UTX8-12-F2-2525-TA-W6

MFG Part Number 387004705

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UltraTEC™ UTX Series Thermoelectric Cooler

The UTX8-12-F2-2525-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 (ΔT) of 71.7 °C at Qc = 0. It has a maximum Qc of 68.5 Watts when ΔT = 0.

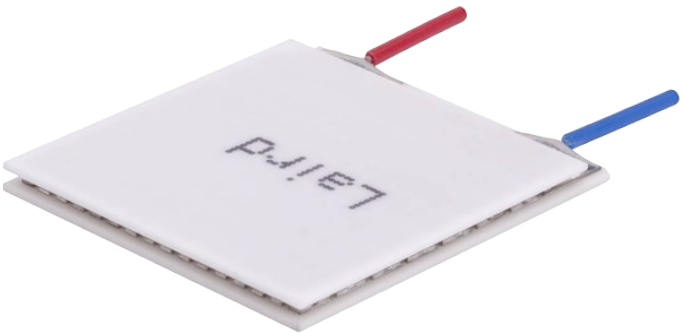
Features

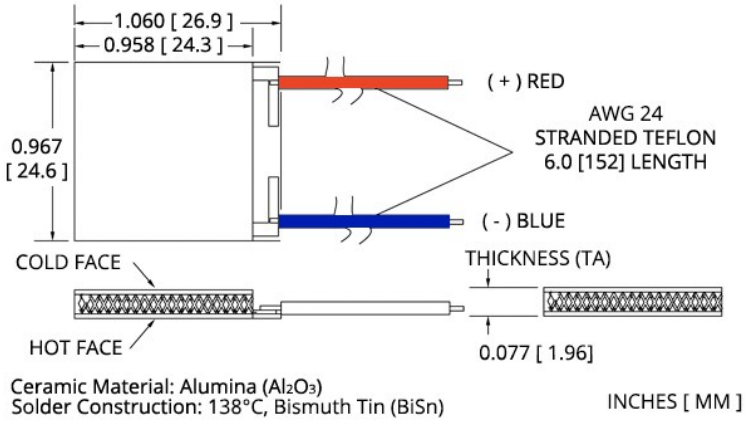
- High heat pump density
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- DC operation
- RoHS-compliant

Applications

- Spot Cooling for Industrial Lasers & Optics
- Thermoelectric Cooling for Projection Lasers

You can interact with the Performance Curves below to estimate the cooling performance by entering the thermal and electrical operating conditions for your application.
Click the **[Save Changes]** button to create a Customized PDF Datasheet.
Please Note: Actual application performance will vary from calculated values based on actual thermal design characteristics.





ELECTRICAL AND THERMAL PERFORMANCE

Use the sliders, input fields and **[UPDATE]** button below to enter your application's electrical and thermal conditions. Use the Graph Y and X Axis buttons to display a variety of performance curves and use the Voltage/Current slider to choose the electrical operating point to display performance.
Click **[Save Changes]** button to save your results as a Customized PDF Datasheet.

Selected Operating Point

Cooling Power (Qc) = 53.38 Watts
Current = 6.58 Amps
Voltage = 11.61 Volts
Power Supply = 76.38 Watts
COP = 0.7
Power Dissipated (Qh) = 129.7 Watts
Thot = 27 °C

Optimum COP

Cooling Power (Qc) = 7.85 Watts
Current = 1.07 Amps
Voltage = 2.4 Volts
Power Supply = 2.57 Watts
COP = 3.05

Power Dissipated (Qh) = 10.42 Watts

Maximum Qc

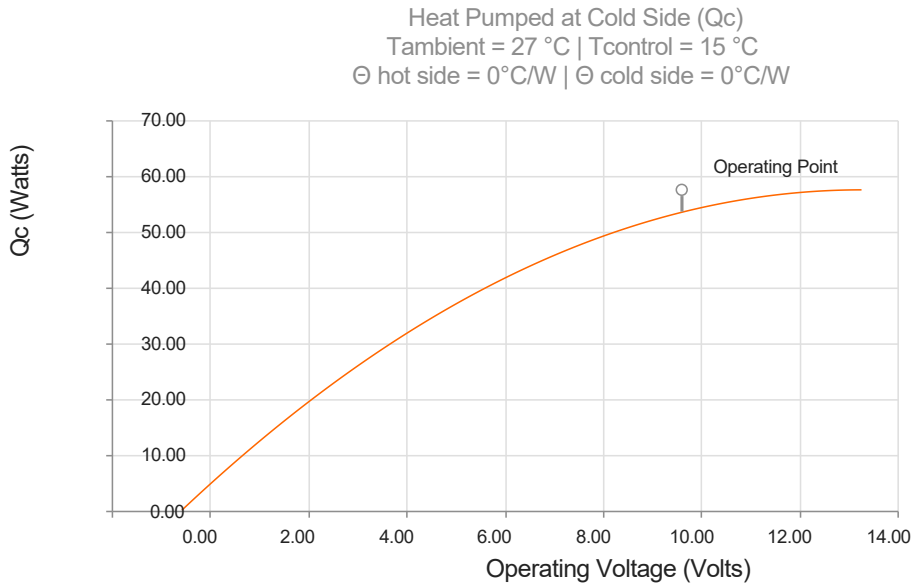
Cooling Power (Qc) = 57.39 Watts
Current = 8.77 Amps
Voltage = 15.27 Volts
Power Supply = 133.91 Watts
COP = 0.43
Power Dissipated (Qh) = 191.3 Watts

Select Graph
Y - Axis

Qc | COP | Qh

Select Graph
X - Axis

Voltage | Current | ΔT



Imin: 0.5 A — Imax: 8.8 A
Vmin: 1.4 V — Vmax: 15.3 V

Voltage 11.61 Volts

Current 6.58 Amps

UPDATE

Click UPDATE to view changes in thermal operating conditions

-30 -20 -10 0 10 20 30 40 50 60 70 80

Control Temp 15 °C

Ambient Temp 27 °C

Δ T 12 °C

Hot Side Thermal Resistance 0 °C/W

Cold Side Thermal Resistance 0 °C/W

SPECIFICATIONS*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	68.5 Watts	70.4 Watts	73.7 Watts
ΔTmax (Qc = 0)	71.7°C	74.8°C	80.4°C
Imax (I @ ΔTmax)	7.9 Amps	7.9 Amps	7.8 Amps
Vmax (V @ ΔTmax)	14.6 Volts	15.1 Volts	16.2 Volts
Module Resistance	1.73 Ohms	1.80 Ohms	1.95 Ohms
Max Operating Temperature	80 °C		
Weight	7.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	1.956 ±0.025 mm 0.077 ± 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 Imax or Vmax when operating module
3. Reference assembly guidelines for recommended installation
4. Recommended to be used with a liquid heat exchanger on the hot side

Date: 11/12/2020