

1.1.1 Photodiode Power Sensors

1.1.1.1 Standard Photodiode Sensors

50pW to 3W

Features

- Very large dynamic range
- Swivel mount for hard to measure places
- Comes with filter in / filter out options
- Patented automatic background subtraction
- Fiber optic adapters available

PD300 with filter off



PD300 with filter installed



Model	PD300			PD300-1W			PD300-3W			PD300-TP		
Use	General			Powers to 1W			Powers to 3W			Thin profile for tight fit		
Detector Type	silicon			silicon			silicon			silicon		
Aperture	10x10mm			10x10mm			10x10mm			10x10mm		
Calibration Uncertainty $\pm\%$	1.1 430-1000nm ^(b)			1.1 430-1000nm ^(b)			1.1 430-1000nm ^(b)			1.1 430-1000nm ^(b)		
Filter Mode	Filter out		Filter in	Filter out		Filter in	Filter out		Filter in	Filter out		Filter in
Spectral Range nm	350-1100		430-1100	350-1100		430-1100	350-1100		430-1100	350-1100		400-1100
Power Range	500pW to 30mW		2 μ W to 300mW	500pW to 30mW		2 μ W to 1W	5nW to 100mW		2 μ W to 3W	50pW to 3mW		2 μ W to 1W
Power Scales	30mW to 30nW and dBm		300mW to 300 μ W and dBm	30mW to 30nW and dBm		1W to 300 μ W and dBm	100mW to 300nW and dBm		3W to 300 μ W and dBm	3mW to 3nW and dBm		1W to 300 μ W and dBm
Resolution nW	0.01		NA	0.01		NA	0.1		NA	0.001		1
Maximum Power vs. Wavelength	nm	mW	mW	nm	mW	mW	nm	mW	mW	nm	mW	mW
	<488	30	300	<488	30	1000	<488	100	3000	350-400	3	NA
	633	20	300	633	20	1000	633	100	3000	400-500	3	1000
	670	13	200	670	13	1000	670	100	2000	600	2.5	1000
	790	10	100	790	10	600	790	100	1200	700	2	500
	904	10	100	904	10	700	904	100	1200	800-950	1.5	300
	1064	25	250	1064	25	1000	1064	100	2200	1064	3	500

Accuracy (including errors due to temp. variations)

% error vs Wavelength nm	±10 360-400	NA	±10 360-400	NA	±10 360-400	NA	±7 350-400	NA
	±3 400-980	±5 430-980	±3 400-950	±5 430-950	±3 400-950	±5 430-950	±3 400-450	±5 400-450
	±5 980-1100	±7 980-1100	±4 950-1030	±6 950-1030	±4 950-1030	±6 950-1030	±2 450-950	±3 450-950
			±6 1030-1100	±7 1030-1100	±6 1030-1100	±7 1030-1100	±6 950-1100	±7 950-1100
Damage Threshold W/cm ²	10	50	10	10 ^(a)	10	30	10	50
Max Pulse Energy μJ	3	30	3	200	30	400	1	100
Noise Level for filter out pW	20		20		200		±2	
Response Time with Meter s	0.2		0.2		0.2		0.2	
Beam Position Dependence	±2%		±2%		±2%	±3%	±2%	
Background Subtraction	95-98% of background is cancelled automatically under normal room conditions, even when changing continuously				N.A.		N.A.	
Fiber Adapters Available (see page 35)	ST, FC, SMA, SC		ST, FC, SMA, SC		ST, FC, SMA, SC		N.A.	
Compliance	CE, UKCA, China RoHS		CE, UKCA, China RoHS		CE, UKCA, China RoHS		CE, UKCA, China RoHS	
Version					V1			
Part Numbe: Standard Sensor	7Z02410 (1.5m cable)		7Z02411A		7Z02426 (1.5m cable)		7Z02424	
Sensor with different cable length	7Z02410B (5m cable)				7Z02426B (5m cable)			

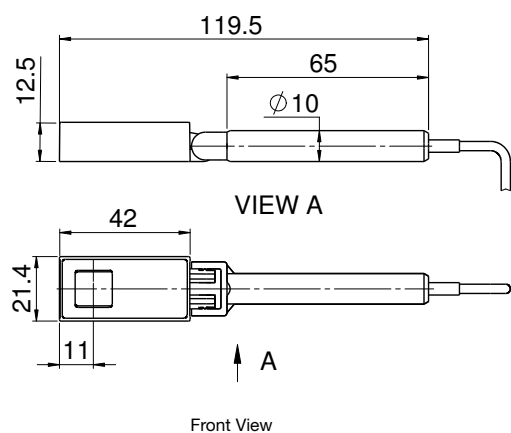
Notes:

- (a) Maximum power density above which sensor may not read correctly. There will be no permanent damage until 50W/cm²
 (b) For calibration uncertainty of wavelengths outside of this range see table on page 25

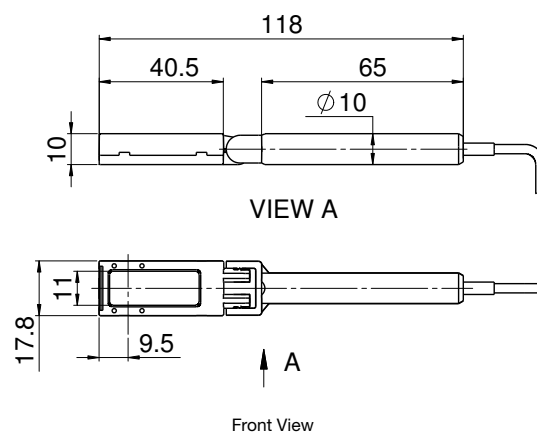
* For graphs see page 33-34

* For drawings please see page 27

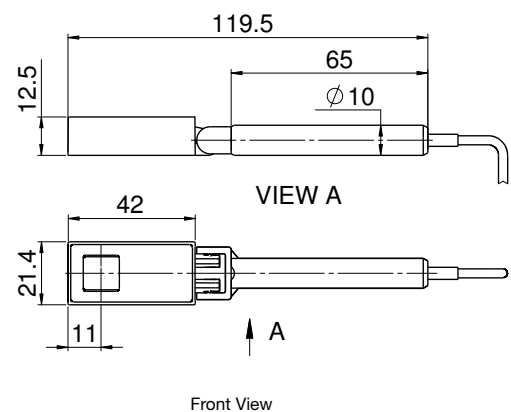
PD300 / PD300-1W filter installed



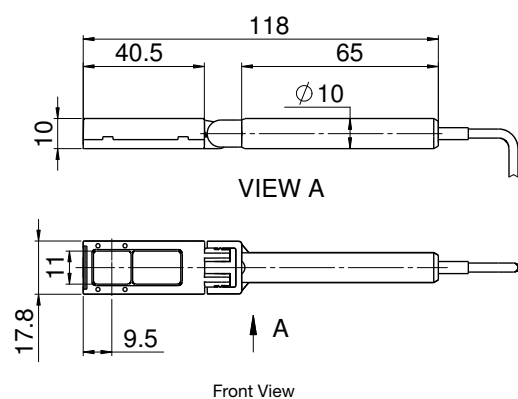
PD300 / PD300-1W filter off



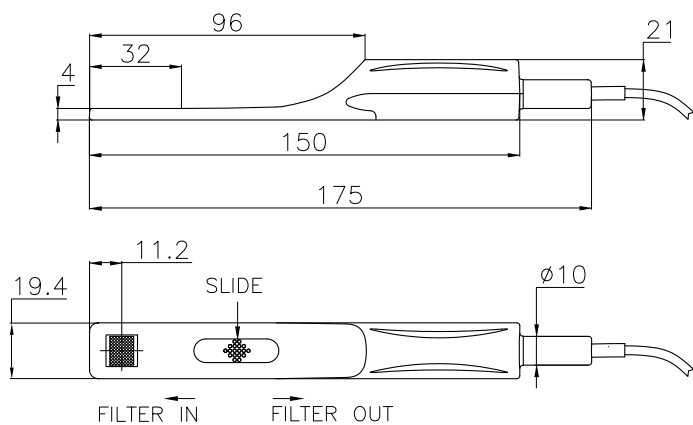
PD300-3W filter installed



PD300-3W filter off

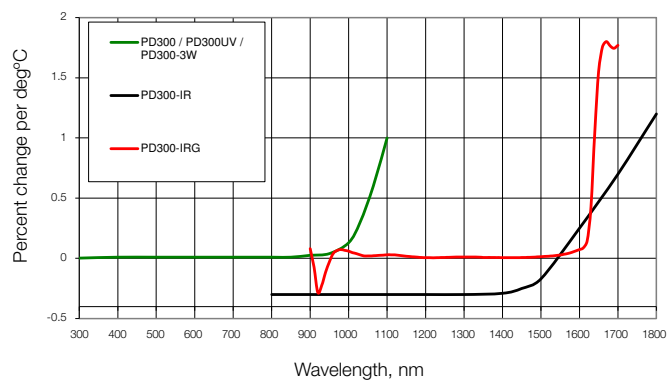


PD300-TP

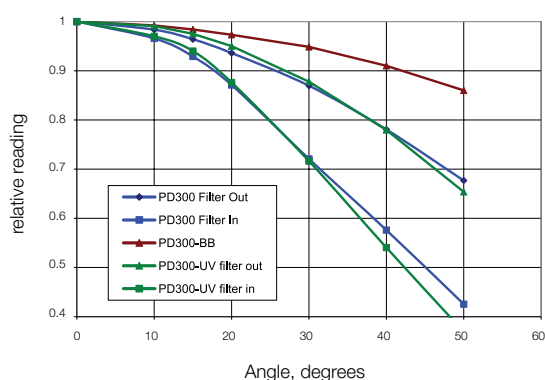


1.1.1.4 Graphs

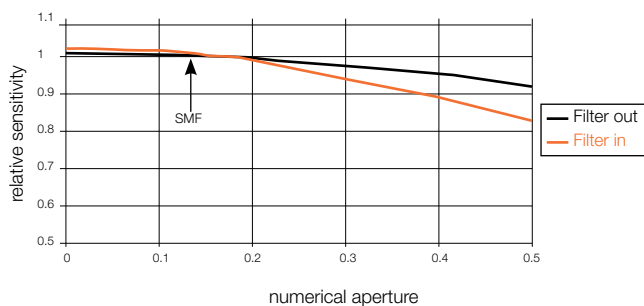
Temperature Coefficient of Sensitivity



PD300 Angle Dependence



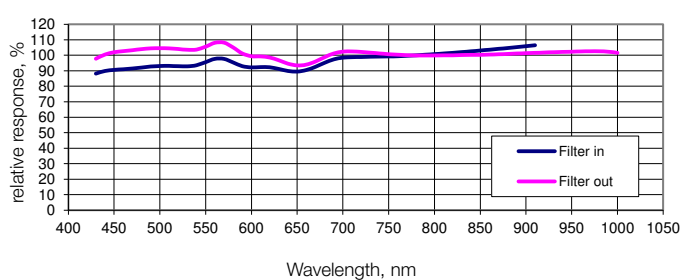
Dependence of Sensitivity on Numerical Aperture (PD300 - IRG)



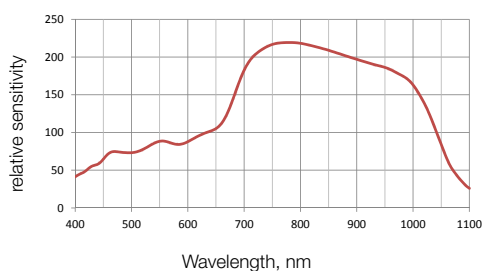
Note:

1. Graph assumes equal intensity into all angles up to maximum N.A.
2. Calibration is done with SMF, N.A. 0.13

Typical Sensitivity Curve of PD300-BB Sensors



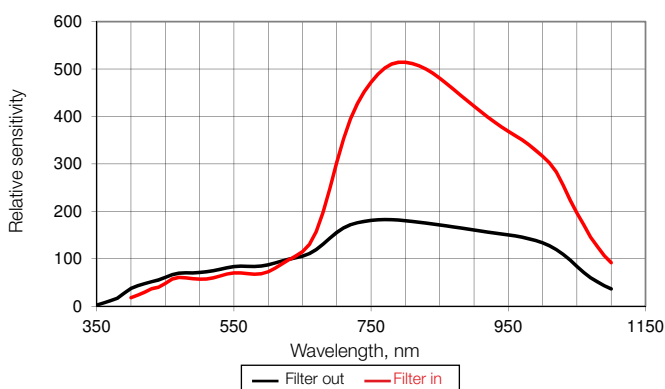
BC20 Relative Spectral Response



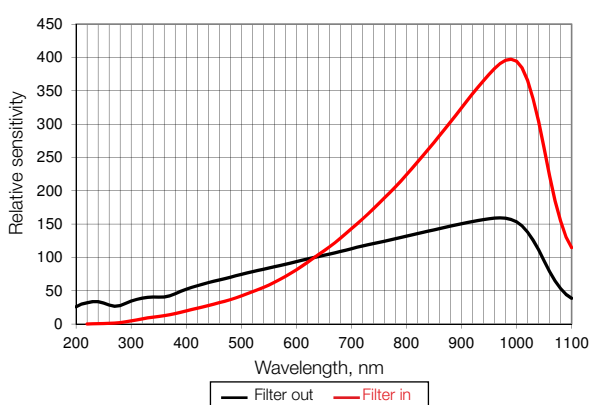
Approximate Spectral Response

Relative to 633nm or 1550nm

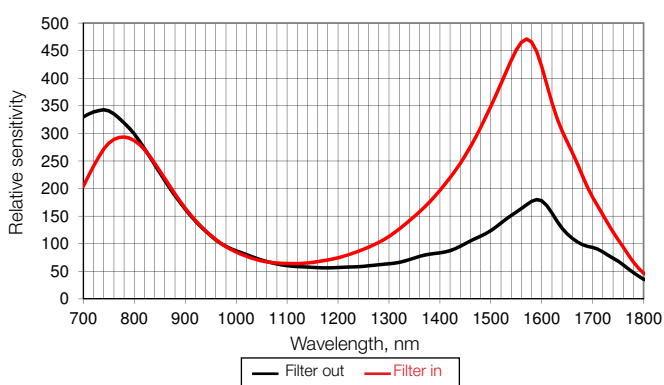
PD300 / PD300R



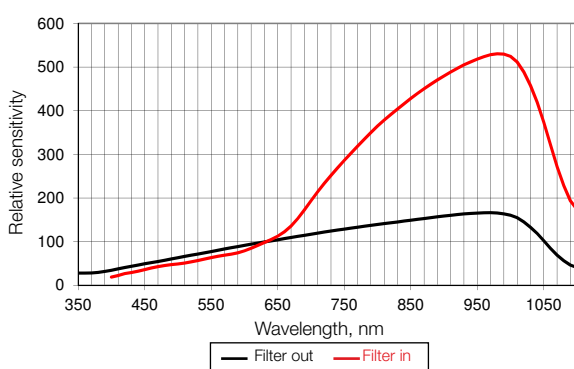
PD300-UV / PD300R-UV



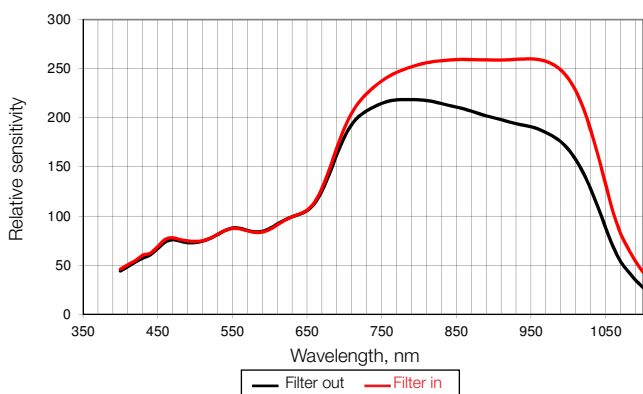
PD300-IR / PD300R-IR



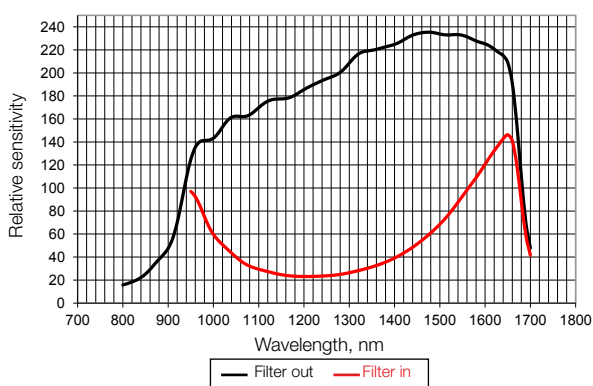
PD300-TP



PD300-3W / PD300R-3W



PD300-IRG



PD300-1W

