

1.1.1.3 Special Photodiode Sensors

Features

- PD300-BB for broadband light sources - radiometry (PD300-BB-50mW option up to 50mW)
- PD300-CIE for human visual perception Lux measurements
- BC20 for measuring scanned beams such as bar code light sources

PD300-BB / PD300-BB-50mW



PD300-CIE



BC20



Model	PD300-BB	PD300-BB-50mW	PD300-CIE ^(a)	BC20
Use	Radiometry-broad spectrum	Same as PD300-BB with removable attenuator for use to 50mW	Eye adjusted measurement in Lux	Scanned beams e.g. bar code with continuous wavelength curve
Detector Type	Silicon with special filter	Silicon with special filter	Silicon with special filter	Silicon with peak and hold circuit
Aperture	10x10mm	10x10mm	Active area 2.4 x 2.8mm	10x10mm
Spectral Range nm	430 - 1000 (see graph)	430 - 1000 (see graph)	400 - 700 (see graph)	400 - 1100 (see graph) ^(c)
Calibration Uncertainty ±%	1.1 430-1000nm ^(d)	1.1 430-1000nm ^(d)	NA	NA
Filter Mode		Filter out Filter in		
Power Range	50pW to 4mW	50pW to 4mW 1nW to 50mW	20mLux to 200kLux	0.1mW to 20mW
Power Scales	4mW to 8nW and dBm	4mW to 8nW and dBm 50mW to 80nW and dBm	200kLux to 200mLux	20mW to 2mW
Resolution	1pW	1pW 10pW	1mLux	1µW
Accuracy	Maximum deviation from flat spectrum (see graph) ±10%	Maximum deviation from flat spectrum (see graph) ±10%	(see graph) 430-910nm, ±12% flatness	±3% for >10% of full scale. Deviation from calibration -3% at 30,000 inch/s scan rate on sensor
Damage Threshold W/cm ²	10	10 100	10	50
Max Pulse Energy µJ	1	1 10	1	NA
Noise Level pW	2	2 30	±1mLux	5µW
Response Time with Meter s	0.2	0.2 0.2	0.2	Two modes of operation: Hold: holds highest reading for 5s then updates. No Hold: updates reading 3 times per second
Beam Position Dependence	±2% for broadband light sources	±2% for broadband light sources ±3% for broadband light sources	NA – source overfills detector	±2%
Background Subtraction	NA	NA NA	NA	Background is automatically subtracted from both scanned and static beams
Fiber Adapters Available (see page 33)	NA	ST, FC, SMA, SC	NA	NA
Compatible Meter / Interface	All Meters & Interfaces	All Meters & Interfaces	Centauri, StarBright, Vega, Nova II, Juno, Juno+, Juno-RS, LaserStar and Nova	StarBright, Vega, Nova II, Juno, Juno+, LaserStar and Nova
Compliance Version	CE, UKCA, China RoHS	CE, UKCA, China RoHS	CE, UKCA, China RoHS	CE, UKCA, China RoHS
Part Number	7Z02405	7Z02440	7Z02406	7Z02481 ^(b)

Notes: (a) The PD300-CIE sensor is not under ISO/IEC 17025:2017 accreditation

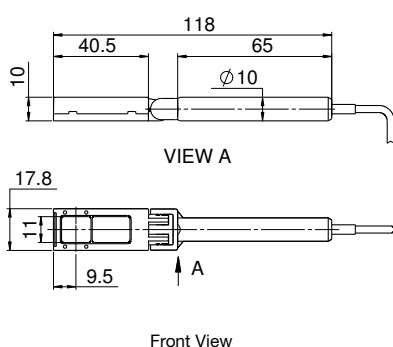
(b) Swivel stand for BC20 sensor P/N 1Z09004

(c) The user can select up to 5 wavelengths from the spectral range. When used with the Nova or LaserStar meters, the sensor will only have the discrete wavelengths 405nm, 633nm, 650nm, 675nm and 780nm

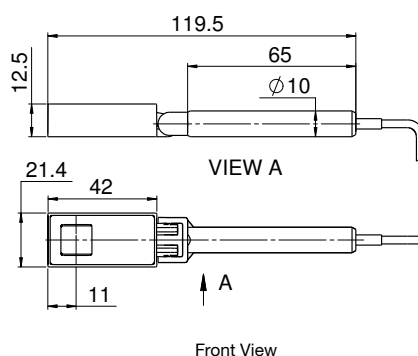
(d) For calibration uncertainty of wavelengths outside of this range see table on page 24

* For graphs see page 31-32

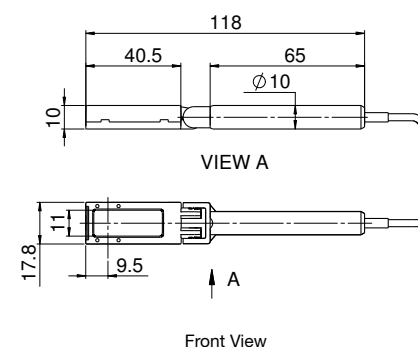
PD300-CIE / PD300-BB /
PD300-BB-50mW with filter off



PD300-BB-50mW with filter installed

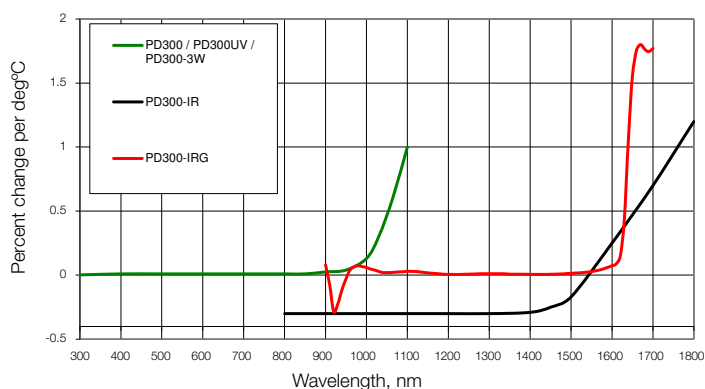


BC20

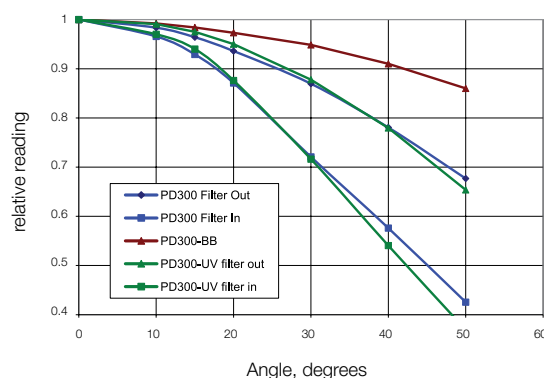


1.1.1.4 Graphs

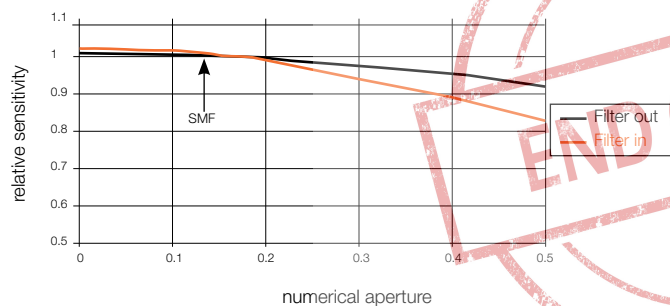
Temperature Coefficient of Sensitivity



PD300 Angle Dependence



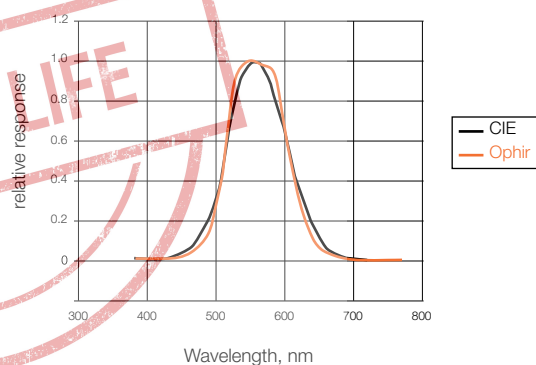
Dependence of Sensitivity on Numerical Aperture (PD300 - IRG)



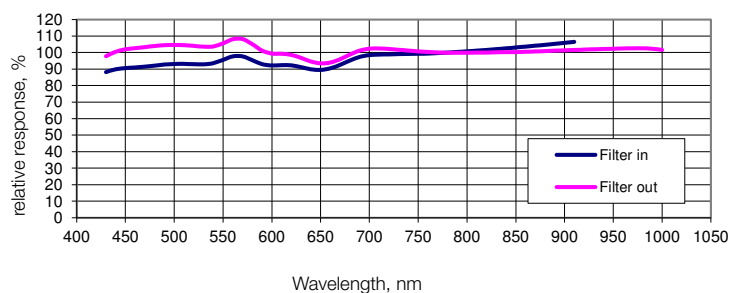
Note:

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

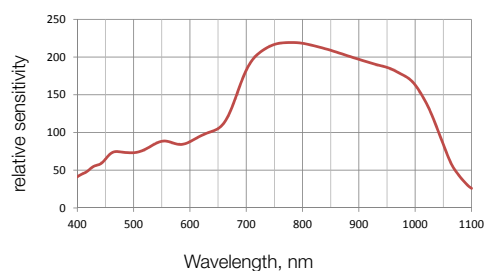
PD300-CIE Spectral Response vs. CIE Curve



Typical Sensitivity Curve of PD300-BB Sensors



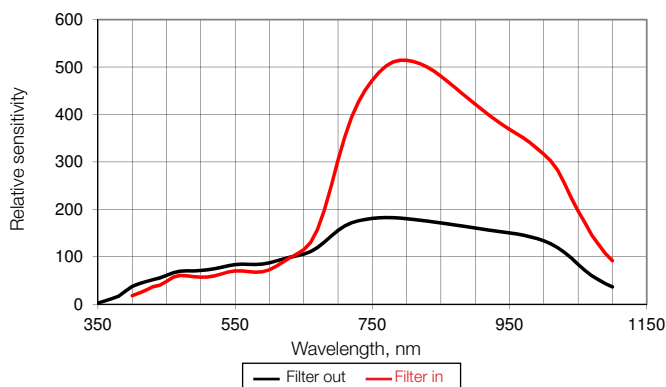
BC20 Relative Spectral Response



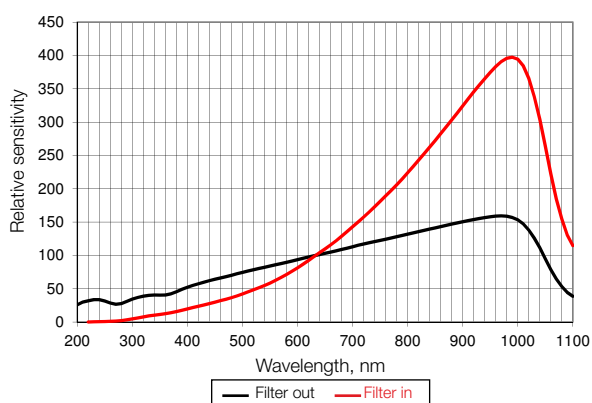
Approximate Spectral Response

Relative to 633nm or 1550nm

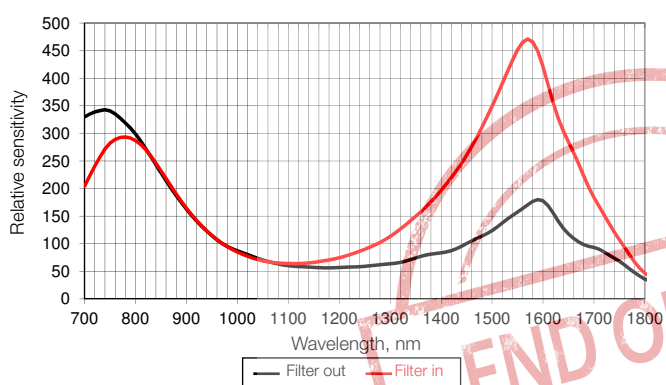
PD300 / PD300R



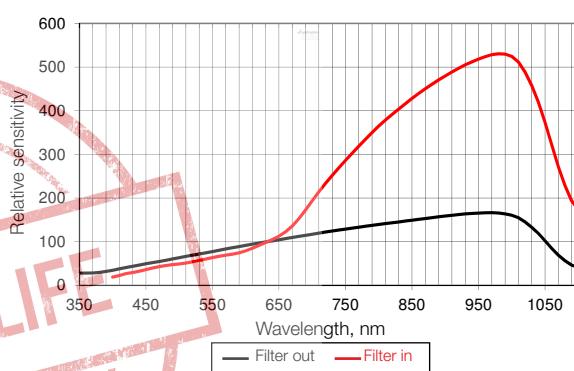
PD300-UV / PD300R-UV



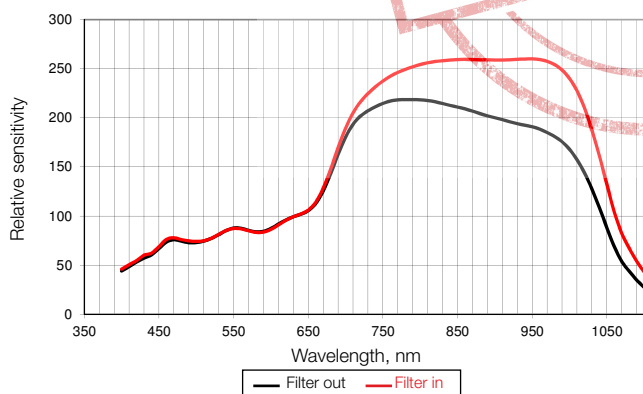
PD300-IR / PD300R-IR



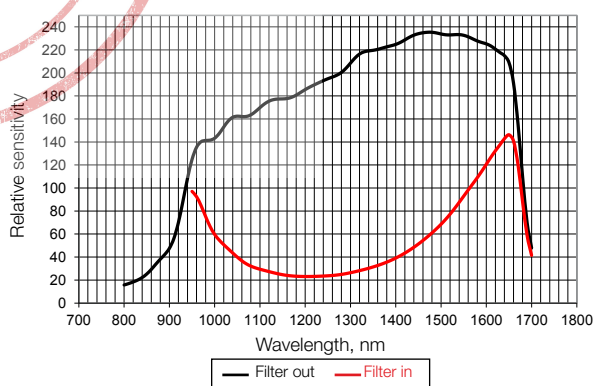
PD300-TP



PD300-3W / PD300R-3W



PD300-IRG



PD300-1W

