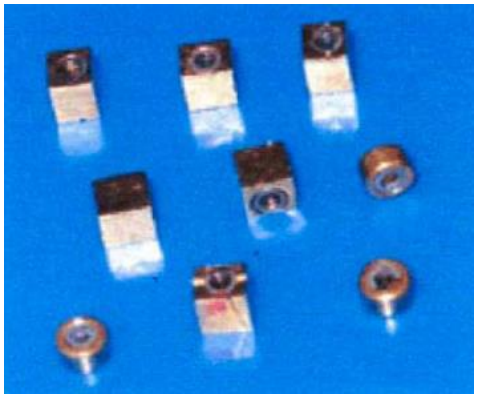
Free Space 1310nm/1550nm Dual-Stage Optical Isolator

DATASHEET

BUY NOW



The FSOI Series Free Space 1310nm/1550nm optical Isolator is a passive device that guides lights at 1310/1550 nm in the normal direction while minimizing back reflection and back scattering in the reverse direction.

With Agiltron's proprietary magnetic-optics technology and proven advanced Micro optics design, it features low insertion loss, high isolation, compact structure, high power handling, and high stability. Agiltron also provides customized designs to meet special applications.

Features

- Low Insertion Loss
- High Isolation
- Compact Size
- High Reliability
- Versatile Package

Applications

- Optical Transmitter
- Laser Diode
- Instrumentation

Specifications

Parameter		Min	Typical	Max	Unit
Central Wavelength (λc)			1310, 1550		nm
Insertion Loss (λc, ±20nm, 23°C) [1]	P Grade		≤ 0.3		dB
	A Grade		≤ 0.5		
Minimum Peak Isolation (λc, 23°C)	P Grade		≥ 55		dB
	A Grade		≥ 50		
Clear Aperture			Ø 0.9		mm
Operating Temperature		-5		+65	°C
Storage Temperature		-40		+85	°C
Optical Power Handling			≤ 50		W/cm²

* Other wavelength is available per customer's request

Note: For a polarized input light version, the isolation is optimized to block the light reflection of the same polarization. Although lights of other polarizations may also be blocked, the extinction may be poor. PM isolators can be specially made to block backward propagating lights of all polarizations. PM isolators can also be made with a light polarizing function.

Rev 03/31/24

© Photonwares Corporation

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

Free Space 1310nm/1550nm Dual-Stage Optical Isolator

DATASHEET

Mechanical Dimensions (mm)

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

Ordering Information

	2 0	☐	☐	☐	0 0	0	0
Prefix	**Type**	**Wavelength**	**Grade**	**Package Type** (unit: mm)	**Fiber Type**	**Fiber Length**	**Connector**
FSOI-	Dual stage = 20	1310 = 3 1550 = 5 Special = 0	Premium = P Grade A = A Special = 0	2.5x1.4x1.8 = 1 2.5x2.5x1.9 = 2 2.5x2.5x2.0 = 3 2.5x2.5x2.6 = 4 2.5x2.5x3.0 = 5 Ø2.5x3.0 = 6 Ø2.99x3.0 = 7 Ø2.5x2.0 = 8 Ø2.5x1.8 = 9 Ø2.5x2.6 = A Ø2.5x3.0 = B Special = 0	Free space = 00	Free space = 0	Free space = 0

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.

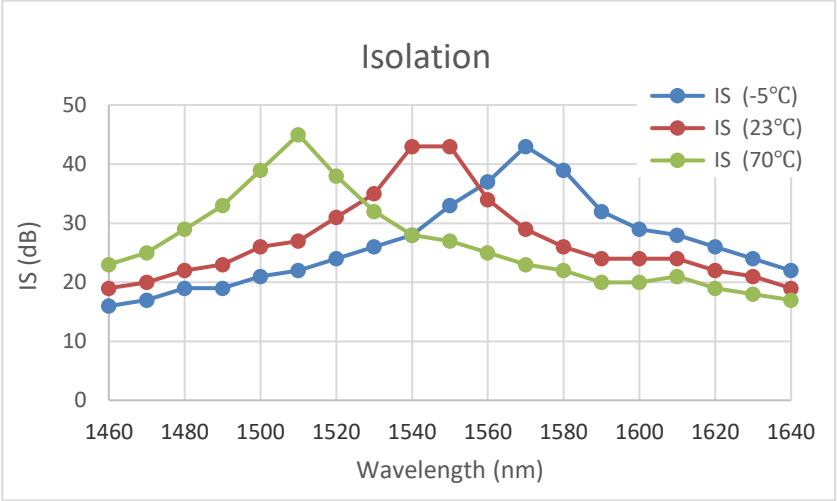
Fiber Cleanliness
Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

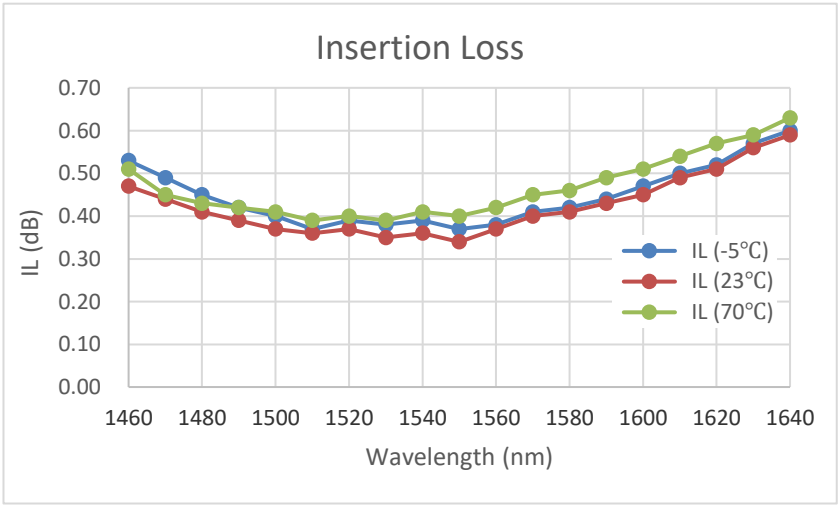
Maximum Optical Input Power
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should 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.

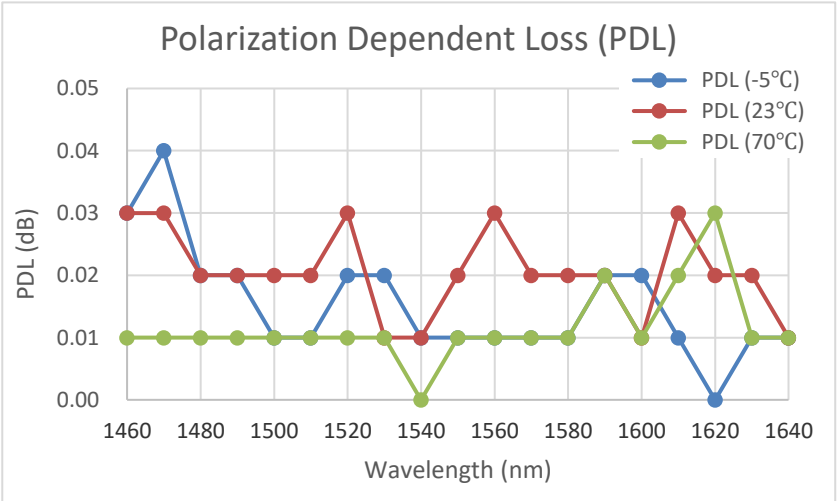
Free Space 1310nm/1550nm Dual-Stage Optical Isolator

DATASHEET

Typical Wavelength Dependence for Single Stage





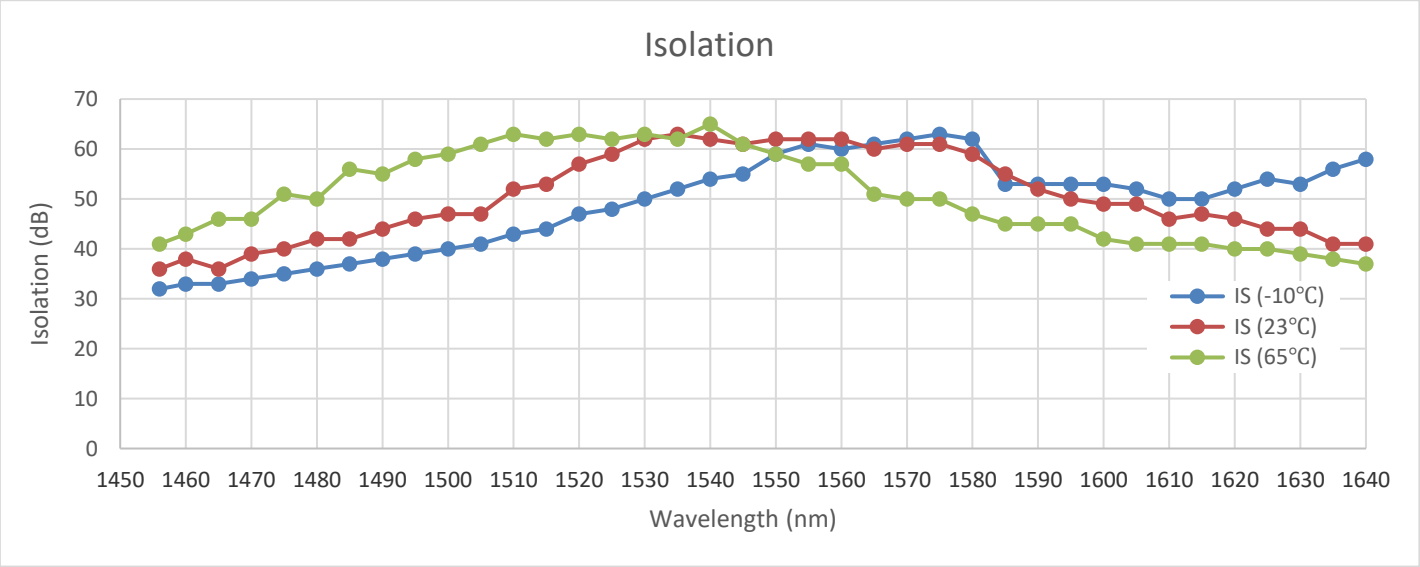


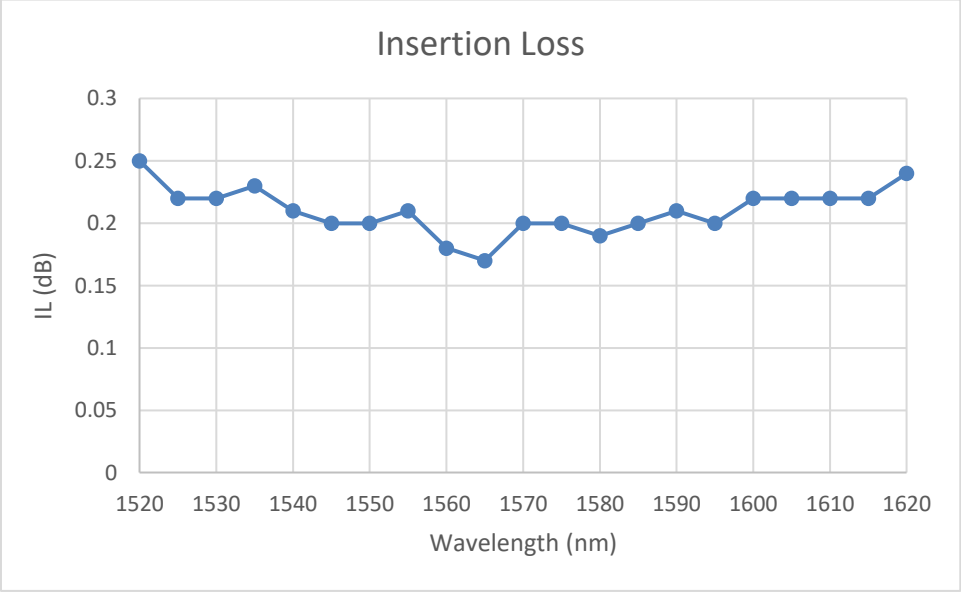
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Free Space 1310nm/1550nm Dual-Stage Optical Isolator

DATASHEET

Typical Wavelength Dependence for Dual Stage





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