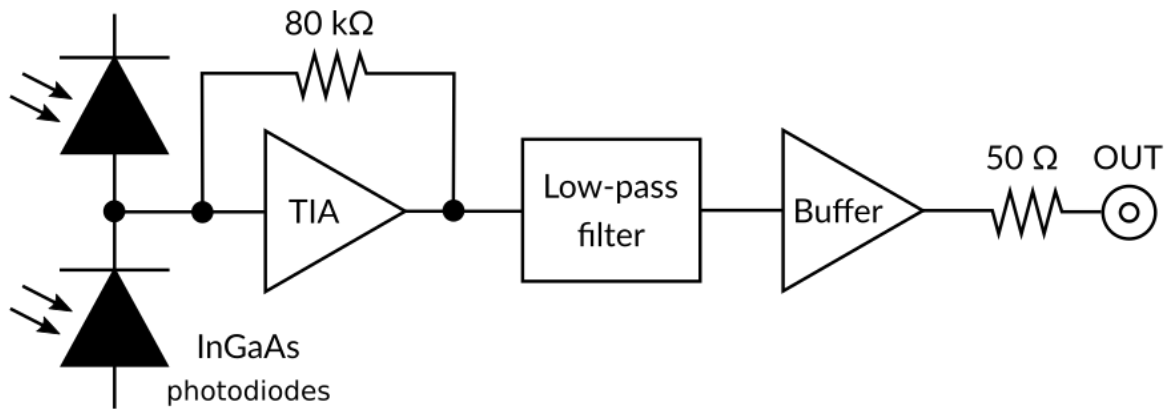


Koheron PD10B is a balanced photodetector with 80 kV/A transimpedance gain and 8 MHz bandwidth. With a noise equivalent power of only 0.8 pW/√Hz at 1 MHz, the PD10B is a perfect alternative to the [PD100B balanced photodetector](#) for those who require a higher gain.

Specifications

	PD10B-3-DC	PD10B-80-DC
Detector		
Detector type	InGaAs photodiodes	InGaAs photodiodes
Wavelength range	900 nm to 1700 nm	900 nm to 1700 nm
Optical input power	0 mW to 1.5 mW	0 mW to 1.5 mW
Photodiode connector	FC	FC
Photodiode active diameter	300 μ m	300 μ m
Photodiode peak responsivity	0.9 A/W	0.9 A/W
Transimpedance amplifier		
Small signal bandwidth at 3 dB	0 Hz to 50 MHz	0 Hz to 8 MHz
Coupling	DC	DC
Transimpedance gain	3 kV/A	80 kV/A
Noise Equivalent Power	3.5 pW/ $\sqrt$ Hz (at 10 MHz)	0.8 pW/ $\sqrt$ Hz (at 1 MHz)
Output impedance	50 Ω	50 Ω
Output voltage range high impedance	8 V _{pp}	8 V _{pp}
Output voltage range 50 Ω	3.8 V _{pp}	3.8 V _{pp}
Output	SMA female connector	SMA female connector
Power supplies		
Positive supply voltage	5.5 V to 9 V, nom. 6 V	5.5 V to 9 V, nom. 6 V
Negative supply voltage	-9 V to -5.5 V, nom. -6 V	-9 V to -5.5 V, nom. -6 V
Quiescent current per rail	35 mA	35 mA
Maximum current per rail	75 mA	90 mA
Other		
Outside dimensions	63 mm x 38 mm x 14 mm	63 mm x 38 mm x 14 mm
Weight	26 g	26 g
Operating temperature	0 °C to 50 °C	0 °C to 50 °C
Mechanical details	Compatible with M6 metric breadboards (25 mm spacing)	Compatible with M6 metric breadboards (25 mm spacing)

Functional diagram

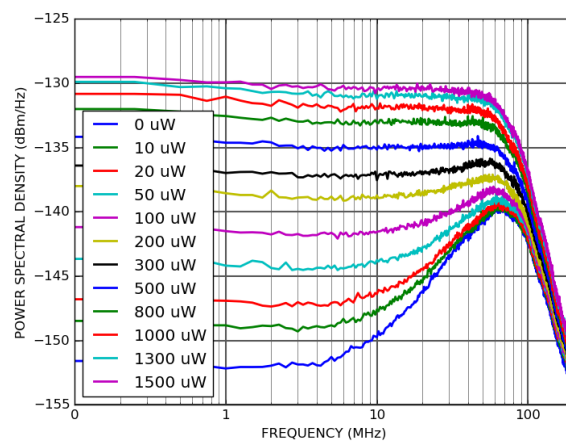


PD10B-80-DC functional diagram

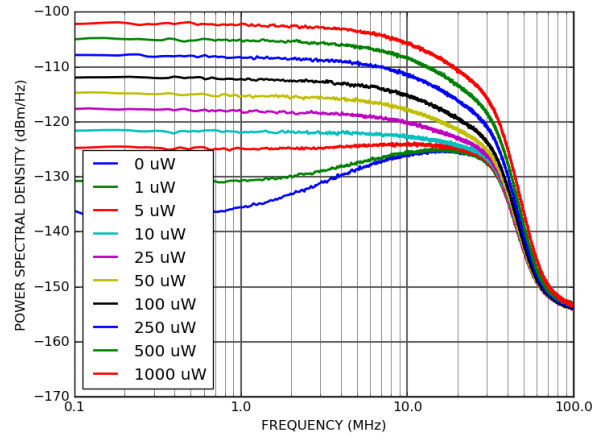
Characterization

Output power spectral density

The power spectral density of the PD10B photodetectors output was measured for different incident optical powers. The indicated power is the incident power per photodiode. Optical source is a [Koheron LD101 laser](#) at 1550 nm. Power spectrum is measured using the [Koheron ALPHA250](#) FFT analyzer.

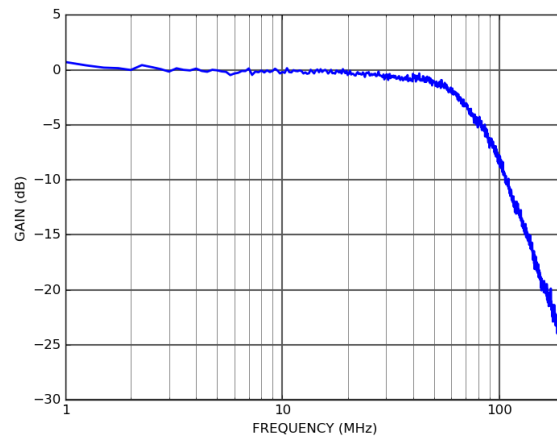


PD10B-3-DC (3 kV/A) output power spectral density

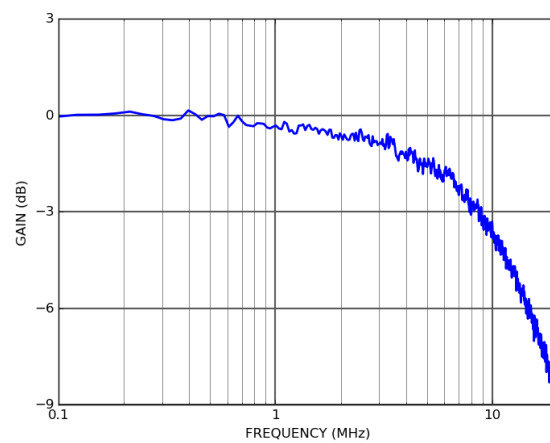


PD10B-80-DC (80 kV/A) output power spectral density

Frequency response

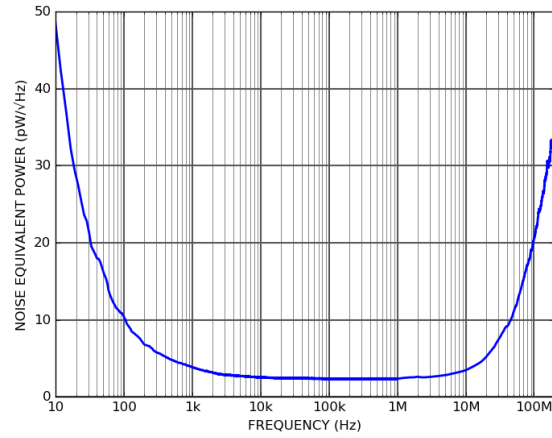


PD10B-3-DC (3 kV/A) frequency response

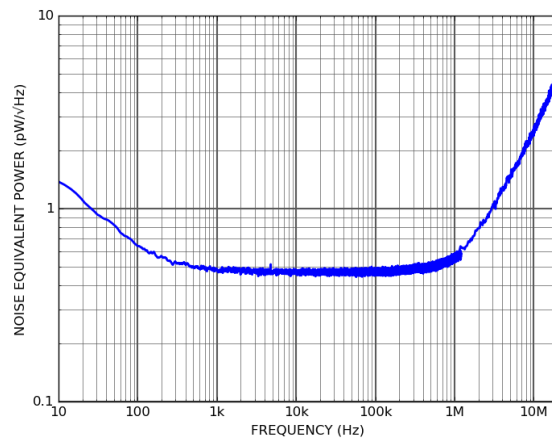


PD10B-80-DC (80 kV/A) frequency response

Noise equivalent power



PD10B-3-DC (3 kV/A) noise equivalent power



PD10B-80-DC (80 kV/A) noise equivalent power

Ordering codes

PRODUCT NUMBER	ATTRIBUTE
PD10B-3-DC	Transimpedance gain 3 kV/A
PD10B-80-DC	Transimpedance gain 80 kV/A