980nm Polarization-Independent Free-Space Isolator

Product Description

Free-space isolators can be divided into two types: polarization-dependent and polarization-independent. The polarization-dependent isolators, also known as Faraday isolators, are mainly composed of three parts: a polarizer, a Faraday rotator, and an analyzer (set at 45?? to the polarizer axis). Polarization-independent isolators typically consist of a birefringent crystal (or polarizer), a Faraday rotator, and a half-wave plate. These are usually

used in fiber lasers to effectively maintain the stability of the optical system. Made with high-quality magneto-optic crystals, these isolators offer low absorption, high extinction ratio, and low loss, ensuring excellent and reliable performance. The peak isolation can reach up to 45dB, with an aperture size up to 45mm. The typical transmission rate can reach 95%, and all products are customizable according to customer requirement

Product features

Polarization-independent design compatible with any polarization state light source; free-space structure supports high-power applications; high isolation effectively suppresses reflection feedback; low insertion loss; high damage threshold coating;

Part Number

MP-ISO-S-980-E-S-5

Application area

Laser Precision Processing | Laser Sensing Systems | Ultrafast Laser | Systems OCT Systems Laser Detection

Core parameters

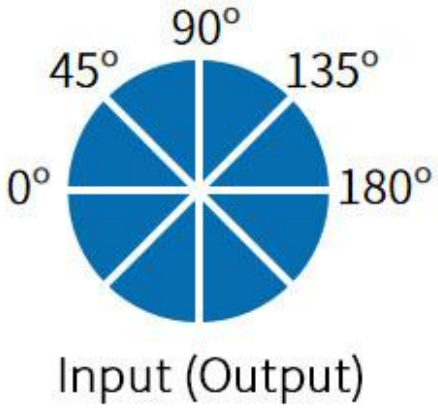
Wavelength	Peak Isolationr	Optical Power	Clear Aperture
980nm	>30dB	10W	5mm

General Parameters

Polarization state reference

All models of free-space isolators will non-reciprocally rotate the polarization state by 45° along the polarization plane.

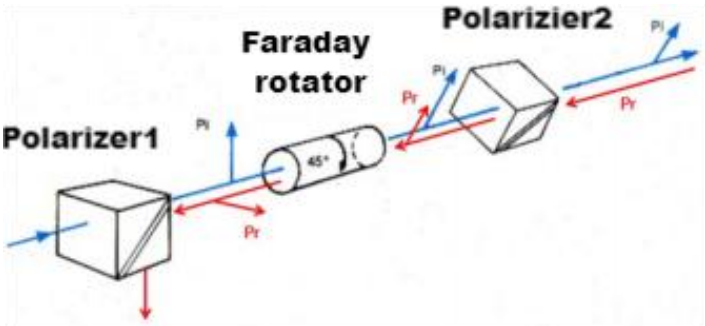
An additional 1/2 waveplate can be provided upon request to alter the output polarization state.

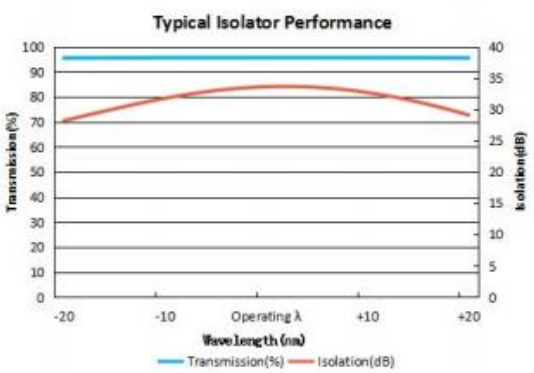


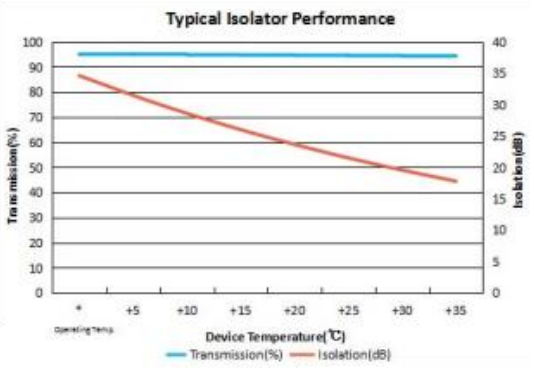
Polarization-dependent isolators beam selection

Forward transmission polarization beam Pi

Reverse transmission polarization beam Pr







A04 (Aperture ⩽ 5mm) package

Type(t)	Power(p)	Aperture(a)	Wavelength(λ)	Waveplate(w)	Package(h)
FS (Standard) DS (Dual-stage) AB (Adjustable bandwidth)	1W 5W 30W 50 W 100 W 500W ...	2 mm 3 mm 4 mm 5 mm 8 mm 10 mm 12 mm 15 mm	550-880nm* 355 nm 405 nm 532 nm 633 nm 780 nm 850 nm 980 nm 1030 nm	C (Contain) N (Not Contain)	A03* A04 A06 A08 A23 A31 ...

		25 mm 45 mm ... 	1064 nm 1319 nm 1550 nm 2000 nm 4500 nm ...		

*Only applicable to the adjustable bandwidth type

**500 W is only applicable under the 1030/1064 nm wavelength condition.

Typical indicator reference				
Aperture Size	Damage Threshold	Power Handling	Transmission	Peak Isolation
2~15 mm	3J/cm² at 10ns @(532~980)nm	50 W	>93%*, > 90%**	>33 dB*, >45 dB**
2~10 mm	10J/cm² at 10ns @(1319~2000)nm	50 W	>93%	>33 dB
15~25 mm	10J/cm² at 10ns @1030/1064nm	500W	>93%	>33 dB

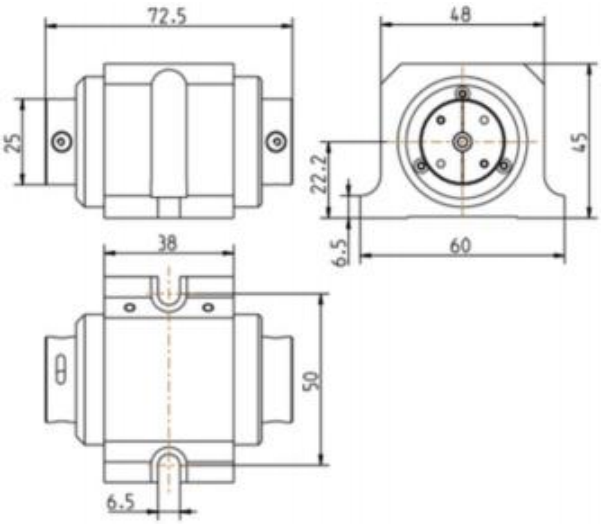
The operating temperature range for the product is 10°C to 30°C.

*** Only applicable to conventional isolators.**

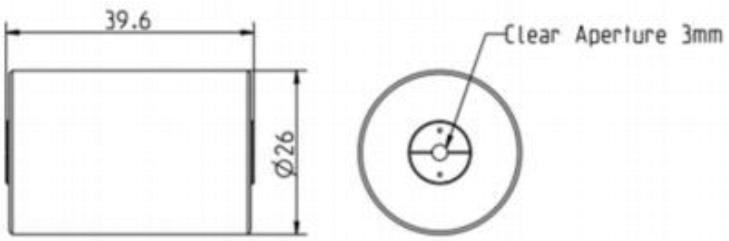
****Only applicable to dual-stage isolators.**

Packaging Dimension Diagram (mm)

A04 (Aperture≤5mm)



A46 (Compact, 1064nm)



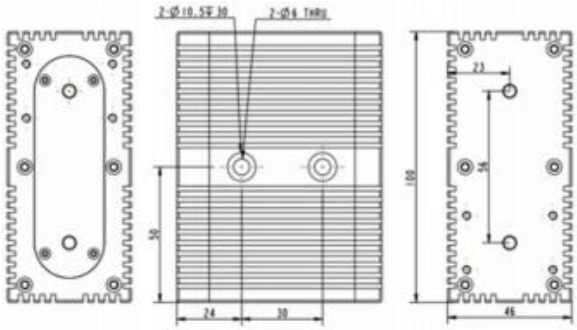
Type(t)	Power(p)	Aperture(a)	Wavelength(λ)	Wavelength(w)	Waveplate(h)
PI (Polarization-Insensitive)	50 W 100 W 500 W 1000 W ...	1.5 mm 5 mm 8 mm ...	980 nm 1030 nm 1064 nm ...	C (Contain) N (Not Contain)	A16 A2 9 A 38 A41 ...

Typical Specifications Reference				
Aperture	Damage Threshold	Power Handling	Transmission	Peak Isolation
1.5 mm	10J/cm² at 10ns @(980~1064)nm	50 W	>93%	>33 dB
5 mm	10J/cm² at 10ns @(980~1064)nm	100 W	>93%	>33 dB
8 mm	10J/cm² at 10ns @(980~1064)nm	1000 W	>93%	>33 dB

* The operating temperature range for the product is 10°C-30°C

Packaging Dimension Diagram (mm)

A16 (Aperture≤5mm)



A41(Aperture≤8，water-cool)