



Koheron PDX10R is a logarithmic photodetector for free-space optical power measurements. In addition to two analog outputs  $\log(A)$  and  $\log(B)$ , it provides the log-ratio  $\log(A/B)$  with an adjustable offset and two gain settings (x1 and x10). The PDX10R provides a fully-analog solution for direct absorption measurement in spectroscopy setups.

For fiber-coupled photodiodes, see [Koheron PD10R logarithmic photodetector](#).

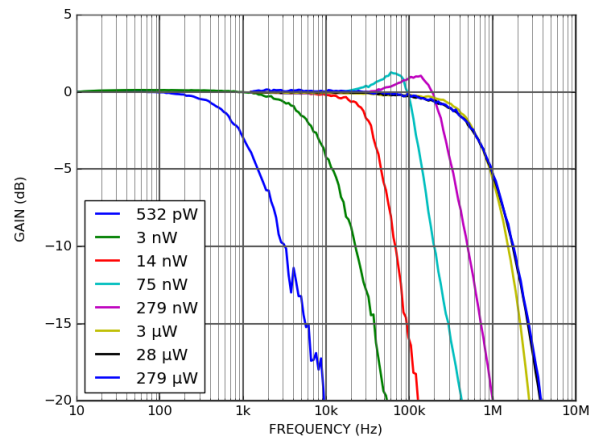
## Specifications

	PDX10R-D-INGAAS	PDX10R-D-SI
Detector		
Detector type	Dual InGaAs PIN photodiodes	Dual Si PIN photodiodes
Active diameter	1 mm	800 $\mu\text{m}$
Wavelength range	900 nm to 1700 nm	320 nm to 1000 nm
Optical input power	1 nW to 5 mW	500 pW to 4 mW
Photodiode peak responsivity	1.1 A/W at 1550 nm	0.55 A/W at 800 nm
Logarithmic amplifier		
Small signal bandwidth (at 3 dB, input current > 3 $\mu\text{A}$ )	600 kHz	600 kHz
Logarithmic slope	300 mV/decade	300 mV/decade
Intercept photocurrent	100 pA	100 pA
Output impedance	1 k $\Omega$	1 k $\Omega$
Power supplies		
Supply voltage	3.3 V to 13 V	3.3 V to 13 V
Quiescent current	11 mA	11 mA
Maximum current	40 mA	40 mA
Other		
Outside dimensions	49 mm x 40 mm x 16 mm	49 mm x 40 mm x 16 mm
Operating temperature	0 $^{\circ}\text{C}$ to 50 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$ to 50 $^{\circ}\text{C}$
Weight	22 g	22 g

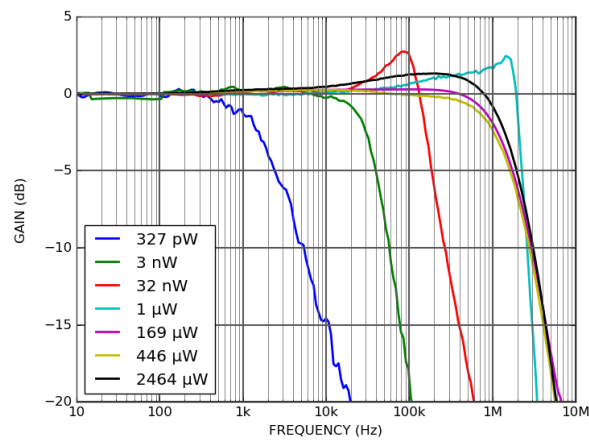
## Characterization

### Frequency response

The figure below shows the frequency response of the detector with Si photodiodes for several input optical powers.



PDX10R-D-Si frequency response



PDX10R-D-INGAAS frequency response

## Ordering codes

PRODUCT NUMBER	ATTRIBUTE
PDX10R-D-SI	Photodiodes Si
PDX10R-D-INGAAS	Photodiodes InGaAs