

PM Fiber Optic Fused Coupler Dual Polarizations



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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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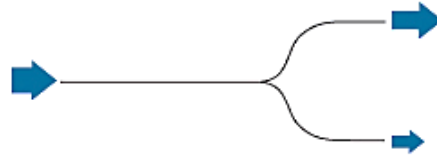
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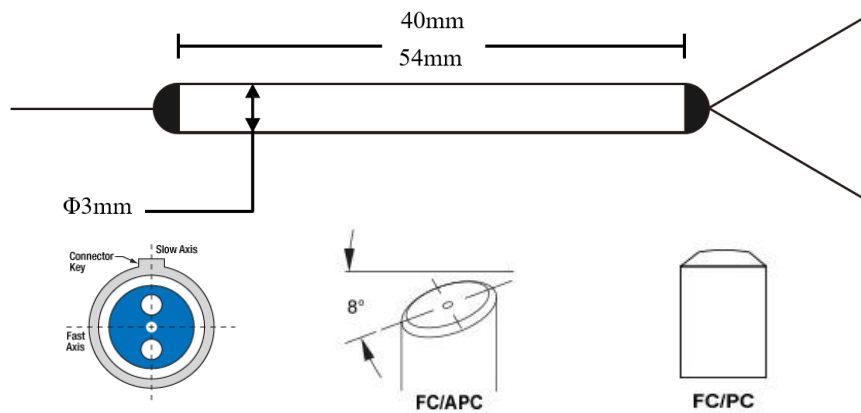


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Function Diagram



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 ^[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 connector cannot be installed directly onto bare fiber, as it 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 can remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SM28 fiber and decreases further with smaller core fibers.