Fiber Inline Polarizer

(400nm to 2300nm, ER up to 25, all fiber types)

DATASHEET

Return to the Webpage

The In-line Polarizer is designed to pass light with one specific polarization while blocking the other polarization. It can be used to convert no-polarized light into polarized light with high extinction ratio. It can also be used to enhance the extinction ratio of signals with its polarization properties. We offer all possible fiber coupling combinations: PM to PM, SM to PM, SM to SM. High power version is also available in which a third port is added to guide the unwanted light out. Our design minimizes component assembly costs and module footprint while increasing stability over a wide temperature and wavelength ranges.

For low ER ratio we use fused method. For high ER requirement, we use micro-optic method in which a polarizer is placed between a pair of collimators.

Features

- Low Cost
- All Wavelength
- All Fiber Type
- Compact Design

Applications

- Laser
- Device
- Instruments

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	450		2300	nm
Wavelength Bandwidth	-40		+40	nm
Insertion Loss [1]		0.3	1.9	dB
Polarization Extinction	18		32	dB
Optical Power Handling[2]	0.1		10	W
Tensile load		5		N
Return Loss	50			dB
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C
Reliability	Telcordia 1209 and 1221			

Note:

[1]. Excluding connectors. Fused with low ER has lower loss. Micro-optic has above 0.5 dB higher loss. Small fiber core has high loss.

[2]. Excluding connectors. Fused with low ER has higher power handling. Small fiber core has low power handling. At 450nm, the a regular micro-optic device only has 80 mW power handling threshold. High power up to 10W is available with in fiber core enlargement.

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]:

Legal notices: All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

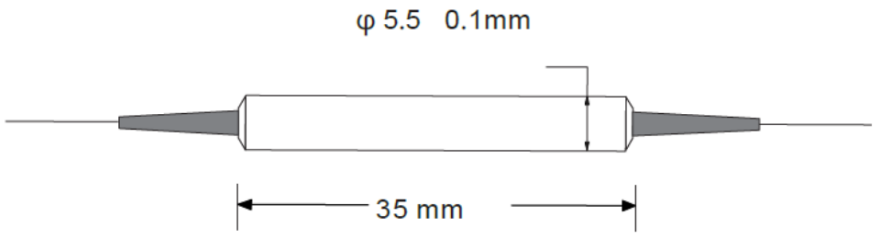
Rev 05/30/25

Fiber Inline Polarizer

(400nm to 2300nm, ER up to 25, all fiber types)

DATASHEET

Dimensions (mm)



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

Ordering Information (Part Number)

	☐	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Wavelength**	**Package**	**Input Fiber[1]**	**Output Fiber [1]**	**Power**	**Fiber Cover**	**PER [2]**	**Fiber Length**	**Connector [3]**
FILP-	1060 = 1 1310 = 3 1420 = 4 1550 = 5 980 = 9 850 = 8 780 = 7 650 = 6 550 = W 450 = A 400 = B Special = 0	Standard = 1 Special = 0	SM28 = 1 PM1550 = 2 PM1310 = 3 Hi1060 = 6 Special = 0	PM1550 = 2 PM1310 = 3 PM1060 = 6 Special = 0	200mW = 1 500mW = 2 1W = 3 2W = 4 5W = 5 10W = 9	0.9mm Tube = 3 Bare Fiber = 1 3mm tube = 4 Special = 0	>18 = 2 >25 = 3 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 1.5 m = 5 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 LC/PC = 7 LC/APC = A LC/UPC = U FC/PC5W = H FC/APC5W = A FC/PC10W = T Special = 0

Red is special orders

Note:

[1]. Select fiber below

[2]. For short wavelength <1000nm, the PER is >18. When select PER >30 for wavelength >1000nm, the connector is $450 ea.

[3]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Fiber Type Selection Table:

1	**SMF-28**	2	**PM1550**
2		A	**PM1950**
3		3	**PM1310**
4	**SM450**	B	**PM400**
H	**SM2000**	C	**PM480**
6	**SM600**	D	**PM630**
7	**Hi780**	E	**PM850**
8	**SM800**	F	**PM980**
9	**Hi980**	G	**PM780**
6	**Hi1060**	H	**PM350**
11		W	**PM405**
12		M	**PM2000**

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

Fiber Inline Polarizer

(400nm to 2300nm, ER up to 25, all fiber types)

DATASHEET

Application Notes

Fiber Core Alignment
Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness
Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

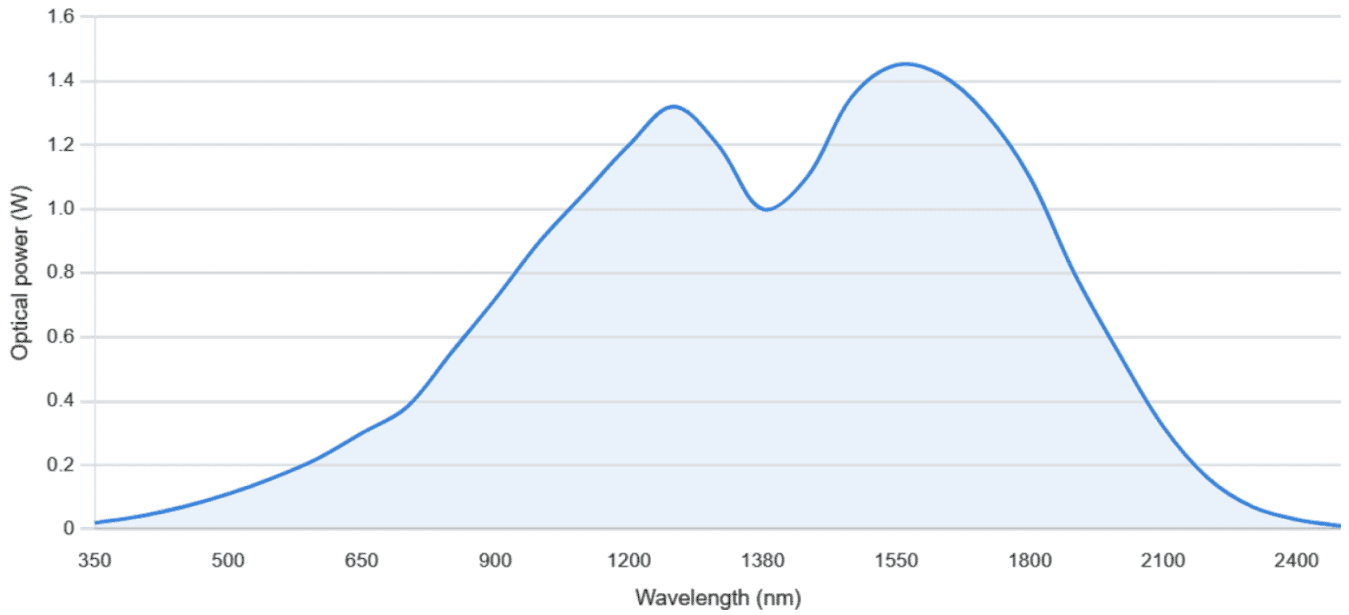
Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

Fiber Inline Polarizer

(400nm to 2300nm, ER up to 25, all fiber types)

DATASHEET

Regular Single Mode / Polarization Maintaining Fiber Optical Power Handing vs Wavelength



Single mode fiber optical power is limited by nonlinear effects in addition to absorption that increase loss and generate heat. The curve shows the approximate safe CW power envelope for standard single-mode fiber. Actual limits depend on fiber design, core size, length, and laser characteristics. Specialty fibers can significantly increase the power limit.

© Photonwares Corporation
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.