www.ozoptics.com

219 Westbrook Rd, Ottawa, ON, Canada, K0A 1L0   Toll Free: 1-800-361-5415 Tel:(613) 831-0981   Fax:(613) 836-5089   E-mail: sales@ozoptics.com
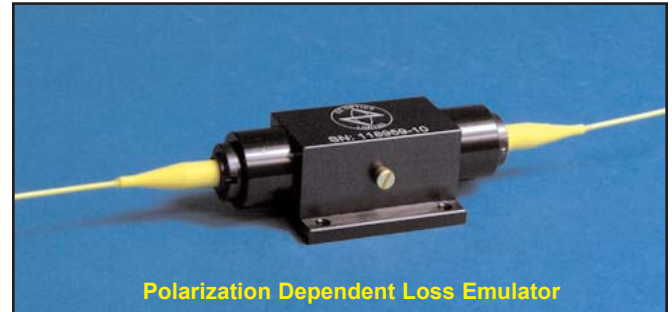
POLARIZATION DEPENDENT LOSS EMULATOR

Features:
- Fixed or manually controllable Polarization Dependent Losses (PDL)
- Low insertion loss
- Broad wavelength range
- Wide range of connectors available
- Rugged and compact design
- Low cost
- Low PMD (PMD free available upon request)

Applications:
- PDL Compensation
- Reference PDL source
- Test Equipment PDL calibration

Polarization Dependent Loss Emulator

Product Description:

OZ Optics produces a Polarization Dependent Loss (PDL) Emulator. The emulator produces a specific amount of polarization dependent loss by transmitting the light through the device. The orthogonal polarizations will have different transmission properties resulting in PDL effect. Emulators are available with either a fixed PDL (between 0.05 and 10dB) or a variable PDL(between 0.05 and 10dB).

The PDL emulator is used to simulate the PDL behavior of a passive component within an optical link. This includes devices like variable optical attenuators, optical modulators, array waveguides, fiber Bragg gratings, optical switches or fused couplers. One can thus examine the effects of PDL in a system, and work out a PDL budget for an optical link. OZ Optics also produces a polarization dependent loss meter, polarized stable sources, and polarization controllers, to further help study the effect of polarization in optical systems. Please refer to the related data sheets for detailed information. Higher PDL values can be provided on request.

Ordering Information For Standard Parts:

Bar Code	Part Number	Description
36135	PDLE-11-1550-9/125-S-3U3U-3-1-5	1550nm, manually variable 0.1 to 5dB Polarization Dependent Loss Emulator with 1m long, singlemode fiber with 3 mm OD jacket, terminated with Ultra FC/PC connectors.
34390	PDLE-10-1550-9/125-S-3U3U-3-0.5-1	1550 nm, 1 dB Polarization Dependant Loss Emulator with 0.5m long on each side, singlemode fiber with 3mm OD jacket, terminated with Ultra FC/PC connectors.
34721	PDLE-10-1550-9/125-S-3A3A-3-1-0.5	1550 nm, 0.5 dB Polarization Dependant Loss Emulator with 1 m long, singlemode fiber with 3mm OD jacket, terminated with angle FC/APC connectors. Intrinsic IL will be about 0.6dB

Ordering Examples For Standard Parts:

A research center wants to introduce varying amounts of PDL into a WDM fiber optic network link and evaluate the induced bit error rate. They need to order the following parts:

Bar Code	Part Number	Description
36135	PDLE-11-1550-9/125-S-3U3U-3-1-5	1550nm, manually variable 0.1-5dB Polarization Dependent Loss Emulator with 1m long, singlemode fiber with 3 mm OD jacket, terminated with Ultra FC/PC connectors
34391	PDLE-10-1550-9/125-S-3U3U-0.5-3	1550nm, 3dB Polarization Dependent Loss Emulator with 0.5m long fibers with 3mm OD jacket, terminated with ultra FC/PC connectors.

Standard Product Specifications[1]:

Part number	PDLE-11-1550-9/125-S-3U3U-3-1-5
Wavelength range[2]	1510 nm to 1590 nm (for uniform PDL)
Fiber Type	9/125μm single mode fiber with 3 mm OD Kevlar reinforced PVC Jacket
Connector Type	Ultra Polished Physical Contact NTT-FC connector
PDL Dynamic Range[3]	0.05 dB to 5.0 dB
Insertion Loss (residual)	< 0.6 dB
Optical Return Loss	> 50 dB
PMD	< 8 ps Typical for standard version. < 0.5 ps for PMD free version
Operating temperature	0 to 40 °C
Storage temperature	-10 to +60 °C with < 80% none-condensing relative humidity
Max input Power[4]	500 mW

[1] Reference condition: 23°C measured with 1mw, 1550 nm fiber optic stable source after 30 minutes warm-up period
[2] Other wavelengths such as 1310 nm or 1060 nm are also available upon request
[3] Fixed PDL value between 0.05 and 10dB can be ordered
[4] Higher power handling can be provided upon request

Ordering Information For Custom Parts:

OZ Optics welcomes the opportunity to provide custom designed products to meet your application needs. As with most manufacturers, customized products do take additional effort so please expect some differences in the pricing compared to our standard parts list. In particular, we will need additional time to prepare a comprehensive quotation, and lead times will be longer than normal. In most cases non-recurring engineering (NRE) charges, lot charges, and a 1 piece minimum order will be necessary. These points will be carefully explained in your quotation, so your decision will be as well informed as possible. We strongly recommend buying our standard products.

Questionnaire For Custom Parts:

1. Do you want a fixed PDL emulator or a variable one?
2. What is the PDL level you require?
3. What is your operating wavelength range?
4. What type of connectors are you using?
5. How long should the fibers be?
6. What is the fiber core/cladding diameters and fiber jacket OD?
7. Do you want a standard version or PMD free version?

Polarization Dependent Loss Emulator:

$$PDLE-1\underline{A}-\underline{W}-\underline{a/b}-S-\underline{XY}-\underline{JD}-\underline{L}-\underline{V}-\underline{(P)}$$

A = 0 for fixed PDL value
    1 for manually variable PDL value

W = Wavelength in nm:
    980,1064, 1310,1480,1550,1625

a/b = Fiber core/cladding size, in microns.
    6/125 for 980, 1064nm wavelengths
    9/125 for 1310, 1480, 1550 or 1625nm wavelengths

X,Y = Input & Output Connector Codes
    3S=Super NTT-FC/PC
    3U=Ultra NTT-FC/PC
    3A=Angled NTT- FC/PC
    SC=SC
    SCA=Angled SC
    8= AT&T-ST
    MU= MU type connector
    LC= LC type connector
    X=Unterminated

P =   For PMD free version:
    Blank = Standard PMD (< 8 ps)
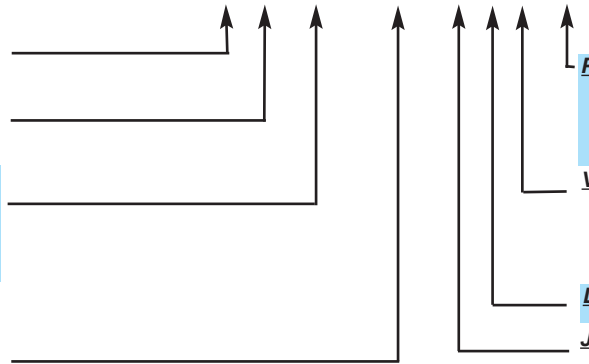   PMD = PMD free version
    (< 0.5 ps Typical < 0.1 ps)

V =   PDL values in dB, between 0.05dB to 10dB for fixed type
    for variable type with range from 0.05dB to 10dB

L =   Fiber length in meters

JD = Fiber jacket type:
    1 = 900 micron OD hytrel jacket
    3 = 3mm OD Kevlar reinforced PVC cable

Ordering Examples for Custom Parts:

A test equipment manufacturer needs a 0.25dB fixed PDL Emulator for 1550nm to use as a reference. As they intend to splice the device into their system, they want 2 meter long leads, no connectors, and 0.9mm cable.
Part number is as follows: **PDLE-10-1550-9/125-S-XX-1-2-0.25**

Frequently Asked Questions (FAQs):

Q: Is the variable emulator calibrated?
A: The current manual design has a scale but is not calibrated. Calibrated versions will be available shortly.

Q: Does the insertion loss listed in the specifications include the PDL?
A: No, it does not.