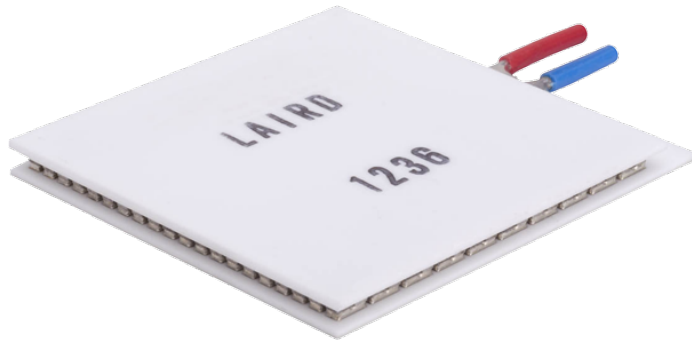


UltraTEC™ UT Series Thermoelectric Cooler

The UT15-200-F2-4040-TA-RT-W6 is a high heat flux density thermoelectric cooler. The thermoelectric module is assembled with a large number of semiconducting thermoelectric couples to achieve a higher heat pumping capacity than standard single stage thermoelectric coolers. It has a maximum Qc of 193.4 Watts when ΔT = 0 and a maximum ΔT of 68.9 °C at Qc = 0.

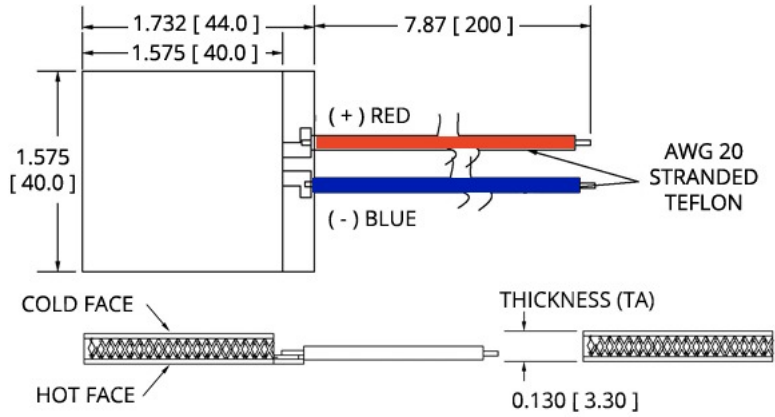


Features

- High heat pump density
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- DC operation
- RoHS-compliant

Applications

- Thermoelectric Coolers and Assemblies for Medical Applications
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Industrial Laser Cooling
- Peltier Cooling for Digital Light Processors



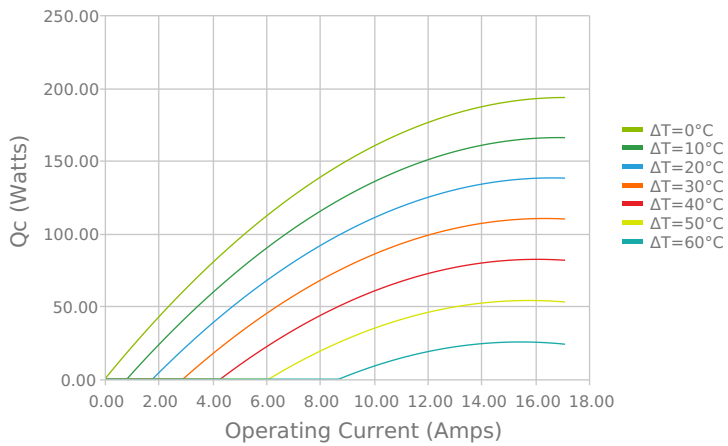
Ceramic Material: Alumina (Al₂O₃)
 Solder Construction: 138°C, Bismuth Tin (BiSn)

INCHES [MM]

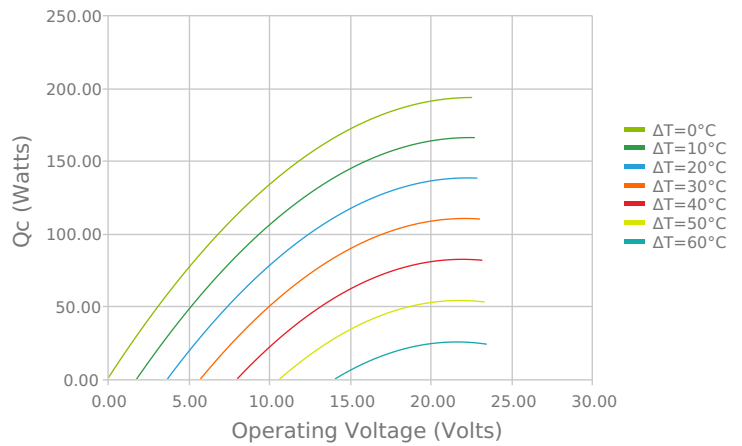
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

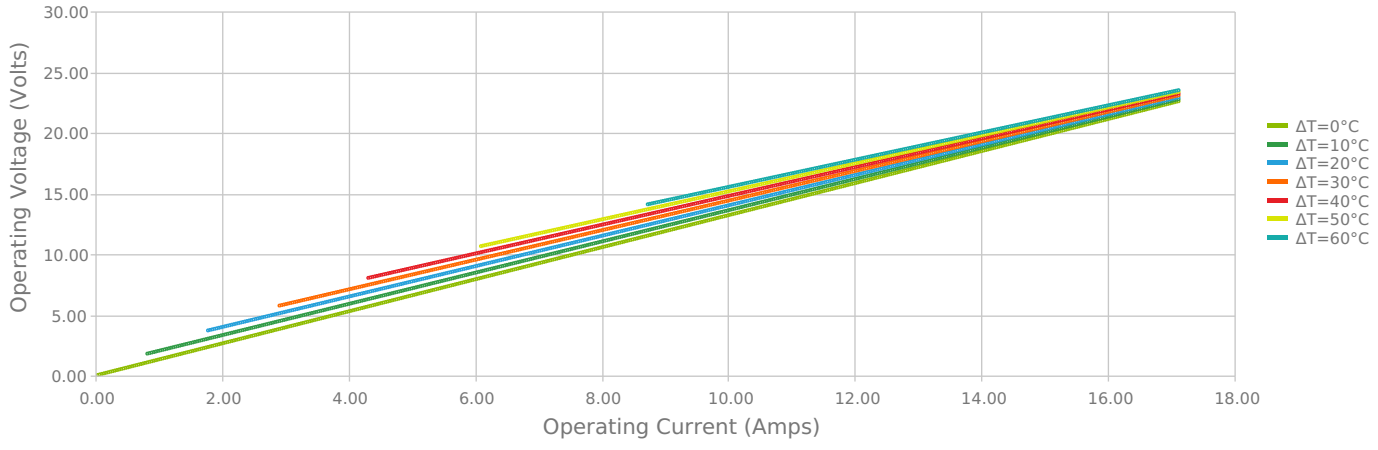
Heat Pumped at Cold Side
 Thot = 27 °C



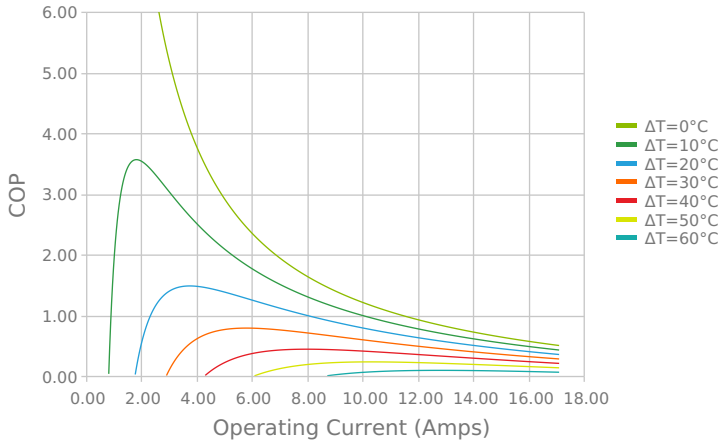
Heat Pumped at Cold Side
 Thot = 27 °C



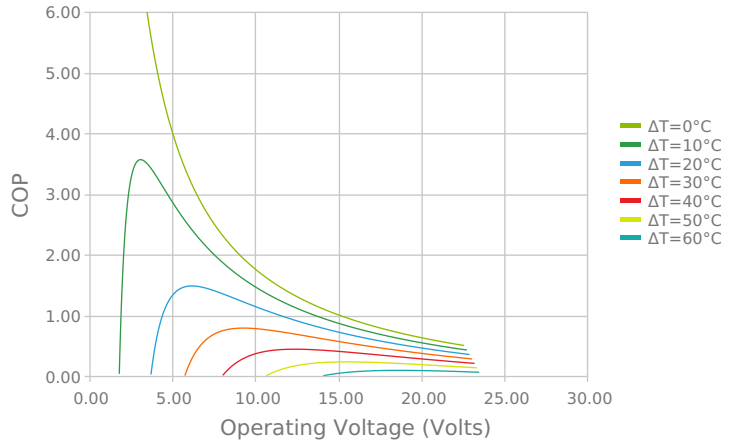
Current vs Voltage (I vs V)
Thot = 27 °C



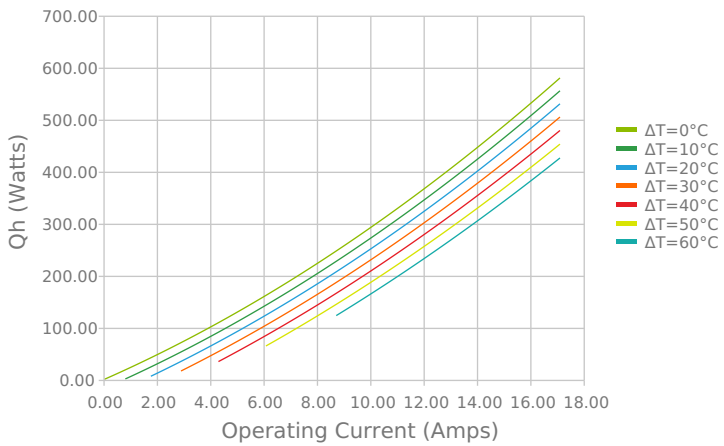
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



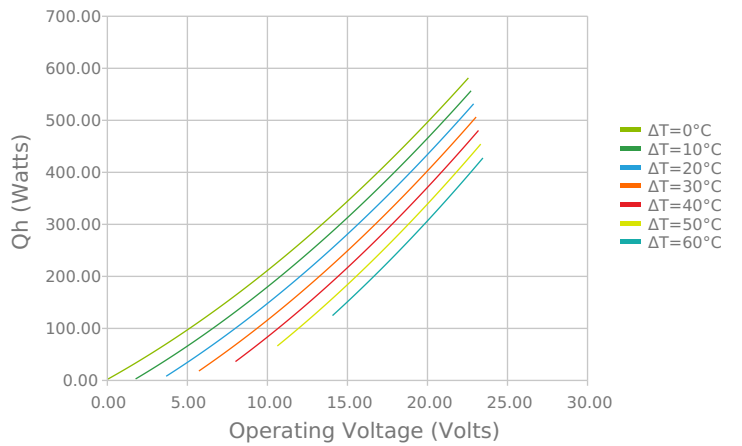
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



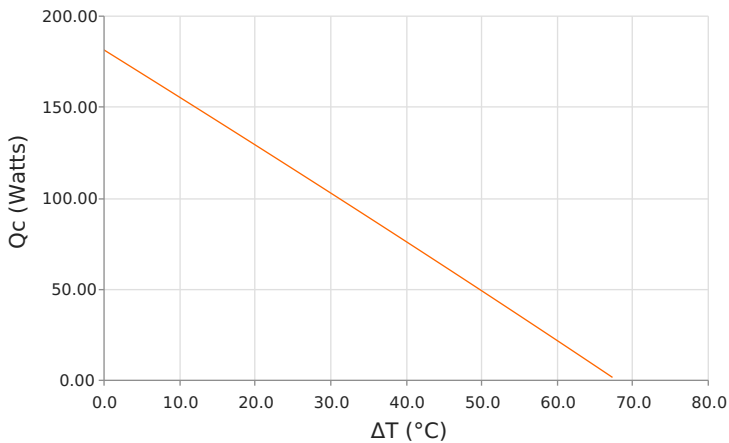
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



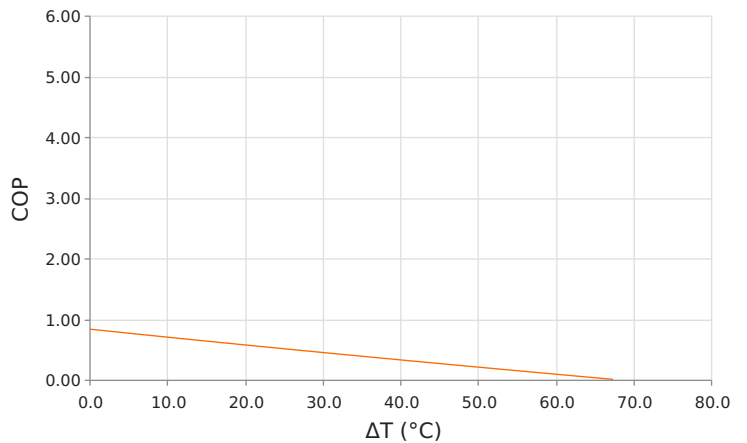
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)
 Thot = 27 °C | Current = 12.8 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C | Current = 12.8 Amps



SPECIFICATIONS*

| Hot Side Temperature | 27.0 °C | 35.0 °C | 50.0 °C |
|---|--------------|-------------|-------------|
| Qcmax ($\Delta T = 0$) | 193.4 Watts | 199.3 Watts | 209.7 Watts |
| ΔT_{max} ($Q_c = 0$) | 68.9°C | 71.8°C | 77.0°C |
| I_{max} (I @ ΔT_{max}) | 15.2 Amps | 15.1 Amps | 14.9 Amps |
| V_{max} (V @ ΔT_{max}) | 21.5 Volts | 22.3 Volts | 23.8 Volts |
| Module Resistance | 1.32 Ohms | 1.38 Ohms | 1.48 Ohms |
| Max Operating Temperature | 80 °C | | |
| Weight | 36.0 gram(s) | | |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|--------------------------------------|--|----------|-----------|---------------------|
| TA | 3.300 ± 0.025 mm 0.130 ± 0.001 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 | White | -60 to 204°C | Non-corrosive, silicone adhesive |

NOTES

1. Max operating temperature: 80°C
2. Do not exceed I_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation

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Date: 04/24/2020