

UltraTEC™ UTX Series Thermoelectric Cooler

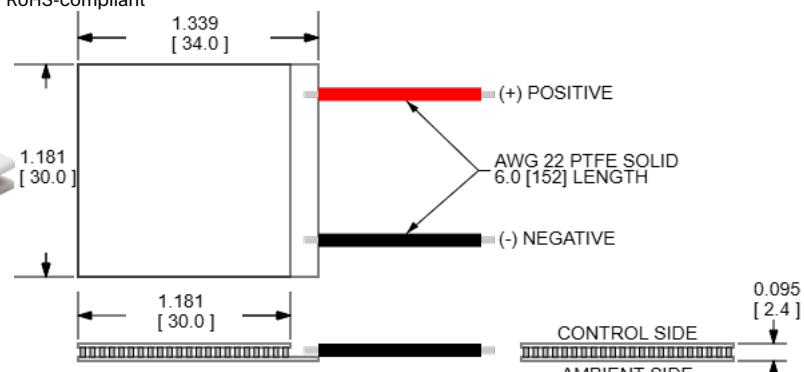
The UTX11-12-F2-3030-TB-W6 is a high-performance thermoelectric cooler that is assembled with advanced thermoelectric materials and can boost cooling capacity by up to 10%. The UltraTEC UTX Series features a higher thermal insulating barrier when compared to standard materials creating a maximum temperature 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

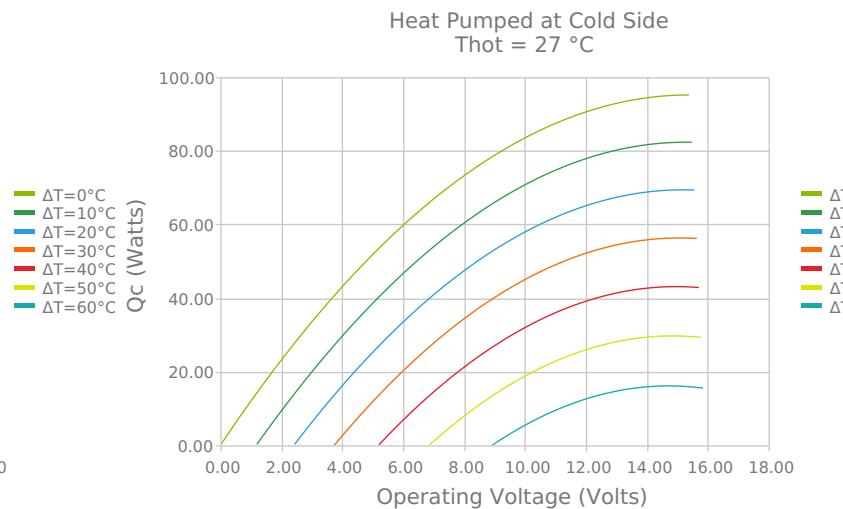
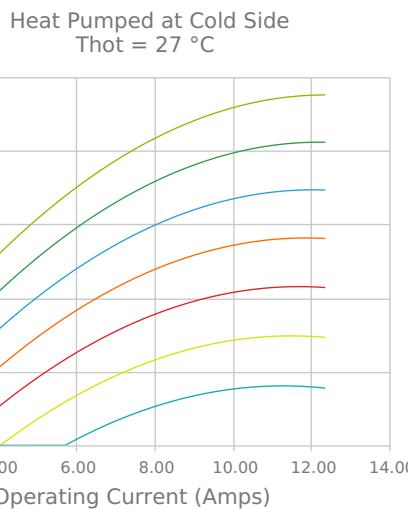


CERAMIC MATERIAL: Al_2O_3
SOLDER CONSTRUCTION: 138°C, BiSn

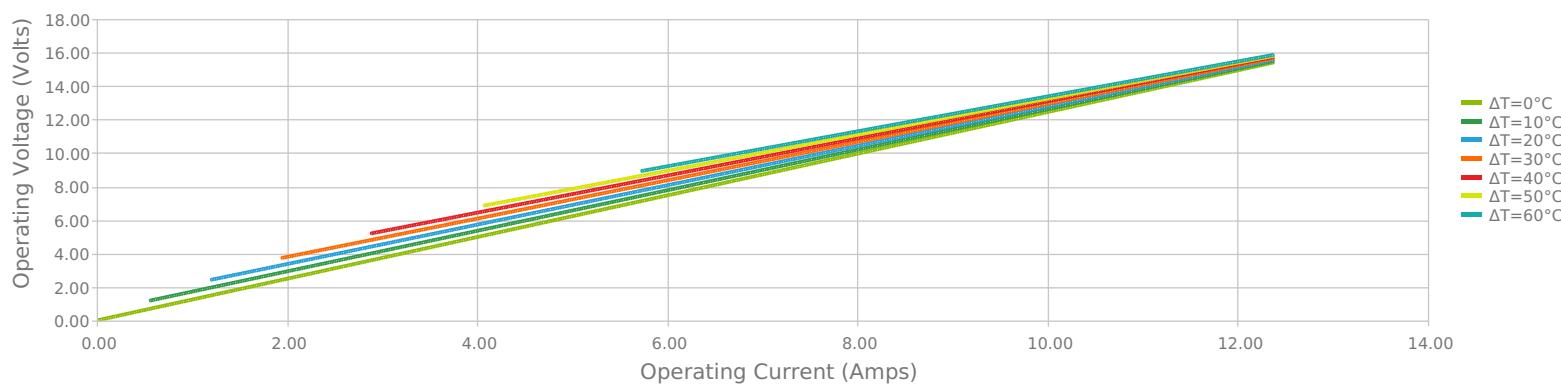
INCHES [MM]

Electrical and Thermal Performance

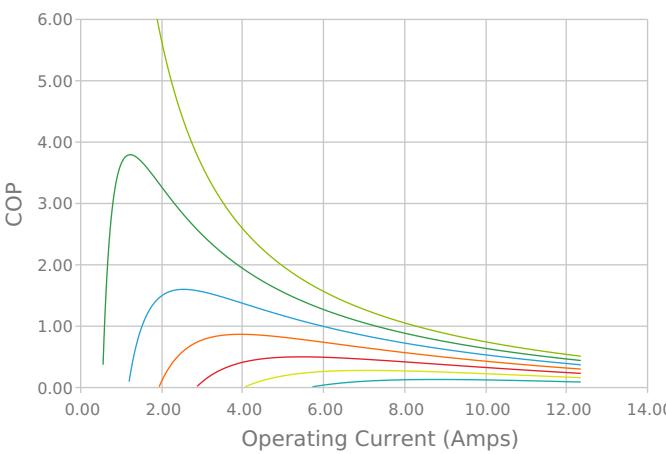
For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the AMBIENT side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less impactful if located on the side that attaches to the heat exchanger.



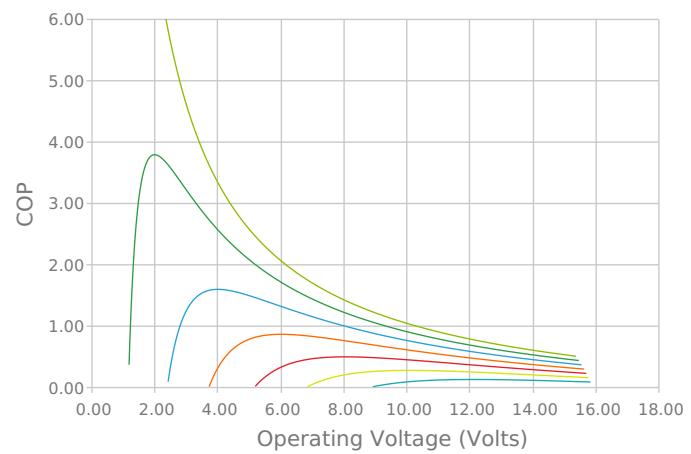
Current vs Voltage (I vs V)
Thot = 27 °C



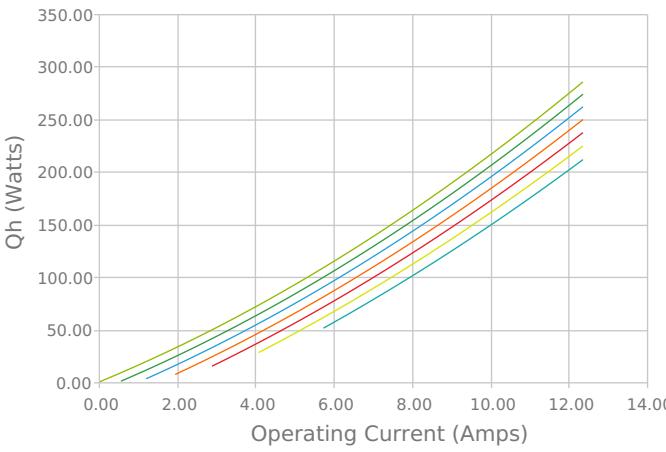
Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C



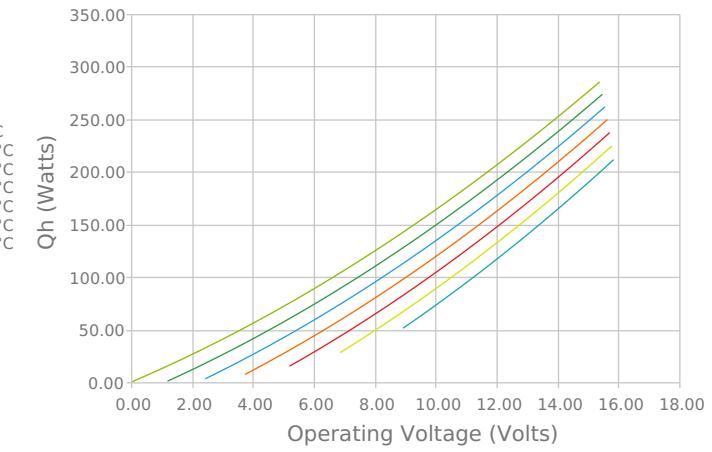
Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C



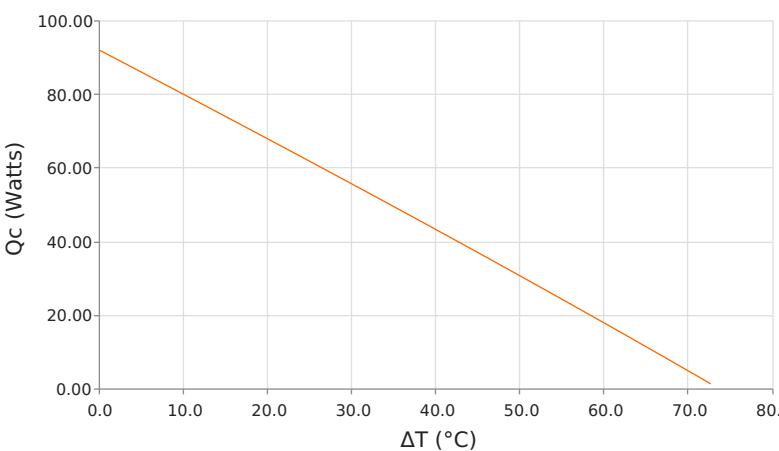
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
Thot = 27 °C



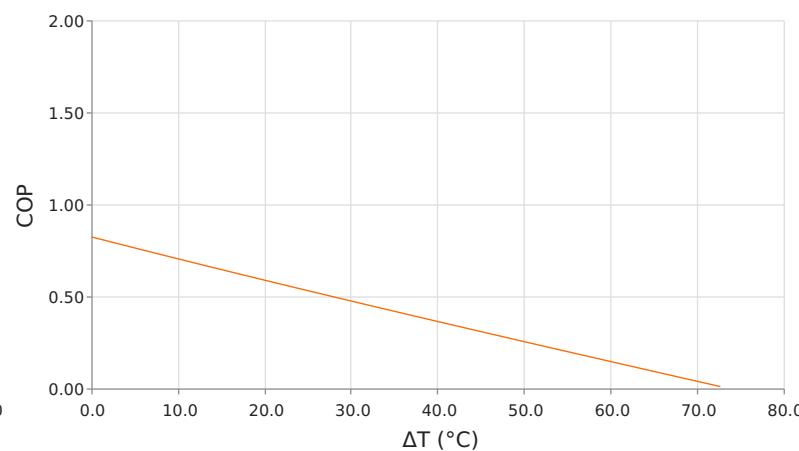
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
Thot = 27 °C



Heat Pumped at Cold Side (Q_c)
Thot = 35 °C | Ioperating = 9.3 Amps



Coefficient of Performance (COP = Q_c/P_{in})
Thot = 35 °C | Ioperating = 9.3 Amps



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
TB	2.413 ±0.013 mm 0.095 ± 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
	None			No sealing specified

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

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