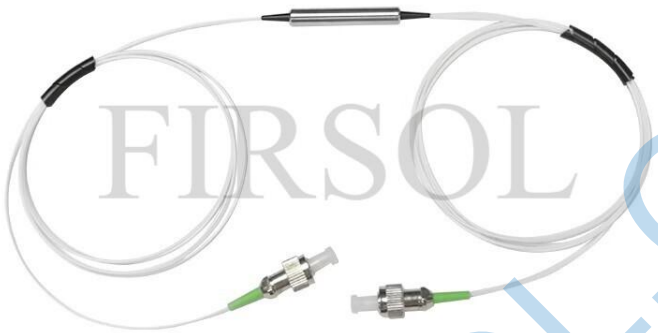
Polarization Maintaining Optical Isolator



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

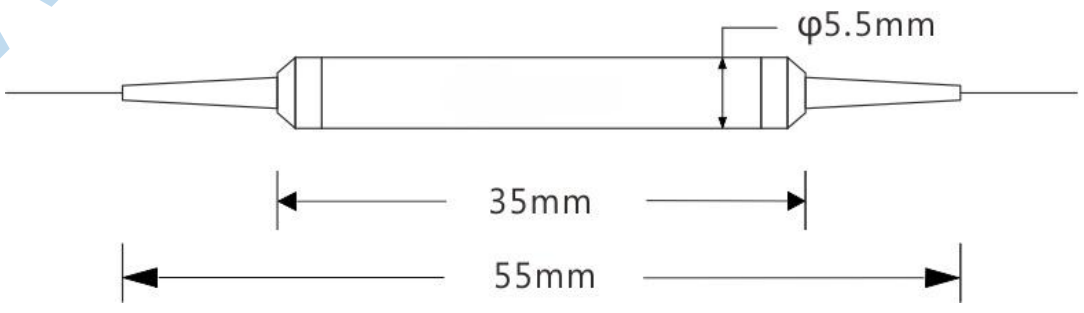
Fiber Laser
Fiber Optic Amplifier
Fiber Optic Sensing
Fiber Optic Communication

Specifications

Parameter	Unit	Value					
Center Wavelength	nm	1064		1310/1480/1550		1950/2000/2050	
Operating Wavelength Range	nm	±5	±5	±20	±20	±20	±20
Single/Dual Stage	-	Single Stage	Dual Stage	Single Stage	Dual Stage	Single Stage	Dual Stage
Peak Isolation (Typ.)	dB	35	55	40	55	20	40
Isolation (Min.)	dB	30	45	26	45	16	35
Insertion Loss (Max.)	dB	1.8	3.2	0.6	0.8	1.2	1.5
Return Loss (Min.)	dB	50					
Extinction Ratio (Min.)	dB	20	22	20	22	20	22
Max Optical Power (CW)	W	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

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