

# Free Space Optical Isolator

(405-1060nm, TGG Crystal)



The OITG Series Free Space optical Isolator is a unidirectional light valve that transmits light in the normal direction while blocking back-reflection and backscattering in the reverse direction. The device protects a laser source from destabilizing feedback or damage from back-reflected light. The OITG isolators are based on high-quality TGG Faraday crystals of low loss and high optical power threshold. High-power fused silica PBS cubes are used for polarization filtering and a waveplate is optional to rotate the polarization of the output beam to a desired direction. Double escape ports are built-in for added application flexibility.

It is available with options of wavelength tunable configuration, thin film polarizers for compactness, integrated tap monitor for feedback. Agiltron excels at providing customized design solutions to meet special applications.

## Features

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

## Specifications

| Parameter                    | Min                | Typical | Max  | Unit              |
|------------------------------|--------------------|---------|------|-------------------|
| Center Wavelength            | 450                |         | 1060 | nm                |
| Insertion Loss               |                    | 0.3     | 0.6  | dB                |
| Wavelength Dependent Loss    |                    |         | 0.2  | dB                |
| Isolation Single Stage       | 25                 | 35      | 38   | dB                |
| Isolation Double Stage       | 40                 | 45      | 55   | dB                |
| Optical Aperture Ø           | 2                  | 5       | 40   | mm                |
| Pulse Damage Threshold @10ns | 3.5                |         | 5    | J/cm <sup>2</sup> |
| Operating Temperature        | -10                |         | 45   | °C                |
| Polarizer Type               | Horizontal         |         |      |                   |
| Polarizer Type               | PBS Cube, Polacore |         |      |                   |

## Applications

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

**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 05/17/23

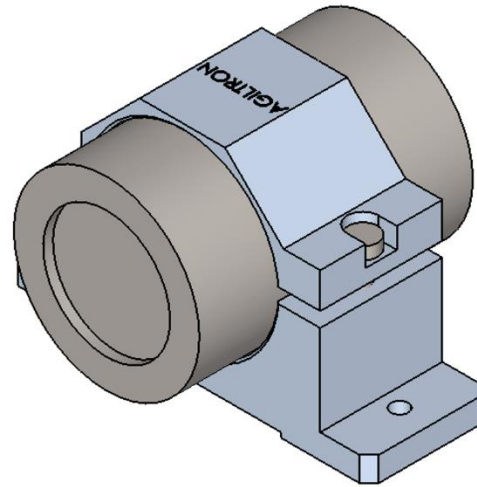
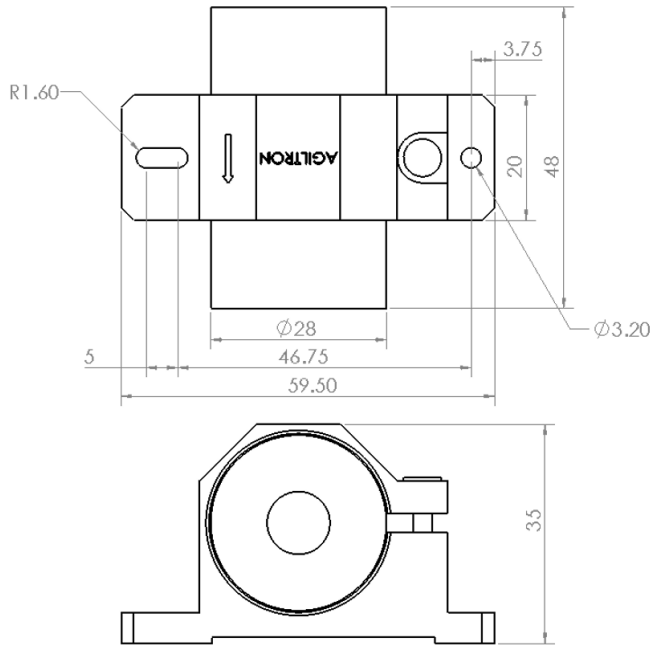
# Free Space Optical Isolator

(405-1060nm, TGG Crystal)

## DATASHEET

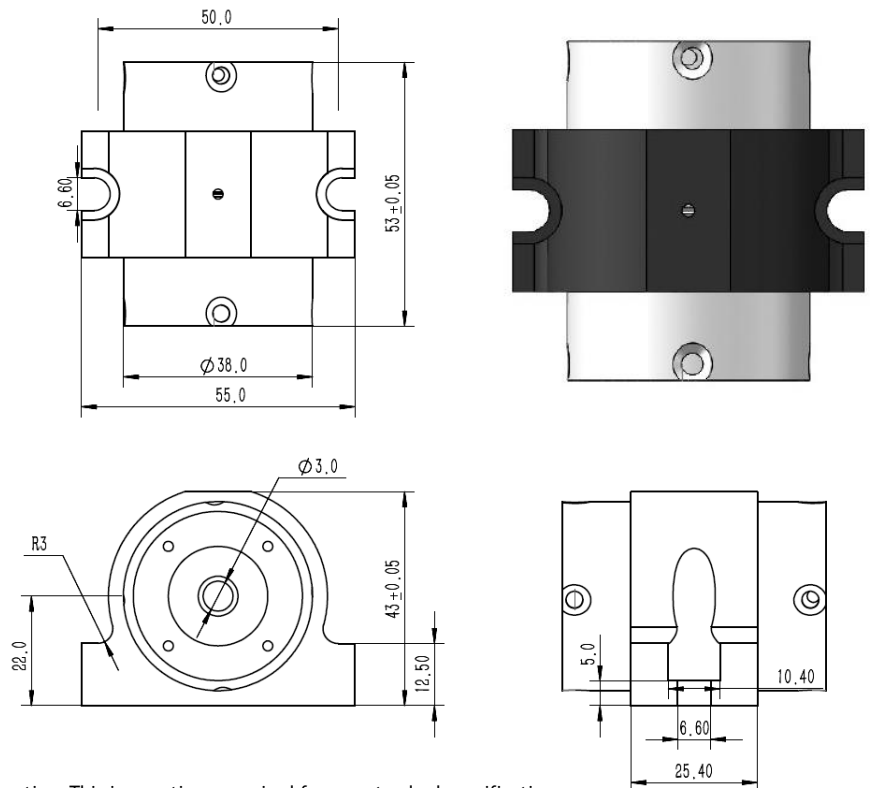
### Mechanical Dimensions (mm)

**Note: The listed dimensions are for using thin polacore, for PBS version both ends add about 5mm extrusions**



**2 mm Aperture**

Polarizer Type: High Power(HP)  
 Transmission@1020-1060nm >92%  
 Clear Aperture: 3mm/5mm  
 Optical Rotation: 45.5°  
 Damage Threshold: 10J/cm<sup>2</sup>@10ns



**3 / 5 mm Aperture**

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

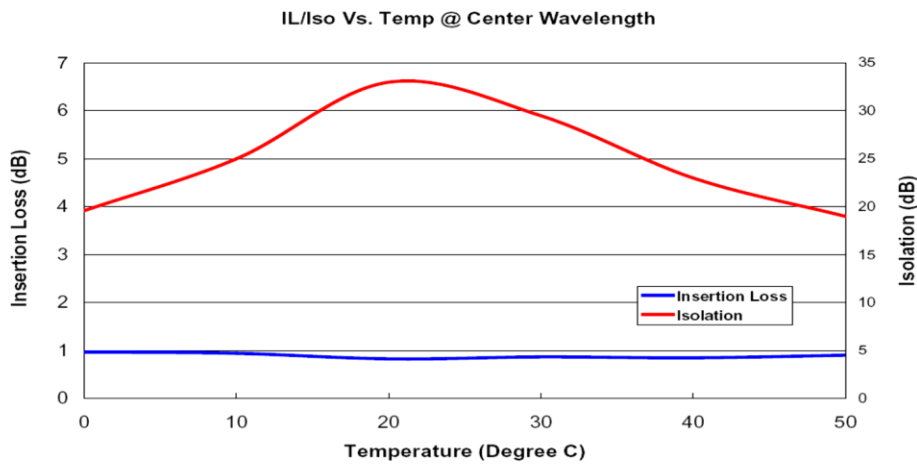
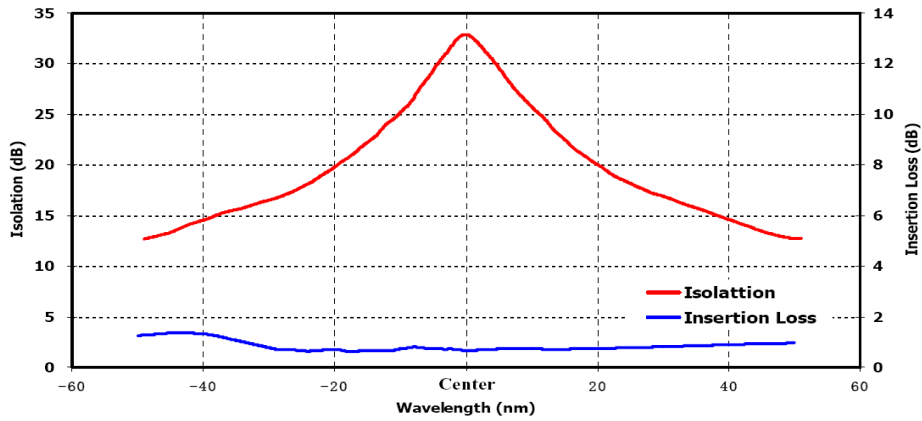
# Free Space Optical Isolator

(405-1060nm, TGG Crystal)



## DATASHEET

### Optical Performance (single Stage)



# Free Space Optical Isolator

(405-1060nm, TGG Crystal)

## DATASHEET

### Ordering Information

| Prefix       | Type                          | Wavelength (nm)   | Isolation Stage                         | Aperture   | Power Handling  | Waveplate Rotation | Mounting Plate    | Polarizer                         |
|--------------|-------------------------------|---|---|--|---|--------------------|-------------------|-----------------------------------|
| <b>OITG-</b> | Free Space = 1<br>Special = 0 | 1060 =16<br>1050 =15<br>1030 =13<br>980 =98<br>940 =94<br>895 =89<br>850 =85<br>830 =83<br>780 =78<br>633 =63<br>660 =66<br>670 =67<br>589 =58<br>560 =56<br>532 =53<br>488 =48<br>440 =44<br>405 =40 | Single = 1<br>Double = 2<br>Special = 0 | 2mm = 1<br>3mm = 2<br>5mm = 5<br>8mm = 8<br>10mm = A<br>25mm = B<br>40mm = C | 0.2W = 1<br>1W = 2<br>5W = 5<br>10W = 6<br>15W = 7<br>Special = 0 | Yes = 1<br>No = 0  | Yes = 1<br>No = 0 | PBS= 1<br>Polacore = 2<br>Non = 3 |