

# DIAMOND

## Fiber Optic Components

### OPTICAL INTERFACE

Connectors with Polarization Maintaining (PM) fibers have been manufactured for very long time to cover several markets and their applications, such as: measurement instrumentation, sensors, communication systems, medical devices. The PM Optical Interface is a complement to IEC 61755-3-7; -8 that defines only SM fibers for telecom 1350/1550nm applications.

DIAMOND offers the PM optical interface for PM fibers.

Using DIAMOND Active Core Alignment and Active Polarization Orientation process, we are able to independently optimize both Insertion Loss (IL) and Extinction Ratio (ER) .

This technology is applicable on those connector interfaces that have an integrated keying mechanism adapted for this use.

Specifications of the **PM** Optical Interface:

- 0.1dB Grade ferrules with diameter tolerance < 0.2 $\mu$ m
- ACA with Ultra low eccentricity < 0.15 $\mu$ m
- Exit angle < 0.6 $^{\circ}$
- Active Polarization Orientation (APO) <  $\pm$ 2 $^{\circ}$
- Ultra polish with 100% Endface inspection

The endface geometry has been improved from standard to the following:

- ▶ Ferrule radius 10 $\div$ 20mm
- ▶ Core Apex 50 $\mu$ m
- ▶ Protrusion -50 $\div$ 200nm (undercut negative)

Diamond can measure and orientate PM and PZ fibers at following fixed wavelengths: 1625nm, 1550nm, 1310nm, 1050nm, 980nm, 800nm, 680nm, 635nm, 405nm. For other wavelengths, please, contact Diamond.

### STANDARDS

- ▶ IEC 61755-3-7, -8 PC, resp. APC 2.5mm and 1.25mm composite ZrO<sub>2</sub> - Titanium ferrules

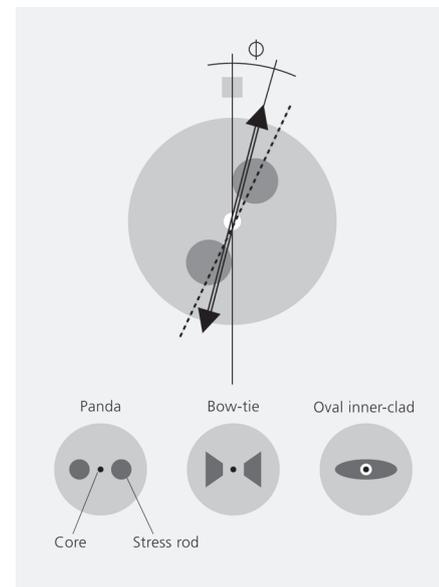
### FEATURES AND BENEFITS

- ▶ Low Insertion loss
- ▶ Best optical polarization axis orientation for High Extinction Ratio
- ▶ Ultra high polish for High return loss

### AVAILABLE AS

- ▶ Pigtailed and patchcords on the following connector interfaces:
  - E-2000<sup>TM</sup>
  - F-3000<sup>TM</sup>
  - DMI
  - FC, narrow and wide key
  - LSA(DIN)
  - AVIM
  - Mini-AVIM
  - SC

### PM - Polarization Maintaining



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Specifications subject to change without notice

BDD 01\_13

## SPECIFICATIONS

WAVELENGTH (nm)	IL (dB) 97% (typ)	ER (dB) min (typ)	RL (dB)	
			PC 0°	APC 8°
1625 - 1550 - 1310	0.3 (0.15)	23 (28)	50*	70*
1060 - 980	0.5 (0.25)	21 (26)	50	60*
830 - 780	0.6 (0.3)	20 (25)	40	60**
635	0.8 (0.4)	20 (25)	40	60**
532 - 460	1.2 (0.6)	20 (23)	35	60**
405	1.5 (0.75)	18 (21)	35	60**
TEST CONDITIONS	IEC 61300-3-34 Random mating	IEC 61300-3-40 Low coherence	IEC 61300-3-6 *OLCR method <OCWR method	

**NOTE** - Optical performance values based on use of Panda PM fiber, use of other types or wavelengths may impact performance values.

- Diamond performs extinction ratio (ER) measurements using the crossed-polarizer method (similar to IEC 61300-3-40). This method requires the use of Glan-Thomson polarizers and of an incoherent light source (bandwidth > 10 nm). As a guideline, the following table shows the measurement accuracy that is achieved with our setup:

ER nominal value and accuracy: 20 dB  $\pm$ 1.5 dB 25 dB  $\pm$ 2.5 dB 30 dB  $\pm$ 3.5 dB.

- NA 0.12  $\pm$  0.02
- IL performance intended for E-2000™. Other connector mechanical interface display higher values. Please contact Diamond for values on your specific connector type.

\*\* Limited by test conditions

## ORDER INFORMATION

To order your connectors using PM technology, please specify:

- ▶ The connector type (E-2000™ PM, F-3000™ PM, etc.), wavelength and end-face (PC or APC).  
Example: DMI PM 635 APC or E-2000™ PM 980 APC
- ▶ Fiber specification: MFD, NA, fiber type, coating structure, operation wavelength.
- ▶ Please refer to the individual data sheets for detailed specifications on individual connector types.