 Amps

 Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 85^\circ C$ | Current = 5.5 Amps


SPECIFICATIONS*

	50.0 °C	85.0 °C	110.0 °C
Qcmax (ΔT = 0)	84.1 Watts	90.9 Watts	93.8 Watts
ΔTmax (Qc = 0)	83.2°C	95.3°C	102.0°C
I_{max} (I @ ΔT_{max})	6.8 Amps	6.5 Amps	6.4 Amps
V_{max} (V @ ΔT_{max})	21.0 Volts	24.2 Volts	26.3 Volts
Module Resistance	2.90 Ohms	3.38 Ohms	3.70 Ohms
Max Operating Temperature	150 °C		
Weight	20.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	3.200 ± 0.025 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
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_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation

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