

1x3 Monolithic Single Mode Coupler



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The FCTM series 1x3 Monolithic Single Mode Coupler utilizes Agiltron's fused biconical taper technology and compact packaging to deliver exceptional optical performance. With superior uniformity, low excess loss, and minimal polarization sensitivity — achieved through precision automated fabrication — this device is ideal for high-performance light splitting or combining across a broad wavelength range. Standard operating wavelengths include 1310 nm, 1490 nm, and 1550 nm, with dual- and triple-band configurations also available. Custom wavelengths, fiber types, and splitting ratios can be provided upon request to meet specific application requirements, subject to a development fee. The coupler is housed in a compact 3 mm diameter, 54 mm long tube, making it well-suited for space-constrained integration.

Features

- Compact Size
- Ultra Low Excess Loss
- Various Split Ratio
- Low Polarization Sensitivity
- Highly Stable & Reliable
- Low Cost

Applications

- Telecommunications
- Sensor
- Instrumentation

Specifications

Parameters	Typical								Unit
Model	S		W		D		T		
Operating Wavelength	1310, 1550				1310/1550		1310/1490/1550		nm
Operating Bandwidth	±15		±40		±40		1310±40, 1490±10, 1550±40		nm
Grade	P	A	P	A	P	A	P	A	
Typical Excess Loss	0.10	0.15	0.10	0.15	0.10	0.15	0.10	0.15	dB
Insertion Loss	≤5.4	≤5.7	≤5.6	≤6.0	≤5.8	≤6.2	≤5.8	≤6.2	dB
PDL	≤0.20	≤0.25	≤0.20	≤0.25	≤0.25	≤0.30	≤0.25	≤0.30	dB
Uniformity	≤0.8	≤1.2	≤1.0	≤1.4	≤1.2	≤1.5	≤1.2	≤1.5	dB
Return Loss	≥50								dB
Directivity	≥55								dB
Operating Temperature	-20 ~ +70								°C
Storage Temperature	-40 ~ +85								°C
Pigtail Type	250μm Bare Fiber				900μm Loose Tube				

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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Rev 08/30/25

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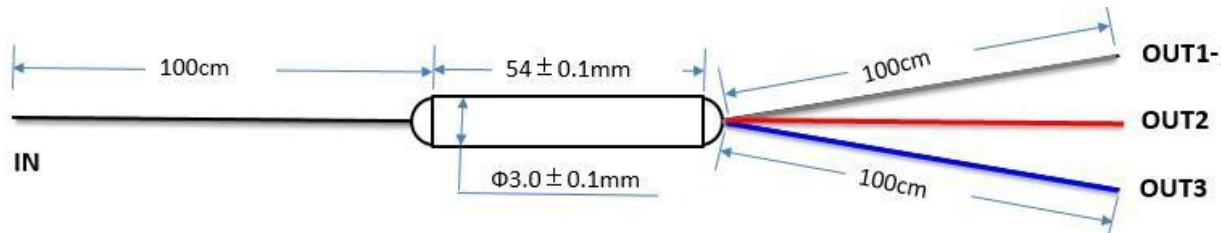
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Mechanical Dimensions (mm)



*OUT1 is highest output port.

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

Ordering Information (Part Number)

Prefix	Type	Wavelength	Grade	Coupling Ratio	Fiber Type	Fiber Cover	Connector ^[2]
FCTM-	S = S W = W D = D T = T	1310 = 3 1480 = 4 1550 = 5 1310/1550 = A 1310/1480/1550 = B Special = 0	A = A P = P Aerospace ^[1] = S	30/30/30 = 333 1/98/1 = 191 2/96/2 = 292 3/94/3 = 393 Special = 0	SMF-28 = 1 Special = 0	Bare fiber = 1 900um tube = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = 9 LC/UPC = U Special = 0

[1]. 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.

- Standard couplers are supplied with bare-fiber pigtails. Adding protective tubing will typically increase the package size and cost.

[2]. 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.