

2 Micron (μm) Optical Coupler/Splitter

DATASHEET

BUY NOW



Features

- High Reliability
- Low Excess Loss
- High Power
- Low Cost

Applications

- Sensors
- Instruments

The FC2M Series fiber optic coupler is based on fused biconical taper technology and compact packaging structure. 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			%
Center Wavelength	1950, 2000, 2040			nm
Bandwidth	± 20			nm
Excess Loss ^[1]	0.3			dB
Insertion Loss ^[1]		Output 1	Output 2	
Split Ratio: 50/50		< 3.6	< 3.6	dB
Split Ratio: 40/60		< 4.8	< 2.8	dB
Split Ratio: 30/70		< 6.1	< 2.0	dB
Split Ratio: 20/80		< 8.0	< 1.3	dB
Split Ratio: 10/90		< 12.0	< 0.8	dB
Split Ratio: 5/95		< 18.4	< 0.5	dB
Split Ratio: 1/99		< 22.0	< 0.3	dB
Uniformity (50/50)	< 1.0			dB
Polarization Dependent Loss	< 0.15			dB
Directivity	> 50			dB
Return Loss ^[2]	> 55			dB
Optical Power Handling	< 5			W
Operating Temperature	-40		75	°C
Storage Temperature	-40		85	°C

Notes:

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

[2]. 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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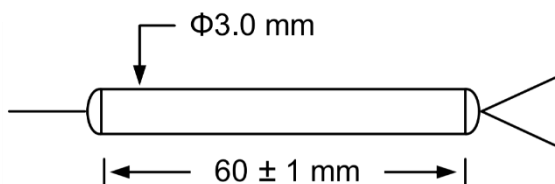
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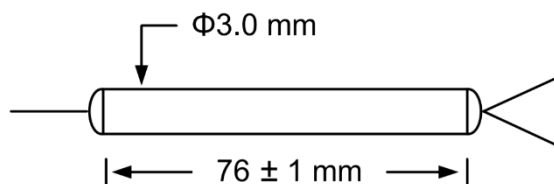
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Mechanical Dimensions (mm)



250 μm bare fiber



900 μm loose tube

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

Ordering Information (Part Number)

Prefix	Coupling Ratio	Center Wavelength	Port	PER ^[2]	Fiber Type	Fiber Cover	Fiber Length	Connector ^[5]
FC2M-	01/99 ^[1] = 99 05/95 = 95 10/90 = 90 20/80 = 80 30/70 = 70 40/60 = 60 50/50 = 50 Special = 00	1950nm = 1 2000nm = 2 2040nm = 3	1x2 = 1 2x2 = 2	19dB = 1 20dB = 2 22dB = 3 24dB = 4 25dB = 5 26dB ^[3] = 6 27dB = 7	SM 1950 = 1 SM 2000 = 2 PM 1950 = 3 PM 2000 = 6 SM28 ^[4] = 4 PM1550 ^[4] = 5 Special=0	250 μm = 1 0.9mm tube = 2 2mm tube = 3 3mm tube = 4 Special = 0	0.5m = 1 1m = 2 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]. Integrated tap monitor is available

[2]. Polarization extinction ratio is only for PM fiber

[3]. High ER is expensive using micro-optic filter with excess loss about 0.8dB

[4]. This fiber is lower cost but higher loss

[5]. 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.