

Reflective Dual Stage High Power 850/980/1060 Optical Isolator



(protected by patent US7920763B1)

DATASHEET

BUY NOW



The OI Series 850/980/1060 nm optical Isolator provides compact size and two stage high isolation. It is a passive device that guides lights at 850/980/1060 nm in the normal direction while minimizing back reflection and back scattering in the reverse direction for any state of polarization. It is based on a high quality US TGG crystal in combination with Agiltron's proprietary magnetic-optics technology and proven advanced micro optics design, featuring low insertion loss, high isolation, broad operation wavelength, compact size, high power handling, and high stability. We offer a full range of polarization independent, polarization maintain, and multimode versions.

Agiltron also provides customized design to meet special applications. Low temperature operation version and magnetic field shielding version are also available.

Features

- Low Insertion Loss
- High Isolation
- Low PDL
- High Stability
- Wide Spectral Coverage
- Cost Effective

Applications

- Optical Fiber Amplifier
- Pump Laser Source
- Fiber Optic Sensor
- Test and Measurement
- Instrumentation

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	850		860	nm
	980		990	
	1060		1070	
Insertion Loss ^[1]		1.5	1.8	dB
Wavelength Dependent Loss			0.2	dB
Polarization Extinction Ratio ^[2]	20	23		
Isolation	850/1060	40	45	dB
Polarization Dependent Loss ^[3]		0.2	0.4	dB
Polarization Mode Dispersion ^[3]			0.2	ps
Return Loss	50			dB
Optical Power Handling			20	W
Storage Temperature	-10		60	°C
Fiber Type	See order information			

Notes:

- [1]. Excluding connectors.
- [2] Only for polarization dependent devices.
- [3] Only for polarization independent devices.

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Rev 01/22/24

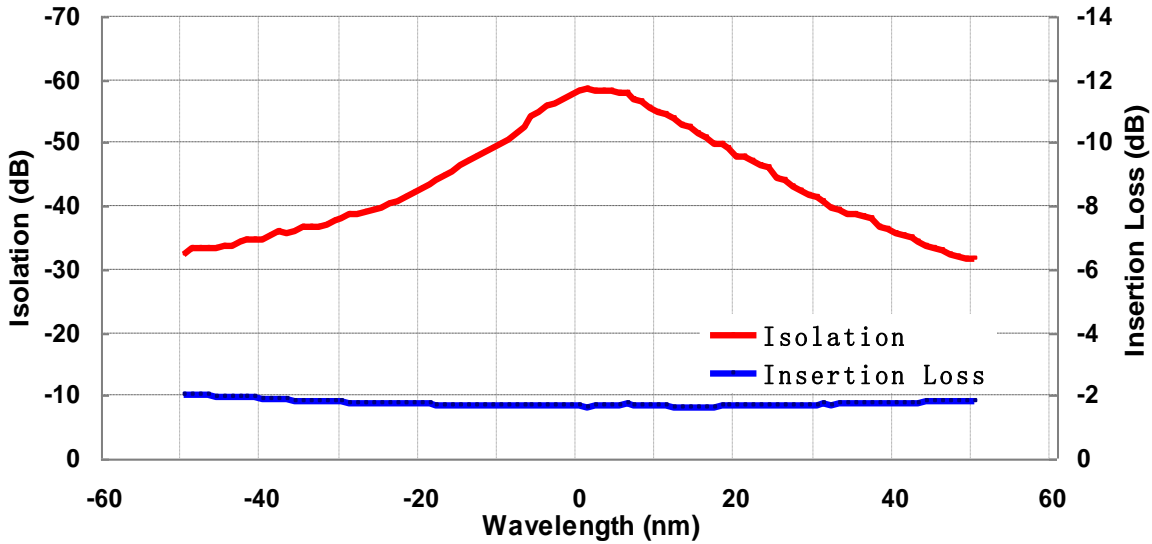
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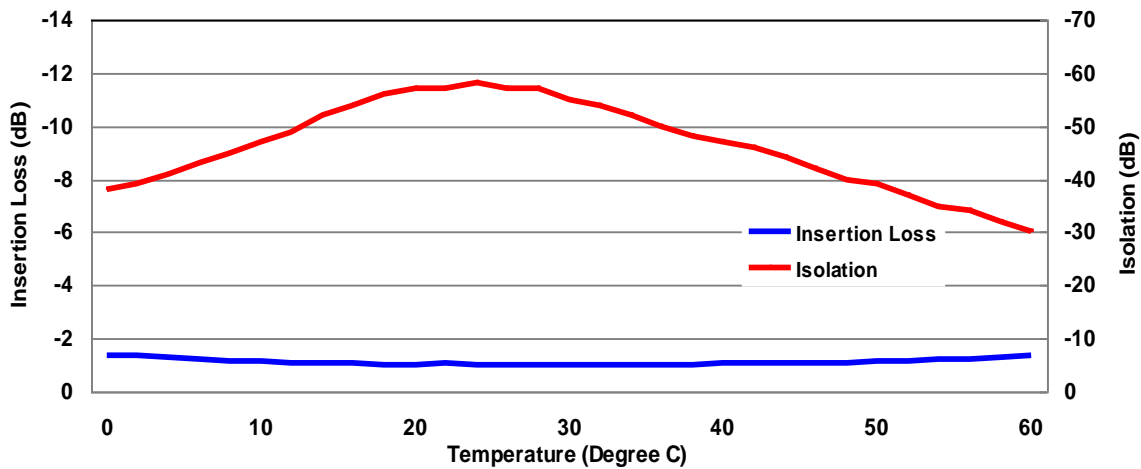
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Optical Performance



IL/ISO VS. Temp @ Center Wavelength



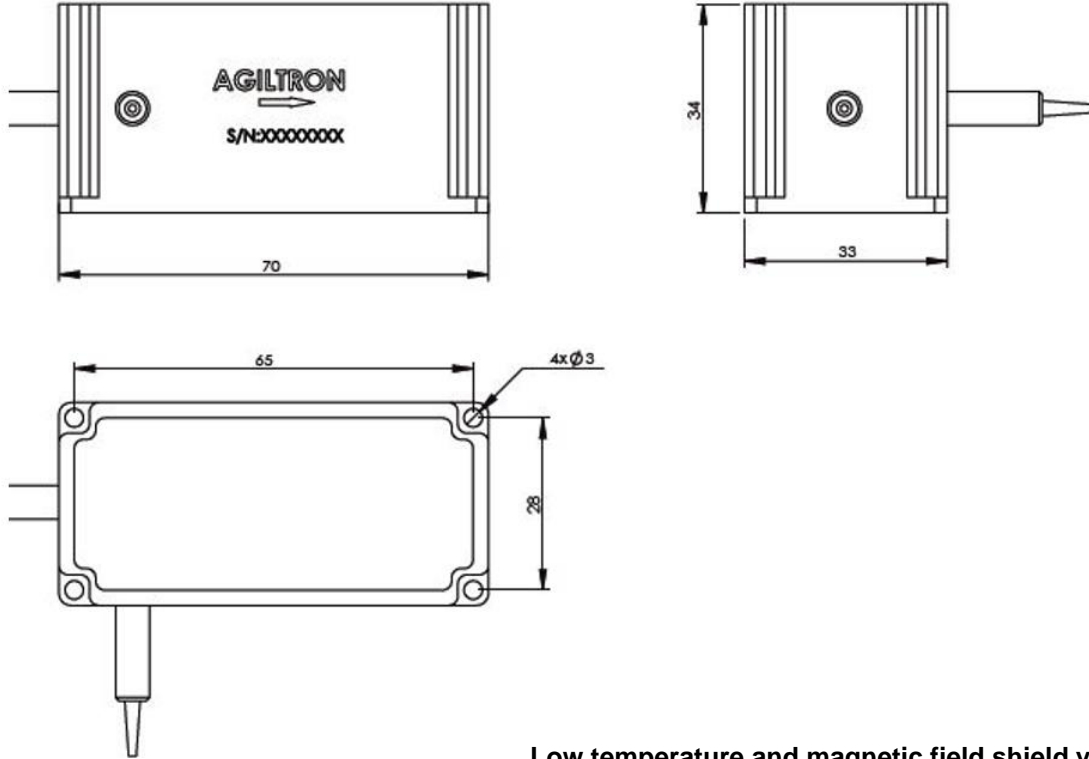
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Mechanical Dimensions: Standard (mm)



Low temperature and magnetic field shield version have dimension 72mmx36mmx35mm.

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

Ordering Information

Prefix	Configuration	Wavelength	Grade	Package	Fiber Type	Fiber Cover	Fiber Length	Connector
OIST-	2-stage HP PI = 41 2-stage HP PM = 42 Special = 10	1060 = 1 850 = 8 980 = 9 Special = 0	1W = 1 2W = 2 5W = 5 10W = 6 20W = 7 Special = 0	Reflective = 2 Low T = 5 Special = 0	HI1060 = 2 HI980 = 9 HI780 = 7 PM980 = E PM850 = D 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 handling by expanding the core side at the fiber ends.