

OptoCooler™ UPF4

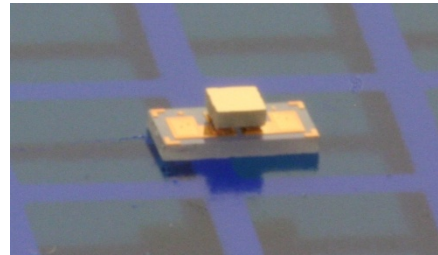
Part #: NCU-4000440-0101A_A

Preliminary Data Sheet

OptoCooler UPF4
Thermoelectric Cooler

Description:

Nextreme's *OptoCooler Series* is a family of miniature heat pumps. These high-performance, solid-state thermoelectric devices are optimized for high heat flux cooling up to 112 W/cm² and are ideally suited for photonics, optoelectronics and sensor applications. The miniature size and large heat pumping capacity make this device unique. In addition, the OptoCooler can be operated in forward or reverse polarity to provide either cooling or heating for precise temperature control.



Features:

- High Heat Flux up to 112 W/cm²
- Extremely thin 0.650 mm profile
- Small 1.24mm X 2.34mm footprint
- 0.61 watts maximum cooling
- <2msec response time
- Scalable to higher Q & V applications

Performance Values (typical):

Hot Side Temperature	25°C	85°C
Q_{max} (Watts)	0.42	0.61
ΔT_{max} (°C)	40	47
I_{max} (Amps)	3.8	4.8
V_{max} (Volts)	0.20	0.24
Q_{max} / Area (W/cm ²)	78	112

Applications:

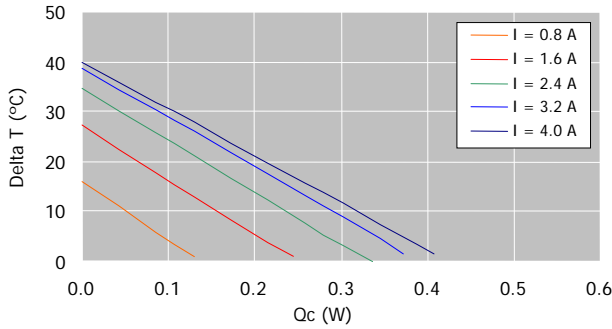
- Photonics
- Optoelectronics
- Military
- Aerospace
- Semiconductors
- Bio-medical
- Instrumentation
- Micro-fluidics

Contact info@Nextreme.com for more information
Preliminary – Subject to change without notice

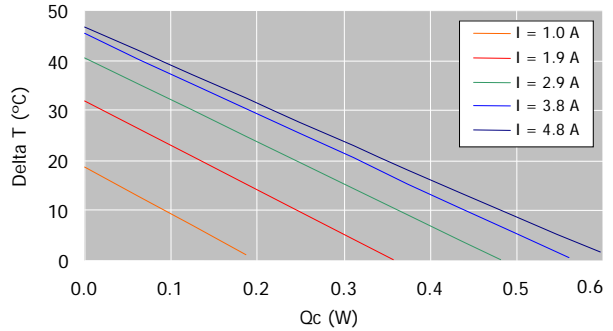
OptoCooler™ UPF4

Preliminary Data Sheet

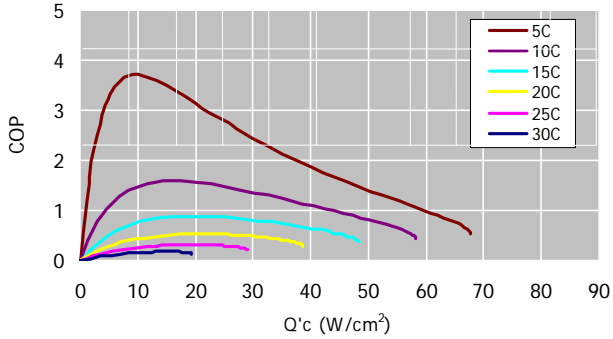
@25°C, 10 mTorr



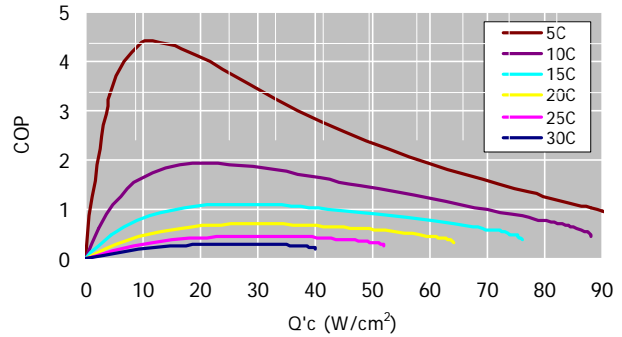
@85°C, 10 mTorr



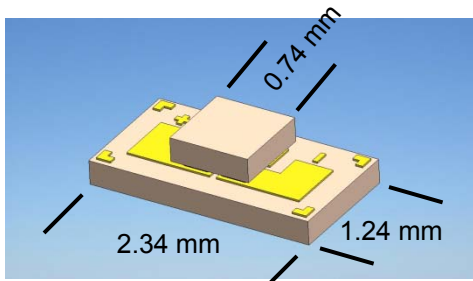
COP vs. Q/A @ 25°C



COP vs. Q/A @ 85°C



Product Dimensions



Ordering Information

1. All devices come with Au on the top and back surfaces.

Definitions:

- Q_{max} The maximum amount of heat that the Peltier device can pump when operating at I_{max}
- ΔT_{max} The maximum temperature difference the Peltier device can produce
- I_{max} The current which produces ΔT_{max}
- V_{max} The voltage which produces ΔT_{max}
- COP Coefficient of Performance (Heat Pumped / Input Power)