



# PH

10 pW to 750 mW, Si and Ge Sensors



## KEY FEATURES

1. **LARGE APERTURES**  
10 mm Ø for the Silicon sensors
2. **3 VERSIONS**
  - Silicon: 350 - 1080 nm, up to 750 mW
  - Silicon-UV: 210 - 1080 nm, up to 38 mW
  - Germanium: 800 - 1650 nm, up to 500 mW
3. **CHOICE OF ATTENUATORS**
  - OD0.3: 50 % Transmission (for PH100-Si<sup>UV</sup> only)
  - OD1: 10 % Transmission
  - OD2: 1 % Transmission
4. **HIGH ACCURACY**  
The PH100-Si-HA presents the lowest calibration uncertainty to date
5. **PRECISE CALIBRATION**  
Wavelength selection in 1 nm steps
6. **SMART INTERFACE**  
Containing all the calibration data
7. **integra OPTIONS**
  - Standard: USB Output (-INT)
  - In Option: RS-232 Output (-IDR)

## AVAILABLE MODELS



PH100-Si-HA  
(10 mm - Silicon)



PH100-Si<sup>UV</sup>  
(10 mm - UV-Silicon)



PH20-Ge  
(5 mm - Germanium)

## OD ATTENUATORS

OD Attenuators sold in option. When bought together, the detector is calibrated with and without the attenuator.



PH Series Detector  
With OD Attenuator

## ACCESSORIES



Stand with Delrin Post  
(Model Number: 200428)



Extension Cables  
(4, 15, 20 or 25 m)



Fiber Adaptors & Connectors  
(FC, SC, ST and SMA)



OD Attenuators



Pelican Carrying Case

## SEE ALSO

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## APPLICATION NOTE

CALIBRATION UNCERTAINTY OF PHOTODETECTORS

[202174](#)

## SPECIFICATIONS

|  | PH100-Si-HA                |  | PH100-SiUV                 |                 | PH20-Ge                                |      |             |  |      |
|--|----------------------------|--|----------------------------|-----------------|--|------|-------------|--|------|
| <b>MAX AVERAGE POWER*<br/>(ALONE / WITH MAX ATTENUATION)</b> | 36 mW / 750 mW             |  | 4 mW / 38 mW               |                 | 30 mW / 500 mW                         |      |             |  |      |
| <b>EFFECTIVE APERTURE</b>                                    | 10 mm Ø                    |  | 10 mm Ø                    |                 | 5 mm Ø                                 |      |             |  |      |
| <b>MEASUREMENT CAPABILITY</b>                                |                            |  |                            |                 |  |      |             |  |      |
| Spectral Range   | 350 – 1080 nm              |  | 210 – 1080 nm              |                 | 800 – 1650 nm                          |      |             |  |      |
| With OD0.3   | ---                        |  | 210 – 1080 nm              |                 | ---                                    |      |             |  |      |
| With OD1   | 400 – 1080 nm              |  | 400 – 1080 nm              |                 | 900 – 1650 nm                          |      |             |  |      |
| With OD2   | 630 – 1080 nm              |  | ---                        |                 | 950 – 1650 nm                          |      |             |  |      |
| Maximum Measurable Power*                                    | 36 mW at 1064 nm           |  | 4 mW at 532 nm             |                 | 30 mW at 1064 nm                       |      |             |  |      |
| With OD0.3   | ---                        |  | 16 mW at 300 nm            |                 | ---                                    |      |             |  |      |
| With OD1   | 300 mW at 1064 nm          |  | 38 mW at 532 nm            |                 | 300 mW at 1064 nm                      |      |             |  |      |
| With OD2   | 750 mW at 1064 nm          |  | ---                        |                 | 500 mW at 1064 nm                      |      |             |  |      |
| Noise Equivalent Power <sup>a</sup>                          | 10 pW at 980 nm            |  | 10 pW at 850 nm            |                 | 60 pW at 1550 nm                       |      |             |  |      |
| Rise Time (nominal)  | 0.2 sec (0.45 sec INTEGRA) |  | 0.2 sec (0.45 sec INTEGRA) |                 | 0.2 sec (0.45 sec INTEGRA)             |      |             |  |      |
| Peak Sensitivity   | 0.5 A/W at 980 nm          |  | 0.45 A/W at 850 nm         |                 | 0.98 A/W at 1550 nm                    |      |             |  |      |
| Calibration Uncertainty                                      | ±5.0 % (350 - 399 nm)      |  | ±18 % (210 - 229 nm)       |                 | ±5.0 % (800 - 1049 nm)                 |      |             |  |      |
|  | ±2.0 % (400 - 449 nm)      |  | ±8.0 % (230 - 254 nm)      |                 | ±3.5 % (1050 - 1559 nm)                |      |             |  |      |
|  | ±1.5 % (450 - 809 nm)      |  | ±6.5 % (255 - 399 nm)      |                 | ±7.0 % (1560 - 1629 nm)                |      |             |  |      |
|  | ±2.0 % (810 - 899 nm)      |  | ±2.5 % (400 - 899 nm)      |                 | ±10 % (1630 - 1650 nm)                 |      |             |  |      |
|  | ±4.0 % (900 - 1009 nm)     |  | ±4.0 % (900 - 1009 nm)     |                 | ---                                    |      |             |  |      |
|  | ±7.5 % (1010 - 1080 nm)    |  | ±7.5 % (1010 - 1080 nm)    |                 | ---                                    |      |             |  |      |
| Calibration Uncertainty (with OD filters)                    | ±5.0 % (400 - 419 nm)      |  | Same as without attenuator |                 | ±5.0 % (900 - 1559 nm)                 |      |             |  |      |
|  | ±4.0 % (420 - 899 nm)      |  | ---                        |                 | ±7.0 % (1560 - 1629 nm)                |      |             |  |      |
|  | ±5.0 % (900 - 1009 nm)     |  | ---                        |                 | ±10 % (1630 - 1650 nm)                 |      |             |  |      |
|  | ±7.5 % (1010 - 1080 nm)    |  | ---                        |                 | ---                                    |      |             |  |      |
| <b>DAMAGE THRESHOLDS</b>                                     |                            |  |                            |                 |  |      |             |  |      |
| Maximum Average Power Density                                | 100 W/cm <sup>2</sup>      |  | 100 W/cm <sup>2</sup>      |                 | 100 W/cm <sup>2</sup>                  |      |             |  |      |
| <b>PHYSICAL CHARACTERISTICS</b>                              |                            |  |                            |                 |  |      |             |  |      |
| Effective Aperture   | 10 mm Ø                    |  | 10 mm Ø                    |                 | 5 mm Ø                                 |      |             |  |      |
| Distance to Sensor Face                                      | 13.7 mm                    |  | 13.7 mm                    |                 | 10.5 mm                                |      |             |  |      |
| Sensor   | Silicon                    |  | UV-Silicon                 |                 | Germanium                              |      |             |  |      |
| Dimensions   | 38.1Ø x 27.4D mm           |  | 38.1Ø x 27.4D mm           |                 | 38.1Ø x 27.4D mm                       |      |             |  |      |
| Weight (head only)   | 130 g                      |  | 130 g                      |                 | 130 g                                  |      |             |  |      |
| <b>ORDERING INFORMATION</b>                                  |                            |  |                            |                 |  |      |             |  |      |
|  | Standard                   | Add Ext. for INTEGRA<br>(USB) (RS-232) |                            | Standard        | Add Ext. for INTEGRA<br>(USB) (RS-232) |      | Standard    | Add Ext. for INTEGRA<br>(USB) (RS-232) |      |
| Product Name   | PH100-Si-HA-D0             | -INT                                   | -IDR                       | PH100-SiUV-D0   | -INT                                   | -IDR | PH20-Ge-D0  | -INT                                   | -IDR |
| Product Number (without stand)                               | 202681                     | 202782                                 |                            | 200879          | 202788                                 |      | 200866      | 202794                                 |      |
| Product Name (with OD0.3)                                    |                            |  |                            | PH100-SiUV-OD.3 | -INT                                   | -IDR |             |  |      |
| Product Number (without stand)                               |                            |  |                            | 202679          | 202792                                 |      |             |  |      |
| Product Name (with OD1)                                      | PH100-Si-HA-OD1            | -INT                                   | -IDR                       | PH100-SiUV-OD1  | -INT                                   | -IDR | PH20-Ge-OD1 | -INT                                   | -IDR |
| Product Number (without stand)                               | 202683                     | 202784                                 |                            | 200881          | 202790                                 |      | 200874      | 202796                                 |      |
| Product Name (with OD2)                                      | PH100-Si-HA-OD2            | -INT                                   | -IDR                       |                 |  |      | PH20-Ge-OD2 | -INT                                   | -IDR |
| Product Number (without stand)                               | 202685                     | 202786                                 |                            |                 |  |      | 200875      | 202798                                 |      |

Specifications are subject to change without notice // Compatible stand: P/N 200428

\* See curves (p. 126-128) for maximum power at other wavelengths

a. Nominal value. Depends on environmental electromagnetic interference and wavelength.