

# THZ-D

THz Detectors for use with our universal monitors



## KEY FEATURES

1. **RELATIVE MEASUREMENTS FROM 0.1 TO 30 THz**  
Broadband, room temperature operation, easier to use and less expensive than a Golay cell
2. **FLAT SPECTRAL RESPONSE**  
Get the best precision across the entire wavelength range
3. **MEASURE HIGHER POWERS**  
Up to 3 W of continuous power with the THZ12D model, the highest in our terahertz range of products
4. **USE WITH A UNIVERSAL MONITOR**  
No need for an exclusive monitor. These unique THz detectors work with our standard universal monitors:
  - MAESTRO
  - M-LINK
5. **LARGE APERTURES**  
Models range from 9 to 12 mm Ø aperture
6. **CALIBRATED AT 10.6 µm**  
THZ-D detectors are calibrated at a single wavelength (10.6 µm) and include typical wavelength correction data from 10.6 to 440 µm. They are used for relative measurements outside that range

## AVAILABLE MODELS



THZ12D-3S-VP  
(3W-Volume Absorber)



THZ9D-20mS-BL  
(9 mm-Organic Black)

## ACCESSORIES



Stand with Steel Post  
(Model Number: 200160)



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



SDC-500 Digital  
Optical Chopper



Pelican Carrying Case

## SEE ALSO

HOW IT WORKS	<b>14</b>
TECHNICAL DRAWINGS	<b>132</b>
ABSORPTION CURVES	<b>134</b>
COMPATIBLE MONITORS	
MAESTRO	<b>20</b>
M-LINK	<b>32</b>
LIST OF ALL ACCESSORIES	<b>186</b>

APPLICATION NOTE	
THZ CALIBRATION	<a href="#">202155</a>

MONITORS

ENERGY DETECTORS

POWER DETECTORS

HIGH POWER SOLUTIONS

PHOTO DETECTORS

THZ DETECTORS

OEM DETECTORS

SPECIAL PRODUCTS

BEAM DIAGNOSTICS

## THZ-D



## SPECIFICATIONS

	THZ9D- 20mS-BL	THZ12D-3S-VP
<b>MAX AVERAGE POWER</b>	25 mW	3 W
<b>EFFECTIVE APERTURE</b>	9 mm Ø	12 mm Ø
<b>COMPATIBLE MONITORS</b>	MAESTRO, M-LINK & APM	MAESTRO & M-LINK
<b>MEASUREMENT CAPABILITY</b>		
Spectral Range <sup>a</sup>		
Frequency	0.1 - 30 THz	0.1 - 30 THz
Wavelength	3000 – 10 µm	3000 – 10 µm
Maximum Average Power		
with MAESTRO	20 mW	3 W
with M-LINK	25 mW	3 W
Noise Equivalent Power <sup>b</sup>	300 nW	0.5 µW
Minimum Measurable Power <sup>c</sup>	N/A	50 - 100 µW
Thermal Drift <sup>d</sup>	N/A	12 µW/°C
Rise Time (nominal) <sup>d</sup>	<0.2 sec	3 sec
Sensitivity (typ into 100 kΩ load) <sup>e</sup>	120 V/W	200 mV/W
Minimum Repetition Rate <sup>d</sup>	1000 Hz	7 Hz
Chopping Frequency	10 Hz (required)	N/A
Calibration Uncertainty <sup>f</sup>	±5.0 % @ 10.6 µm; ±15 % @ 10.6 - 440 µm <sup>a</sup>	±8.0 % @ 10.6 - 300 µm; ±15 % @ 300 - 440 µm <sup>a</sup>
Repeatability	±0.5 %	±0.5 %
<b>DAMAGE THRESHOLDS</b>		
Maximum Average Power Density <sup>a</sup>	50 mW/cm <sup>2</sup>	30 W/cm <sup>2</sup>
Maximum Energy Density	<0.1 J/cm <sup>2</sup>	<1 J/cm <sup>2</sup>
<b>PHYSICAL CHARACTERISTICS</b>		
Effective Aperture	9 mm Ø	12 mm Ø
Absorber (High Damage Threshold)	BL (Black Absorber)	VP (Volume Absorber)
Dimensions	38.1Ø x 26.2 mm	73H x 73W x 28D mm (80D mm with tube)
Weight (head only)	91 g	320 g
<b>ORDERING INFORMATION</b>		
Product Name	THZ9D-20mS-BL	THZ12D-3S-VP-D0
Product Number		202229

Specifications are subject to change without notice

- 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 Gentec-EO monitors.  
e. Maximum output voltage = sensitivity x maximum power.  
f. Including linearity with power.  
g. At 1064 nm, 1 W CW.