

# THZ-D

THz Detectors for use with our universal displays & PC interfaces



## KEY FEATURES

- > **COVERS THE ENTIRE THZ SPECTRUM**  
Get the best precision across the entire wavelength range and relative measurements from 30 THz to 0.1 THz.
- > **ROOM TEMPERATURE OPERATION**  
Easier to use and less expensive than a Golay cell.
- > **CALIBRATED AT 10.6  $\mu\text{m}$**   
THZ-D detectors are calibrated at a single wavelength 10.6  $\mu\text{m}$  (30 THz) and at 10 Hz chopping frequency for the THZ9D. Both include typical wavelength correction data from 10.6 to 440  $\mu\text{m}$ . They are used for relative measurements outside that range.
- > **LARGE AREA**  
Models range from 9 mm  $\varnothing$  for the THZ9D and 12 mm  $\varnothing$  for the THZ12D.
- > **WIDE RANGE OF MEASUREMENTS**  
Measure from 100  $\mu\text{W}$  to 3 W of continuous power with the THZ12D model, the highest in our terahertz range of products, and down to 5  $\mu\text{W}$  to 25 mW with the THZ9D model.
- > **USE WITH A UNIVERSAL DISPLAYS & PC INTERFACE**  
No need for an exclusive monitor. These unique THz detectors work with our display & PC interface.
- > **SDC-500 OPTICAL CHOPPER**  
The THZ9D model requires the use of an optical chopper, like our SDC-500, running at 10 Hz.

## OUTPUT OPTIONS

- > **SMART DB15 CONNECTOR**  
Contains all the calibration data
- > **ANALOG OUTPUT**  
When used with APM analog power supply module
- > **integra ALL-IN-ONE-METER** (for THZ12D only)  
Connects directly to a PC  
Two models available:
  - USB output (-INT)
  - RS-232 output (-IDR)

## COMPATIBLE DISPLAYS & PC INTERFACES



MIRO ALTITUDE



MAESTRO



U-LINK



M-LINK



APM  
analog power module  
(for THZ9D)

## ACCESSORIES



Stand with steel post  
(for THZ12D)



Stand with delrin  
(for THZ9D)



SDC-500 digital  
optical chopper



Pelican carrying case



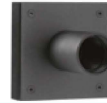
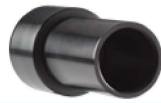
Extension cables  
(4, 15, 20 or 25 m)

# THZ-D

## Specifications



\*Also traceable to NRC-CNRC



	THZ9D-20mS-BL	THZ12D-3S-VP
<b>MAX AVERAGE POWER</b>	25mW	3W
<b>EFFECTIVE APERTURE</b>	9 mm Ø	12mm Ø
<b>COMPATIBLE DISPLAYS &amp; PC INTERFACES</b>	MIRO ALTITUDE, MAESTRO, U-LINK, M-LINK & APM	MIRO ALTITUDE, MAESTRO, U-LINK & M-LINK

<b>MEASUREMENT CAPABILITY</b>		
<b>Spectral range<sup>a</sup></b>		
Frequency	0.1-30THz	0.1 -30THz
Wavelength	3000-10 μm	3000-10 μm
<b>Maximum average power</b>		
with MAESTRO	20mW	3W
with U-LINK, M-LINK or MIRO ALTITUDE	25mW	3W
Noise equivalent power <sup>b</sup>	300nW	0.5μW
Minimum measurable power <sup>c</sup>	N/A	50-100 μW
Thermal drift	N/A	12 μW/°C
Rise time (nominal) <sup>d</sup>	<0.2s	3s
Minimum repetition rate <sup>e</sup>	1000Hz	7Hz
Chopping frequency	10 Hz (required)	N/A
Calibration uncertainty <sup>g</sup>	±5.0% at 10.6 μm; ±1% at 10.6 - 440 μm	±3.0% at 10.6 μm ±8.0% at 10.6 - 300 μm ±1% at 300 - 440 μm
Repeatability	±0.5%	±0.5%

<b>DAMAGE THRESHOLDS</b>		
Maximum average power density <sup>h</sup>	30 mW/cm <sup>2</sup>	30W/cm <sup>2</sup>
Maximum energy density	<0.1 J/cm <sup>2</sup>	<1 J/cm <sup>2</sup>

<b>PHYSICAL CHARACTERISTICS</b>		
<b>Effective aperture</b>	9 mm Ø	12mm Ø
<b>Absorber</b>	BL (Black Absorber)	VP (Volume Absorber)
<b>Dimensions</b>	38.10 x 26.2 mm	73H x73Wx28D mm (80D mm with tube)
<b>Weight (head only)</b>	91g	320g

<b>ORDERING INFORMATION</b>		
<b>Compatible stand</b>	STAND-D-233	STAND-D-233
<b>Product page</b>		

- a. From 10 to 440 μm, spectrometer measurement with multiple laser references validation.  
From 440 to 600 μm, spectrometer measurement only.  
From 600 to 3000 μm, relative measurement only.  
This spectral range is subject to change.
- b. Nominal value. actual value depends on electrical noise in the measurement system.
- c. Actual value depends on ambient conditions and the measurement system.
- d. With anticipation
- e. Maximum output voltage ÷ sensitivity x maximum power.
- f. Minimum repetition rate for stable average power measurements.
- g. Including linearity with power.
- h. At 1064 nm. 1 W CW.

Specifications are subject to change without notice  
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