

Polarization Maintaining Mode Field Adapter



Description

A Mode Field Adapter (MFA) is a passive fiber-optic component designed to connect two fibers with different mode field diameters (MFDs) and optical characteristics, such as numerical aperture (NA), core diameter, or refractive-index profile. It is widely used in fiber amplifiers and fiber laser systems. An MFA typically employs an adiabatic tapered transition to gradually match the optical mode fields of the two fibers, thereby minimizing splice loss, suppressing higher-order mode excitation, and enabling efficient fundamental-mode coupling and transmission. We offer MFAs for various operating wavelengths, fiber types, power levels, and package configurations to meet diverse application requirements. For directional identification, we define transmission from the fiber with the smaller MFD to the fiber with the larger MFD as the forward direction, and transmission from the larger-MFD fiber to the smaller-MFD fiber as the backward direction.

Features

- Low Insertion Loss
- High Stability and Reliability
- Efficient Fundamental-Mode Coupling

Applications

- Fiber Laser
- Fiber Amplifier
- Scientific Research

Specifications

1.0μm Performance Parameters @Forward Transmission

Operating Wavelength (nm)	Signal Input Fiber	Signal Output Fiber	Signal Insertion Loss (dB)	Max Optical Power (CW)
1020-1080	PM980-XP	PM10/125μm,NA0.08/0.46	≤0.5	30W
1020-1080		PM15/130μm,NA0.08/0.46	≤0.5	30W
1020-1080		PM20/125μm,NA0.08/0.46	≤0.5	30W
1020-1080		PM25/250μm,NA0.065/0.46	≤0.5	100W
1020-1080		PM30/250μm,NA0.06/0.46	≤0.5	100W
1020-1080		PM20/400μm,NA0.065/0.46	≤0.5	100W
1020-1080	PM10/125μm,NA0.08/0.46 or PM1060L	PM15/130μm,NA0.08/0.46	≤0.5	30W
1020-1080		PM20/125μm,NA0.08/0.46	≤0.5	30W
1020-1080		PM25/250μm,NA0.065/0.46	≤0.5	100W
1020-1080		PM30/250μm,NA0.06/0.46	≤0.5	100W
1020-1080		PM20/400μm,NA0.065/0.46	≤0.5	100W

1.5μm Performance Parameters @Forward Transmission

Operating Wavelength (nm)	Signal Input Fiber	Signal Output Fiber	Signal Insertion Loss (dB)	Max Optical Power (CW)
1530-1570	PM1550	PM-GDF-1550	≤0.5	30W
1530-1570	PM-GDF-1550	PM12/130μm,NA0.20/0.46	≤0.5	30W
1530-1570	PM12/130μm,NA0.20/0.46	PM25/300μm,NA0.09/0.46	≤0.5	30W

2.0μm Performance Parameters @Forward Transmission

Operating Wavelength (nm)	Signal Input Fiber	Signal Output Fiber	Signal Insertion Loss (dB)	Max Optical Power (CW)
1950-2050	PM1950	PM10/130μm,NA0.15/0.46	≤0.5	30W
1950-2050	PM10/130μm,NA0.15/0.46	PM25/250μm,NA0.09/0.46	≤0.5	100W
1950-2050	PM1950	PM25/250μm,NA0.09/0.46	≤0.5	30W

1.0μm Performance Parameters @Backward Transmission

Operating Wavelength (nm)	Signal Input Fiber	Signal Output Fiber	Signal Insertion Loss (dB)	Max Optical Power (CW)
1020-1080	PM10/125μm,NA0.08/0.46	PM980-XP	≤0.5	30W
1020-1080	PM15/130μm,NA0.08/0.46		≤0.5	30W
1020-1080	PM20/125μm,NA0.08/0.46		≤0.5	30W
1020-1080	PM25/250μm,NA0.065/0.46		≤0.5	100W
1020-1080	PM30/250μm,NA0.06/0.46		≤0.5	100W
1020-1080	PM15/130μm,NA0.08/0.46	PM10/125μm,NA0.08/0.46 or PM1060L	≤0.5	30W
1020-1080	PM20/125μm,NA0.08/0.46		≤0.5	30W
1020-1080	PM25/250μm,NA0.065/0.46		≤0.5	100W
1020-1080	PM30/250μm,NA0.06/0.46		≤0.5	100W
1020-1080	PM20/400μm,NA0.065/0.46		≤0.5	100W

1.5μm Performance Parameters @Backward Transmission

Operating Wavelength (nm)	Signal Input Fiber	Signal Output Fiber	Signal Insertion Loss (dB)	Max Optical Power (CW)
1530-1570	PM-GDF-1550	PM1550	≤0.5	30W
1530-1570	PM12/130μm,NA0.20/0.46	PM-GDF-1550	≤0.5	30W
1530-1570	PM25/300μm,NA0.09/0.46	PM12/130μm,NA0.20/0.46	≤0.5	30W

2.0μm Performance Parameters @Backward Transmission

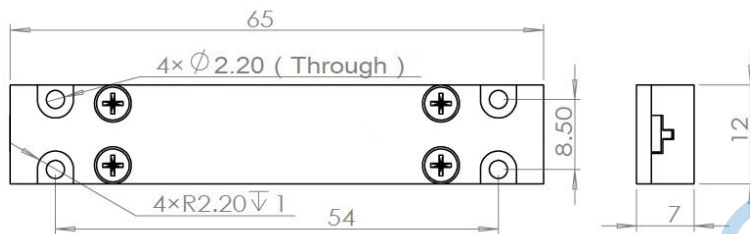
Operating Wavelength (nm)	Signal Input Fiber	Signal Output Fiber	Signal Insertion Loss (dB)	Max Optical Power (CW)
1950-2050	PM10/130μm,NA0.15/0.46	PM1950	≤0.5	20W
1950-2050	PM25/250μm,NA0.09/0.46	PM10/130μm,NA0.15/0.46	≤0.7	50W
1950-2050	PM25/250μm,NA0.09/0.46	PM1950	≤0.7	20W

Notes: Tested at 25 °C. Data exclude connectors. MFAs for other fiber combinations are available upon request. Please contact us for customized requirements.

Product Dimensions

Package Type	P1	P2	P3
Dimensions (mm)	50 x 5 x 5	65 x 12 x 7	80 x 12 x 8

Notes: The specific package dimensions are determined based on the power rating.



Ordering Information

					
Operating Wavelength	Transmission Direction	Max Optical Power (CW)	Signal Input Fiber	Signal Output Fiber	Pigtail Length
1030nm	Forward Transmission	20W	PM980	PM980	0.8m
1064nm	Backward Transmission	30W	PM1550	PM1550	1.0m
1550nm		50W	PM1950	PM1950	2.0m
2000nm		100W	PM10/125μm, NA0.08/0.46	PM10/125μm, NA0.08/0.46	
Custom			PM10/130μm, NA0.15/0.46	PM10/130μm, NA0.15/0.46	
			PM-GDF-1550	PM-GDF-1550	
			Custom	Custom	