

# QS-THZ

Hybrid THz Detectors



\* Pictures for indicative purposes only

## AVAILABLE MODELS

- **QS2-THZ-BL** 2 x 2 mm, Pyroelectric Sensor with Organic Black Coating in T05 Packaging
- **QS5-THZ-BL** 5 mm Ø, Pyroelectric Sensor with Organic Black Coating in T05 Packaging
- **QS9-THZ-BL** 9 mm Ø, Pyroelectric Sensor with Organic Black Coating in T08 Packaging

## 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. EASY TO INTEGRATE FORMAT

T05 and T08 packages make the QS-THZ detectors small and easy to integrate in an existing system

### 3. SEVERAL SENSOR SIZES AVAILABLE

Choice of 2 x 2 mm, 5 and 9 mm Ø

### 4. CALIBRATED AT 0.63 µm

All THz detectors are calibrated at a single wavelength (0.63 µm) and include a typical wavelength correction data from 0.25 to 440 µm. They are used for relative measurements outside that range.

### 5. TEST BOX AVAILABLE

Can be used with our QS-I-TEST test box which provides mounting and power supply

### 6. PERMANENT IR WINDOW OPTIONS

Every model can be fitted with a permanent IR window to narrow the wavelength range:  
 S5/8: Sapphire (0.3 – 4.5 and 100 – 1000 µm)  
 Q5/8: Quartz (0.25 – 3.0 and 50 – 1000 µm)  
 Si5/8: Silicon (1.2 – 8.0 and 50 – 1000 µm)

## ACCESSORIES



QS-I-Test  
Evaluation Test Box



Permanent IR Windows  
(Various types available)



SDC-500 Digital  
Optical Chopper



Pelican Carrying Case

## SEE ALSO

TECHNICAL DRAWINGS [126](#)  
 LIST OF ALL ACCESSORIES [190](#)

APPLICATION NOTES  
 THZ MEASUREMENT:  
 PYROELECTRIC VS GOLAY CELL [201924](#)

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# QS-THZ

## SPECIFICATIONS



Approuvé ou en processus d'approbation\*

	QS2-THZ-BL	QS5-THZ-BL	QS9-THZ-BL
<b>VOLTAGE RESPONSIVITY</b>	140 kV/W	70 kV/W	30 kV/W
<b>EFFECTIVE APERTURE</b>	2 x 2 mm	5 mm Ø	9 mm Ø
<b>PACKAGE</b>	T05	T05	T08
<b>MEASUREMENT CAPABILITY</b>			
Spectral Range <sup>a</sup>			
Frequency	0.1 - 30 THz	0.1 - 30 THz	0.1 - 30 THz
Wavelength	3000 - 10 µm	3000 - 10 µm	3000 - 10 µm
Max Power Density	50 mW/cm <sup>2</sup>	50 mW/cm <sup>2</sup>	50 mW/cm <sup>2</sup>
Noise Equivalent Power	4.0 x 10 <sup>-10</sup> W/(Hz) <sup>½</sup>	1.0 x 10 <sup>-9</sup> W/(Hz) <sup>½</sup>	3.0 x 10 <sup>-9</sup> W/(Hz) <sup>½</sup>
Detectivity <sup>b</sup>	5.10 <sup>8</sup> cm(Hz) <sup>½</sup> /W	4.10 <sup>8</sup> cm(Hz) <sup>½</sup> /W	2.7.10 <sup>8</sup> cm(Hz) <sup>½</sup> /W
Voltage Responsivity <sup>b</sup>	140 kV/W	70 kV/W	30 kV/W
<b>PHYSICAL CHARACTERISTICS</b>			
Effective Aperture	2 x 2 mm	5 mm Ø	9 mm Ø
Package	T05	T05	T08
Sensor	Pyroelectric	Pyroelectric	Pyroelectric
Absorber	BL	BL	BL
Dimensions	3.6Ø x 7.5D mm	3.6Ø x 7.5D mm	3.6Ø x 7.5D mm
Weight	45 g	45 g	45 g
<b>ORDERING INFORMATION</b>			
Product Name	QS2-THZ-BL	QS5-THZ-BL	QS9-THZ-BL
Product Number	201691	202289	201690

- a. Projected Spectral Range.  
From 10 to 440 µm, spectrometer measurement.  
From 440 to 3000 µm, relative measurement only.  
This spectral range is subject to change.
- b. 630 nm, 5 Hz

Specifications are subject to change without notice



## QS-I-TEST EVALUATION TEST BOX

	QS-I-TEST
Batteries	+9V / -9V
R <sub>i</sub> Resistors	10 <sup>5</sup> - 10 <sup>10</sup> Ω
C <sub>i</sub> Compensating	YES
Package	101.6H x 127W x 58.4D
Optical Mount	¼-20 Threaded
Front Bezel	SM1 (1.035-40)
Product Number	201693

\* For details, contact your Gentec-EO representative