

Detectors

For Bruker FT-IR and FT-NIR Spectrometers



Bruker offers a wide range of detectors to provide maximum experimental flexibility with optimum results. These detectors feature Bruker's proprietary low noise preamplifiers for superior signal-to-noise. Bruker detectors are pre-aligned and mounted on dovetail slides which allow easy interchange without the need for optical realignment. The same mounts are used in external accessories permitting interchange of detectors between the spectrometer and accessory.

Detector	Part No	Range(cm ⁻¹)	Sensitivity	Operating Temp
Mid-Infrared				
DTGS w/ KBr window	D 301	10,000 – 370	D* > 2 x 10 ⁸ cm Hz ^{1/2} W ⁻¹	Room Temperature
DTGS w/ KBr window	D 301-TE	10,000 - 370	D* > 2 x 10 ⁸ cm Hz ^{1/2} W ⁻¹	Peltier cooled
DTGS w/ CsI window	D 302	7,000 – 180	D* > 2 x 10 ⁸ cm Hz ^{1/2} W ⁻¹	Room Temperature
MCT Narrow-Band	D 313	10,000 – 750	D* > 4 x 10 ¹⁰ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
MCT Mid-Band	D 316	10,000 – 600	D* > 2.5 x 10 ¹⁰ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
MCT Wide-Band	D 315	10,000 – 420	D* > 5 x 10 ⁹ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
MCT Photovoltaic	D 317	4,800 – 850	D* > 3 x 10 ¹⁰ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
MCT/InSb Sandwich	D 318	10,000 – 600	D* > 3 x 10 ¹⁰ / 1 x 10 ¹¹ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
Near-Infrared				
InSb	D 413	10,000 - 1,850	D* > 1.5 x 10 ¹¹ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
InSb with cold filter	D 417	10,000 - 3,100	D* > 5 x 10 ¹¹ cm Hz ^{1/2} W ⁻¹	Liquid N ₂ cooled
Ge-Diode (Raman)	D 418-S	11,750 - 5,900	NEP < 10 ⁻¹⁵ W Hz ^{-1/2}	Liquid N ₂ cooled
InAs Diode	D 423	12,500 - 3,300	NEP < 3 x 10 ⁻¹³ W Hz ^{-1/2}	Peltier cooled
InGaAs Diode	D 424	12,500 - 5,800	NEP < 2 x 10 ⁻¹⁴ W Hz ^{-1/2}	Room Temperature
Ge Diode	D 425	15,000 - 5,300	NEP < 5 x 10 ⁻¹² W Hz ^{-1/2}	Room Temperature
InGaAs Diode	D 427	12,500 - 4,000	NEP < 2 x 10 ⁻¹³ W Hz ^{-1/2}	Peltier cooled
PbS Diode	D 430	12,000 - 4,000	NEP < 5 x 10 ⁻¹⁰ W Hz ^{-1/2}	Room Temperature
PbSe Diode	D 440	12,000 - 2,500	NEP < 3 x 10 ⁻⁹ W Hz ^{-1/2}	Room Temperature
Far Infrared				
DTGS w/ PE window	D 201	700 - 10	D* > 2 x 10 ⁸ cm Hz ^{1/2} W ⁻¹	Room Temperature
Silicon Bolometer	D 211	370 - 10	NEP < 10 ⁻¹² W Hz ^{-1/2}	Liquid He cooled
Silicon Bolometer	D 211F	35 - 5	NEP < 5 x 10 ⁻¹³ W Hz ^{-1/2}	Liquid He cooled
Visible & UV				
Silicon Diode	D 510	25,000 - 9,500	NEP < 10 ⁻¹⁴ W Hz ^{-1/2}	Room Temperature
GaP Diode	D 520	33,000 - 18,000	NEP < 5 x 10 ⁻¹⁵ W Hz ^{-1/2}	Room Temperature
Photomultiplier(PMT)	D 530	35,000 - 12,000		Room Temperature
UV vacuum Diode	D 610	50,000 - 28,000	20 mA/W at 254 nm	Room Temperature
PMT solar blind	D 630	50,000 - 32,000		Room Temperature

Detector Preamplifier Bandwidth Specifications

Preamplifier	MCT PC	MCT PV	InSb	InGaAs	Si Diode	PMT	GaP Diode	Comments
Standard Bandwidth AC-coupled	70 kHz	70 kHz	70 kHz	100 kHz	100 kHz	70 kHz	100 kHz	◆ Preamp located below detector
Part Number	I 3976	I 0493	I 3362	I 0221	I 8064	I 10232	I 0431	
Extended Bandwidth AC-coupled	200 kHz	200 kHz	200 kHz	N/A	N/A	N/A	N/A	◆ Preamp Located below detector
Part Number	I 3976-ext.	I 0493-ext.	I 3362-ext.					
Extended Bandwidth AC & DC-coupled	200 kHz	200 kHz	200 kHz	N/A	200 kHz (DC-Only)	N/A	N/A	◆ AC/DC Selection with switch ◆ Preamp in external shielded box
Part Number	I 3976-ext.	I 0493-ext.	I 3362-ext.					
Fast Preamplifier AC & DC-coupled	1 MHz	20 MHz	Typ. 7 MHz	Typ. 30 MHz	20 MHz	Typ. 20 MHz	Typ. 20 MHz	◆ Both outputs via BNC (+/-1Vpp) ◆ Preamp in external shielded box: MCT, InSb ◆ Preamp on detector back: Si, InGaAs, GaP, PMT
Part Number	I 0437	(D317)	I 0581	I 0841	I 0867	I 0653	I 0598	

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