

**UltraTEC™ UTX Series Thermoelectric Cooler**

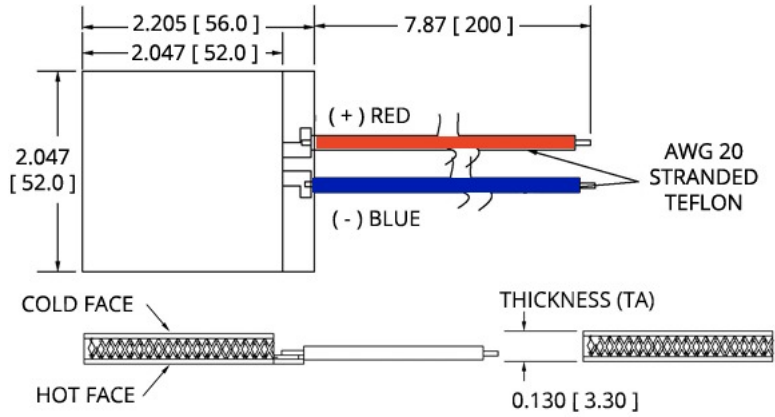
The UTX15-288-F2-5252-TA-RT-W6 is a high-performance thermoelectric cooler that is assembled with advanced thermoelectric materials and can boost cooling capacity by up to 10%. The UltraTEC UTX Series features a higher thermal insulating barrier when compared to standard materials creating a maximum temperature differential ( $\Delta T$ ) of 71.7 °C at  $Q_c = 0$ . It has a maximum  $Q_c$  of 298.9 Watts when  $\Delta T = 0$ .

**Features**

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

**Applications**

- Spot Cooling for Industrial Lasers & Optics
- Thermoelectric Cooling for Projection Lasers

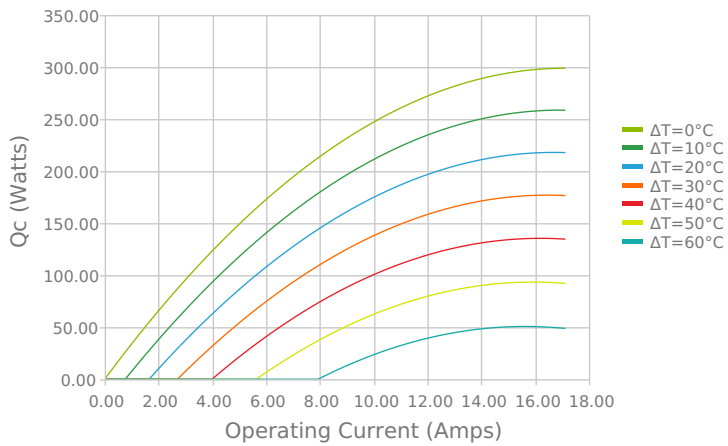


Ceramic Material: Alumina ( $Al_2O_3$ )  
 Solder Construction: 138°C, Bismuth Tin (BiSn) INCHES [ MM ]

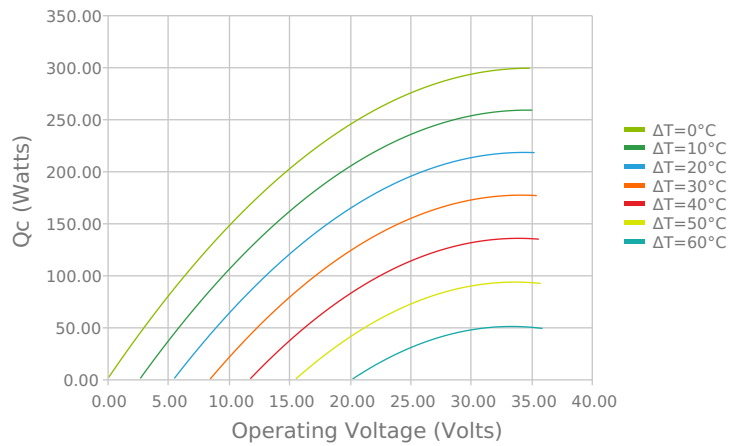
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

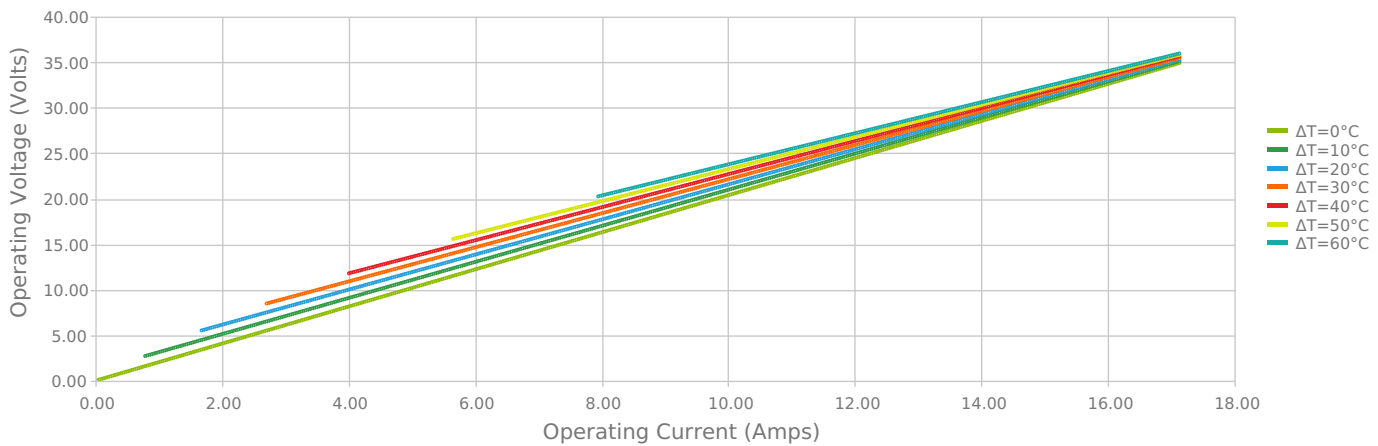
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



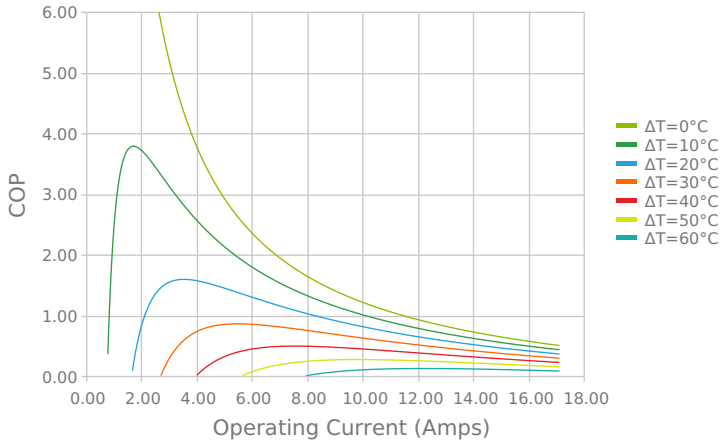
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



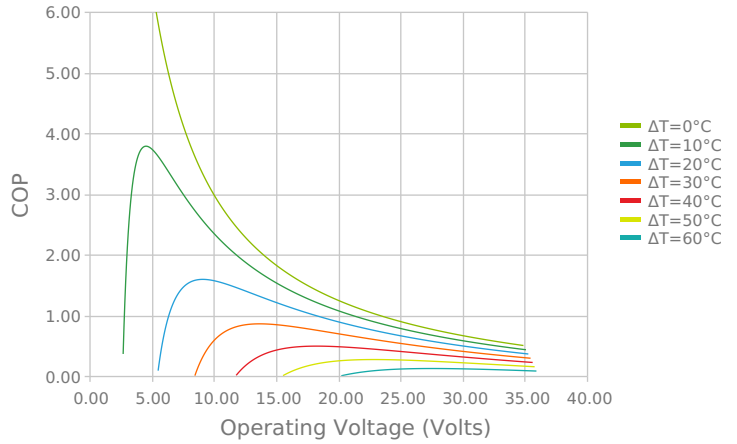
Current vs Voltage (I vs V)  
 $T_{hot} = 27\text{ °C}$



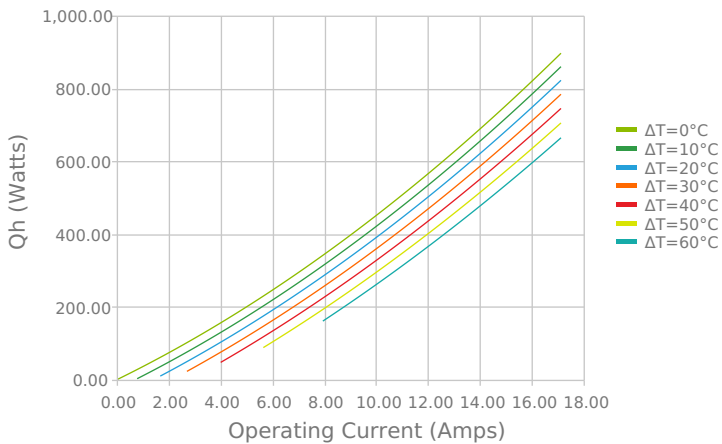
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



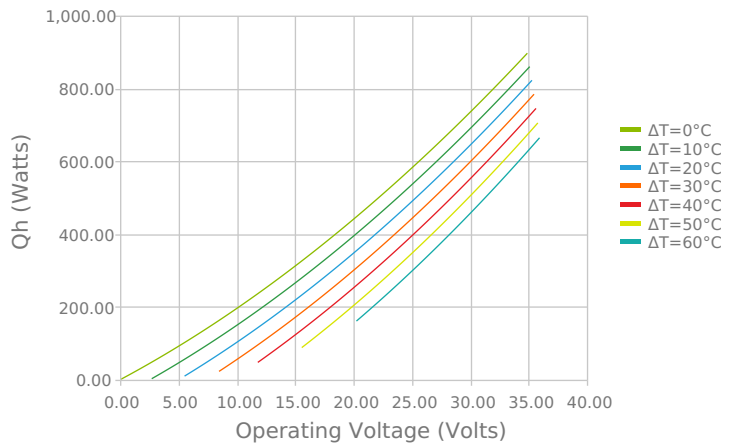
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



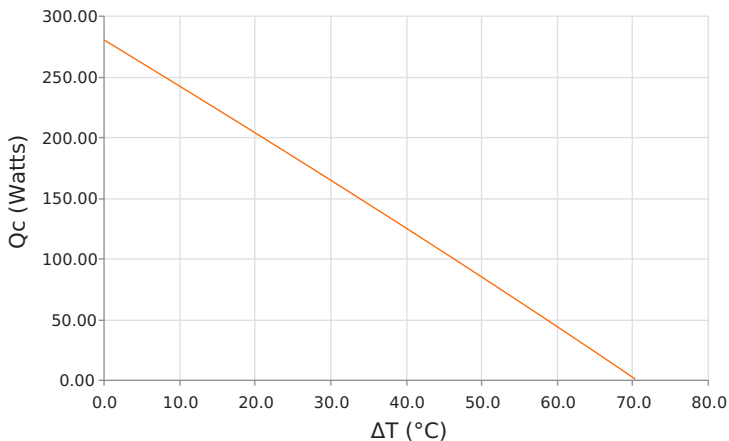
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



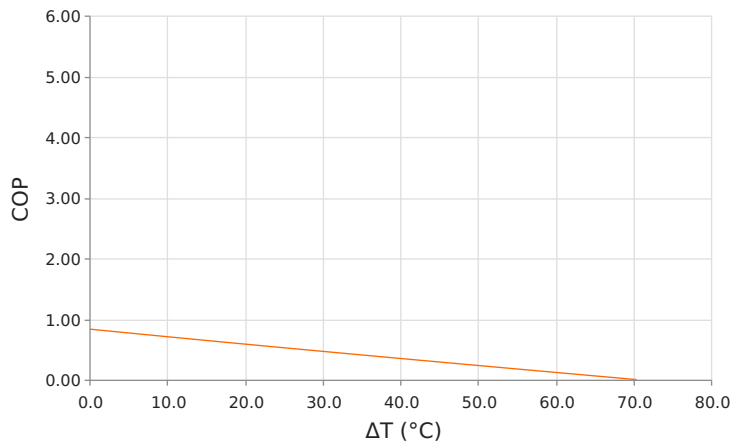
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



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     |
|---|--------------|-------------|-------------|
| <b>Qcmax (<math>\Delta T = 0</math>)</b>                  | 298.9 Watts  | 307.2 Watts | 321.6 Watts |
| <b><math>\Delta T_{max}</math> (<math>Q_c = 0</math>)</b> | 71.7°C       | 74.8°C      | 80.4°C      |
| <b>I<sub>max</sub> (I @ <math>\Delta T_{max}</math>)</b>  | 15.3 Amps    | 15.2 Amps   | 14.9 Amps   |
| <b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>  | 33.0 Volts   | 34.3 Volts  | 36.7 Volts  |
| <b>Module Resistance</b>                                  | 2.04 Ohms    | 2.13 Ohms   | 2.29 Ohms   |
| <b>Max Operating Temperature</b>                          | 80 °C        |             |             |
| <b>Weight</b>   | 53.0 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<br>0.130 ± 0.001 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     | White | -60 to 204°C | Non-corrosive, silicone adhesive |

## NOTES

1. Max operating temperature: 80°C
2. Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation
4. Recommended to be used with a liquid heat exchanger on the hot side

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