

HiTemp ETX Series Thermoelectric Cooler

The ETX25-12-F1-6262-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 245.1 Watts when $\Delta T = 0$ and a maximum ΔT of 83.2 °C at Qc = 0.

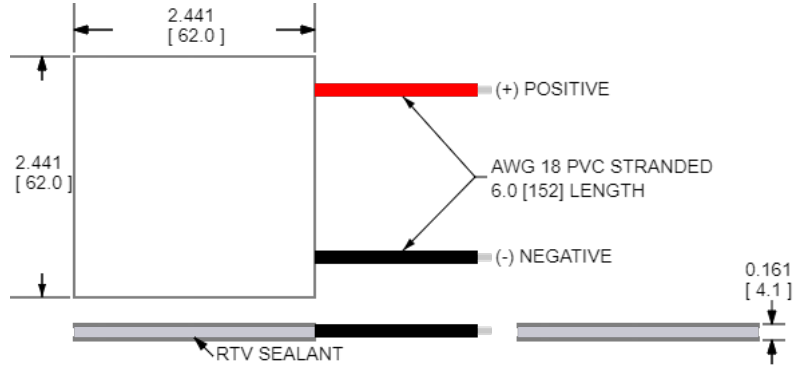


Features

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

Applications

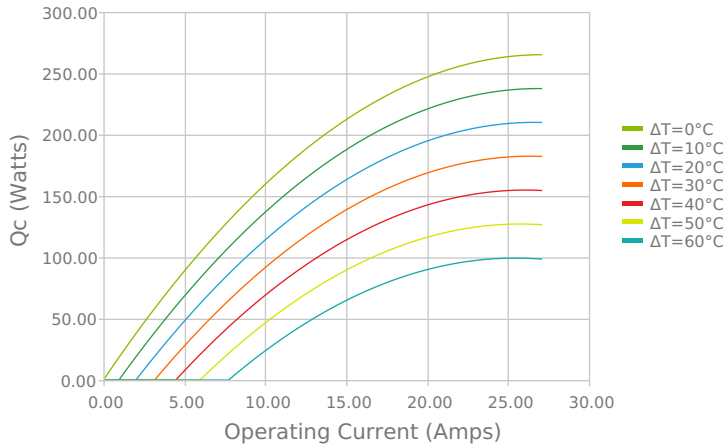
- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems
- Peltier Cooling for Digital Light Processors
- Heating and Cooling for Liquid Chromatography Systems
- Thermoelectric Cooling for Security Cameras



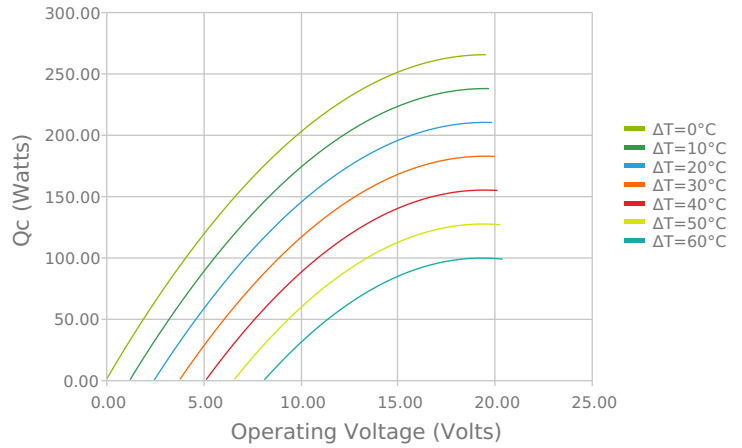
CERAMIC MATERIAL: Al₂O₃
 SOLDER CONSTRUCTION: 232°C, SbSn
 Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

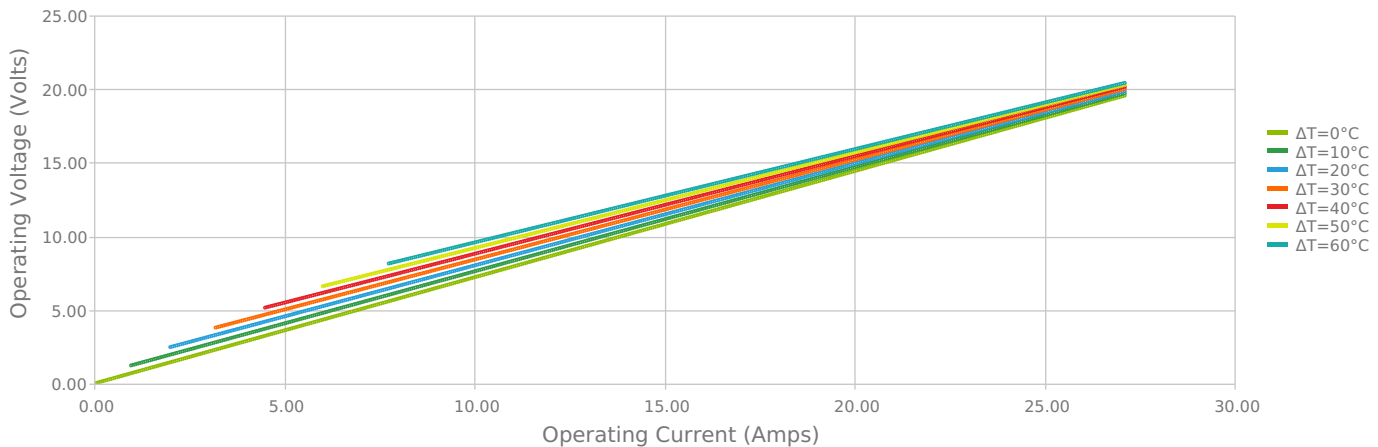
Heat Pumped at Cold Side
 Thot = 85 °C



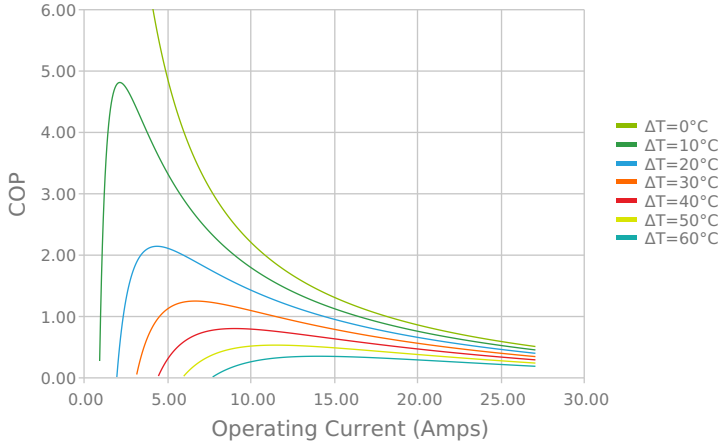
Heat Pumped at Cold Side
 Thot = 85 °C



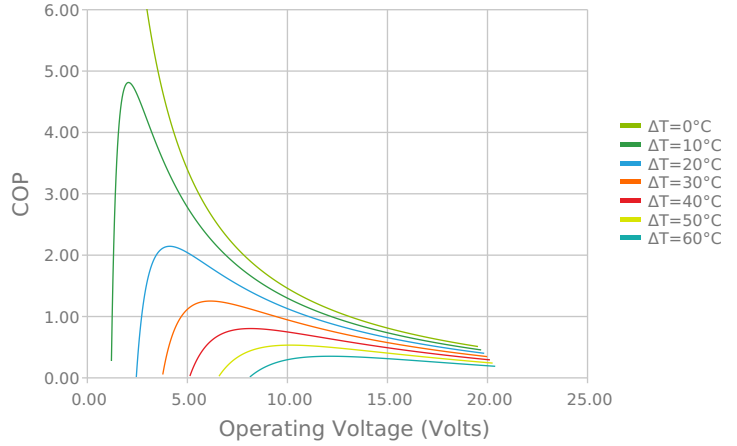
Current vs Voltage (I vs V)
 Thot = 85 °C



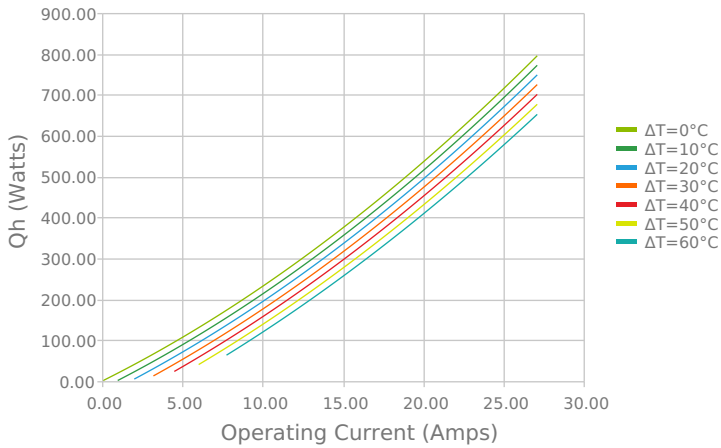
Coefficient of Performance (COP = Qc/Pin)
 Thot = 85 °C



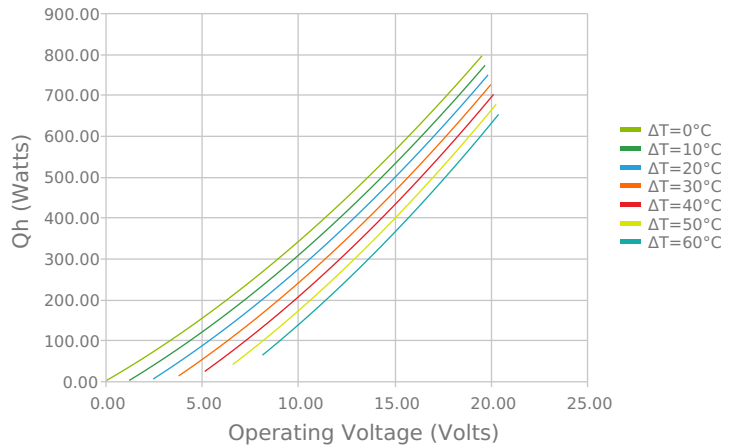
Coefficient of Performance (COP = Qc/Pin)
 Thot = 85 °C



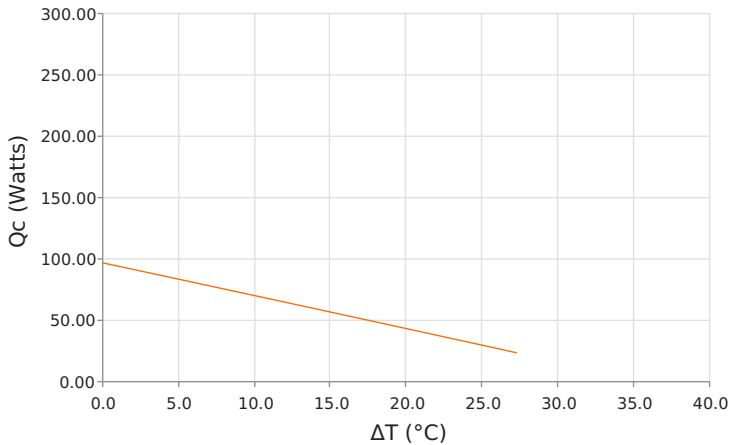
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 85 °C



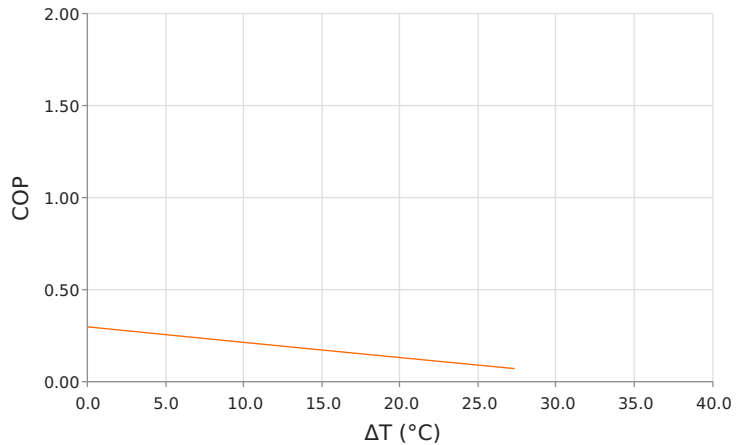
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 85 °C



Heat Pumped at Cold Side (Qc)
 Thot = 85 °C | Current = 20.3 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 85 °C | Current = 20.3 Amps



SPECIFICATIONS*

| | 50.0 °C | 85.0 °C | 110.0 °C |
|---|--------------|-------------|-------------|
| Hot Side Temperature | | | |
| Qcmax ($\Delta T = 0$) | 245.1 Watts | 265.1 Watts | 273.4 Watts |
| ΔT_{max} ($Q_c = 0$) | 83.2°C | 95.3°C | 102.0°C |
| I_{max} (I @ ΔT_{max}) | 25.0 Amps | 24.1 Amps | 23.6 Amps |
| V_{max} (V @ ΔT_{max}) | 16.6 Volts | 19.1 Volts | 20.8 Volts |
| Module Resistance | 0.62 Ohms | 0.72 Ohms | 0.79 Ohms |
| Max Operating Temperature | 150 °C | | |
| Weight | 69.0 gram(s) | | |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|---------------------------------------|--|----------|-----------|---------------------|
| TA | 4.100 ± 0.254 mm 0.161 ± 0.0100 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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