

**UltraTEC™ UT Series Thermoelectric Cooler**

**Note: This product is not recommended for new designs.**  
 This product series has been replaced with the UltraTEC UTX Series.  
 The recommended replacement is:  
 MFG Part Number: 387004684  
 Description: UTX15-12-F2-4040-TB-RT-W10

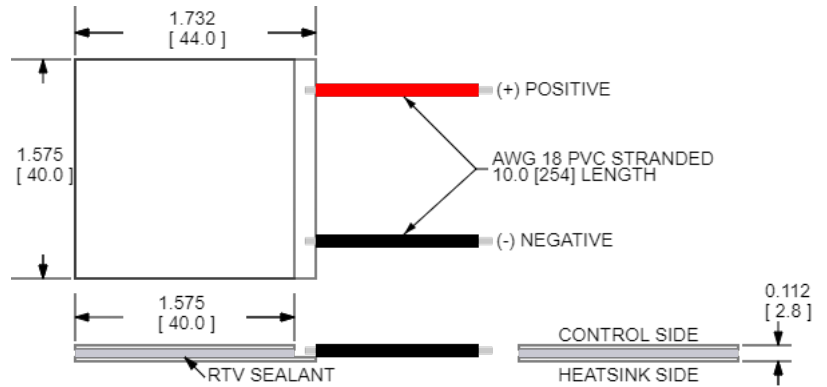


**Features**

- 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

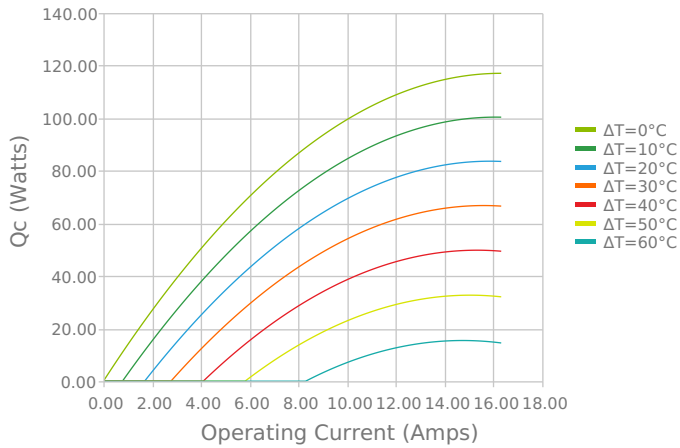


CERAMIC MATERIAL: Al<sub>2</sub>O<sub>3</sub>  
 SOLDER CONSTRUCTION: 138°C, BiSn  
 INCHES [ MM ]  
 Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

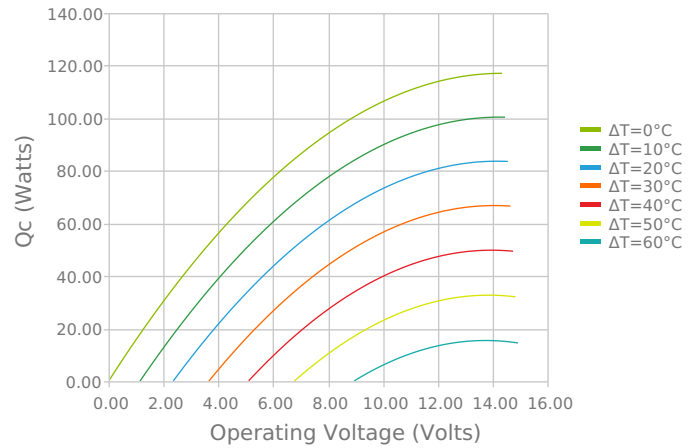
**ELECTRICAL AND THERMAL PERFORMANCE**

For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the HEATSINK 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.

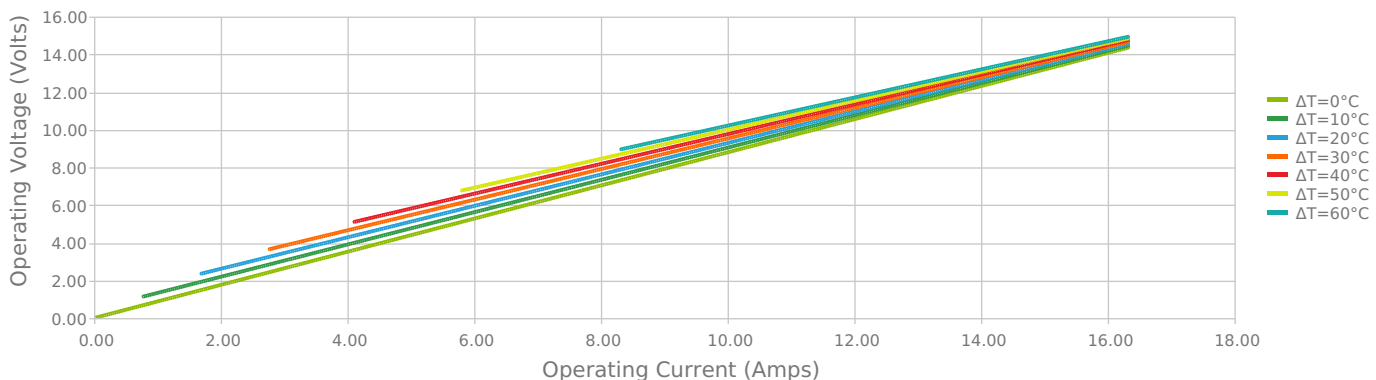
Heat Pumped at Cold Side  
 Thot = 27 °C



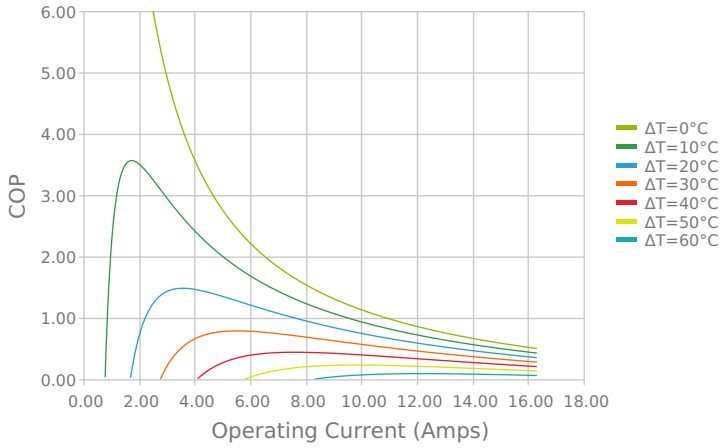
Heat Pumped at Cold Side  
 Thot = 27 °C



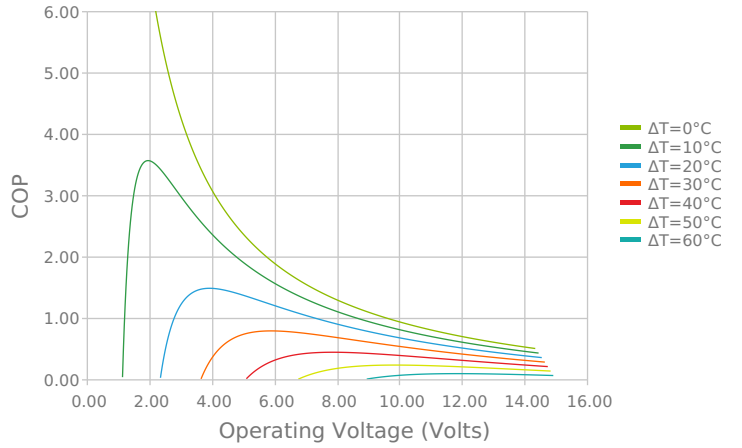
Current vs Voltage (I vs V)  
 Thot = 27 °C



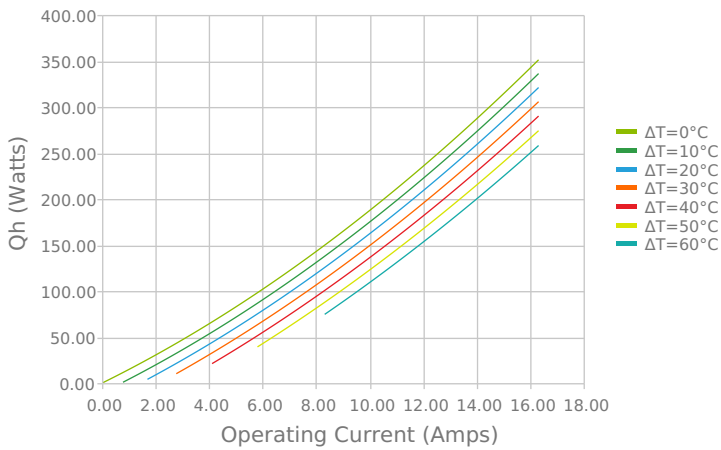
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



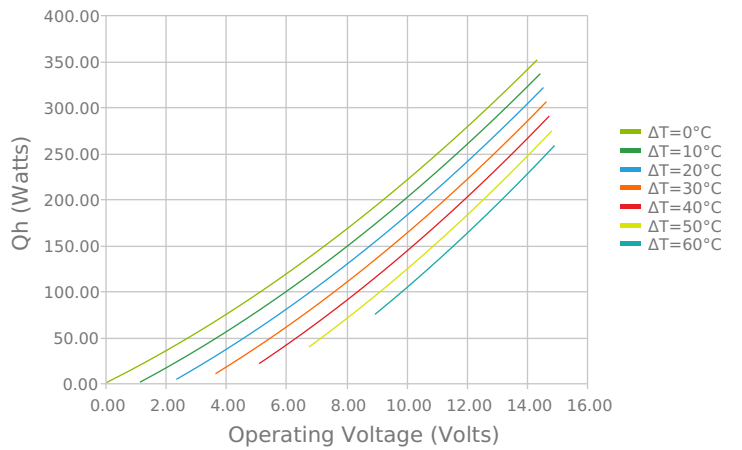
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



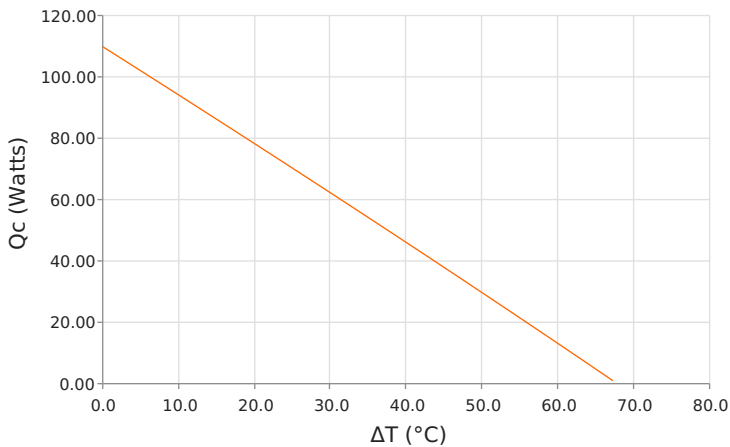
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



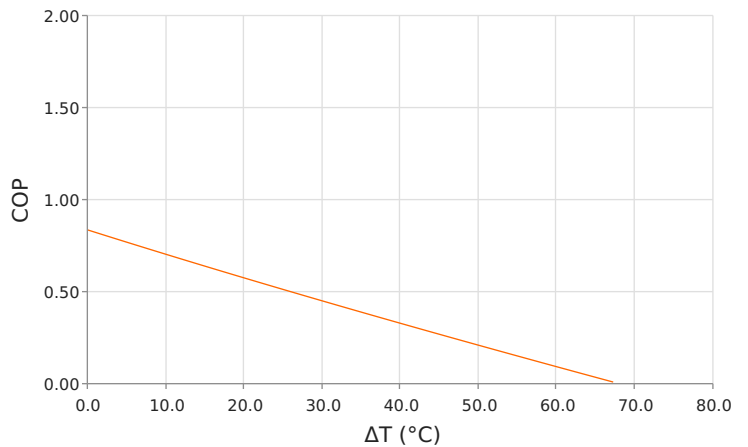
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
Thot = 27 °C | Current = 12.2 Amps



Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C | Current = 12.2 Amps



## SPECIFICATIONS\*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
<b>Qcmax (<math>\Delta T = 0</math>)</b>	117.1 Watts	120.7 Watts	126.9 Watts
<b><math>\Delta T_{max}</math> (<math>Q_c = 0</math>)</b>	68.9°C	71.8°C	77.0°C
<b>I<sub>max</sub> (I @ <math>\Delta T_{max}</math>)</b>	14.4 Amps	14.4 Amps	14.2 Amps
<b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>	13.6 Volts	14.2 Volts	15.1 Volts
<b>Module Resistance</b>	0.88 Ohms	0.92 Ohms	0.98 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	20.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TB	2.845 ±0.013 mm 0.112 ± 0.0005 in	0.013 mm / 0.013 mm 0.0005 in / 0.0005 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: 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

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