

Free-Space Balanced Amplified Detectors

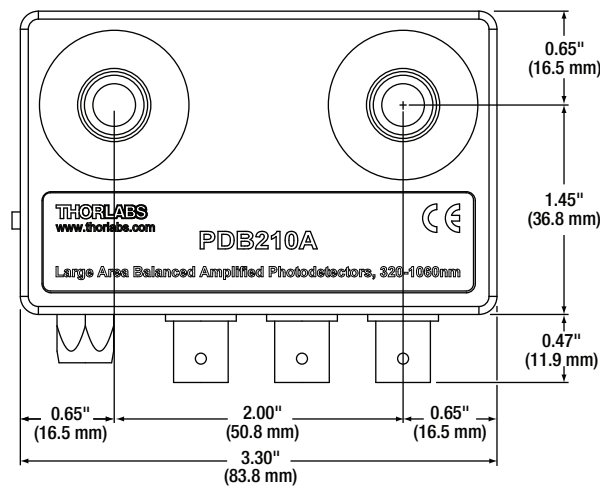
Features

- Large Active Areas for Free-Space Beams
- Two Modes
 - 320 – 1060 nm (Si)
 - 800 – 1700 nm (InGaAs)
- Excellent Common Mode Rejection
- Fast Monitor Outputs
- Power Supply Included
- External SM1 Threads and Internal SM05 Threads

The PDB210 series of balanced amplified photodetectors utilize two large-area Si or InGaAs detectors to detect signal path differences in two beams. The detectors are spaced 2" (50.8 mm) apart, making beam alignment an easy task on an optical table. To further simplify the use of these detectors, the housing has external SM1 (1.035"-40) and internal SM05 (0.535"-40) threads around each detector to attach components such as lens tubes, cage systems, mounted optics, and fiber adapters.

The design uses two matched photodiodes to achieve an excellent common mode rejection, leading to better noise reduction. These photodiodes are combined with an ultralow noise, high-speed transimpedance amplifier to provide low noise-equivalent power (NEP).

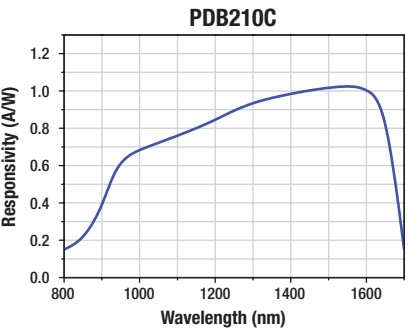
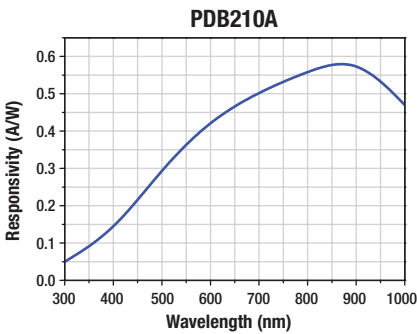
These detectors have two BNC monitor outputs to provide individual photodiode monitoring and a BNC RF output to monitor the difference between the photodiodes. Each detector includes a switchable power supply for 100 – 120 VAC or 220 – 240 VAC. One 8-32 (M4) tap is centered along the length of the body and one 8-32 (M4 x 0.7) tap is located on each side of the body, centered along the optical axis of the detector.



PDB210C

Top View

SPECIFICATIONS	PDB210A	PDB210C
Detector Type	Si/PIN	InGaAs/PIN
Wavelength Range	320 – 1060 nm	800 – 1700 nm
Responsivity (Max)	0.6 A/W @ 920 nm	1 A/W @ 1550 nm
Detector Diameter	5 mm	3 mm
Bandwidth, 3 dB	DC – 1 MHz	
Common Mode Rejection Ratio	40 dB	30 dB
Transimpedance Gain	500 x 10 ³ V/A (175 x 10 ³ V/A with 50 Ω Termination)	
Conversion Gain (RF Output)	300 x 10 ³ V/W	500 x 10 ³ V/W
Conversion Gain (Monitor Outputs)	10 V/mW @ 920 nm	10 V/mW @ 1550 nm
CW Saturation Power (RF Output)	33 μW @ 920 nm	20 μW @ 1550 nm
Minimum NEP (DC - 10 MHz)	2.2 pW/√Hz	16 pW/√Hz
Damage Threshold	20 mW	
Electrical Outputs	BNC, 100 Ω	
Dimensions	3.3" x 2.1" x 0.8" (83.9 mm x 53.4 mm x 21 mm)	
Power Supply	±12 V @ 200 mA	



ITEM #	METRIC ITEM #	\$	£	€	RMB	DESCRIPTION
PDB210A	PDB210A/M	\$ 920.00	£ 662.40	€ 800,40	¥ 7,332.40	Balanced Photodetector, Si, 320 – 1060 nm
PDB210C	PDB210C/M	\$ 1,720.00	£ 1,238.40	€ 1,496,40	¥ 13,708.40	Balanced Photodetector, InGaAs, 800 – 1700 nm