



The UltraTEC™ UTX Series is a high-performance thermoelectric cooler for demanding applications. The module is assembled with next generation thermoelectric material that has higher cooling capacity, temperature differential and efficiency than standard semiconductor materials. The UltraTEC™ UTX Series uses a large number of N and P couples to generate a higher heat flux density than standard thermoelectric coolers.

This product often uses a liquid heat exchanger on the hot side to dissipate heat generated by a cooler. The series is available in multiple configurations and is ideal for spot cooling applications that require higher cooling capacities with limited surface area.

**FEATURES**

- High heat pump density
- Precise temperature control
- Reliable Solid-State Operation
- No sound or vibration
- DC Operation
- RoHS Compliant

**APPLICATIONS**

- Industrial Lasers
- Analytical Instrumentation
- Medical Diagnostics
- Laser Projectors

\*Specifications reflect thermoelectric coefficients updated December 2019

TECHNICAL SPECIFICATIONS*	
Hot Side Temperature (°C)	27
Qmax (W)	79
Delta Tmax (°C)	72
I <sub>max</sub> (Amps)	6.0
V <sub>max</sub> (Volts)	22.8
Module Resistance (Ohms)	3.38

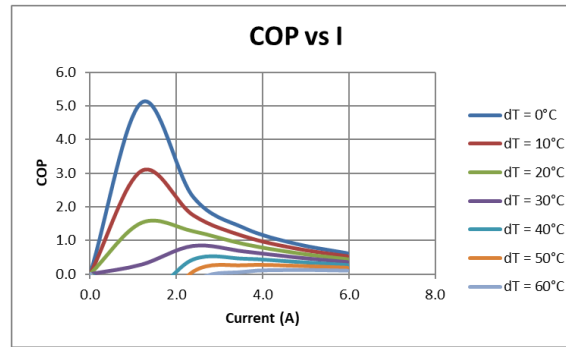
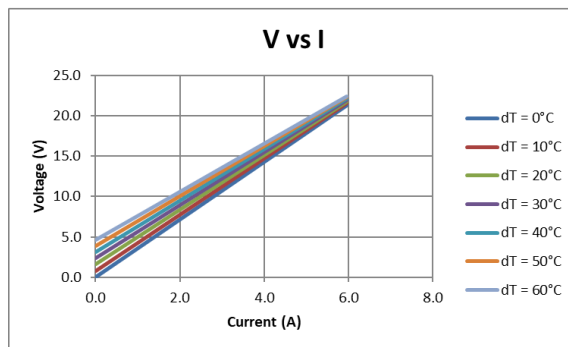
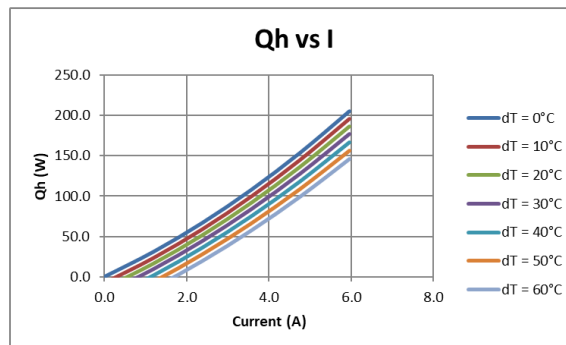
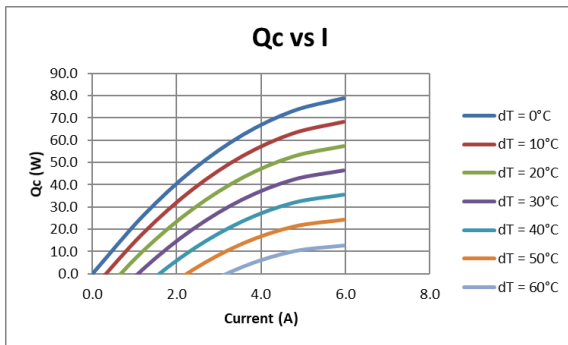
**LAPPING OPTIONS**

SUFFIX	THICKNESS (PRIOR TO THINNING)	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
TA	0.154" ± 0.001"	0.001" / 0.001"	Lapped	Lapped	6.0"
TB	0.154" ± 0.0005"	0.0005" / 0.0005"	Lapped	Lapped	6.0"

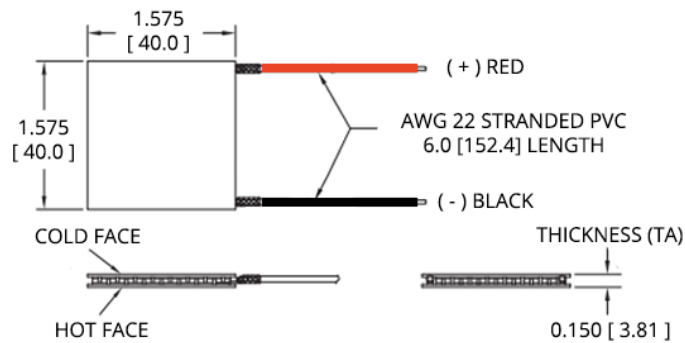
**SEALING OPTIONS**

SUFFIX	SEALANT	COLOR	TEMPERATURE RANGE	DESCRIPTION
RT	RTV	White	-60 to +204 °C	Non-corrosive, silicone adhesive sealant
EP	Epoxy	Black	-55 to +130 °C	Low density syntactic foam epoxy encapsulant

### PERFORMANCE CURVES AT $T_h = 27^\circ\text{C}$



### MECHANICAL DRAWINGS



Ceramic Material: Alumina ( $\text{Al}_2\text{O}_3$ )  
Solder Construction:  $138^\circ\text{C}$ , Bismuth Tin (BiSn)

INCHES [ MM ]

Ceramic material 96%  
Alumina ceramics  
Solder construction:  $138^\circ\text{C}$  BiSn

#### Operating tips

- Max operating temperature:  $80^\circ\text{C}$
- Do not exceed  $I_{\text{max}}$  or  $V_{\text{max}}$  when operating module
- Reference assembly guidelines for recommended installation

[www.lairdthermal.com](http://www.lairdthermal.com)

LTS-UTX6-19-F1-4040-DATASHEET



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