MEASUREMENT AND CHARACTERIZATION

Polarization Dependent Loss Multimeter - PolaChex™ (PDL-201)

Using a patented maximum and minimum search method (compliant with TIA/EIA-455-198; ref. "Automatic Maximum-Minimum Search Method for Accurate PDL and DOP Characterization"), General Photonics' PDL multimeter simultaneously measures the Polarization Dependent Loss (PDL), Insertion Loss (IL), and optical power of a device under test (DUT) in just 30 ms. Unlike PDL meters that use the polarization scrambling method, which has large measurement uncertainty, PolaCHEX™ systematically searches for the maximum and minimum transmissions to assure measurement accuracy at all times for devices with both low and high PDL values. It is therefore the most accurate PDL meter available. Even more impressively, PolaCHEX covers a wide wavelength range from 1260 to 1620 nm without wavelength calibration, a clear advantage over PDL meters based on the Mueller Matrix method. PolaCHEX comes with USB, Ethernet, GPIB and RS-232 interfaces for PC control and is ideal for fast, accurate characterization of the wavelength dependence of passive devices, especially DWDM and fiber sensor components, in manufacturing environments as well as in laboratories. The PDL-201 features fast measurement, large measurement dynamic range, bright OLED display, and an analog output port for easy integration in automated measurement stations.

Specifications:

Wavelength Range	1260 to 1620 nm
Resolution	0.01 dB
PDL Accuracy[1,2,3]	± (0.01 + 5% of PDL) (dB)
PDL Repeatability[1]	± (0.005 + 2% of PDL) (dB)
PDL Dynamic Range[4]	0 to 45 dB
IL Accuracy[1,5]	± (0.01 + 5% of IL) (dB)
IL Repeatability[1]	± (0.005 dB + 2% of IL) (dB)
IL Dynamic Range[4]	0 to 45 dB
Optical Power Range (at DUT output port)	-40 to +6 dBm
Optical Power Accuracy	±0.25 dB
Wavelength Calibration for Power Measurement	1260 to 1360 nm and 1440 to 1620 nm
Measurement Speed	30 ms/measurement for input > -30 dBm
Operating Temperature	0 to 50 °C
Storage Temperature	-20 to 70 °C
Front Panel Display	OLED graphic display
Optical Connector Type	Light source and DUT input: APC DUT output: Free space adapter
Analog Output	0 to 4V PDL monitor voltage (0 to 3.5V linear with PDL, 4V indicates power low) User-configurable PDL range
Power Supply	100 – 240 VAC, 50 – 60 Hz
Communication Interfaces	USB, Ethernet, RS-232, and GPIB
Dimensions	2U, 19" half rack width 14" (L) x 8.5" (W) x 3.5" (H)

Notes:
1. For 10 sample average.
2. At 23 ± 5°C.
3. Accurate PDL measurement also depends on test setup. Optimize your test environment with suggestions from General Photonics' PDL measurement application note.
4. For input power ≥0 dBm.
5. In power meter measurement mode with user-defined reference

Features:

- 30 ms measurement speed
- Wide wavelength range
- High PDL accuracy
- Analog PDL output
- Bright OLED display
- Power meter function

Applications

- PDL vs. wavelength measurement
- DWDM device characterization
- Fiber sensor component characterization

Related Products:

- Optical Component Analyzer (OCA-1000)
- DOP Meter (DOP-201)
- ER Meter (ERM-202)
- Rack Mount Kit (RCK-001)
- Components
- Bare Fiber Adapter (PEZ-001)

Tech Info:

- What is Polarization?
- Automatic Maximum-Minimum Search Method for Accurate PDL and DOP Characterization
- Application Note for PDL Measurement

Ordering Information:

PDL — 201 — ☐

Connector Type:
FC
SC
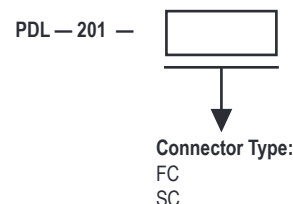
Note:
A NoTail isolator is recommended at the light input port to minimize back reflections.

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INSTRUMENTS

MODULES

PASSIVE COMPONENTS

ACCESSORIES

APPLICATION GUIDE

FAQS

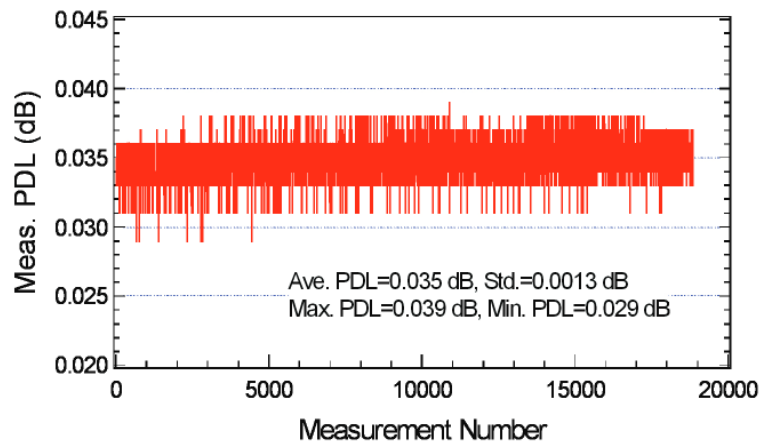**Typical Performance Data:**

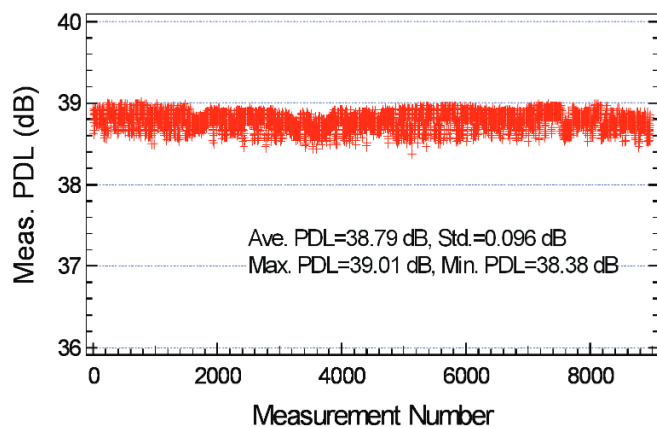Figure 1. Measurement of a low PDL sample: APC Connector
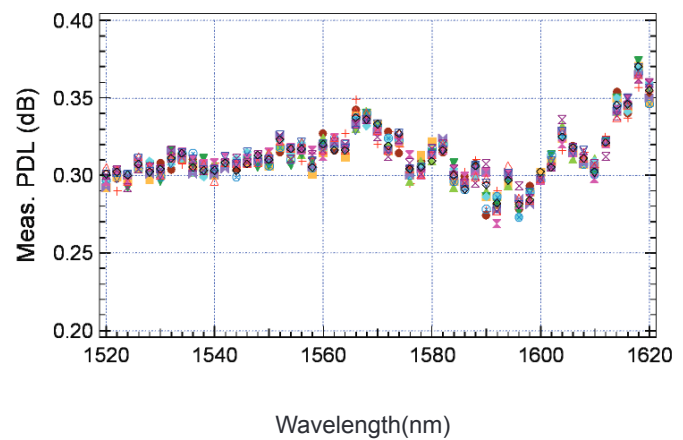

Figure 2. Measurement of high PDL sample: Polarizer

Figure 3. Wavelength scan and multiple (12) scan repeatability

Video: