

**Multistage MS Series Thermoelectric Cooler**

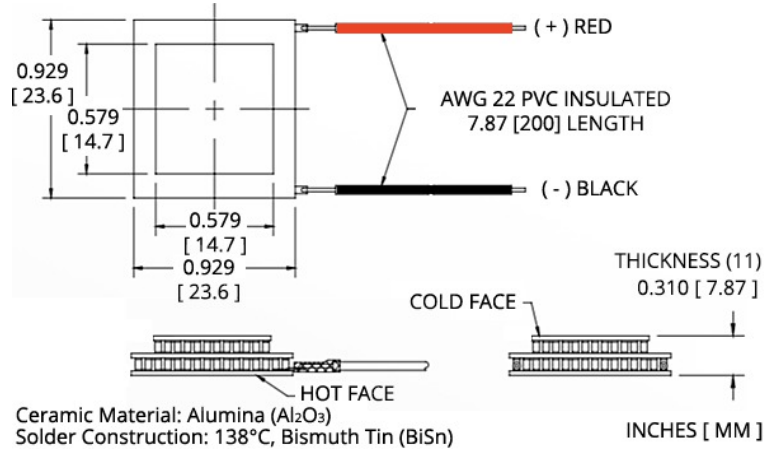
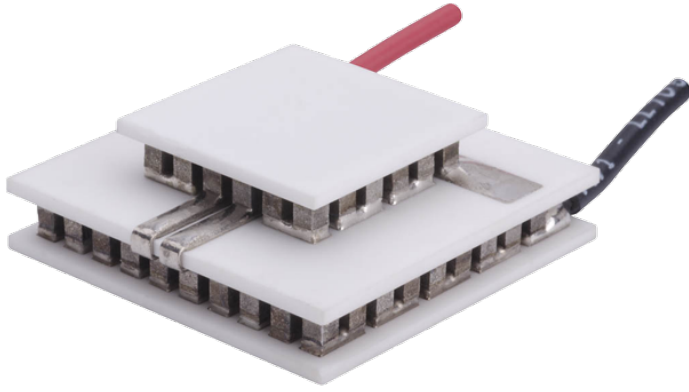
The MS2-068-14-14-15-15-11-W8 multistage thermoelectric cooler is able to reach colder temperatures than single stage thermoelectric coolers. It has a maximum  $Q_c$  of 7.4 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 81 °C at  $Q_c = 0$ .

**Features**

- High temperature differential
- Precise temperature control
- Reliable solid-state operation
- Environmentally-friendly
- DC operation
- RoHS-compliant

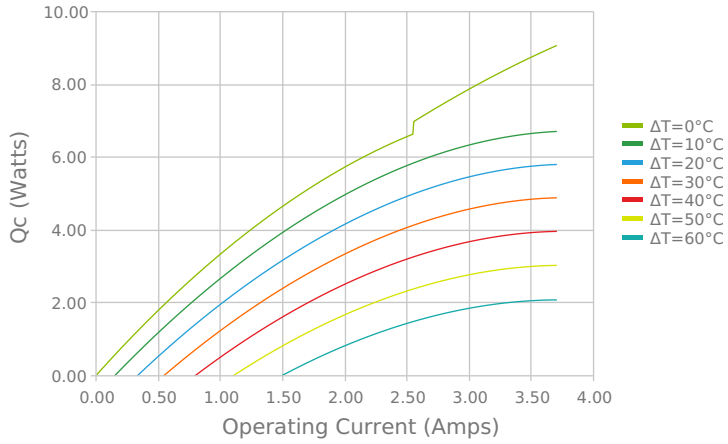
**Applications**

- Thermoelectric Cooling for CMOS Sensors
- Heads-Up Displays, Imaging Sensors

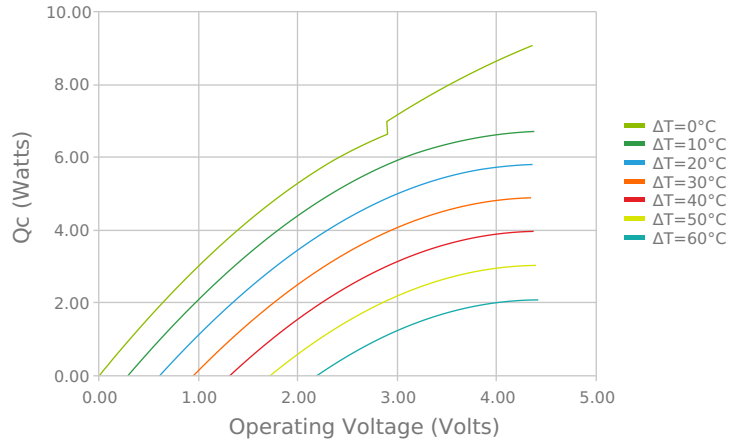


**ELECTRICAL AND THERMAL PERFORMANCE**

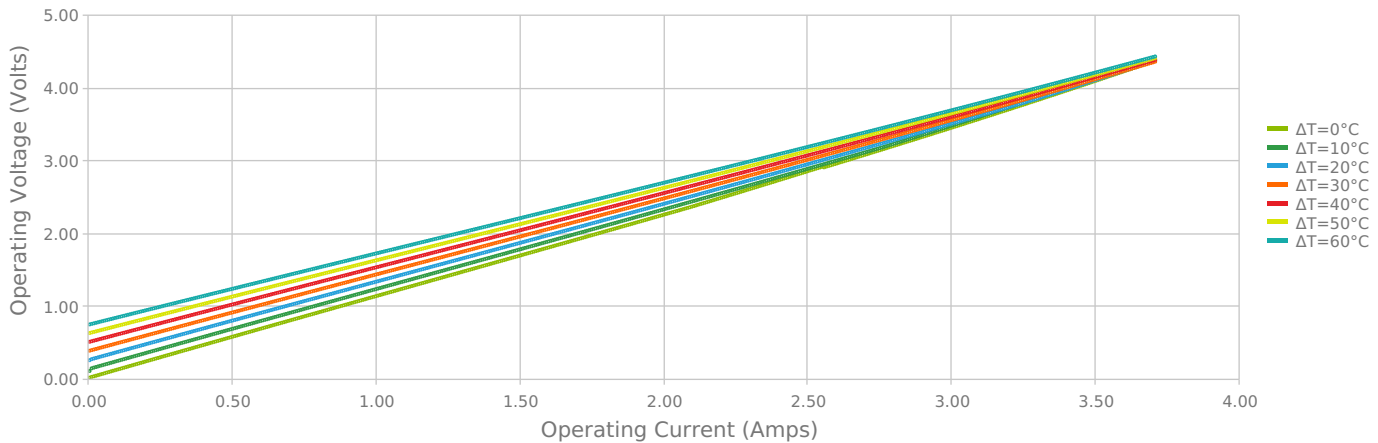
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



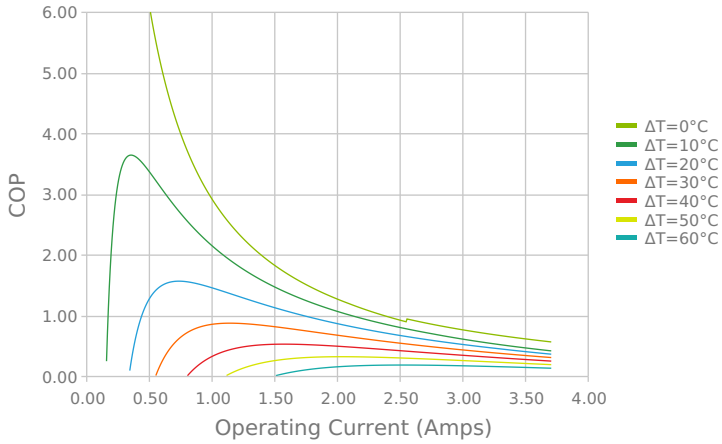
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



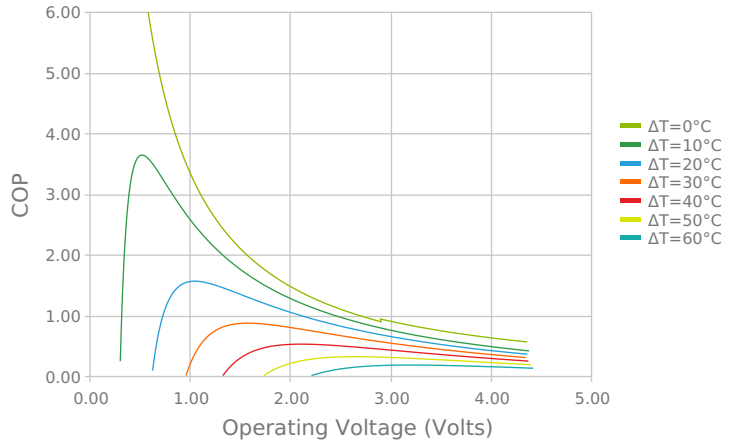
Current vs Voltage (I vs V)  
 $T_{hot} = 27\text{ °C}$



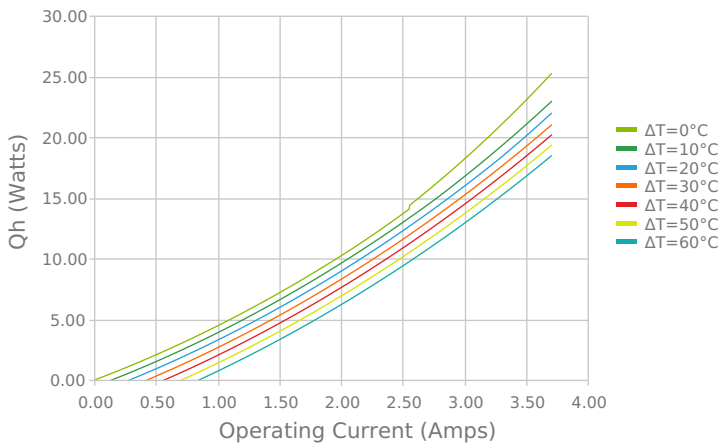
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



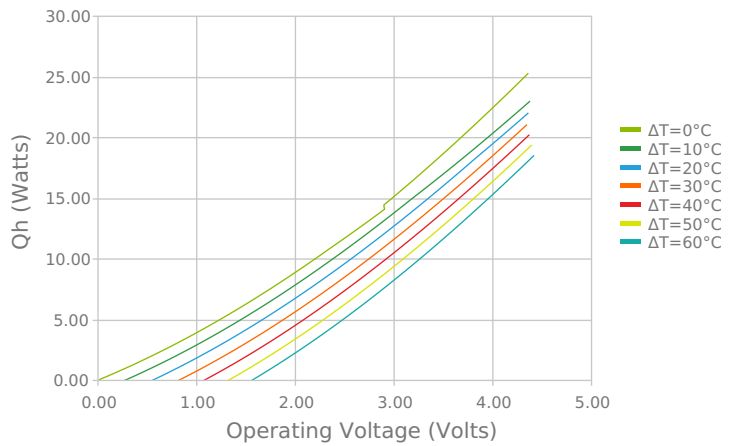
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



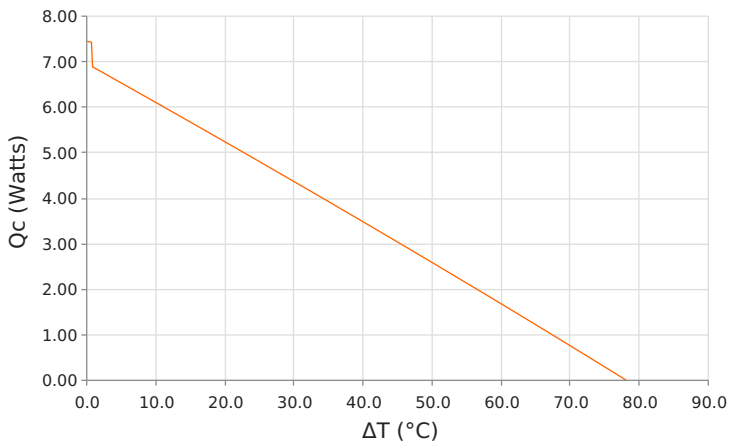
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



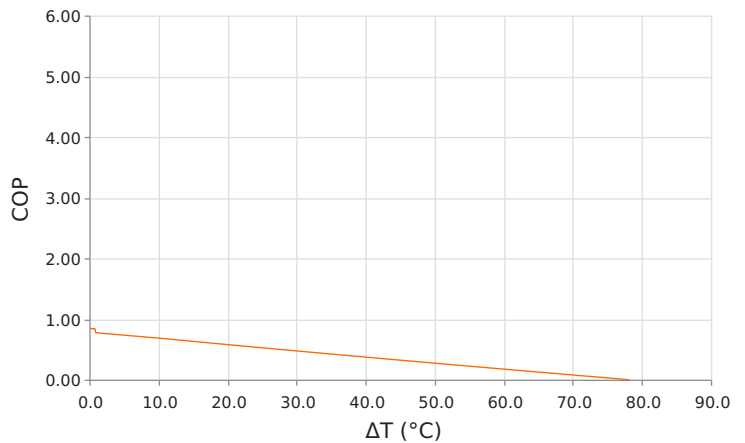
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
Thot = 27 °C | Current = 2.8 Amps



Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C | Current = 2.8 Amps



## SPECIFICATIONS\*

<b>Hot Side Temperature</b>	<b>27.0 °C</b>
<b>Qcmax (<math>\Delta T = 0</math>)</b>	7.4 Watts
<b><math>\Delta T_{max}</math> (<math>Q_c = 0</math>)</b>	81.0 °C
<b>I<sub>max</sub> (I @ <math>\Delta T_{max}</math>)</b>	3.7 Amps
<b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>	4.4 Volts
<b>Module Resistance</b>	1.19 Ohms
<b>Max Operating Temperature</b>	80 °C
<b>Weight</b>	15.0 gram(s)

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
11	14.700 ±0.203 mm 0.579 ± 0.008 in	0.025 mm / 0.203 mm 0.001 in / 0.008 in	Lapped	Lapped	199.9 mm 7.87 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<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics

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