

ZT Series Thermoelectric Cooler

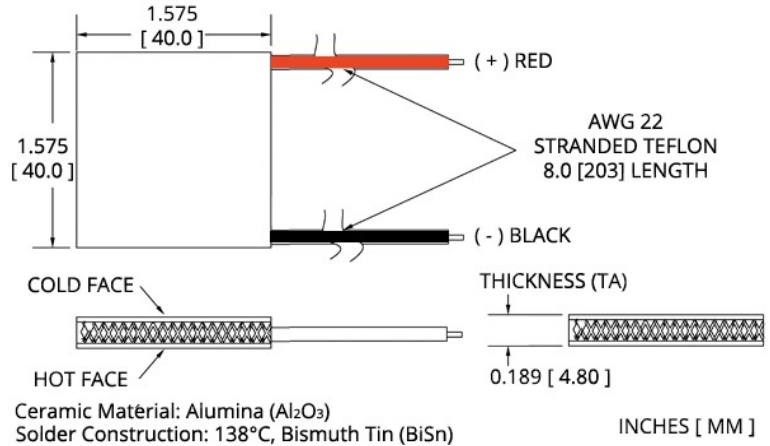
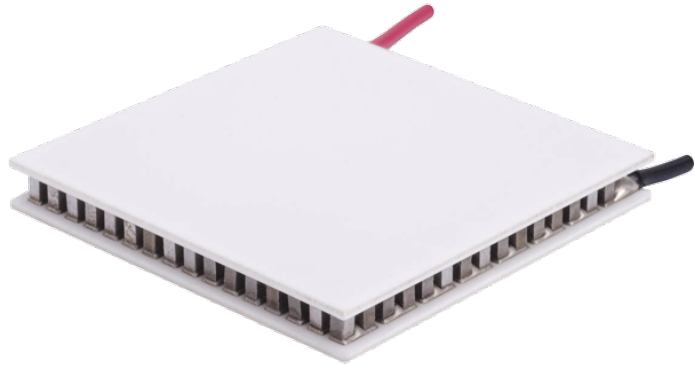
The ZT4-12-F1-4040-TA-W8 is a high performance thermoelectric cooler that achieves a higher temperature differential than standard single stage thermoelectric coolers. It has a maximum Qc of 33.3 Watts when $\Delta T = 0$ and a maximum ΔT of 71.7 °C at Qc = 0.

Features

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

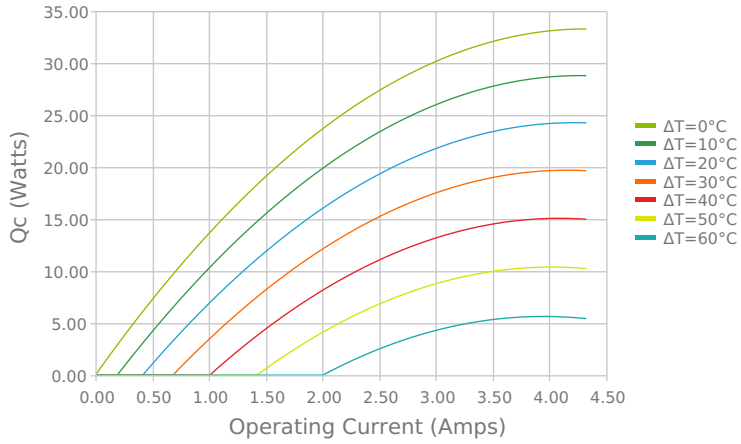
Applications

- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems
- Peltier Cooling for Digital
- Light Processors

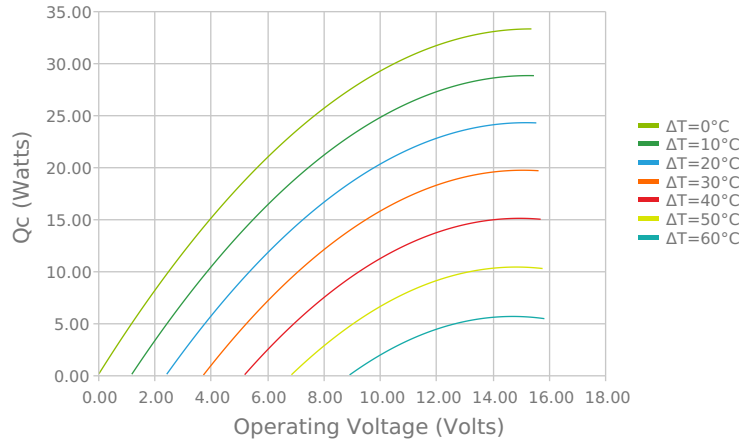


ELECTRICAL AND THERMAL PERFORMANCE

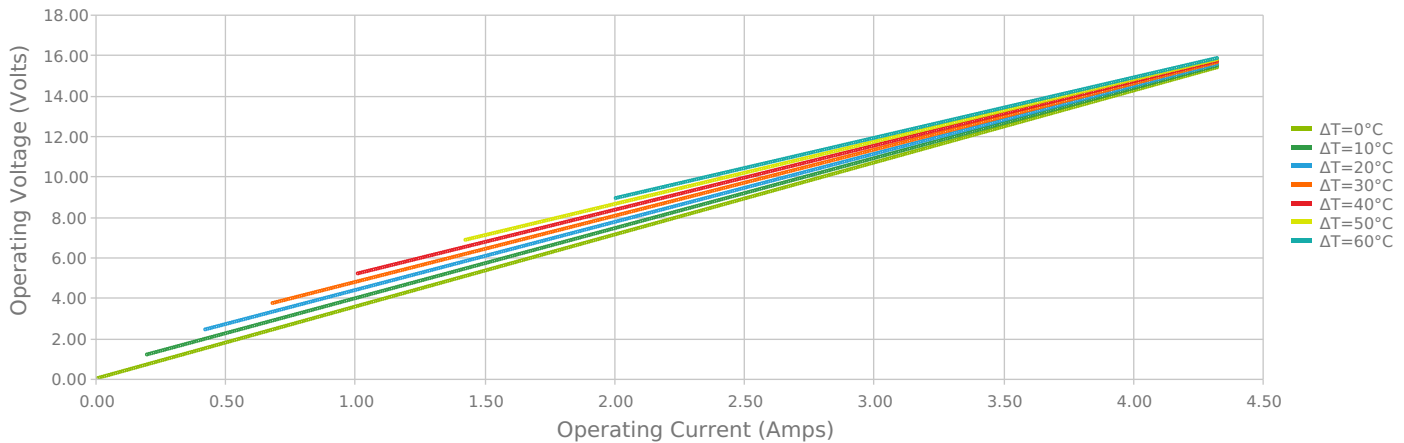
Heat Pumped at Cold Side
 Thot = 27 °C



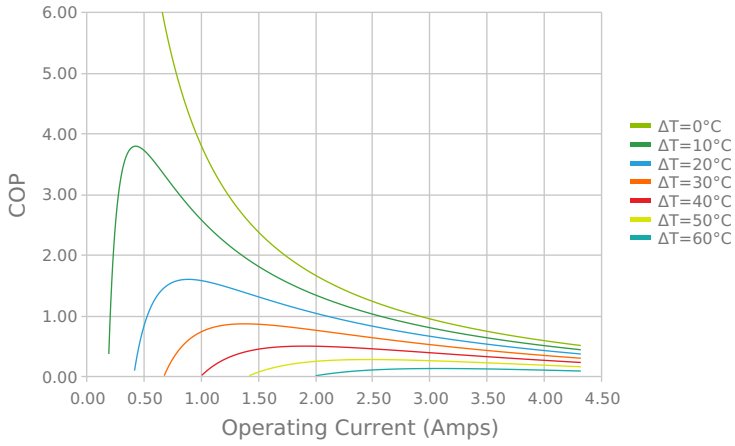
Heat Pumped at Cold Side
 Thot = 27 °C



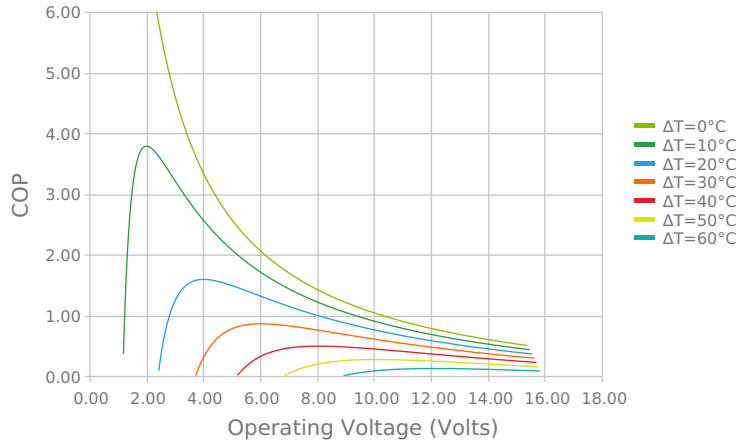
Current vs Voltage (I vs V)
 Thot = 27 °C



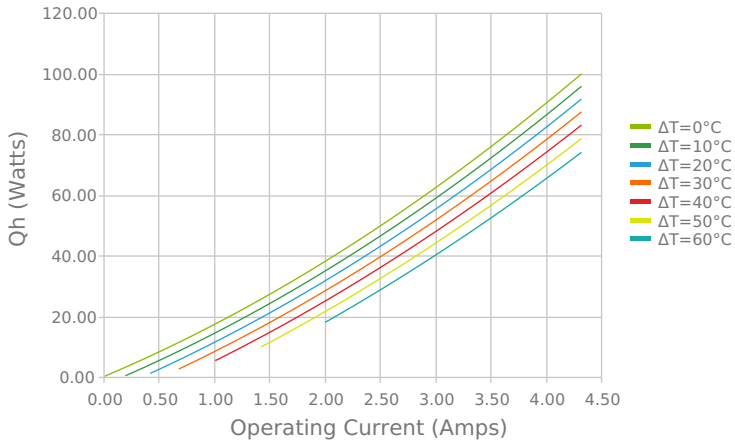
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



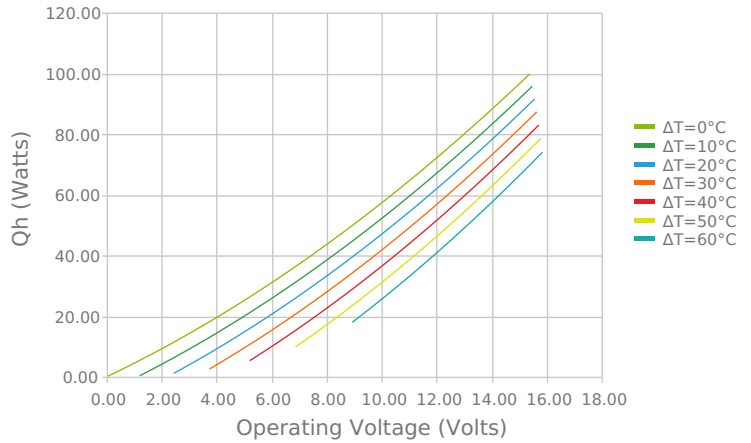
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



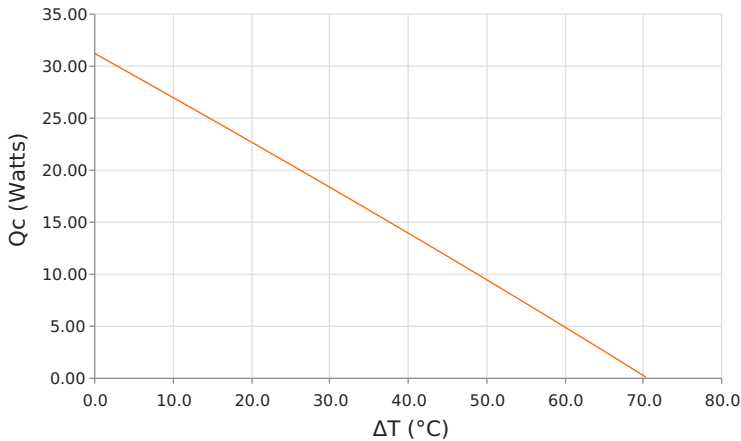
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



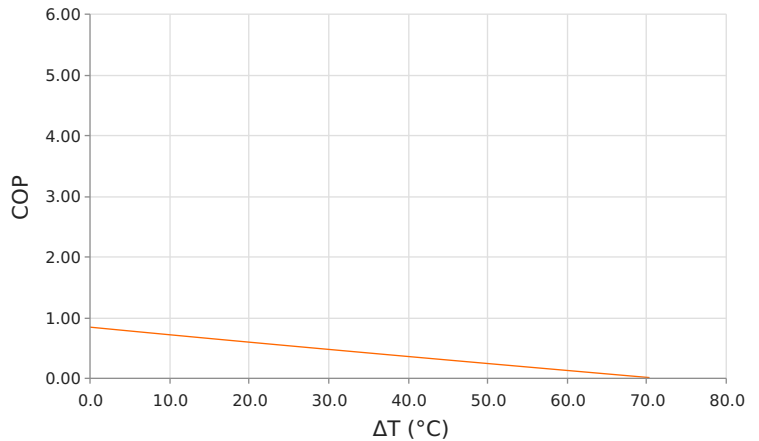
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)
 Thot = 27 °C | Current = 3.2 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C | Current = 3.2 Amps



SPECIFICATIONS*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax ($\Delta T = 0$)	33.3 Watts	34.2 Watts	35.8 Watts
ΔT_{max} ($Q_c = 0$)	71.7°C	74.8°C	80.4°C
I_{max} (I @ ΔT_{max})	3.9 Amps	3.8 Amps	3.8 Amps
V_{max} (V @ ΔT_{max})	14.6 Volts	15.1 Volts	16.2 Volts
Module Resistance	3.56 Ohms	3.71 Ohms	4.01 Ohms
Max Operating Temperature	80 °C		
Weight	25.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	4.800 ± 0.025 mm 0.189 ± 0.001 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	203.2 mm 8.00 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

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 GmbH. All Rights Reserved. Laird, Laird Technologies, Laird Thermal Systems, the Laird Logo, and other word marks and logos are trademarks or registered trademarks of Laird Limited or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird or any third party intellectual property rights.

Date: 04/24/2020