

PM Fiber Optic Fused Coupler Dual Polarizations



DATASHEET

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Features

- Wavelength Independent
- Ultra Low Excess Loss
- Low Polarization Sensitivity
- Highly Stable & Reliable
- Ultra Low Cost

Applications

- Telecommunications
- CATV
- Local Access Network (LAN)
- Fiberoptic Instrumentation

This FC Series PM fiber optic coupler works on both orthogonally polarized light, providing a polarization-independent coupling function. It features good uniformity, low excess loss, and very low polarization sensitivity. The device is ideal for splitting or combining light with exceptional performance over a wide wavelength range.

Couplers are highly efficient in splitting light with little loss, about 0.2dB per joint, but incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

Specifications

Parameter	Min	Typical	Max	Unit
Coupling Ratio		1/99 to 50/50		%
Wavelength Bandwidth		± 15		nm
Polarization Dependent Loss		0.15		dB
Directivity		> 55		dB
Return Loss ^[3]		> 55		dB
Optical Power Handling		< 3		W
Operating Temperature	-40		85	°C
Storage Temperature	-50		85	°C

Parameter		Grade P	Grade A	Unit
Excess Loss ^[1]	1310,1550 nm	≤0.3	≤0.4	dB
	980~1060 nm	≤0.4	≤0.6	dB
	780,850 nm	≤0.6	≤0.8	dB
Polarization Extinction Ratio ^[2]		≥20	≥18	dB
Split Ratio Tolerance				
Split Ratio: 50/50		± 3.8	± 6.0	%
Split Ratio: 40/60		± 2.9	± 4.5	%
Split Ratio: 30/70		± 1.5	± 3.0	%
Split Ratio: 20/80		± 1.3	± 2.1	%
Split Ratio: 10/90		± 1.1	± 1.6	%
Split Ratio: 5/95		± 0.8	± 1.3	%
Split Ratio: 1/99		± 0.5	± 0.6	%

Notes:

[1]. Without connector. Each connector adds 0.3dB and 0.5dB for short wavelength

[2]. Without connector. Each connector adds 2dB

[3]. Without connector. Each connector adds 5dB

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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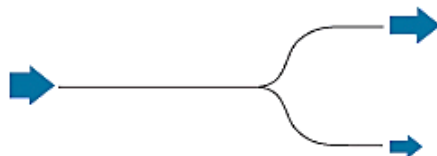
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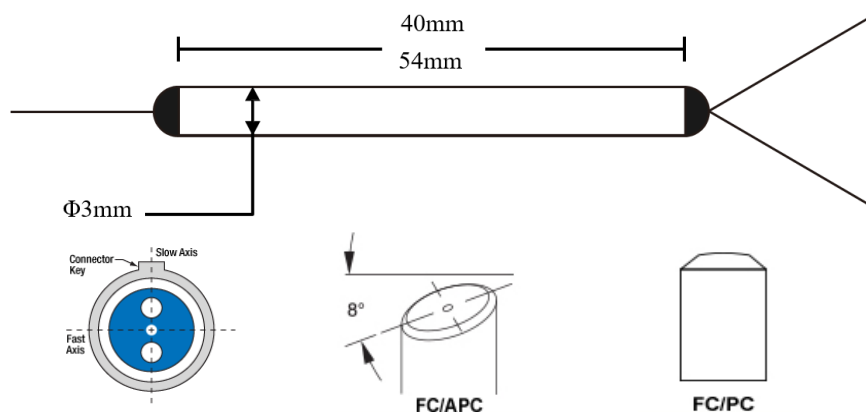


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Function Diagram



Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information (Part Number)

Prefix	Wavelength	Grade	Package	Coupling Ratio	Port	Fiber Type	Fiber Cover	Configuration	Connector ^{[1][3]}
FCPM-	1060 = 1 1310 = 3 1550 = 5 780 = 7 850 = 8 980 = 9 Special = 0	Premium = 1 Standard = 2 Aerospace ^[2] = A Special = 0	40(L) = 1 54(L) = 2 Square = 3 Special = 0	01/99 = 1 02/98 = 2 05/95 = 3 10/90 = 4 15/85 = 5 20/80 = 6 30/70 = 7 40/60 = 8 50/50 = 9 Special = 0	1x2 = 1 2x2 = 2	Panda = 1 Special = 0	250μm = 1 900μm = 3 Special = 0	Low PDL = 1 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/UPC = U Special = 0

[1]. Regular fiber connector has PER ~22dB. Connector with PER >27 dB is available using special process

[2]. Aerospace-grade package featuring an aluminum metal casing filled with a specially formulated RTV compound that is both vibration-resistant and thermally conductive, specifically designed to endure repeated thermal shock cycles from -45°C to 90°C.

[3]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.