Golay Detectors

Golay Detector is one of the most efficient devices detecting THz radiation. It has excellent sensitivity at room temperature and flat optical response over a wide wavelength range. Tydex detectors are completely in-house manufactured and calibrated. Every model is available from stock. Delivery includes a detector head and a power supply unit. A mount for the filters can be supplied as on option.

The various THz optical components and devices (e.g. low pass filters, band pass filters, polarizers, attenuators, windows, lenses, mirrors, waveplates, spectral splitters, and beam splitters) can be supplied as a useful complement for THz applications. Please find relevant chapters at our web site.

Tydex offers 3 models of Golay detectors:

1. GOLAY CELL GC-1P (detector with HDPE window)

2. GOLAY CELL GC-1T (detector with TPX window)

Due to polyethylene window exchange to TPX one, GC-1T detectors have a wider operation wavelength range spreading down to visible/ UV. They can be considered a good substitute to Diamond window model as TPX has higher transmittance in THz than Diamond and surely cheaper than the latter one. So GC-1T model is only slightly expensive than GC-1P detector.

3. GOLAY CELL GC-1D (detector with diamond window)

Due to polyethylene window exchange to Diamond one, GC-1D detectors have a wider operation wavelength range spreading down to visible. They are usually used when not only THz and VIS ranges but also MIR is necessary. GC-1D model is a bit more expensive than GC-1T detector.

For price quotation and delivery please fax or e-mail us.

Specfication:

MODEL		GC-1P	GC-1T	GC-1D
Application: monitoring and control of		MIR and THz radiation	UV-NIR and THz radiation	VIS-THz radiation
Material of entrance window		High-Density Polyethylene (HDPE)	Polymethylpentene (TPX)	Diamond
Operating wavelength range, μm		15 ÷ 8000	0.3 ÷ 6.5 & 13 ÷ 8000	0.4 ÷ 8000
Diameter of entrance cone, mm		11.0		
Diameter of entrance window, mm		6.0		
Recommended detected power, W, not more than For higher power THz attenuators are recommended		1×10^{-5} ATS-5-25.4, ATS-5-50.8		
Optimum modulation frequency, Hz:		15 ± 5		
Noise-equivalent power @ 15Hz, W/Hz$^{1/2}$:	typical	1.4×10^{-10}		
	min	0.8×10^{-10}		
Optical responsivity @ 15Hz, V/W:	typical	1×10^{5}		
	max	1.5×10^{5}		
Response rate, ms:	typical	30		
	min	25		
Detectivity (D*) at entrance cone aperture, cm x Hz$^{1/2}$ /W:	typical	7.0×10^{9}		
	max	11.0×10^{9}		
Ambient operating pressure range, mm Hg		$760 \div 10^{-3}$		
Operational and storage temperature range, °C		5 ÷ 40		
Humidity, %		0 ÷ 80		
Vibration		avoid vibrations at 1÷100 Hz		
Rated voltage, VAC		100/115±10%, 220/230±10%		
Line frequency, Hz		50 ÷ 60		
Overall dimensions, LxWxH, mm		126x45x87		
Weight, kg		0.8		

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