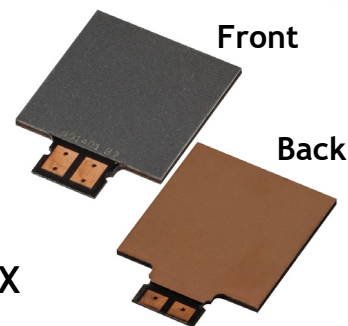


Unmounted Thermal Detector

TD10X



Description

The TD10X unmounted and compact thermopile detector measures optical power levels between 100 μW and 5 W with a 10.0 mm x 10.0 mm sensing area. It possesses a nearly flat broadband spectral absorption ranging from the UV through the MIR, has negligible dependency on the angle of incidence, and a homogeneous response over the full sensing area. This surface mount device (SMD) includes copper solder pads to facilitate electrical connection. A copper layer on the back allows the detector to be soldered onto a heat sink and ensures excellent thermal contact.

As a thermal gradient across the sensor is required for voltage generation, it is crucial that the back side of the detector is mounted to an appropriate heat sink. Please read the *Handling Instructions* document for information on mounting the thermal detector on a metal-core PCB, making electrical connections, maintenance, and safety.

The *Handling Instructions* document can be downloaded at: www.thorlabs.com/manuals.cfm.

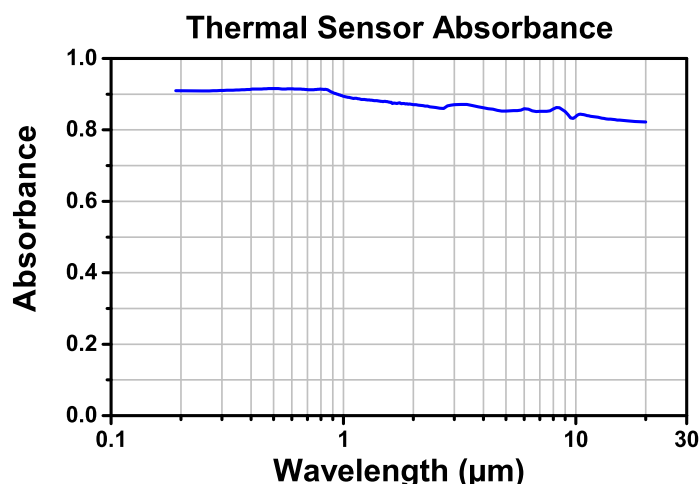
Specifications

TD10X	
Detector Type	Thermopile
Wavelength Range	190 nm - 20 μm
Optical Power Working Range ^a	100 μW - 5 W
Max Average Power Density ^b	1.5 kW/cm ²
Max Pulse Energy Density	0.3 J/cm ² (1 ns Pulse), 5 J/cm ² (1 ms Pulse)
Typical Responsivity	>100 mV/W
Linearity with Optical Power	$\pm 0.2\%$
Rise Time ^c	1.1 s
Active Sensor Area	10.0 mm x 10.0 mm (0.39" x 0.39")
Active Area Uniformity	$\pm 1\%$ (>1 mm Beam Diameter)
Detector Dimensions	10.0 mm x 13.0 mm x 0.6 mm (0.39" x 0.51" x 0.02")
Mounting	SMD Solder Pads or Thermally Conductive Adhesive
Connection	PCB, Wire

a. Mounting on appropriate heat sink is required.

b. Damage Threshold

c. Typical Natural Response Time (0 - 95%)



Drawing

