

Polarization Maintaining Optical Isolator



Description

A Polarization Maintaining Optical Isolator (PM Isolator) is a passive optical device designed to allow light to pass in only one direction while preserving the state of polarization. Unlike standard optical isolators that are polarization insensitive, a PM isolator is specifically built for use with polarization-maintaining (PM) fibers, ensuring that the input polarization (typically aligned to the slow or fast axis) remains stable throughout transmission. It operates based on the Faraday effect, using magneto-optic components to rotate the polarization of forward-propagating light for transmission, while preventing reverse light from passing back due to polarization mismatch. This makes it highly effective in protecting sensitive optical sources such as lasers from back reflections, while maintaining strict polarization control.

Features

- Low Insertion Loss
- High Isolation
- Compact Size
- High Stability and Reliability

Applications

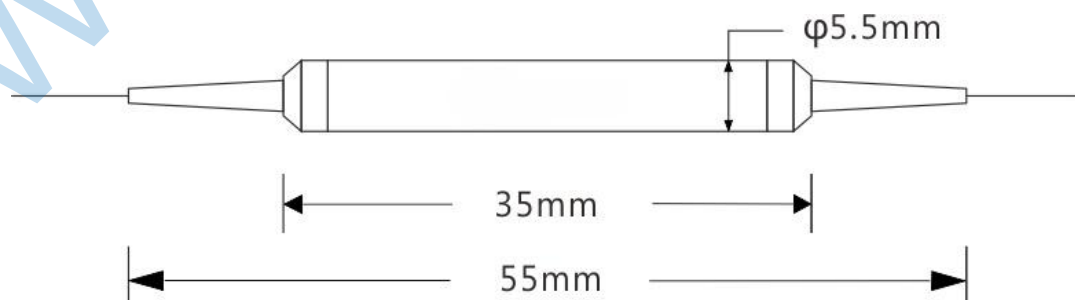
- Fiber Laser
- Fiber Optic Amplifier
- Fiber Optic Sensing
- Fiber Optic Communication

Specifications

Parameter	Unit	Value						
Center Wavelength	nm	1030	1064		1310/1480/1550		1950/2000/2050	
Operating Wavelength Range	nm	±5	±5	±5	±20	±20	±20	±20
Single/Dual Stage	-	Single Stage	Single Stage	Dual Stage	Single Stage	Dual Stage	Single Stage	Dual Stage
Peak Isolation	dB	≥32	≥35	≥55	≥40	≥55	≥20	≥40
Isolation	dB	≥28	≥30	≥45	≥26	≥45	≥16	≥35
Insertion Loss	dB	≤3.5	≤1.8	≤3.2	≤0.6	≤0.8	≤1.2	≤1.5
Return Loss	dB	≥50						
Extinction Ratio	dB	≥18	≥20	≥22	≥20	≥22	≥20	≥22
Max Optical Power (CW)	W	0.05	0.2	0.1	0.5/1/2/5			
Max Peak Power (Pulse)	KW	<1@ns pulse						
Fiber Type	-	PM980			PM1300	PM1550	PM1950	
Working Axis	-	Slow Axis (Default) or Fast Axis or Both Axis						
Package Dimensions	mm	Φ5.5 x L35						
Operating Temperature	°C	-5 to +70						
Storage Temperature	°C	-40 to +85						

Notes: Tested at 25 °C. Data exclude connectors. Adding connectors will increase insertion loss by approximately 0.3 dB, reduce return loss by 5 dB, and decrease extinction ratio by 2 dB. The fiber slow axis is aligned to the key by default.

Product Dimensions



Ordering Information

Center Wavelength	Max Optical Power (CW)	Single/Dual Stage	Working Axis	Fiber Type	Pigtail Length	Pigtail Diameter	Connector
1030nm	0.05W	Single Stage	Slow Axis	PM980	0.5m	250µm Bare Fiber	None
1064nm	0.1W	Dual Stage	Fast Axis	PM1300	1.0m	900µm Loose Tube	LC/UPC
1310nm	0.2W		Both Axis	PM1550	1.5m		LC/APC
1480nm	0.5W			PM1950	2.0m		SC/UPC
1550nm	1W						SC/APC
1950nm	2W						FC/UPC
2000nm	5W						FC/APC
2050nm							ST/UPC
							ST/APC