

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 | 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) ^(b) |
| Calibration Uncertainty nm | ±1.1% 430-1000 ^(c) | ±1.1% 430-1000 ^(c) | NA | NA |
| Filter Mode | | Filter out | | |
| Power Range | 50pW to 4mW | 50pW to 4mW | 20mLux to 200kLux | 0.1mW to 20mW |
| Power Scales | 4mW to 8nW and dBm | 4mW to 8nW and dBm | 200kLux to 200mLux | 20mW to 2mW |
| Resolution | 1pW | 1pW | 1mLux | 1μW |
| Accuracy | Maximum deviation from flat spectrum (see graph) ±10% | Maximum deviation from flat spectrum (see graph) ±10% | (see graph) | ±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 | 10 | 50 |
| Max Pulse Energy μJ | 1 | 1 | 1 | NA |
| Noise Level pW | 2 | 2 | ±1mLux | 5μW |
| Response Time with Meter s | 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 |
| Background Subtraction | NA | NA | NA | Background is automatically subtracted from both scanned and static beams |
| Fiber Adapters Available (see page 32) | 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 ^(a) |

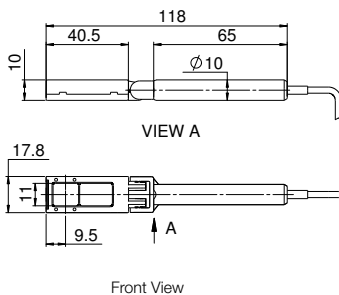
Notes: (a) Swivel stand for BC20 sensor P/N 1Z09004

(b) 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

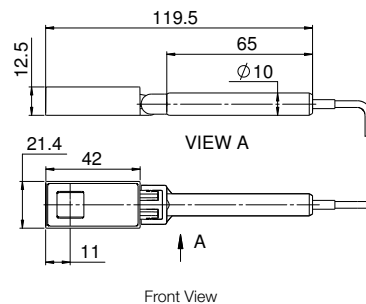
(c) For calibration uncertainty of wavelengths outside of this range see table on page 24

* For graphs see page 30-31

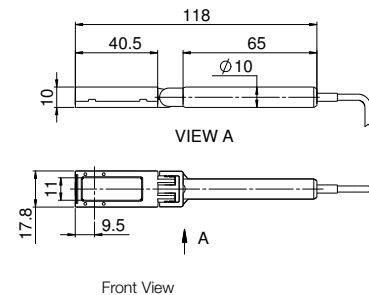
PD300-CIE / PD300-BB / PD300-BB-50mW with filter off



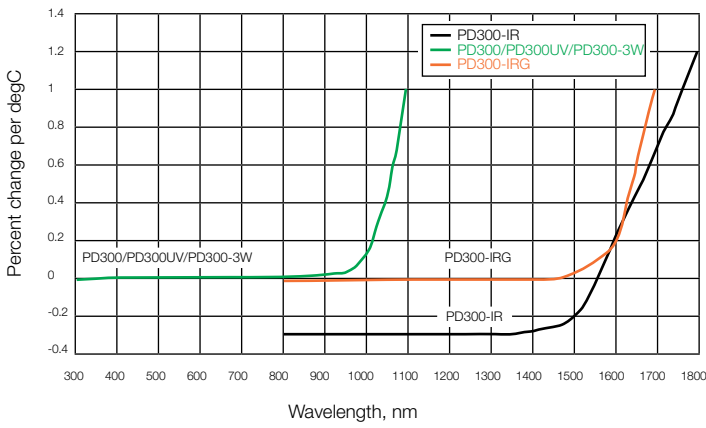
PD300-BB-50mW with filter installed



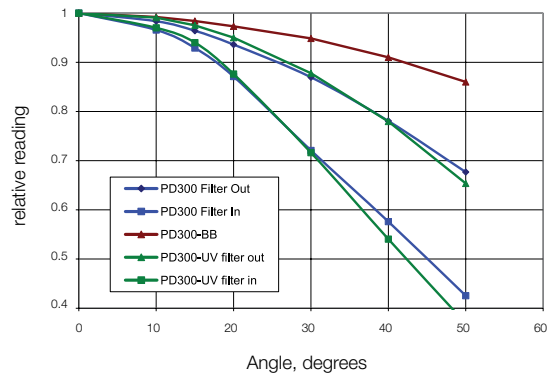
BC20



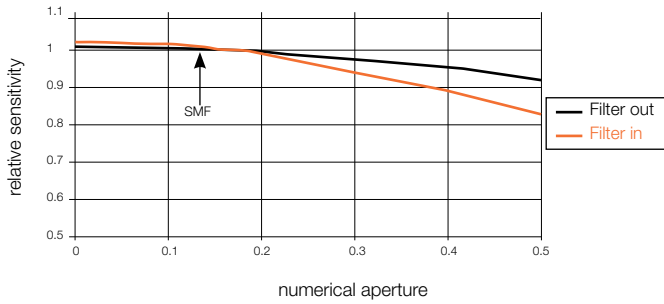
Temperature Coefficient of Sensitivity



PD300 Angle Dependence

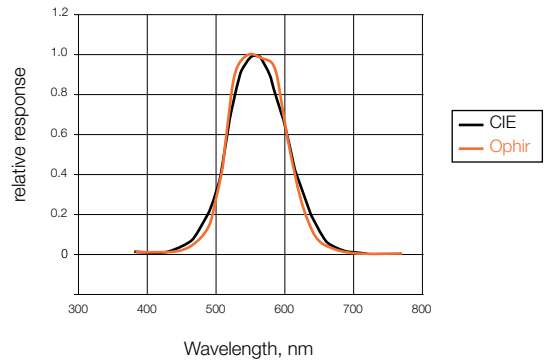


Dependence of Sensitivity on Numerical Aperture (PD300 - IRG)

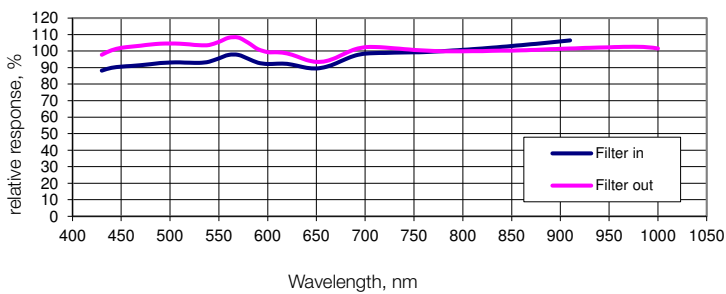


Note:
 1. Graph assumes equal intensity into all angles up to maximum N.A.
 2. Calibration is done with SMF, N.A. 0.13

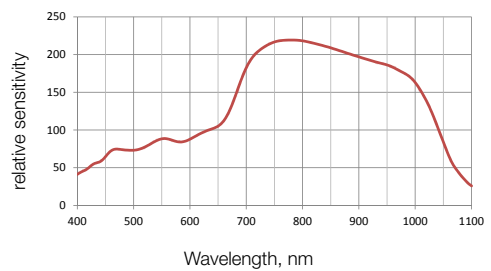
PD300-CIE Spectral Response vs. CIE Curve



Typical Sensitivity Curve of PD300-BB Sensors



BC20 Relative Spectral Response



Approximate Spectral Response

Relative to 633nm or 1550nm

