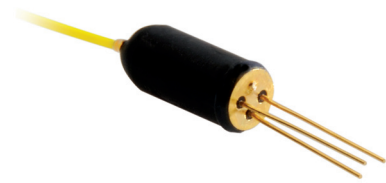Optical Coherence Tomography Products
Miniature Polarization Diversity Detector

Simultaneously detecting the powers of two orthogonal polarization components is important for many sensor and measurement systems, to either obtain polarization related information or minimize polarization sensitivity. By integrating polarization-splitting components with photodetectors, General Photonics created this compact device with a proprietary design, which can be easily mounted onto a circuit board for customer applications. With a size of only 6 mm (dia.) x 15 mm (length), the PDD-003 features high detection sensitivity, high extinction ratio, high reliability, small size, and low cost. At General Photonics, we provide innovative solutions to solve customers' polarization problems.

Specifications:

Operation Wavelengths	1310 ± 50nm or 1550 ± 50 nm.
Bandwidth	DC to 300 MHz
Photodiode Responsivity	> 0.8 mA / mW
Operating Input Power	0 to 1 mW
Capacitance at V_R = 5V	< 5 pF
Dark Current at V_R = 5V	< 10 nA
Overall Responsivity[1,2]	> 0.3 mA / mW
Detector Pinout (3 pins)	Anodes 1 and 2: Photocurrents of the two orthogonal polarization components Cathode: Common ground
Excess Loss[2]	< 0.8 dB
Return Loss[2]	> 40 dB
Polarization Extinction Ratio	> 20 dB
Imbalance[3]	< 10%
Max. Forward Current	5 mA
Max. Reverse Current	1 mA
Max. Reverse Voltage (V_R)	20 V
Max. Optical Power	2 mW
Fiber type	SMF - 28 with 900 μm loose tube
Termination	FC/PC, FC/APC, LC/PC, LC/APC, SC/PC, SC/APC
Pigtail Length	0.75 to 1.1m
Operating Temperature	-5 to 60° C
Storage temperature	-20 to 85° C
Operating Humidity	20 to 85%
Dimensions	Ø 6.0 mm × 14.9 mm (L)

Applications:
· Fiber optic sensor systems
· Performance monitoring
· Polarization analysis
· Instruments

Unique Features:
· Miniature size
· High extinction ratio
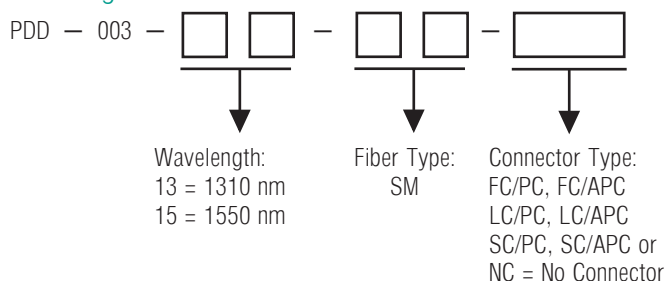· High detection sensitivity
· Easy to use
· Low cost

Notes:
1. Overall responsivity includes photodiode responsivity with excess loss. Measured per channel using unpolarized input light.
2. Without optical fiber connector.
3. Imbalance = 100% * abs $(I_1 - I_2)$ / $[(I_1 + I_2) / 2]$, where I_1 and I_2 are output currents.

Ordering Information:

PDD — 003 — ☐☐ — ☐☐ — ☐

Wavelength:
13 = 1310 nm
15 = 1550 nm

Fiber Type:
SM

Connector Type:
FC/PC, FC/APC
LC/PC, LC/APC
SC/PC, SC/APC or
NC = No Connector

Dimensions (in mm):

INSTRUMENTS

MODULES

OCT PRODUCTS

SPECIAL POLARIZATION COMPONENTS

ACCESSORIES

APPLICATION GUIDE

FAQS