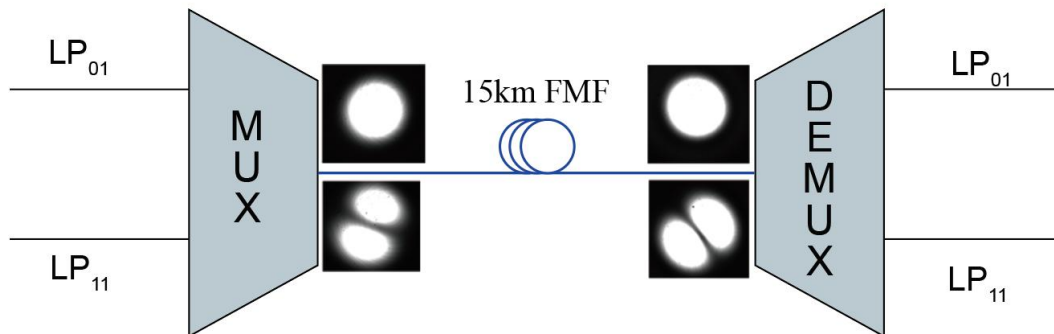


Three-Mode MDM Device



● Product Description

Our series of mode multiplexers/demultiplexers and mode converters are manufactured through a unique process design. They feature advantages such as low loss, low crosstalk, and a broad operating wavelength range, and are fully compatible with the few-mode fibers (FMFs) developed by our company. As key components for enabling mode multiplexing and demultiplexing, they are well suited for applications in optical transmission, optical sensing, scientific research, and other fields. We also provide comprehensive solutions for mode couplers tailored to few-mode fibers and multi-core few-mode fibers, along with customized services.



- **Product features**

Low insertion loss ; Low modal loss ; Low inter-modal crosstalk ; Wide operating wavelength range

- **Part Number**

MP-IP-MDM-3-C

- **Application area**

Optical fiber communication | Optical fiber sensing | Medical and Biological imaging

- **Core parameters**

Number of Modes	Operating Wavelength	Mode Crosstalk
3	C band or customized	<2.0

- **General Parameters**

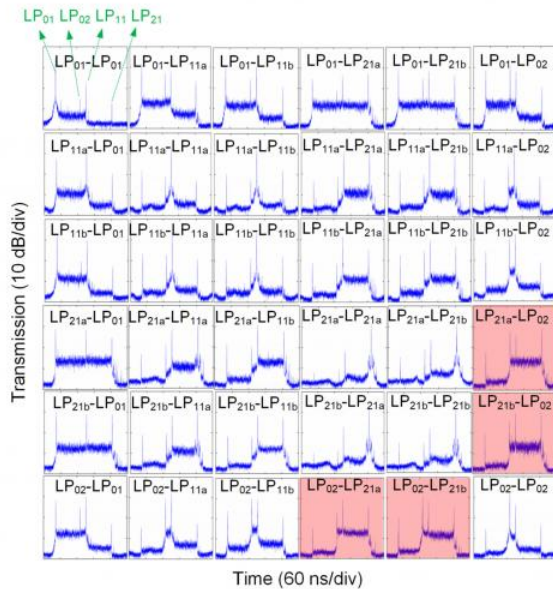
Parameters

Product Type	2-mode	3-mode	4-mode	6-mode
Number of Modes	2	3	4	6
Operating Wavelength	C band or customized			
Insertion Loss	<3.0	<3.0	<4.0	<5.0
Mode Crosstalk	<2.0	<2.0	<3.0	<3.0
Package Dimensions	100 mm × 80 mm × 9 mm or customized			
Pigtail Length	1.0 m or customized			
Connectors	FC, LC, SC, etc., PC/APC			

Note: For more specifications and parameters, please contact us.

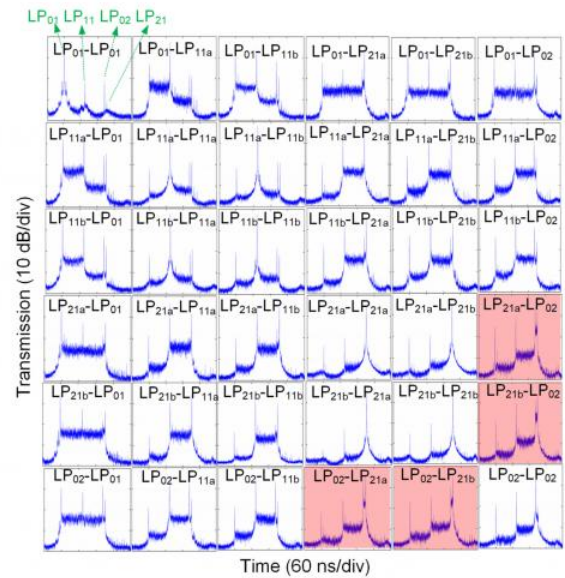
Application Cases

Optoweave ring-assisted four-mode fiber



Impulse response of an Optoweave 23.4 km-long ring-assisted four-mode fiber

Conventional four-mode fiber



Impulse response of a conventional 23.4 km-long four-mode fiber

Appendix: Few-Mode Fiber Specifications

	LP ₀₁	LP ₁₁	LP ₂₁	LP ₀₂
n_{eff}	1.4533	1.4511	1.4478	1.4460
Measured modal loss (dB/km@1550 nm)	0.222	0.233	0.242	0.237
Min $ \Delta n_{\text{eff}} $	1.8×10^{-3} (LP ₂₁ mode vs LP ₀₂ mode)			
A_{eff} (μm^2)	125	149	161	105
Bending Loss (dB/turn) @ R=10 mm	<<1	<<1	<<1	2.7
DGD vs LP ₀₁ mode (ps/m)	/	6.7	12.3	4.6
Dispersion (ps/nm/km)	23.8	26.6	22.4	-1.9
Loss of LP ₃₁ mode (dB/m)	2.3 (@ R=140 mm)			