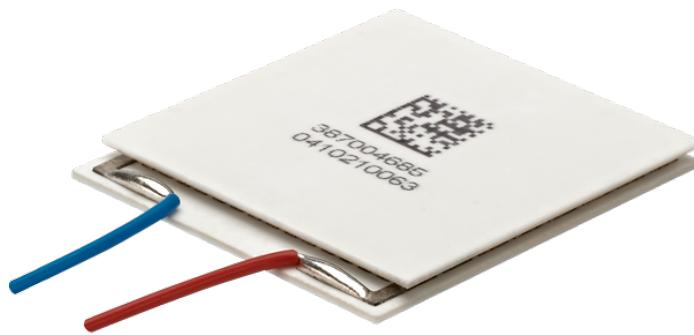


**UltraTEC™ UTX Series Thermoelectric Cooler**

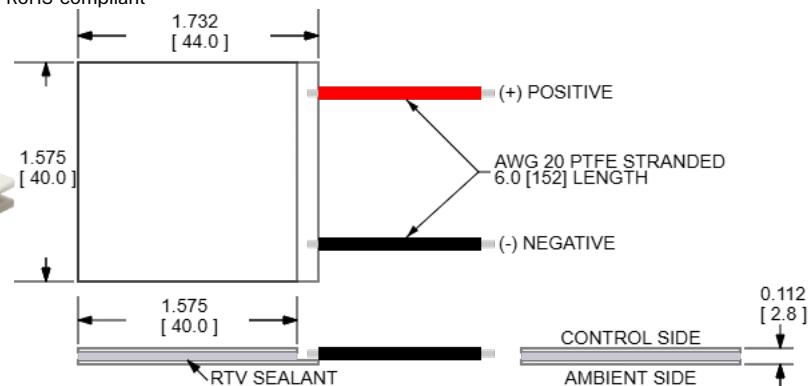
The UTX15-12-F2-4040-11-RT-W6 is a high-performance thermoelectric cooler that is assembled with advanced thermoelectric materials and can boost cooling capacity by up to 10%. The UltraTEC UTX Series features a higher thermal insulating barrier when compared to standard materials creating a maximum temperature differential ( $\Delta T$ ) of 71.7 °C at  $Q_c = 0$ . It has a maximum  $Q_c$  of 125.7 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:  $\text{Al}_2\text{O}_3$ 

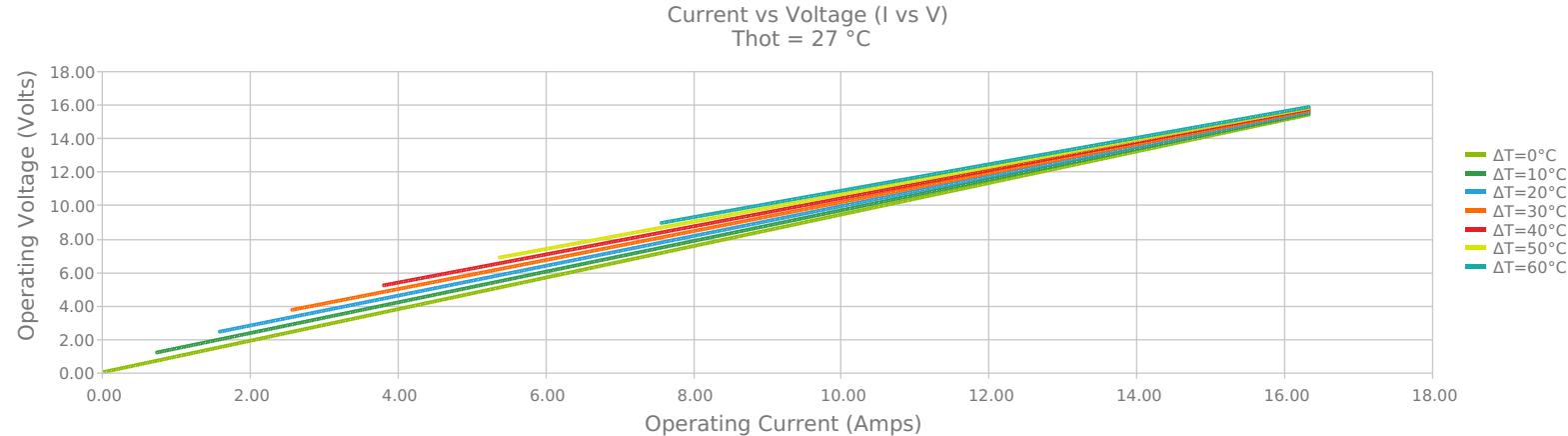
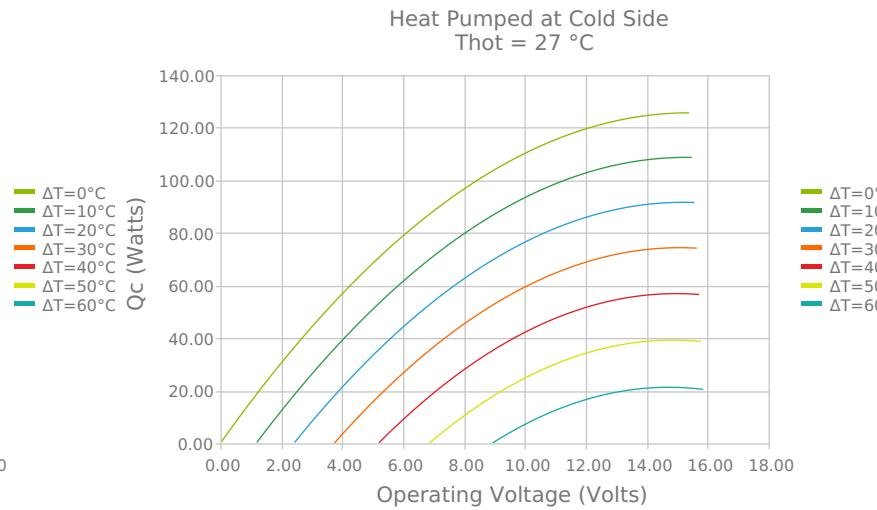
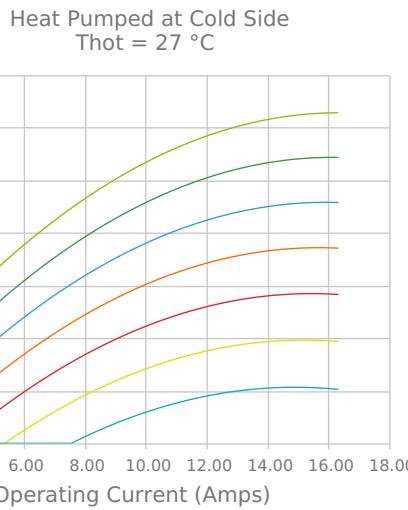
SOLDER CONSTRUCTION: 138°C, BiSn

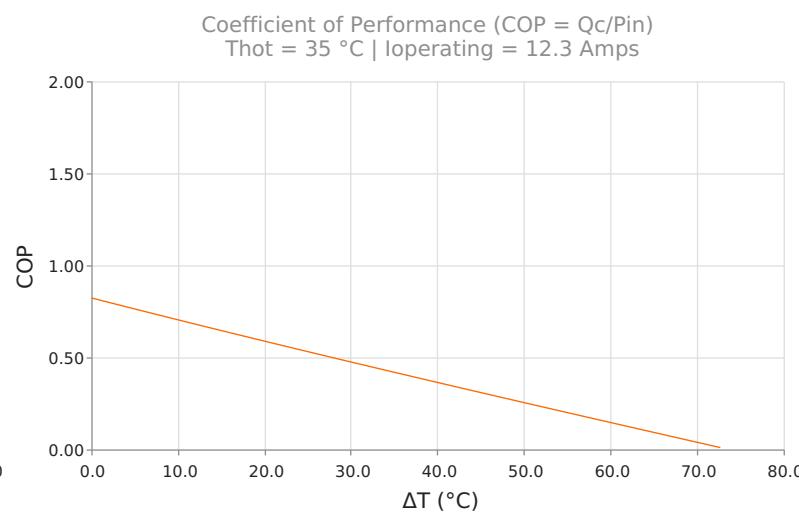
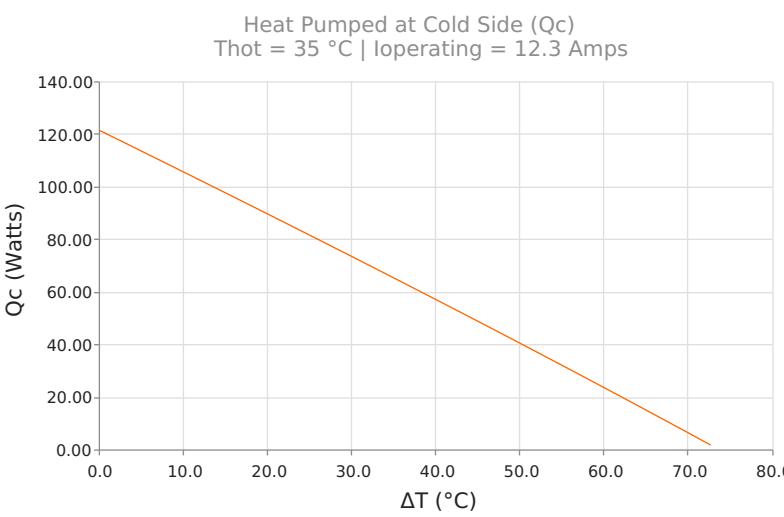
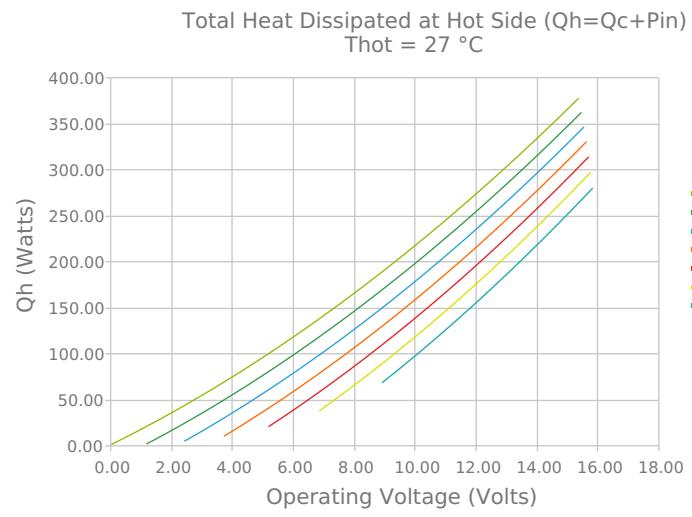
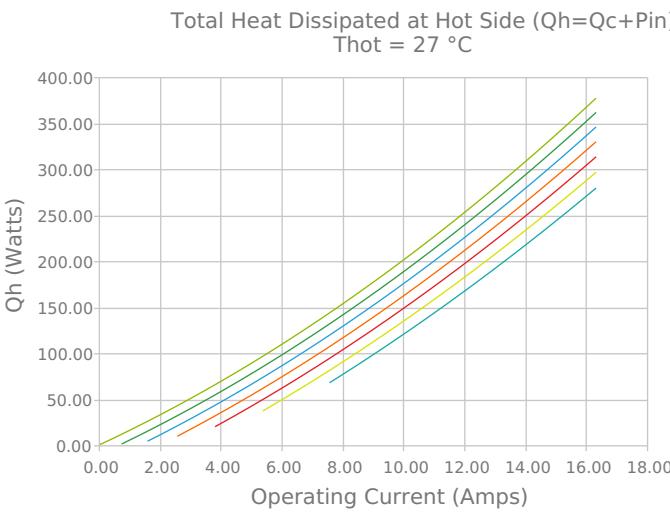
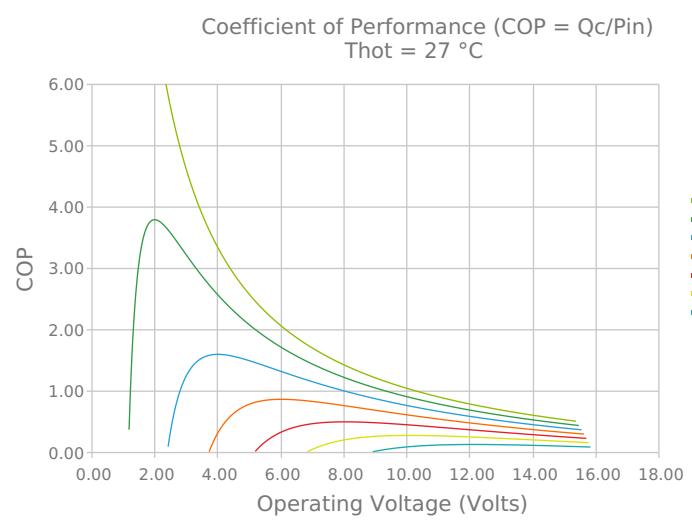
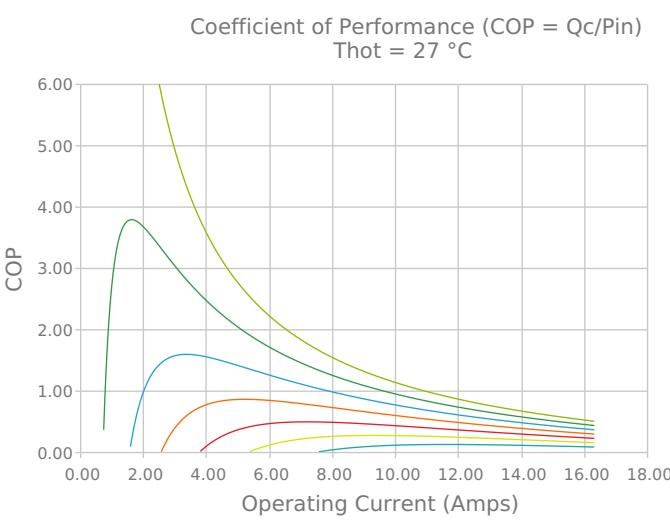
INCHES [ MM ]

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.





## Specifications

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax ( $\Delta T = 0$ )	125.7 Watts	129.2 Watts	135.2 Watts
$\Delta T_{max}$ ( $Q_c = 0$ )	71.7°C	74.8°C	80.4°C
I <sub>max</sub> (I @ $\Delta T_{max}$ )	14.6 Amps	14.4 Amps	14.2 Amps
V <sub>max</sub> (V @ $\Delta T_{max}$ )	14.6 Volts	15.1 Volts	16.2 Volts
Module Resistance	0.94 Ohms	0.98 Ohms	1.06 Ohms
Max Operating Temperature	80 °C		
Weight	20.0 gram(s)		

## Finishing Options

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
11	2.845 ±0.051 mm 0.112 ± 0.0020 in	0.051 mm / 0.051 mm 0.002 in / 0.002 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

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

Any information furnished by Tark Thermal Solutions and its agents, whether in specifications, data sheets, product catalogues or otherwise, is believed to be (but is not warranted as being) accurate and reliable, is provided for information only and does not form part of any contract with Tark Thermal Solutions. All specifications are subject to change without notice. Tark Thermal Solutions assumes no responsibility and disclaims all liability for losses or damages resulting from use of or reliance on this information. All Tark products are sold subject to the Tark Thermal Solutions Terms and Conditions of sale (including Tark's limited warranty) in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2025 Tark Thermal Solutions, Inc. All rights reserved.

UltraTEC™ is a trademark of Tark Thermal Solutions, Inc. All other marks are owned by their respective owners.

Revision: 01 Date: 06-07-2023

Print Date: 05-16-2025