

Fiber Mode Field Adapters

PM or Non-PM, 100-5000W



DATASHEET

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Features

- High Reliability
- Ultra-Low Loss
- Passive

Applications

- Laser
- Protection
- High Power Device

Standard splice between two asymmetric fiber geometries can lead to high insertion loss and degradation of the beam quality. A mode field adapter overcome this using an adiabatic taper between the two fibers to gradually expand or compress the mode field to achieve maximum signal transmission and M2 beam quality. Our Mode Field Adapters efficiently expand the mode field of an SM optical fiber or large-mode-area (LMA) fiber to match the LP01 mode of a larger LMA fiber. The PM Mode Field Adapter similarly expands the mode field of a PM optical fiber to match the LP01 mode of a polarization-maintaining LMA (PLMA) fiber while maintaining a high PER. These devices are bidirectional and can also be used in reverse to compress the mode field when the output end is used as an input. We offer standard configurations for most application scenarios. Customer parts are available with a NRE fee for different optical fibers, power levels, and package configurations by email.

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	1030-1080 or 1450-1600			nm
Insertion Loss ^[1]		0.2	0.5	dB
Polarization Dependent Loss (SM version only)		0.01	0.03	dB
Extinction Ratio (PM version only)	17	23	25	dB
Max Power			5000 ^[2]	W
Return Loss	45			dB
Operating Temperature	-10		85	°C
Storage Temperature	-40		85	°C

Notes:

[1]. Without connector and at room temperature

[2]. Require to mount on an effective heat sink

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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Mechanical Dimension (mm)

Type	Dimension (Mounting)	Schematic	Schematic	Note
D1	Φ4x60mm			Low power with glass tube Dissipated power<5W
D2	50x5x5mm			Low power with glass tube Dissipated power<5W
D3	70x12x8mm (54x7.0mm)			Low power with glass tube Dissipated power<10W
D4	75x12x8mm (54x7.0mm)			Mid power package, up to 1200W Dissipated power<50W
D5	80x14x10mm (54x8.4mm)			Mid power package up to 2500W Dissipated power<70W
D6	105x15x8mm (40x11mm)			Mid power package up to 1500W Dissipated power<60W
D7	100x28x12.6mm (66x23mm)			High power package up to 5000W Dissipated power<200W

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

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Ordering Information (Part Number) System

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Prefix	Dissipated Power	Wavelength	Input Fiber	Output Type	Fiber Cover	Fiber Length	Package
MFAD-	5W = 1	1020-1080nm = 1	LMAGDF10/125M = 19	LMAGDF10/125M = 19	0.25m = 1	Bare fiber = 1	D1 = 1
	10W = 2	1450-1600nm = 2	LMAGDF20/130M = 21	LMAGDF20/130M = 21	0.5m = 2	900 μm tube = 3	D2 = 2
	50W = 3		LMAGDF30/250M = 31	LMAGDF30/250M = 31	1.0m = 3	3mm tube = 5	D3 = 3
	60W = 4		LMAGDF20/400M = 44	LMAGDF20/400M = 44	1.5m = 4	Aarmor = 7	D4 = 4
	70W = 5		PM1060LFA = 15	PM1060LFA = 15	Special = 0	Special = 0	D5 = 5
	200W = 6		PLMAGDF20/130 = 20	PLMAGDF20/130 = 20			D7 = 7
	300W = 7		PLMAGDF30/250M = 30	PLMAGDF30/250M = 30			Special = 0
	Special = 0		PLMAGDF20/400M = 35	PLMAGDF20/400M = 35			

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