

## **Faraday isolator**



### **DESCRIPTION**

Faraday optical isolator is a passive optical device that only allows unidirectional light to pass through. It is generally composed of TGG crystal or glass, external magnetic field, polarizer, and polarizer. Its working principle: for the normal incident signal light, becomes linearly polarized light after passing through the polarizer. TGG crystal or glass together with the external magnetic field rotates the polarization direction of the signal light by 45 degrees (Faraday effect of magneto-optical crystal) and just makes its low loss pass through the polarizer placed at 45 degrees with the polarizer. For the reverse light, when the linearly polarized light from the polarizer passes through the TGG crystal, the deflection direction also rotates 45 degrees to the right, so that the polarization direction of the reverse light is orthogonal to the polarizer direction, completely blocking the transmission of the reflected light. The isolator without polarizer and polarizer is called the Faraday rotator. The function of the Faraday optical isolator is to prevent the adverse effects of backward transmitted light in the optical path on the light source and optical path system due to various reasons.

### **FEATURES**

- High isolation
- Low insertion loss
- Multiple transparent holes
- Multi wavelength available
- Controllable output polarization

### **APPLICATIONS**

- Film locked laser
- Semiconductor laser
- Optical measuring equipment
- Optical parametric oscillator
- Seed light amplification laser





# Faraday isolator

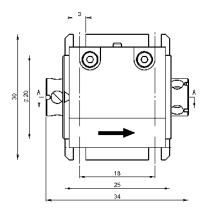
### **PARAMETER**

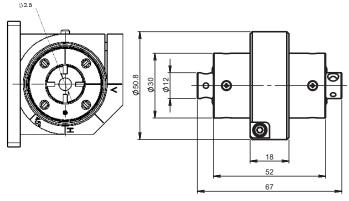
Central Wavelength	Clear Aperture	Isolation @25℃	Transmissivity <b>@25℃</b>	Polariser	Damage threshold @10ns	Package type
532nm	5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	2#
633nm	2.5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	1#
633nm	5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	2#
780nm	2.5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	1#
780nm	5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	2#
785nm	2.5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	1#
785nm	5mm	> 30dB	> 90%	PBS Cube	3.5J/cm <sup>2</sup>	2#
1030nm	2.5mm	> 30dB	> 90%	PBS Cube	5J/cm²	3#
1030nm	5mm	> 30dB	> 90%	PBS Cube	5J/cm²	3#
1064nm	2.5mm	> 30dB	> 90%	PBS Cube	5J/cm²	3#
1064nm	5mm	> 30dB	> 90%	PBS Cube	5J/cm²	3#
	532nm 532nm 633nm 633nm 780nm 780nm 785nm 1030nm 1030nm	Wavelength         Aperture           532nm         5mm           633nm         2.5mm           780nm         2.5mm           780nm         5mm           785nm         2.5mm           785nm         5mm           1030nm         2.5mm           1030nm         5mm           1064nm         2.5mm	Wavelength       Aperture       @ 25℃         532nm       5mm       > 30dB         633nm       2.5mm       > 30dB         780nm       2.5mm       > 30dB         780nm       5mm       > 30dB         785nm       2.5mm       > 30dB         785nm       5mm       > 30dB         1030nm       2.5mm       > 30dB         1030nm       5mm       > 30dB         1064nm       2.5mm       > 30dB	Wavelength         Aperture         @ 25°C         @ 25°C           532nm         5mm         > 30dB         > 90%           633nm         2.5mm         > 30dB         > 90%           633nm         5mm         > 30dB         > 90%           780nm         2.5mm         > 30dB         > 90%           780nm         5mm         > 30dB         > 90%           785nm         2.5mm         > 30dB         > 90%           1030nm         2.5mm         > 30dB         > 90%           1030nm         5mm         > 30dB         > 90%           104nm         2.5mm         > 30dB         > 90%	Wavelength         Aperture         @ 25°C         @ 25°C         Polariser           532nm         5mm         > 30dB         > 90%         PBS Cube           633nm         2.5mm         > 30dB         > 90%         PBS Cube           780nm         5mm         > 30dB         > 90%         PBS Cube           780nm         5mm         > 30dB         > 90%         PBS Cube           785nm         5mm         > 30dB         > 90%         PBS Cube           785nm         5mm         > 30dB         > 90%         PBS Cube           1030nm         2.5mm         > 30dB         > 90%         PBS Cube           1030nm         5mm         > 30dB         > 90%         PBS Cube           1034nm         2.5mm         > 30dB         > 90%         PBS Cube	Wavelength Wavelength         Clear Aperture         Bolation (@25°C)         Irransmissivity (@25°C)         Polariser threshold (@10ns)           532nm         5mm         > 30dB         > 90%         PBS Cube         3.51/cm²           633nm         2.5mm         > 30dB         > 90%         PBS Cube         3.51/cm²           633nm         5mm         > 30dB         > 90%         PBS Cube         3.51/cm²           780nm         2.5mm         > 30dB         > 90%         PBS Cube         3.51/cm²           785nm         5mm         > 30dB         > 90%         PBS Cube         3.51/cm²           785nm         5mm         > 30dB         > 90%         PBS Cube         3.51/cm²           1030nm         2.5mm         > 30dB         > 90%         PBS Cube         51/cm²           1030nm         5mm         > 30dB         > 90%         PBS Cube         51/cm²           1064nm         2.5mm         > 30dB         > 90%         PBS Cube         51/cm²



# Faraday isolator

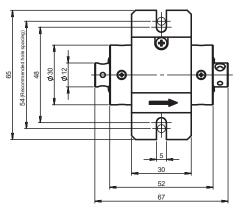
### STRUCTURE DIAGRAM

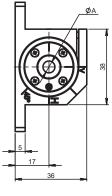


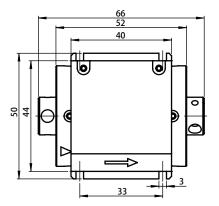


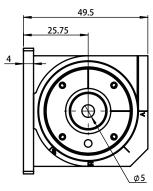
1# Packaged isolator

2# Package isolator (standard adapter)









2# Package isolator (optional fixed base)

3# Packaged isolator