

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 μm**
THZ-D detectors are calibrated at a single wavelength 10.6 μm (30 THz) and at 10 Hz chopping frequency for the THZ9D. Both include typical wavelength correction data from 10.6 to 440 μm . 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 μW to 3 W of continuous power with the THZ12D model, the highest in our terahertz range of products, and down to 5 μW 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 (D) 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



MAESTRO



U-LINK



M-LINK
(for THZ12D)



APM (D)
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)



Extra isolation tube



Fiber adaptors & connectors
(FC, ST and SMA)

THZ-D



Specifications

CE NIST*
Traceable



*Also traceable to NRC-CNRC



	THZ9D-20mS-BL	THZ12D-3S-VP
MAX AVERAGE POWER	25 mW	3 W
EFFECTIVE APERTURE	9 mm ϕ	12 mm ϕ
COMPATIBLE DISPLAYS & PC INTERFACES	MAESTRO, U-LINK & APM (D)	MAESTRO, U-LINK & M-LINK
MEASUREMENT CAPABILITY		
Spectral range ^a		
Frequency	0.1 - 30 THz	0.1 - 30 THz
Wavelength	3000 - 10 μ m	3000 - 10 μ m
Maximum average power		
with MAESTRO	20 mW	3 W
with U-LINK	25 mW	3 W
Noise equivalent power ^b	300 nW	0.5 μ W
Minimum measurable power ^c	N/A	50 - 100 μ W
Thermal drift	N/A	12 μ W/ $^{\circ}$ C
Rise time (nominal) ^d	< 0.2 s	3 s
Minimum repetition rate ^f	1000 Hz	7 Hz
Chopping frequency	10 Hz (required)	N/A
Calibration uncertainty ^g	\pm 5.0% at 10.6 μ m; \pm 15% at 10.6 - 440 μ m ^h	\pm 3.0% at 10.6 μ m \pm 8.0% at 10.6 - 300 μ m \pm 15% at 300 - 440 μ m
Repeatability	\pm 0.5%	\pm 0.5%
DAMAGE THRESHOLDS		
Maximum average power density ^b	50 mW/cm ²	30 W/cm ²
Maximum energy density	< 0.1 J/cm ²	< 1 J/cm ²
PHYSICAL CHARACTERISTICS		
Effective aperture	9 mm ϕ	12 mm ϕ
Absorber	BL (Black Absorber)	VP (Volume Absorber)
Dimensions	38.1 ϕ x 79 mm	73H x 73W x 20D mm (72D mm with tube)
Weight (head only)	91 g	320 g
ORDERING INFORMATION		
Compatible stand	STAND-D-233 or STAND-D-233-M	STAND-D-233
Product page		

- a. From 10 to 440 μ m, spectrometer measurement with multiple laser references validation.
From 440 to 600 μ m, spectrometer measurement only.
From 600 to 3000 μ m, 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