

# Free Space Optical Isolator

(1310/1550/2000 nm, 3-5 mm apertures)



DATASHEET

BUY NOW



## Features

- Low Insertion Loss
- High Isolation
- High Stability
- High Reliability
- Cost Effective

## Applications

- Optic Sensor
- Laser Systems
- Test and Measurement
- Instrumentation

The OITG Series Free Space optical Isolator is a unidirectional light valve that transmits light in the normal direction while blocking backreflection and backscattering in the reverse direction. The device protects a laser source from destabilizing feedback or damage from back-reflected light. The OIBG isolators have a miniature package and suitable for compact and low-power laser sources. The standard isolator will rotate the polarization direction to 45 degrees, but the waveplate is optional to rotate the polarization of the output beam to a desired direction.

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

## Specifications

Parameter	Min	Typical	Max	Unit
Center Wavelength	1310	1550	2000	nm
Insertion Loss		0.4	0.6	dB
Wavelength Dependent Loss			0.2	dB
Isolation Single Stage	30	35	40	dB
Isolation Double Stage	40	45	55	dB
Optical Aperture		ø3.0		mm
		ø5.0		mm
Storage Temperature	-10		+60	°C
Packaging Size (3 mm aperture)	0.5 W	ø5.5 x 5 (mm)		
	1 W	ø12.5 x 9 (mm)		
	5 W	ø15 x 12 (mm)		
	15 W	ø20 x 50 (mm)		

**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.

**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](#):

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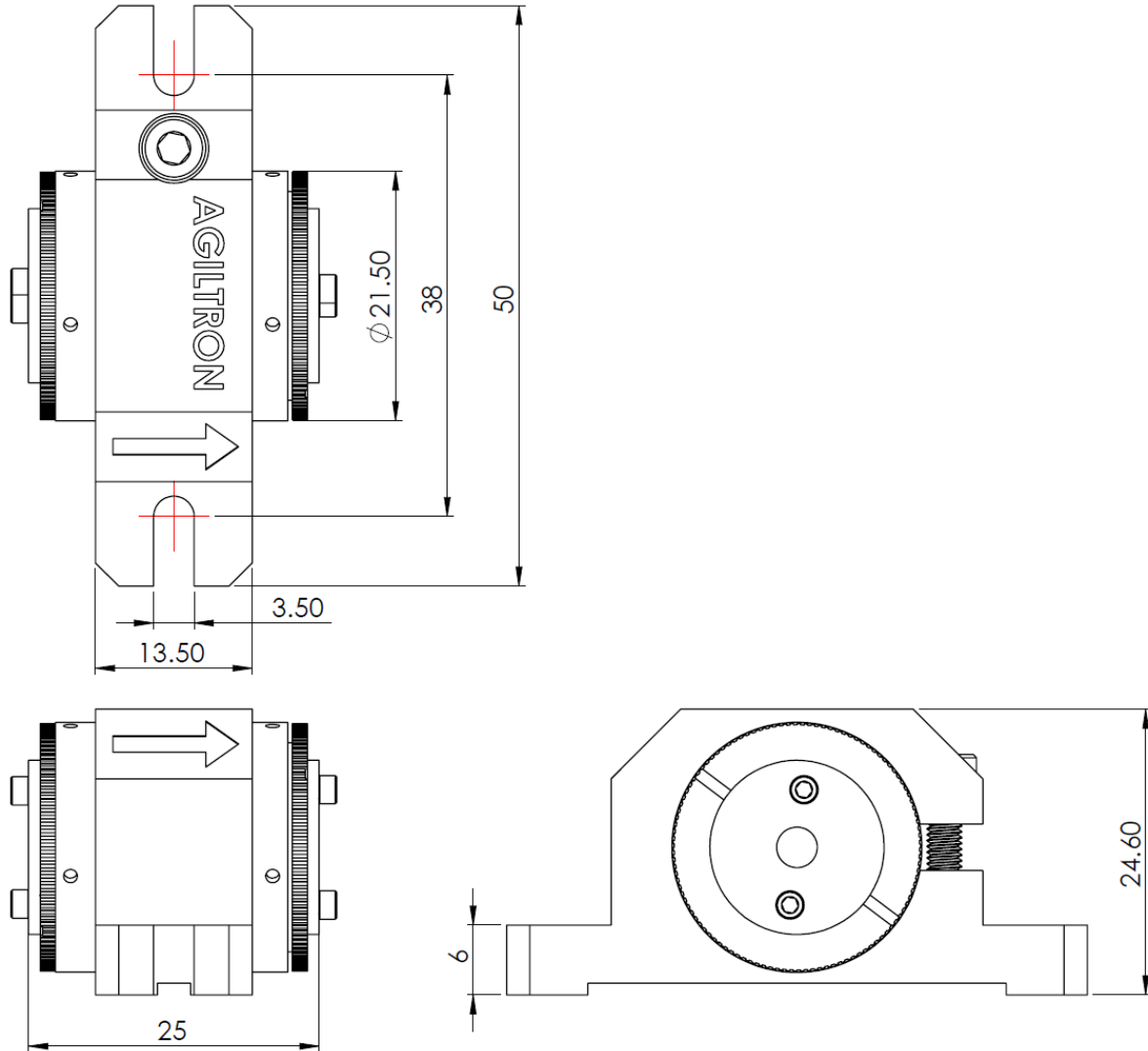
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### Mechanical Dimensions (Unit: mm)



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

### Ordering Information

Prefix	Type	Wavelength	Isolation Stage	Aperture	Power Handling	Waveplate	Mounting Plate	Polarizer
OIBG-	Free Space = 1 Special = 0	1310nm = 13 1550nm = 15 2000 nm = 20	Single = 1 Double = 2 Special = 0	3mm = 2 5mm = 5 Special = 0	0.5 W = 1 1 W = 2 5 W = 5 10 W = 6 15 W = 7 Special = 0	No = 0 Yes = 1	Yes = 1 No = 0	Non = N Polacore = 1 PBS = 2

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## Application Notes

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### 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 ( $<5 \mu\text{m}$ ) 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.