Broad-Band Low PMD Fiber Optical Isolator

(patents pending)

DATASHEET

BUY NOW

This series optical Isolator is a passive device based on TGG material to provide a broad band laser transmission from 680 to 1070nm in the normal direction while minimizing back reflection and back scattering in the reverse direction for any state of polarization. With Agiltron's proprietary configuration, the new isolator features extremely low polarization mode dispersion (PMD) in addition of low insertion loss, high isolation, compact structure, and high stability. This unique performance attribute makes it an ideal choice for very broadband SLD sources widely used in OCT and other optical fiber sensing systems. We currently offer a full range of polarization independent, single mode and multimode versions. Agiltron also provides customized design to meet special application or cost requirements.

Features

- Extremely low PMD
- High Isolation
- Low Insertion loss
- High Stability
- High Reliability
- Cost Effective

Applications

- Broadband SLD source
- Fiber Optic Sensor
- Test and Measurement
- Instrumentation

Specifications

Parameter		Min	Typical	Max	Unit
Operating Wavelength			680 ~ 1070		nm
Insertion Loss [1]			0.8	1.2	dB
Wavelength Dependent Loss				0.2	dB
Peak Isolation		24	27		dB
PDL			0.1	0.2	dB
PMD	SMF version		0.02	0.04	ps
	MMF version		0.05	0.12	ps
Return Loss	SMF version	50			dB
	MMF version	35			dB
Optical Power Handling			300		mW
Storage Temperature		-10		60	°C
Fiber Type		See order information			

Notes:

[1]. Measured without connectors. For MMF version, measured at CPR =14dB.

Rev 01/22/24

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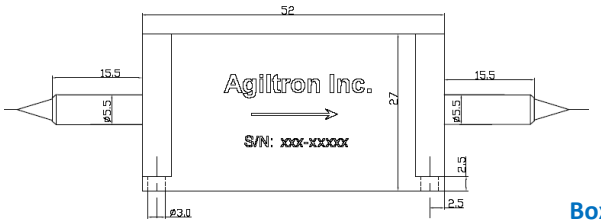
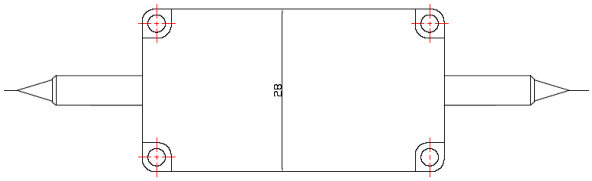
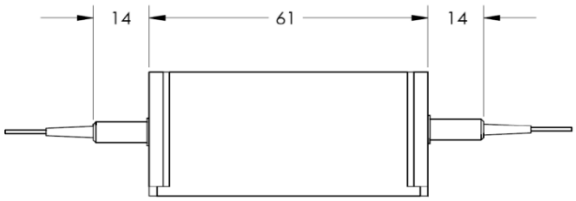
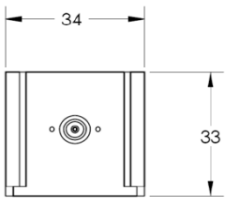
Mechanical Dimensions (mm)



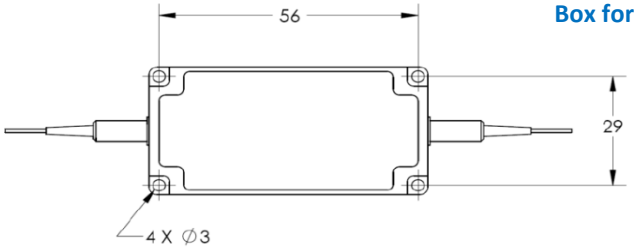
Box for wavelength shorter than 900nm

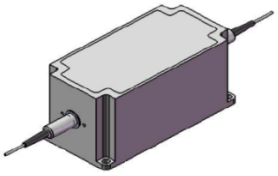






Box for wavelength 960 ~ 1070nm





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

Ordering Information

	1 1	☐	2	☐	☐	☐	☐	☐
Prefix	**Configuration**	**Wavelength**	**Grade**	**Package**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
OIST-	Polarization Independent = 11	1060nm = 1 1030nm = 3 980nm = 9 850nm = 8 780nm = 7 660nm = 6 Special = 0	Extremely low PMD = 2	Small = S Large = L	HI1060 = 2 HI980 = 9 HI780 = 7 MM50/125 = 5 Special = 0	0.9mm tube = 3 Bare fiber = 1 Special = 0	0.25m = 1 0.5m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

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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.