



# PE-B

8 fJ - 150 nJ, Our Lowest Energy Measurements



## KEY FEATURES

1. **VERY LOW NOISE LEVEL**  
Take measurements with a noise level as low as 8 fJ with the M-LINK, MAESTRO and S-LINK monitors
2. **3 SENSORS AVAILABLE**
  - PE-B-Si family: 3 and 10 mm Ø Silicon sensors for 0.21 to 1.08 µm
  - PE5B-Ge: 5 mm Ø, Germanium sensor for 0.8 to 1.65 µm
  - PE3B-In: 3 mm Ø, InGaAs sensor for 0.9 to 1.7 µm
3. **SMART INTERFACE**  
Containing all the calibration data
4. **integra OPTIONS**
  - Standard: USB Output (-INT)
  - In Option: RS-232 Output (-IDR) and External Trigger (-INE)

## AVAILABLE MODELS



PE3B-Si  
(3 mm - UV-Silicon)



PE10B-Si  
(10 mm - UV-Silicon)



PE5B-Ge  
(5 mm - Germanium)



PE3B-In  
(3 mm - InGaAs)

## ACCESSORIES



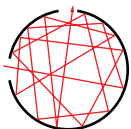
Stand with Delrin Post  
(Model Number: 200428)



Fiber Adaptors & Connectors  
(FC, ST or SMA)



APM Analog Power Supply  
(Model Number: 201848)



Integrating Sphere



Pelican Carrying Case

*This product cannot be used with DB-15 extension cables*

## SEE ALSO

TECHNICAL DRAWINGS	<b>122</b>
SENSITIVITY CURVES	<b>124</b>
COMPATIBLE MONITORS	
MAESTRO	<b>20</b>
S-LINK	<b>28</b>
M-LINK	<b>32</b>
LIST OF ALL ACCESSORIES	<b>196</b>

## APPLICATION NOTE

CALIBRATION UNCERTAINTY OF PHOTO DETECTORS

[202174](#)

MONITORS  
ENERGY DETECTORS  
POWER DETECTORS  
HIGH POWER SOLUTIONS  
PHOTO DETECTORS  
THZ DETECTORS  
OEM DETECTORS  
SPECIAL PRODUCTS  
BEAM DIAGNOSTICS

## PE-B



\*Also traceable to NRC-CNRC

## SPECIFICATIONS

	PE3B-Si	PE10B-Si	PE5B-Ge	PE3B-In
<b>MAX MEASURABLE ENERGY*</b>	24 $\mu$ J	81 nJ	2.4 nJ	245 $\mu$ J
<b>EFFECTIVE APERTURE</b>	3 mm $\emptyset$	10 mm $\emptyset$	5 mm $\emptyset$	3 mm $\emptyset$
<b>MEASUREMENT CAPABILITY</b>				
Spectral Range	210 - 1080 nm	210 - 1080 nm	800 - 1650 nm	900 - 1700 nm
Maximum Measurable Energy*				
With M-LINK	22 $\mu$ J @ 634 nm	75 nJ @ 634 nm	2.2 nJ @ 1310 nm	223 $\mu$ J @ 1310 nm
With S-LINK	24 $\mu$ J @ 634 nm	81 nJ @ 634 nm	2.4 nJ @ 1310 nm	245 $\mu$ J @ 1310 nm
With MAESTRO	20 $\mu$ J @ 634 nm	69 nJ @ 634 nm	2.0 nJ @ 1310 nm	200 $\mu$ J @ 1310 nm
With INTEGRA	24 $\mu$ J @ 634 nm	81 nJ @ 634 nm	2.4 $\mu$ J @ 634 nm	245 $\mu$ J @ 634 nm
Noise Equivalent Energy <sup>a</sup>	8 fJ @ 634 nm	1.5 $\mu$ J @ 634 nm	1 $\mu$ J @ 1310 nm	30 fJ @ 1310 nm
Rise Time (0-100%)	15 $\mu$ s	30 $\mu$ s	25 $\mu$ s	12 $\mu$ s
Max Repetition Rate	1000 Hz	1000 Hz	1000 Hz	1000 Hz
Max Pulse Width	10 $\mu$ s	10 $\mu$ s	10 $\mu$ s	10 $\mu$ s
Sensitivity	100 GV/J @ 634 nm	20 MV/J @ 634 nm	1 GV/J @ 1310 nm	10 GV/J @ 1310 nm
Calibration Uncertainty <sup>b</sup>	$\pm$ 4% <sup>c</sup>	$\pm$ 8 % (210 - 219 nm) $\pm$ 6.5 % (220 - 399 nm) $\pm$ 2.5 % (400 - 899 nm) $\pm$ 3.5 % (900 - 999 nm) $\pm$ 5 % (1000 - 1049 nm) $\pm$ 7 % (1050 - 1080 nm)	$\pm$ 3.5%	$\pm$ 4% <sup>d</sup>
<b>DAMAGE THRESHOLDS</b>				
Max Energy Density	N/A	5 $\mu$ J/cm <sup>2</sup>	5 $\mu$ J/cm <sup>2</sup>	N/A
Max Average Power Density	N/A	65 mW/cm <sup>2</sup> @ 532 nm	320 mW/cm <sup>2</sup> @ 1064 nm	N/A
<b>PHYSICAL CHARACTERISTICS</b>				
Effective Aperture	3 mm $\emptyset$	10 mm $\emptyset$	5 mm $\emptyset$	3 mm $\emptyset$
Distance to Sensor Face	13.7 mm	13.7 mm	10.5 mm	N/A
Sensor	UV-Silicon	UV-Silicon	Germanium	InGaAs
Dimensions	38.1 $\emptyset$ x 27.4D mm	38.1 $\emptyset$ x 27.4D mm	38.1 $\emptyset$ x 27.4D mm	38.1 $\emptyset$ x 27.4D mm
Weight	91 g	91 g	91 g	91 g
<b>ORDERING INFORMATION</b>				
Product Name	PE3B-Si	PE10B-Si	PE5B-Ge	PE3B-In
Product Number (Including stand)		202822	202825	
Add Extension for INTEGRA (USB)	-INT	-INT	-INT	-INT
Add Extension for INTEGRA (RS-232)	-IDR	-IDR	-IDR	-IDR
Add Extension for INTEGRA (Ext Trig)	-INE	-INE	-INE	-INE

Specifications are subject to change without notice

\* See curves (p. 124-125) for maximum power at other wavelengths

- a. Nominal value. Depends on environmental electromagnetic interference and wavelength.  
 b. With Gentec-EO monitor.  
 c. This detector is NIST Traceable at the calibration wavelength of 634 nm. Typical values are used at other wavelengths.  
 d. This detector is NIST Traceable at the calibration wavelength of 1310 nm. Typical values are used at other wavelengths.