

# THZ-I-BNC

THz Detectors with integrated analog module



## KEY FEATURES

- **COVERS THE ENTIRE THZ SPECTRUM**  
Measure accurately from 0.25 to 15  $\mu\text{m}$  and from 30 THz to 0.1 THz in relative terms
- **MEASURE POWER FROM nW TO  $\mu\text{W}$**   
Make low-level measurements with an NEP of 1.0 nW
- **MEASURE ENERGY FROM nJ TO  $\mu\text{J}$**   
Can be used with low repetition rate pulsed THz sources to measure pulse energy up to 40 Hz
- **INTEGRATED ANALOG MODULE**  
Plug the device directly into your oscilloscope or Lock-In Amplifier
- **BATTERY OR EXTERNAL POWER**  
Includes 9V battery and an external power supply
- **CALIBRATED AT 0.63  $\mu\text{m}$**   
All THz detectors are calibrated at a single wavelength (0.63  $\mu\text{m}$ ) and include typical wavelength correction data from 0.25 to 440  $\mu\text{m}$ . They are used for relative measurements outside that range.
- **SDC-500 OPTICAL CHOPPER**  
The THZ-I-BNC models require the use of an optical chopper, like our SDC-500, running at 5 Hz.

## OUTPUT OPTIONS

- **ANALOG OUTPUT**  
Plug the device directly into your oscilloscope or lock-in amplifier with the BNC output

## ACCESSORIES



Stand with delrin post



Removable IR Windows  
(Various types available)



SDC-500 digital  
optical chopper



Pelican carrying case

# THZ-I-BNC

## Specifications



THZ51-BL-BNC	
<b>MAX AVERAGE POWER</b>	140 $\mu$ W
<b>EFFECTIVE APERTURE</b>	5 mm $\varnothing$
<b>INTEGRATED MODULE</b>	Analog (BNC)

### MEASUREMENT CAPABILITY

<b>Spectral range <sup>a</sup></b>	
Frequency	0.1 - 30 THz
Wavelength	3000 - 10 $\mu$ m
<b>Max measurable power</b>	140 $\mu$ W
<b>Noise equivalent power <sup>b</sup></b>	1.0 nW [1.0 x 10 <sup>-9</sup> W/(Hz) <sup>1/2</sup> ]
<b>Rise time (0-100%)</b>	$\leq$ 0.2s
<b>Sensitivity (Typical)</b>	70 kV/W
<b>Chopping frequency</b>	5 Hz (Required)
<b>Calibration uncertainty</b>	Contact us
<b>Energy mode</b>	
Maximum measurable energy	100 $\mu$ J
Noise equivalent energy	1.0 nJ
Minimum pulse width	1.0 $\mu$ s
Maximum repetition rate	40 Hz

### DAMAGE THRESHOLDS

<b>Maximum average power density (1064 nm)</b>	50 mW/cm <sup>2</sup>
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### PHYSICAL CHARACTERISTICS

<b>Effective aperture</b>	5 mm $\varnothing$
<b>Sensor</b>	Pyroelectric
<b>Absorber</b>	BL
<b>Analog output</b>	0-10 V
<b>Dimensions</b>	81.3 $\varnothing$ X 99.3D mm
<b>Weight</b>	500 g

### ORDERING INFORMATION

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

- a. Projected spectral range.  
From 10 to 440  $\mu$ m, spectrometer measurement.  
From 440 to 3000  $\mu$ m, relative measurement only.  
This spectral range is subject to change.
- b. At 632 nm and a chopping frequency of 5Hz.