

Products / Thermoelectric Coolers / UltraTEC™ UTX Series - High performance peltier coolers
/ UTX8-12-F2-2525-TA-W6 (MFG Part Number: 387004705)

UTX8-12-F2-2525-TA-W6

MFG Part Number 387004705

Request a Quote

Contact a Thermal Expert

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 $Q_c = 0$. It has a maximum Q_c of 68.5 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

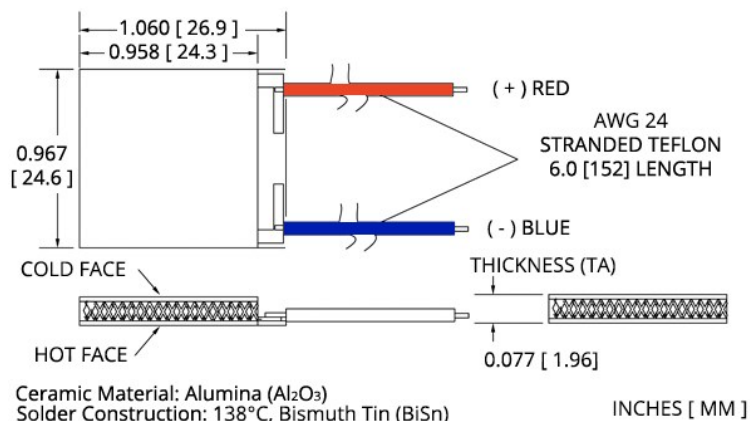
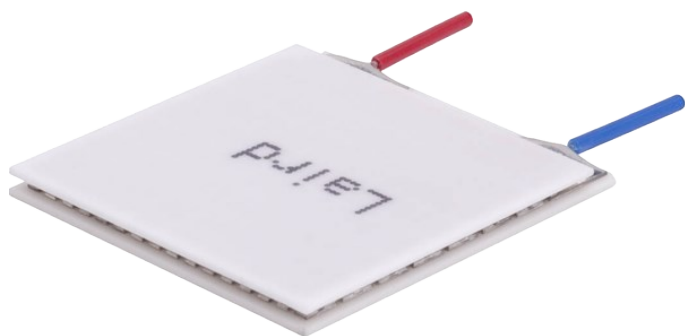
Applications

- [Spot Cooling for Industrial Lasers & Optics](#)
- [Thermoelectric Cooling for Projection Lasers](#)

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 (Q_c) = 53.38 Watts

Current = 6.58 Amps

Voltage = 11.61 Volts

Power Supply = 76.38 Watts

COP = 0.7

Power Dissipated (Q_h) = 129.7 Watts

θ_{hot} = 27 °C

Optimum COP

Cooling Power (Q_c) = 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

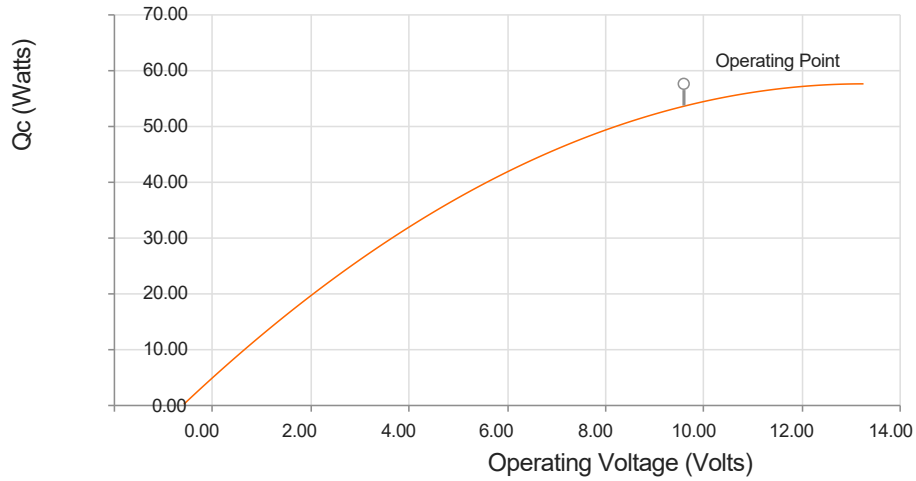
X - Axis

Voltage

Current

ΔT

Heat Pumped at Cold Side (Qc)
 Tambient = 27 °C | Tcontrol = 15 °C
 Θ hot side = 0 °C/W | Θ cold side = 0 °C/W



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

Voltage: Volts
 Current: Amps

Control Temp: °C | Ambient Temp: °C | ΔT: °C | Hot Side Thermal Resistance: °C/W

Cold Side Thermal Resistance: °C/W

[UPDATE](#) Click UPDATE to view changes in thermal operating conditions

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 I_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation
4. Recommended to be used with a liquid heat exchanger on the hot side

Any information furnished by Laird 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 Laird. All specifications are subject to change without notice. Laird assumes no responsibility and disclaims all liability for losses or damages resulting from use of or reliance on this information. All Laird products are sold subject to the Laird Terms and Conditions of sale (including Laird's limited warranty) in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2020 Laird Thermal Systems, Inc. All rights reserved. Laird™, the Laird Ring Logo, and Laird Thermal Systems™ are trademarks or registered trademarks of Laird Limited or its subsidiaries.

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

Date: 11/12/2020



Products & Solutions

Thermoelectric Coolers
Thermoelectric Cooler Assemblies
Liquid Cooling Systems
Temperature Controllers
Custom Solutions

Thermal Wizard

Air Cooling Calculator
Device Cooling Calculator
Enclosure Cooling Calculator
Liquid Cooling Calculator

Applications

Medical
Analytical
Industrial
Telecom
Transportation
Consumer

Services

Design
Manufacturing
Prototyping
Support
Software
Testing

Technical Library

Application Notes
Current News
Press Releases
Datasheets

Contact

Feedback
Distributors
Privacy Statement
Anti-Slavery Statement
Terms of Use

We use cookies on this site to enhance your user experience

By clicking the Accept button, you agree to us doing so. [More info](#)

No, thanks

Accept