

ZT Series Thermoelectric Cooler

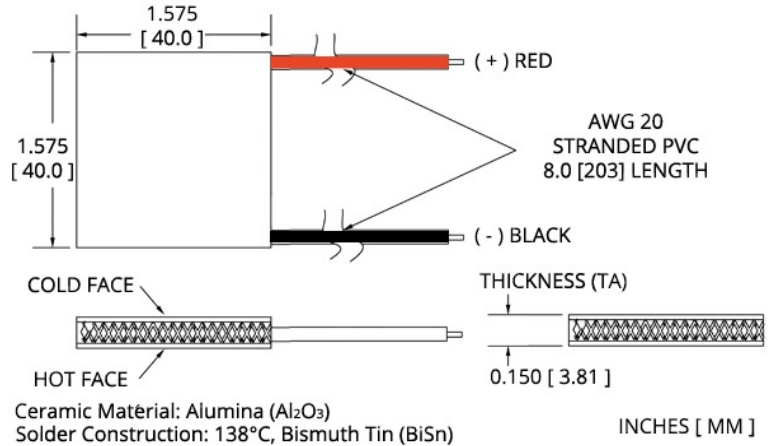
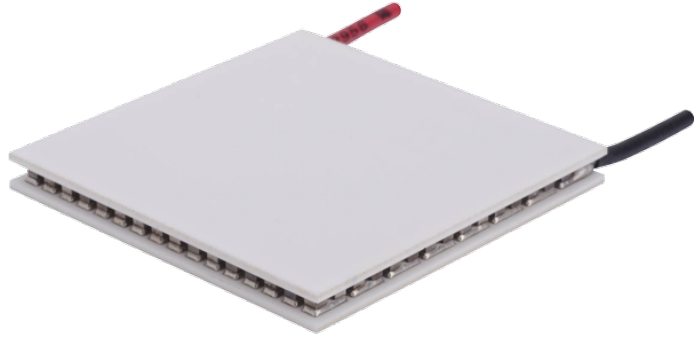
The ZT8-12-F1-4040-TA-W8 is a high performance thermoelectric cooler that achieves a higher temperature differential than standard single stage thermoelectric coolers. It has a maximum Q_c of 72.6 Watts when $\Delta T = 0$ and a maximum ΔT of 71.7 °C at $Q_c = 0$.

Features

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

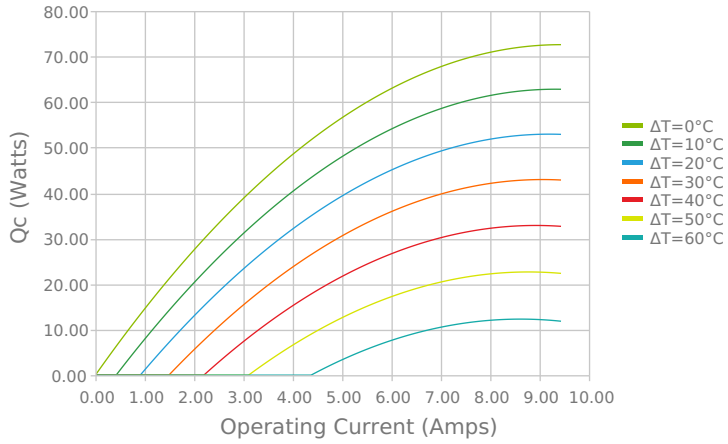
Applications

- 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

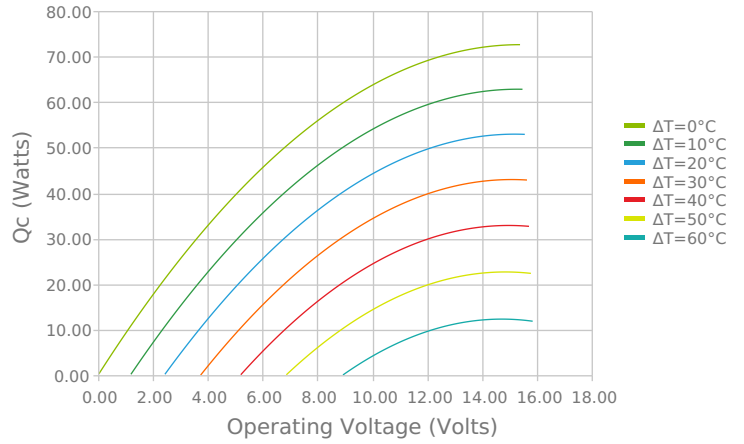


ELECTRICAL AND THERMAL PERFORMANCE

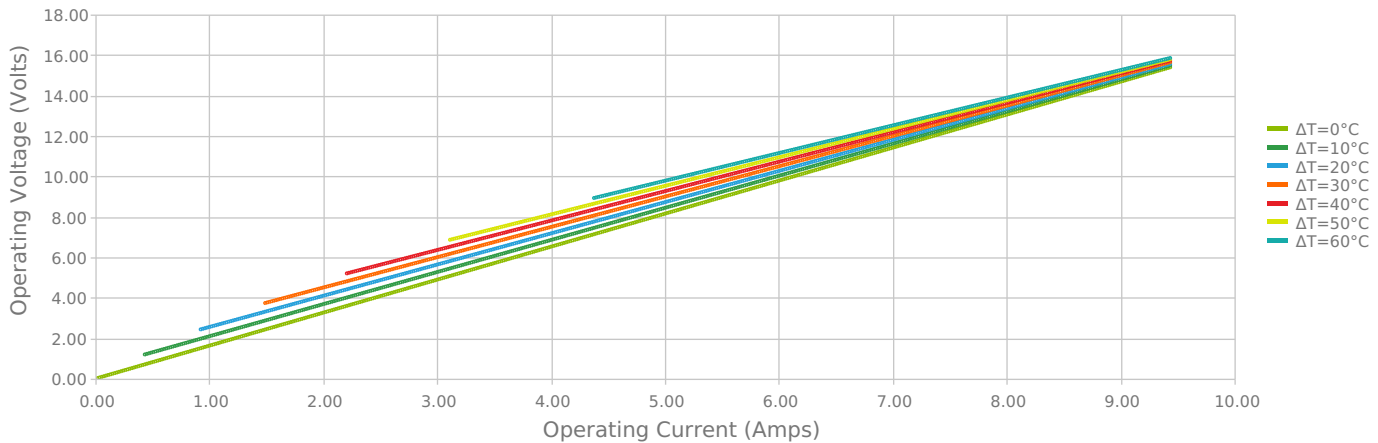
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



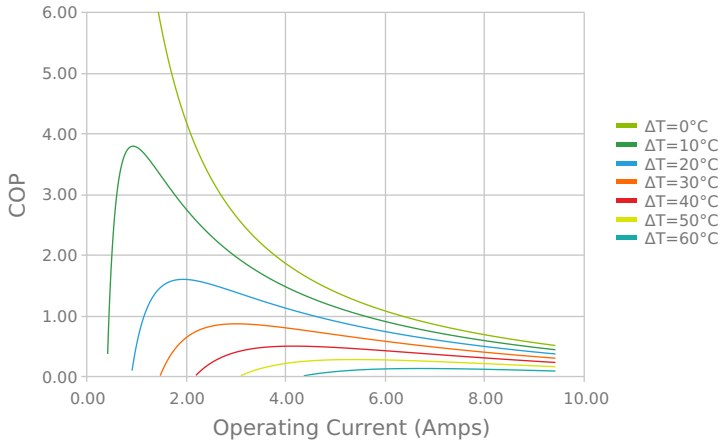
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



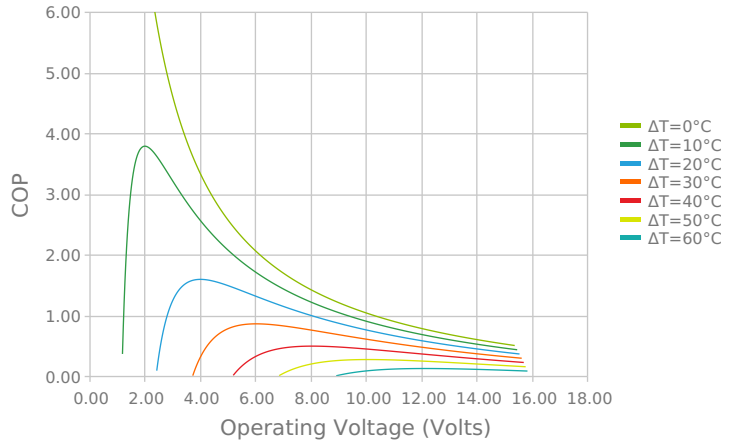
Current vs Voltage (I vs V)
 $T_{hot} = 27\text{ °C}$



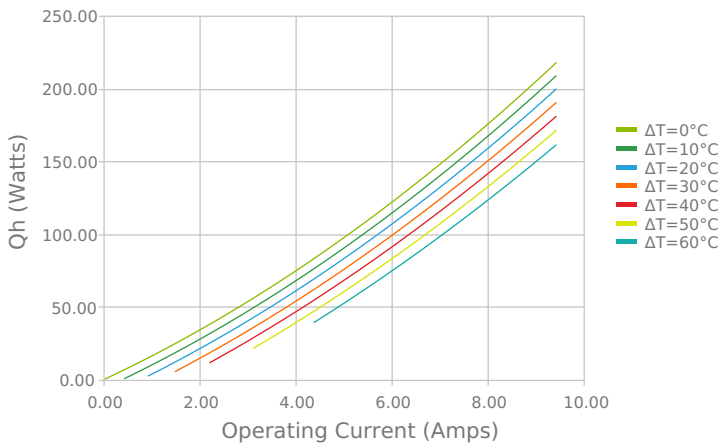
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



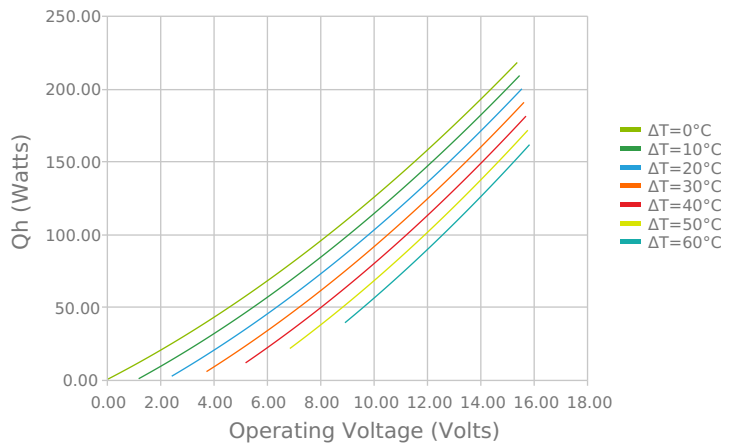
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



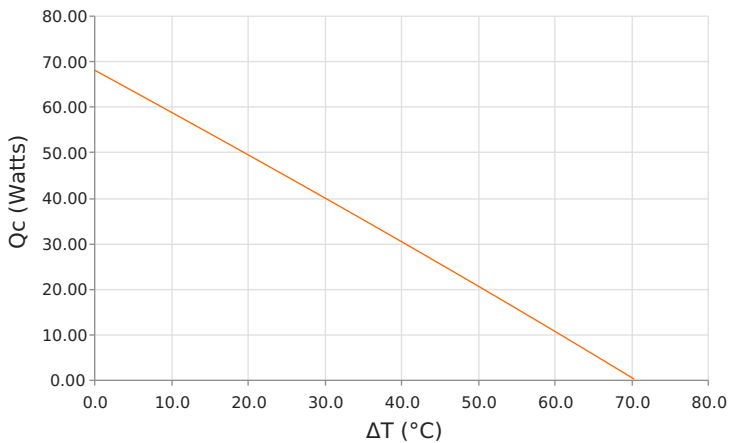
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



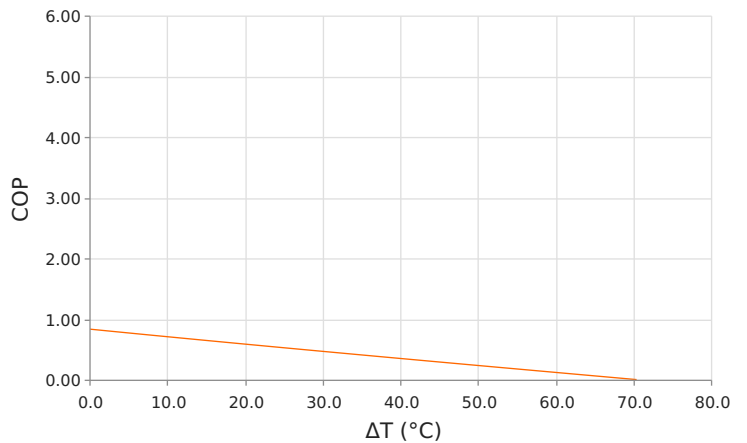
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 7.1 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 7.1 Amps



SPECIFICATIONS*

| | 27.0 °C | 35.0 °C | 50.0 °C |
|---|--------------|------------|------------|
| Hot Side Temperature | | | |
| Qcmax ($\Delta T = 0$) | 72.6 Watts | 74.6 Watts | 78.1 Watts |
| ΔT_{max} ($Q_c = 0$) | 71.7°C | 74.8°C | 80.4°C |
| I_{max} (I @ ΔT_{max}) | 8.4 Amps | 8.3 Amps | 8.2 Amps |
| V_{max} (V @ ΔT_{max}) | 14.6 Volts | 15.1 Volts | 16.2 Volts |
| Module Resistance | 1.63 Ohms | 1.70 Ohms | 1.84 Ohms |
| Max Operating Temperature | 80 °C | | |
| Weight | 26.0 gram(s) | | |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|-------------------------------------|--|----------|-----------|---------------------|
| TA | 3.810 ±0.025 mm 0.150 ± 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