

## 780 nm Polarization Maintaining Fiber Optic Connector/Patch Cord



### ● Product Description

These polarization-maintaining fiber optic patch cords feature high-quality, narrow-key ceramic FC/APC connectors on both ends. Produced by our equipment, each patch cord is individually tested at the test wavelength specified in the specification label, ensuring extinction ratio and low back reflection (return loss) for both the fiber and its connections. These patch cords are in stock, featuring high-quality polishing to guarantee a typical



return loss exceeding 60 dB. The test data sheet provides the extinction ratio and insertion loss test results for each patch cord. Each patch cord comes with two protective caps covering the ends to prevent dust or other contaminants from settling on the ferrule end face. We also sell protective FC/PC end caps separately, including CAPF plastic fiber caps and CAPFM metal threaded fiber caps. If you cannot find a suitable product among our in-stock patch cords, Terahertzlabs also offers custom patch cords that can be shipped on the same day.

## ● Product features

Slow Axis Alignment、 Polarization-maintaining fiber with a pair of FC/APC connectors、 Wavelength range of 400-2200 nm、 Narrow key (2 mm) and slow axis alignment、 Typical 60 dB return loss、 Ceramic ferrule, 8° angle (APC)、 Ø3mm outer protective sleeve、 Custom patch cords available

## ● Part Number

MP-FOJ-780-2-1-PA

## ● Application area

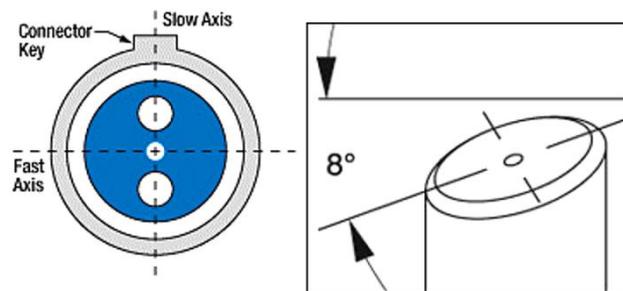
Fiber optic communication system、 Fiber optic access network、 Fiber optic

data transmission、 Fiber optic CATV、 Local area network (LAN)、 Test equipment、 Fiber optic sensor

## ● Core parameters

| Operating Wavelength | Fiber Type |
|----------------------|------------|
| 770-1100nm           | PM780-HP   |

## ● General Parameters



### Parameter

| PN#                  | MP-FOJ-40    | MP-FOJ-488   | MP-FOJ-630   | MP-FOJ-78     | MP-FOJ-9      |
|----------------------|--------------|--------------|--------------|---------------|---------------|
|                      | 5-2-1-PA     | -2-1-PA      | -2-1-PA      | 0-2-1-PA      | 80-2-1-PA     |
| Test wavelength      | 405 nm       | 488 nm       | 630 nm       | 780 nm        | 980 nm        |
| Operating wavelength | 400 - 680 nm | 460 - 700 nm | 620 - 850 nm | 770 - 1100 nm | 970 - 1550 nm |
| Cut-off wavelength   | 380 ± 20 nm  | 420 ± 30 nm  | 570 ± 50 nm  | 710 ± 60 nm   | 920 ± 50 nm   |



| Fiber type                 | PM-S405-XP<br>(Panda)                         | PM460-HP<br>(Panda) | PM630-HP<br>(Panda) | PM780-H<br>P (Panda) | PM980-X<br>P<br>(Panda)       |
|----------------------------|---|---------------------|---------------------|----------------------|-------------------------------|
| Maximum insertion loss a   | 1.5 dB  | 1.5 dB              | 1.2 dB              | 1.0 dB               | 0.7 dB                        |
| Minimum extinction ratio a | 15 dB   | 18 dB               | 20 dB               | 20 dB                | 22 dB                         |
| Mode field diameter b      | 3.6 ± 0.5<br>um @<br>405nm                    | 3.4 um @<br>488nm   | 4.2 um @<br>630nm   | 4.9<br>um @<br>780nm | 6.6 ±<br>0.7 um<br>@<br>980nm |
| Numerical aperture c       | 0.12  | 0.12                | 0.12                | 0.12                 | 0.12                          |
| Return loss a              | 60 dB Typical                                 |                     |                     |                      |                               |
| Fiber connector            | FC/APC  |                     |                     |                      |                               |
| Connector groove width     | 2.00 ± 0.02 mm                                |                     |                     |                      |                               |
| Alignment method           | Narrow Key Aligned to Slow Axis               |                     |                     |                      |                               |
| Fiber length               | 1.0 +0.075/-0 m for Item Numbers Ending in -1 |                     |                     |                      |                               |
| Loose tube type            | 2.0 +0.075/-0 m for Item Numbers Ending in -2 |                     |                     |                      |                               |



|                          |   |
|--------------------------|---|
| Operating temperature    | 5.0 +0.075/-0 m for Item Numbers Ending in -5   |
|                          | 10.0 +0.075/-0 m for Item Numbers Ending in -10 |
| Storage temperature      |   |
| Cut-off wavelength       | 900um/2mm/3mm armor can be choose               |
| Fiber type               | 0 to 70 °C                                      |
| Maximum insertion loss a | -45 to 85 °C                                    |

| PN#                        | MP-FOJ-10       | MP-FOJ-13         | MP-FOJ-15         | MP-FOJ-20      |
|----------------------------|-----------------|-------------------|-------------------|----------------|
|                            | 64-2-1-PA       | 10-2-1-PA         | 50-2-1-PA         | 00-2-1-PA      |
| Test wavelength            | 1064 nm         | 1310 nm           | 1550 nm           | 2000 nm        |
| Operating wavelength       | 970 - 1550 nm   | 1270 - 1625 nm    | 1440 - 1625 nm    | 1850 - 2200 nm |
| Cut-off wavelength         | 920 ±50 nm      | 1200 ±70 nm       | 1370 ±70 nm       | 1720 ±80 nm    |
| Fiber type                 | PM980-XP(Panda) | PM1300-X P(Panda) | PM1550-XP (Panda) | PM2000(Panda)  |
| Maximum insertion loss a   | 0.7 dB          | 0.5 dB            | 0.5 dB            | 0.5 dB         |
| Minimum extinction ratio a | 22 dB           | 23 dB             | 23 dB             | 23 dB          |

|                        |  |                             |                             |                     |
|------------------------|--|-----------------------------|-----------------------------|---------------------|
| Mode field diameter b  | 7.7 um@<br>1064 nm                             | 9.3 ±0.5<br>um @ 1300<br>nm | 9.9 ±0.5<br>um @ 1550<br>nm | 8.6 um @<br>2000 nm |
| Numerical aperture c   | 0.12   | 0.13                        | 0.125                       | 0.2                 |
| Return loss a          | 60 dB Typical                                  |                             |                             |                     |
| Fiber connector        | FC/APC   |                             |                             |                     |
| Connector groove width | 2.00 mm ±0.02                                  |                             |                             |                     |
| Alignment method       | Narrow Key Aligned to Slow Axis                |                             |                             |                     |
| Fiber length           | 1.0 +0.075/-0 m for Item NumbersEnding in -1   |                             |                             |                     |
|                        | 2.0 +0.075/-0 m for Item NumbersEnding in -2   |                             |                             |                     |
|                        | 5.0 +0.075/-0 m for Item NumbersEnding in -5   |                             |                             |                     |
|                        | 10.0 +0.075/-0 m for Item NumbersEnding in -10 |                             |                             |                     |
| loose tube type        | 900um 2mm 3mm Armor is optional                |                             |                             |                     |
| Operating temperature  | 0 to 70 °C                                     |                             |                             |                     |
| storage temperature    | -45 to 85°C                                    |                             |                             |                     |

**Note:**

a. Measured at the test wavelength.

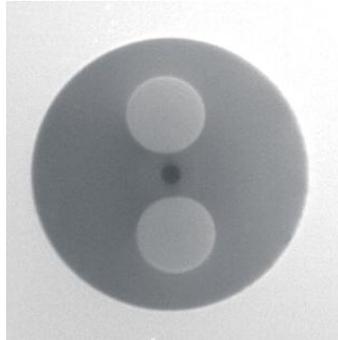
b. Mode field diameter (MFD) is a nominal value. The diameter at the  $1/e^2$  power position in the near field.

c. Numerical aperture (NA) is a nominal value.



## 1550PM Fiber Optic Patch Cord Experimental Test:

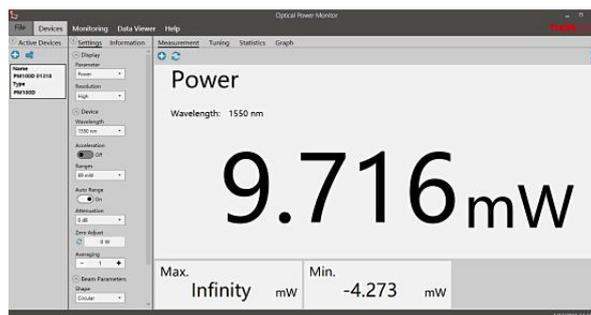
### 1. End-face inspection



### 2. IL test



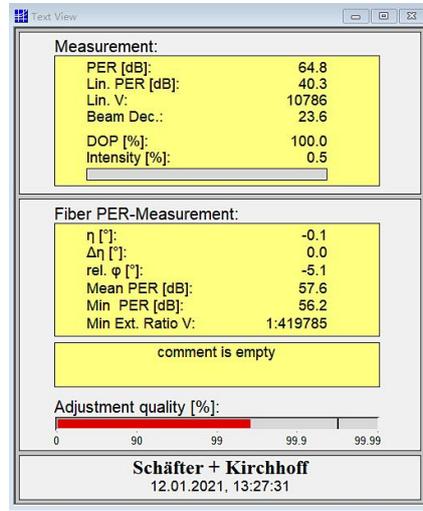
Laser power before connection



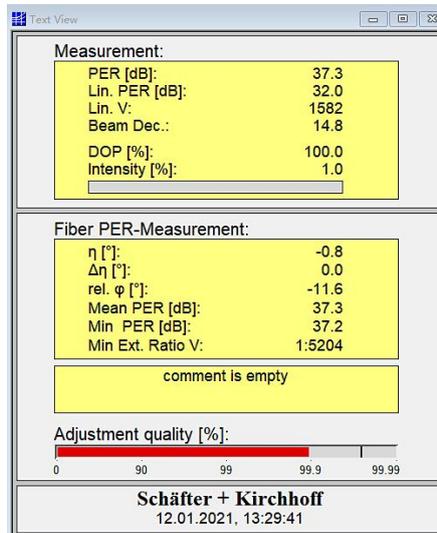
Power after connecting the fiber optic patch cord



### 3. Extinction Ratio Testing



### Laser Direct Testing



### After Connecting Optical Fiber Patch Cord