

UltraTEC™ UTX Series Thermoelectric Cooler

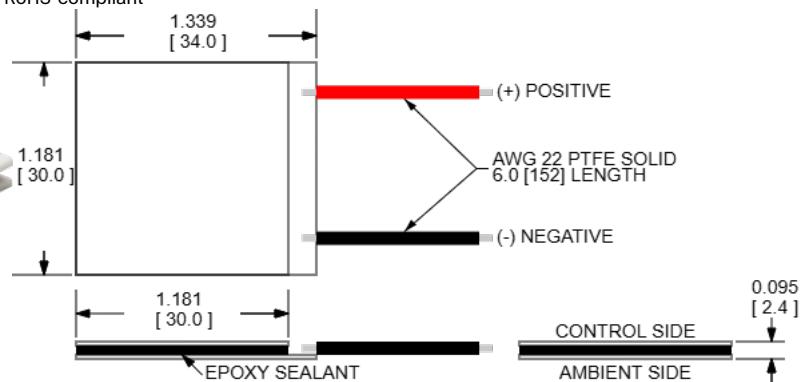
The UTX11-12-F2-3030-TA-EP-W6 is a high-performance thermoelectric cooler that is assembled with advanced thermoelectric materials and can boost cooling capacity by up to 10%. The UltraTEC UTX Series features a higher thermal insulating barrier when compared to standard materials creating a maximum temperature differential (ΔT) of 71.7 °C at $Q_c = 0$. It has a maximum Q_c of 95.2 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

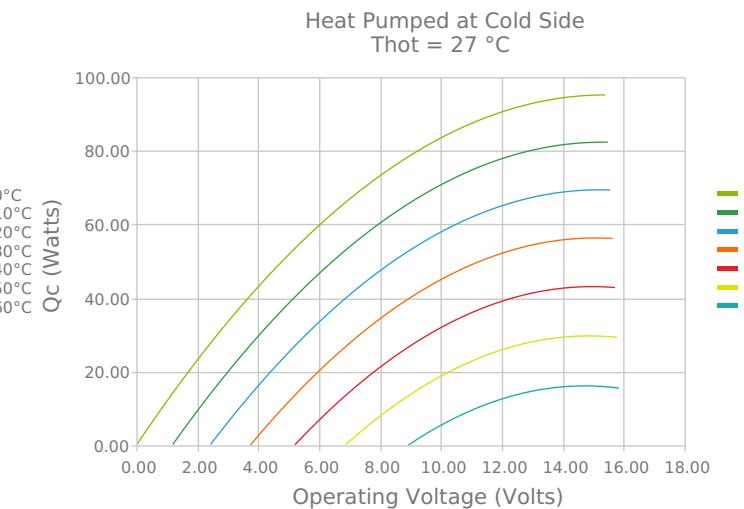
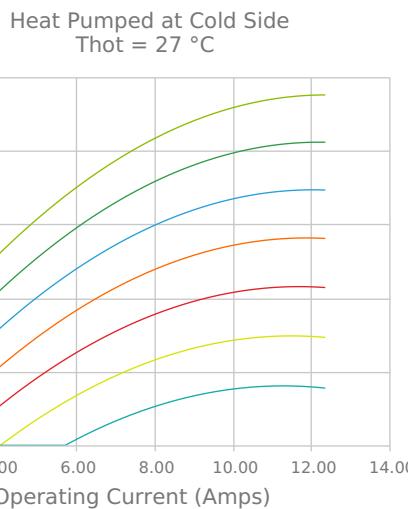
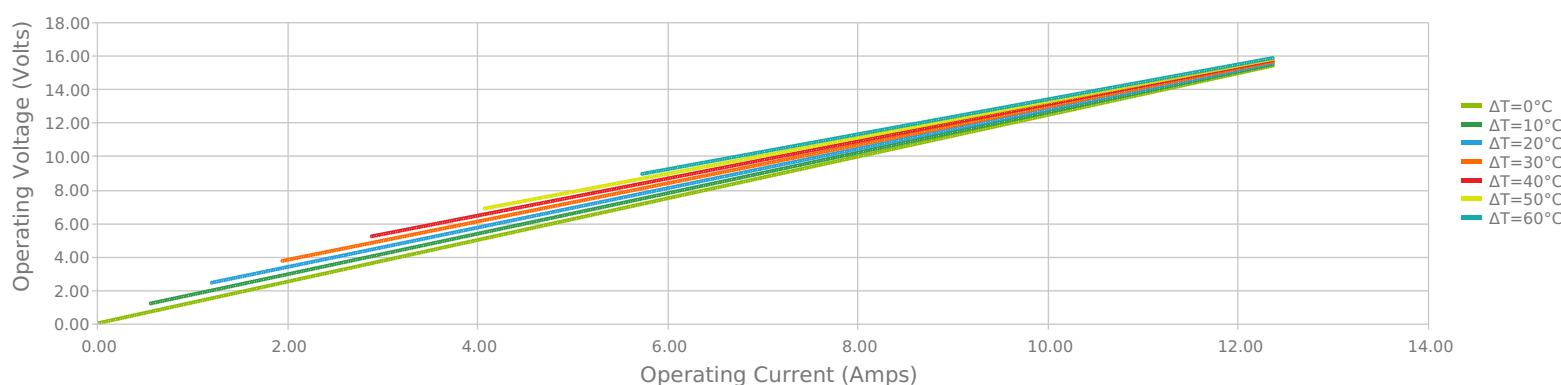
SOLDER CONSTRUCTION: 138°C, BiSn

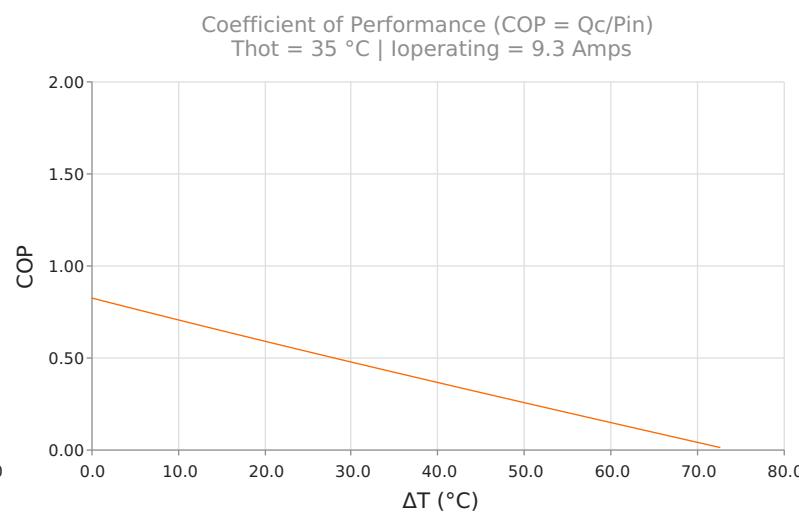
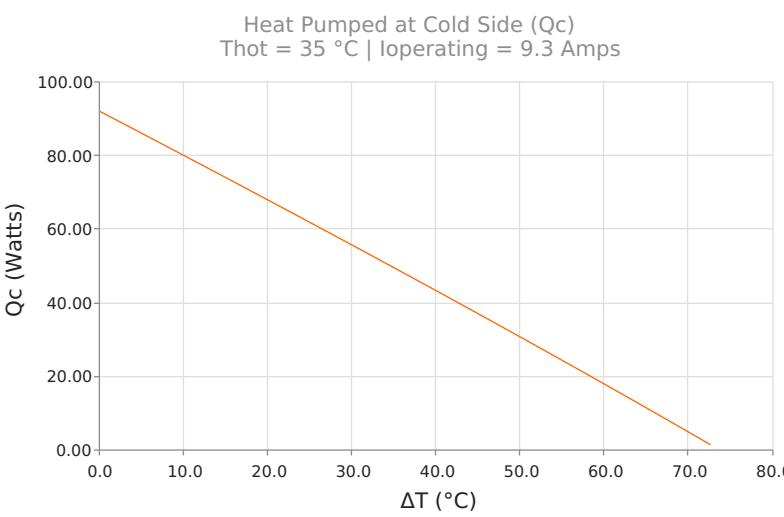
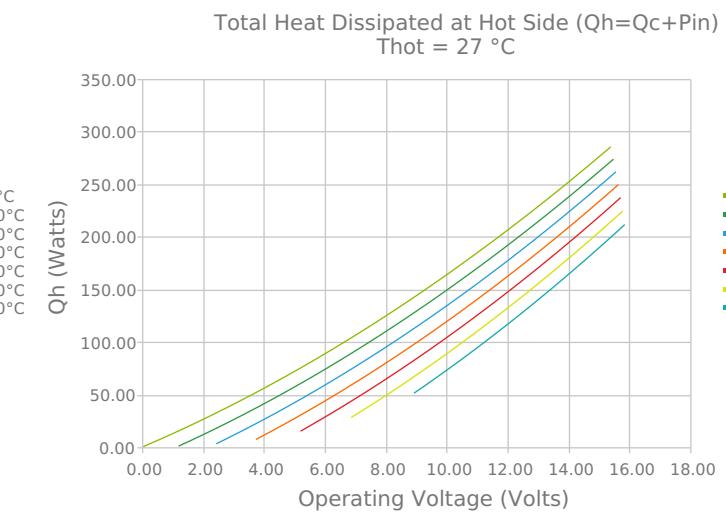
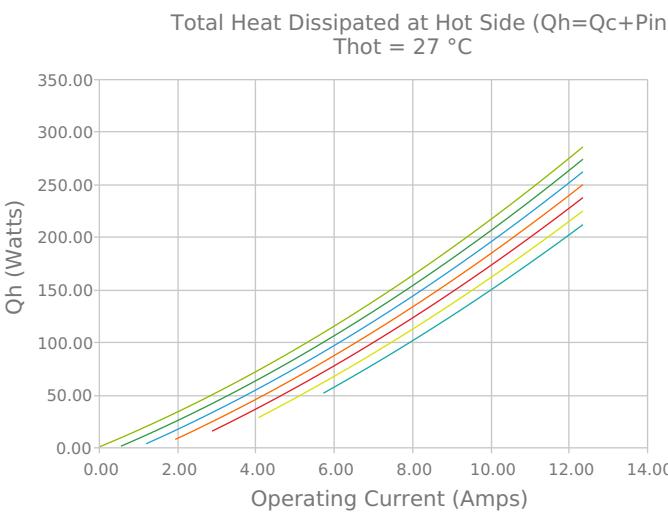
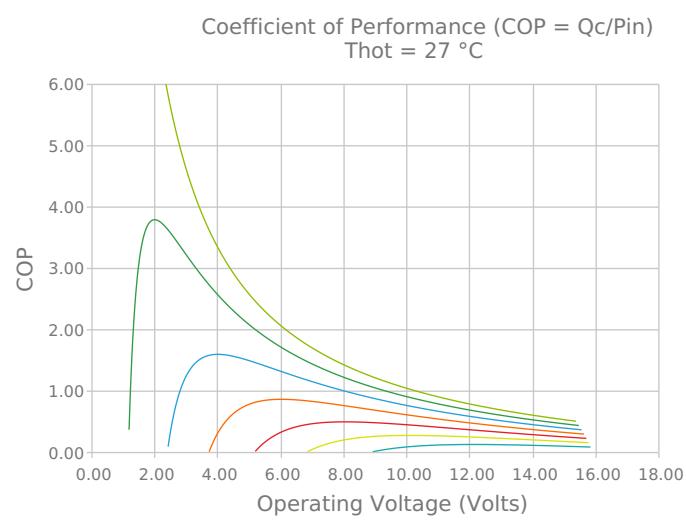
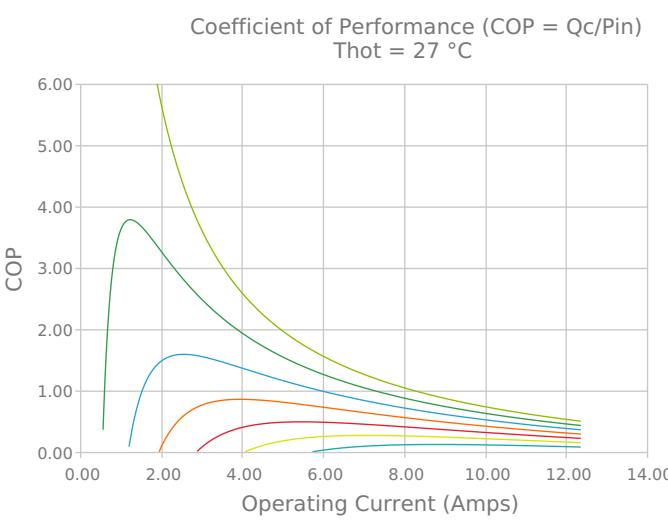
INCHES [MM]

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 AMBIENT 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.

Current vs Voltage (I vs V)
 $\text{Thot} = 27^\circ\text{C}$ 



Specifications

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax ($\Delta T = 0$)	95.2 Watts	97.8 Watts	102.4 Watts
ΔT_{max} ($Q_c = 0$)	71.7°C	74.8°C	80.4°C
I _{max} (I @ ΔT_{max})	11.0 Amps	10.9 Amps	10.8 Amps
V _{max} (V @ ΔT_{max})	14.6 Volts	15.1 Volts	16.2 Volts
Module Resistance	1.24 Ohms	1.30 Ohms	1.40 Ohms
Max Operating Temperature	80 °C		
Weight	11.0 gram(s)		

Finishing Options

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	2.413 ±0.025 mm 0.095 ± 0.0010 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
EP	Epoxy	Black	-55 to 150°C	Low density syntactic foam epoxy encapsulant

Notes

Max operating temperature: 80°C
Do not exceed I_{max} or V_{max} when operating module
Reference assembly guidelines for recommended installation
Recommended to be used with a liquid heat exchanger on the hot side

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