

CHAPTERS

- Laser Scanning Microscopy
- Microscopy Components
- OCT Imaging Systems

OCT Components

Adaptive Optics

SECTIONS

- Light Source
- Balanced Detectors
- Interferometers
- Fiber Components
- Polarization Controller
- Scanning Mirrors
- Optics
- Resolution Targets

Polarization Diversity, Balanced Detector



Features

- Integrated Signal Detection with Active Aliasing Filter
- Fast Monitor Outputs for External Polarization Adjustment
- Excellent Common Mode Rejection
- Matched S and P Optical Path Lengths

The INT-POL-1300 is a pair of integrated balanced detectors that are used to analyze the S and P States of Polarization (SOP) of two input signals independently. This compact system is designed for polarization-sensitive optical coherence tomography (OCT) applications, but it also can be used in any application where the difference between two signals has to be analyzed with a high degree of sensitivity.

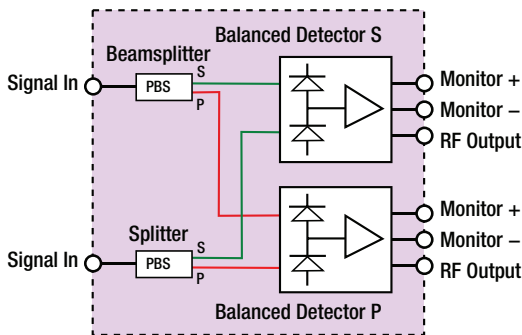
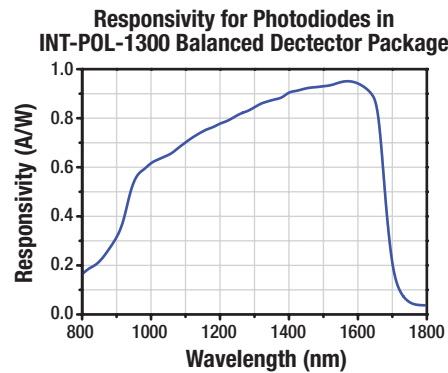
Balanced Receiver Functionality

The S and P polarization states of the input are split using a polarizing beamsplitter (PBS) and directed into two balanced detectors, one for each SOP. The receiver is comprised of two balanced photodetectors and an ultra-low-noise, high-speed transimpedance amplifier. The balanced detectors also have active lowpass filters to prevent aliasing effects and to suppress out-of-band noise effectively. These balanced photodetectors operate in the same manner as our PDB400 Series of OCT Balanced Detectors; they subtract the two optical input signals from each other resulting in the cancellation of common mode noise.

Connectors

Optical signals are coupled to the photodiodes via two FC/APC input connectors. The unit has six electrical SMA output connectors, three for each polarization state. One of the three outputs provides the balanced signal and the other two are the power monitor outputs. The monitor outputs allow the user to observe the effect of changes to the power or SOP of the input signals. The device is powered via a ± 12 VDC input connector (power supply included).

Custom Designs & Volume Pricing Available



Custom Designs Available (Please Call for Details)

ITEM #	\$	£	€	RMB	DESCRIPTION
INT-POL-1300	\$ 2,400.00	£ 1,728.00	€ 2,088.00	¥ 19,128.00	Polarization Dependent, Balanced Detector, 1270 – 1350 nm

ITEM #	INT-POL-1300
Optical Parameters	
Wavelength Range (Beamsplitter Limited)	1270 – 1350 nm
Fiber Type	Corning SMF-28e+
Optical Connectors	FC/APC
Extinction Ratio (PBS)	22 dB
Max Input Power 1300 nm	20 mW
Electrical Parameter	
Detector Material/Type	InGaAs/PIN
Detector Wavelength Range	800 – 1700 nm
Typical Max Responsivity	1.0 A/W
Output Bandwidth RF Output	DC – 15 MHz
Output Bandwidth Monitor Output	DC – 5 MHz
Transimpedance Gain	50 x 10 ³ V/A
Conversion Gain Monitor Outputs	5 V/mW
Saturation Power	80 μ W @ 1300 nm
Electrical Output/Impedance	SMA, 50 Ω
DC Offset	± 10 mV
Power Supply	± 12 V, 250 mA