

#### Multistage MS Series Thermoelectric Cooler

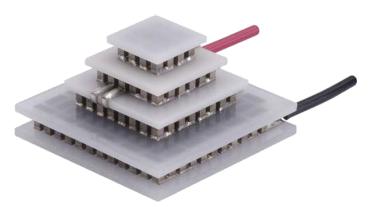
The MS4-129-10-15-11-W8 multistage thermoelectric cooler is able to reach colder temperatures than single stage thermoelectric coolers. It has a maximum Qc of 1.8 Watts when  $\Delta T=0$  and a maximum  $\Delta T$  of 120 °C at Qc =0.

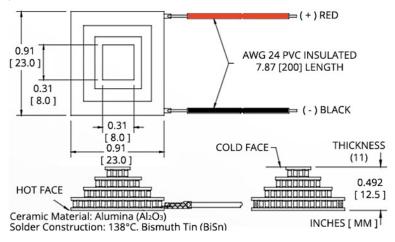
#### **Features**

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

#### **Applications**

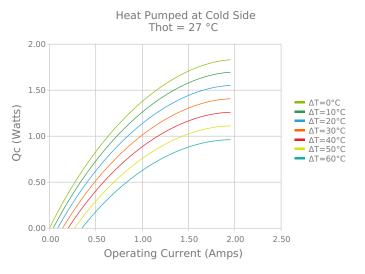
- Thermoelectric Cooling for CMOS Sensors
- Heads-Up Displays, Imaging Sensors

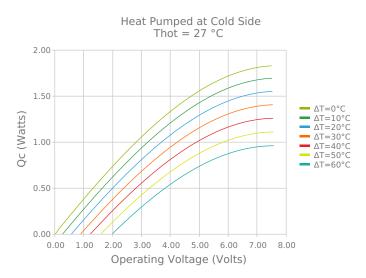


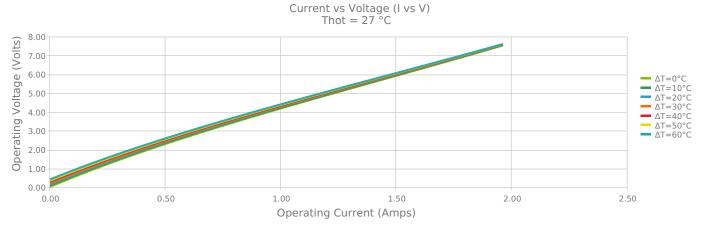


# **ELECTRICAL AND THERMAL PERFORMANCE**

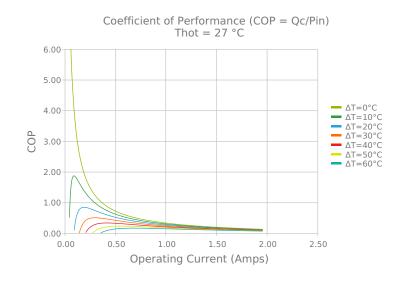
For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the HEATSINK side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less impactful if located on the side that attaches to the heat exchanger.

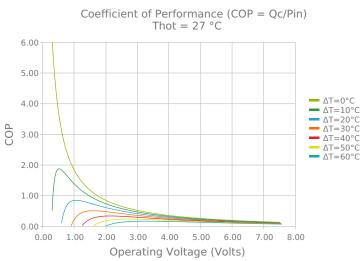


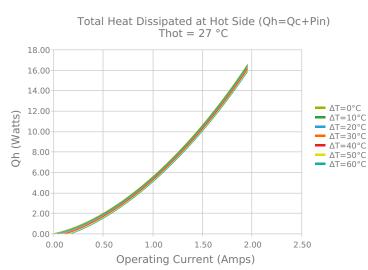


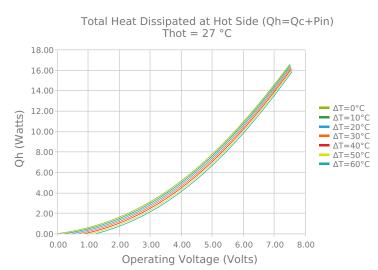


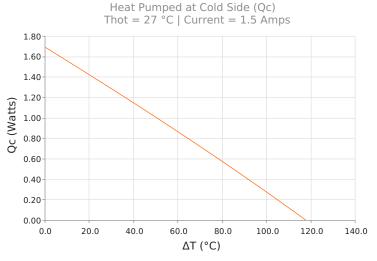


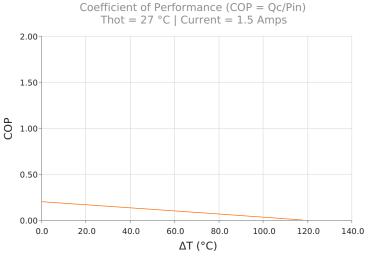














# **SPECIFICATIONS\***

**Hot Side Temperature** 

 $Qcmax (\Delta T = 0)$ 

 $\Delta T max (Qc = 0)$ 

Imax (I @ ∆Tmax)

Vmax (V @  $\Delta$ Tmax)

**Module Resistance** 

**Max Operating Temperature** 

Weight

27.0 °C
1.8 Watts
120.0 °C
1.8 Amps
7.3 Volts
4.05 Ohms
80 °C
11.0 gram(s)

# **FINISHING OPTIONS**

Suffix	Thickness	Flatness / Parallelism	<b>Hot Face</b>	Cold Face	<b>Lead Length</b>
11	12.500 ±0.203 mm 0.492 ± 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	<b>Temp Range</b>	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. Solder tinning also available on metallized ceramics

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Revision: 00 Date: 06-01-2022 Print Date: 06-14-2022

<sup>\*</sup> Specifications reflect thermoelectric coefficients updated March 2020