

**UltraTEC™ UTX Series Thermoelectric Cooler**

The UTX9-28-F2-4040-TA-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 196 Watts when  $\Delta T = 0$ .

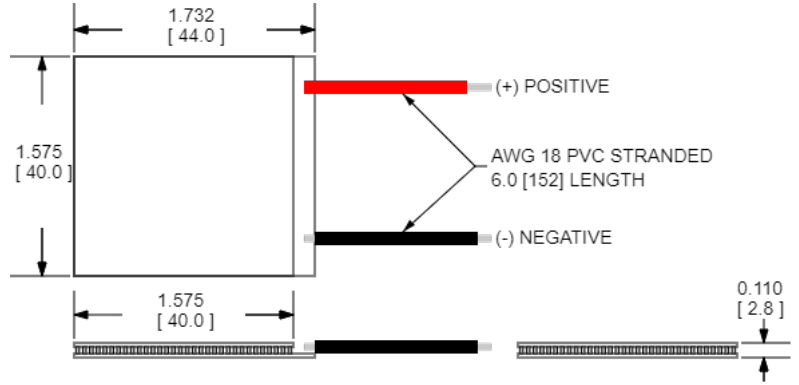


**Features**

- 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

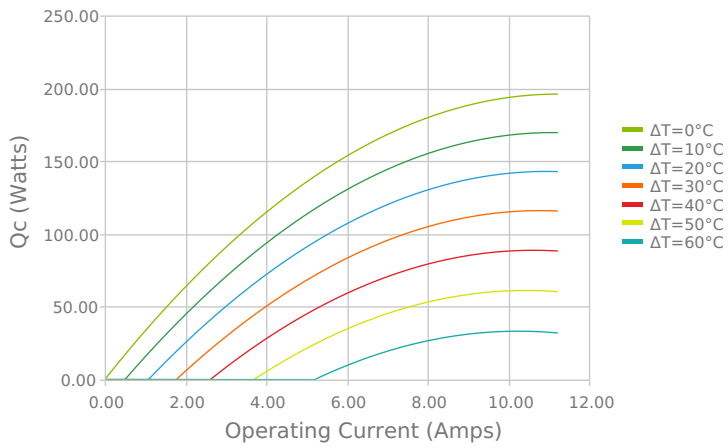


CERAMIC MATERIAL:  $Al_2O_3$   
SOLDER CONSTRUCTION: 138°C, BiSn

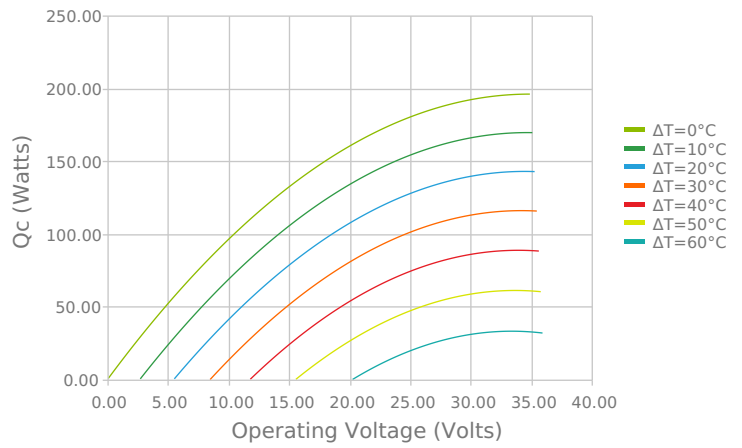
INCHES [MM]

**ELECTRICAL AND THERMAL PERFORMANCE**

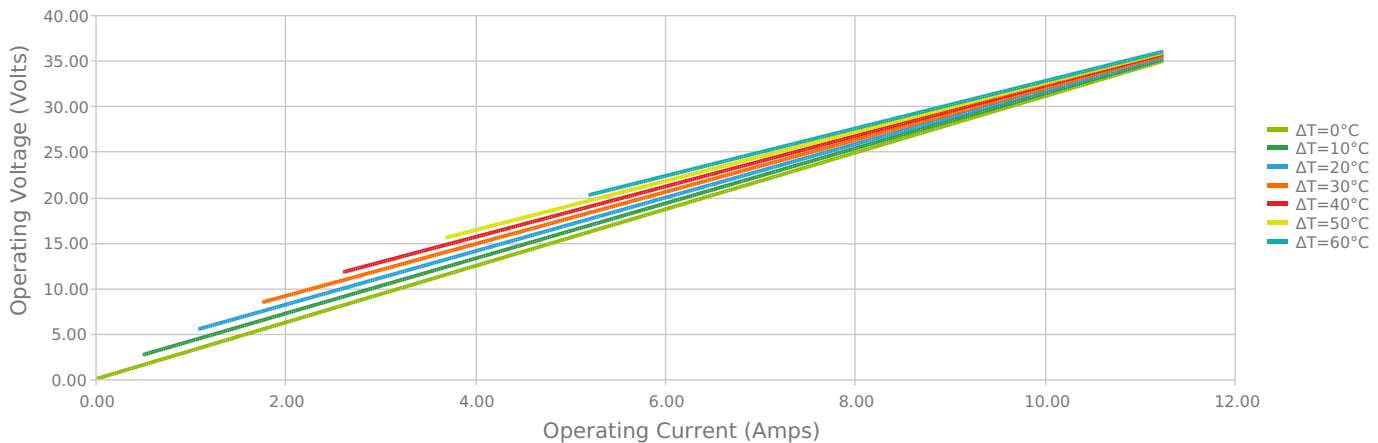
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



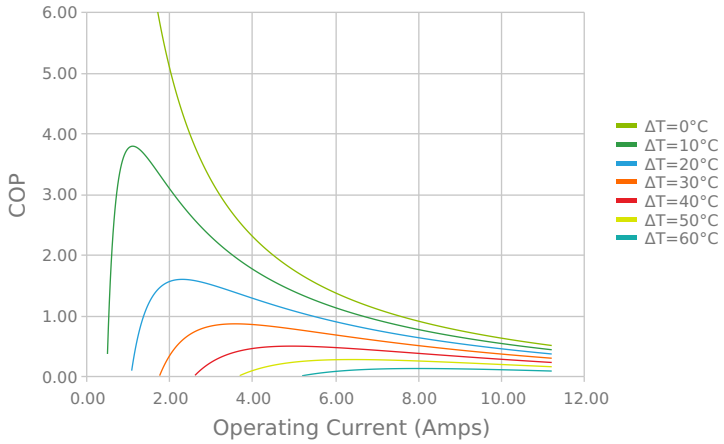
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



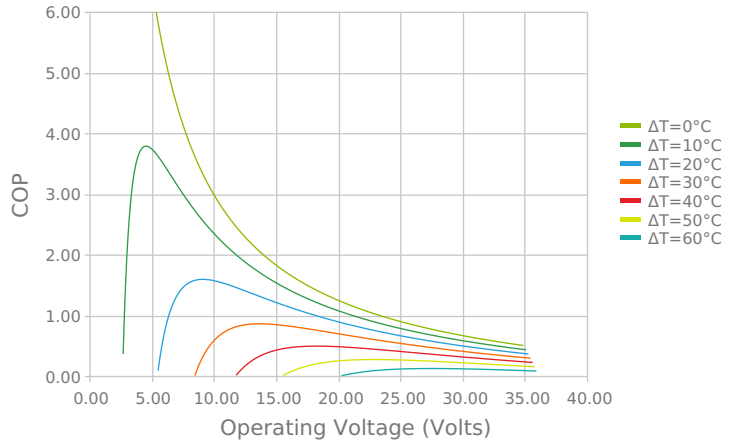
Current vs Voltage (I vs V)  
 $T_{hot} = 27\text{ °C}$



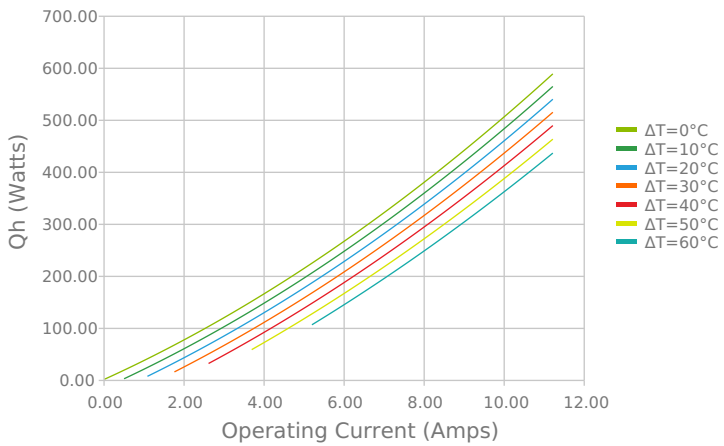
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



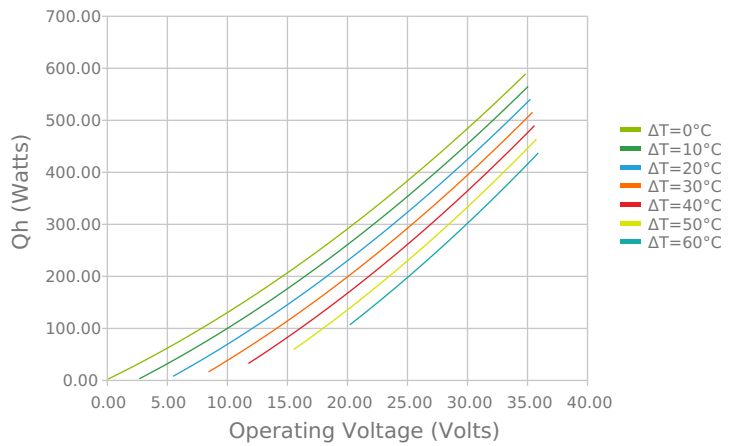
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



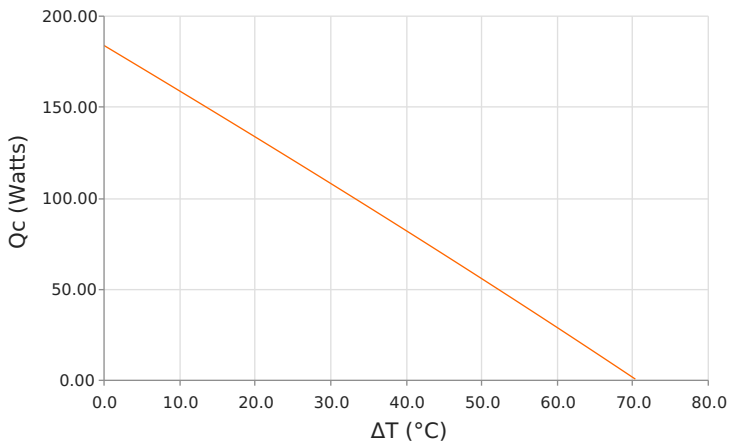
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



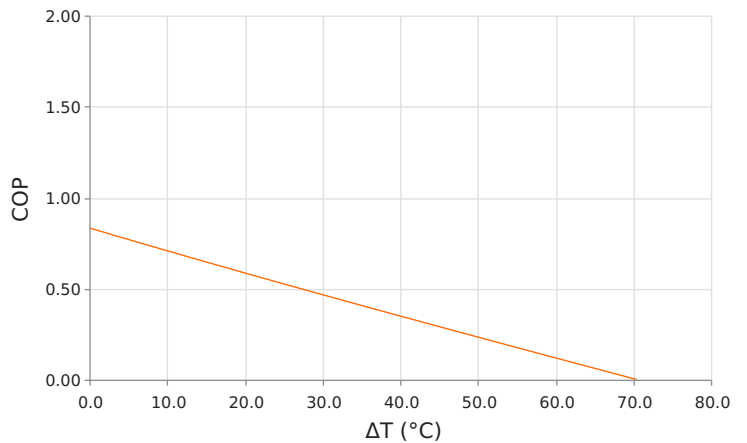
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
 Thot = 27 °C | Current = 8.4 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C | Current = 8.4 Amps



## SPECIFICATIONS\*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
<b>Qcmax (ΔT = 0)</b>	196.0 Watts	201.5 Watts	210.9 Watts
<b>ΔTmax (Qc = 0)</b>	71.7°C	74.8°C	80.4°C
<b>I<sub>max</sub> (I @ ΔT<sub>max</sub>)</b>	10.0 Amps	9.9 Amps	9.8 Amps
<b>V<sub>max</sub> (V @ ΔT<sub>max</sub>)</b>	33.0 Volts	34.3 Volts	36.7 Volts
<b>Module Resistance</b>	3.11 Ohms	3.24 Ohms	3.50 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	24.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	2.800 ±0.025 mm 0.110 ± 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
	None			No sealing specified

## 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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