Polarization Maintaining Fused WDM

Description

Polarization Maintaining Fused WDM (PM Fused WDM) is a passive fiber optic device designed to combine or separate different wavelengths of light in polarization maintaining (PM) fiber systems while preserving the polarization state of the optical signal. It is manufactured using fused biconical taper (FBT) technology with PM fibers, allowing wavelengths such as 980/1550nm, 1310/1550nm, or 1480/1550nm to be multiplexed into a single fiber or demultiplexed into separate channels. Unlike standard single mode fused WDMs, PM Fused WDMs maintain the alignment of the slow axis or fast axis throughout the optical path, ensuring high polarization extinction ratio (PER) and stable polarization performance.

Features

Low Insertion Loss
Compact Structure
High Power Handling
High Stability and Reliability

Applications

Fiber Laser
Fiber Optic Amplifier
Fiber Optic Sensing
Underwater Communication

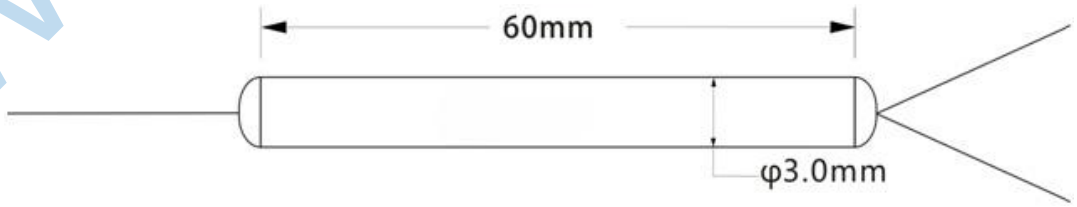
Specifications

Series 1: 450–850 nm

Parameter	Unit	Value					
Center Wavelength	nm	450/532	450/635	532/635	532/780	635/780	635/850
Operating Wavelength Range	nm	±5	±5	±5	±5	±5	±5
Isolation (Min.)	dB	13	13	15	18	18	18
Insertion Loss (Max.)	dB	1.2	1.2	1.2	1.0	1.0	1.0
Return Loss (Min.)	dB	55					
Extinction Ratio (Min.)	dB	18					
Max Optical Power (CW)	W	0.1	0.1	0.25	0.25	0.5	0.5
Fiber Type	-	PM460			PM630		
Working Axis	-	Both Axis					
Tensile Load	N	5					
Package Dimensions	mm	Φ3 x L60 (Bare Fiber)/Φ3 x L70 (Loose Tube)					
Operating Temperature	°C	-40 to +85					
Storage Temperature	°C	-40 to +85					

Notes: Tested at 25 °C. Data exclude connectors. Adding connectors will increase insertion loss by approximately 1.5 dB, reduce return loss by 5 dB, and decrease extinction ratio by 2 dB. The fiber slow axis is aligned to the key by default.

Product Dimensions

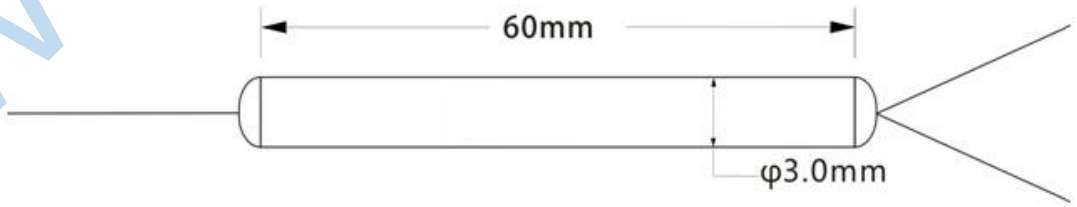


Series 2: 980–2000 nm

Parameter	Unit	Value							
Center Wavelength	nm	980/1030	980/1064	980/1310	980/1550	1064/1310	1064/1550	1310/1550	1570/2000
Operating Wavelength Range	nm	±3	±5	±10	±15	±15	±15	±15	±15
Isolation (Min.)	dB	13	15	17	20	20	20	16	15
Insertion Loss (Max.)	dB	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6
Return Loss (Min.)	dB	55							
Extinction Ratio (Min.)	dB	18							
Max Optical Power (CW)	W	0.5/1/5/10							
Fiber Type	-	PM980						PM1300	PM1550
Working Axis	-	Both Axis							
Tensile Load	N	5							
Package Dimensions	mm	Φ3 x L54 (Bare Fiber)/Φ3 x L60 (Loose Tube)							
Operating Temperature	°C	-40 to +85							
Storage Temperature	°C	-40 to +85							

Notes: Tested at 25 °C. Data exclude connectors. Adding connectors will increase insertion loss by approximately 0.3 dB, reduce return loss by 5 dB, and decrease extinction ratio by 2 dB. The fiber slow axis is aligned to the key by default.

Product Dimensions



Ordering Information

□nm	□W	□	□	□m	□μm	□
Center Wavelength	**Max Optical Power (CW)**	**Working Axis**	**Fiber Type**	**Pigtail Length**	**Pigtail Diameter**	**Connector**
450/532nm	0.1W	Both Axis	PM460	0.5m	250μm Bare Fiber	None
450/635nm	0.25W		PM630	1.0m	900μm Loose Tube	LC/UPC
532/635nm	0.5W		PM980	1.5m		LC/APC
532/780nm	1W		PM1300	2.0m		SC/UPC
635/780nm	5W		PM1550			SC/APC
635/850nm	10W					FC/UPC
980/1030nm						FC/APC
980/1064nm						ST/UPC
980/1310nm						ST/APC
980/1550nm						
1064/1310nm						
1064/1550nm						
1310/1550nm						
1570/2000nm						