

550-880nm Bandwidth Adjustable Polarization-Related 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

High isolation; low insertion loss; wide wavelength adaptability; high damage threshold; compact free-space design

● Part Number

MP-ISO-S-550-880-E-S-5

● Application area

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

● Core parameters

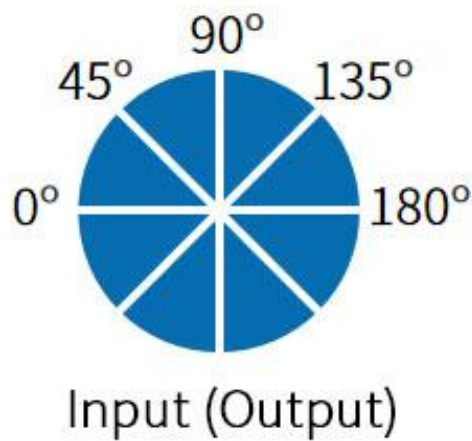
Wavelength	Aperture	Package
550-880nm	5mm	A03

● General Parameters

Polarization state reference

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

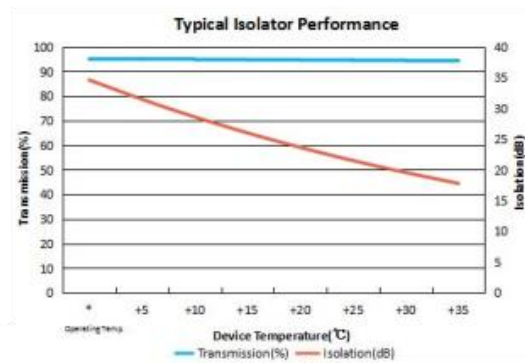
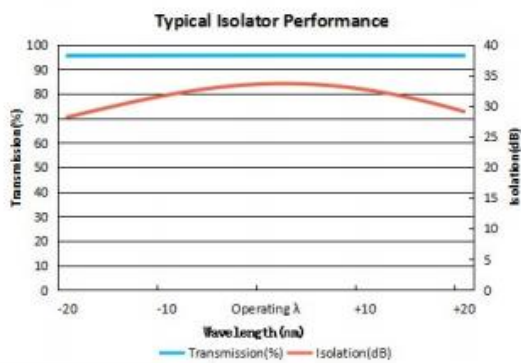
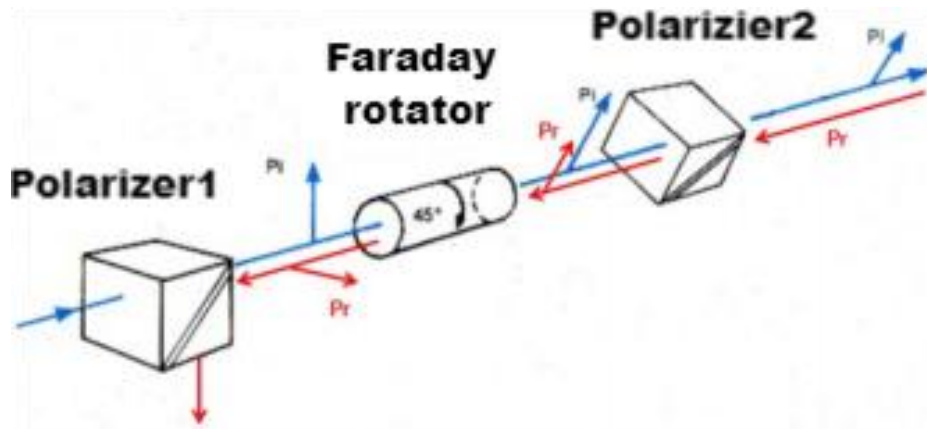
An additional $1/2$ waveplate can be provided upon request to alter the output polarization state.



Polarization-dependent isolators beam selection

Forward transmission polarization beam Pi

Reverse transmission polarization beam Pr



A04 (Aperture $\leq 5\text{mm}$) package

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

		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/cm ² at 10ns @(532~980)nm	50 W	>93%*, >90%**	>33 dB*, >45 dB**
2~10 mm	10J/cm ² at 10ns @(1319~2000)nm	50 W	>93%	>33 dB
15~25 mm	10J/cm ² at 10ns @1030/1064nm	500W	>93%	>33 dB

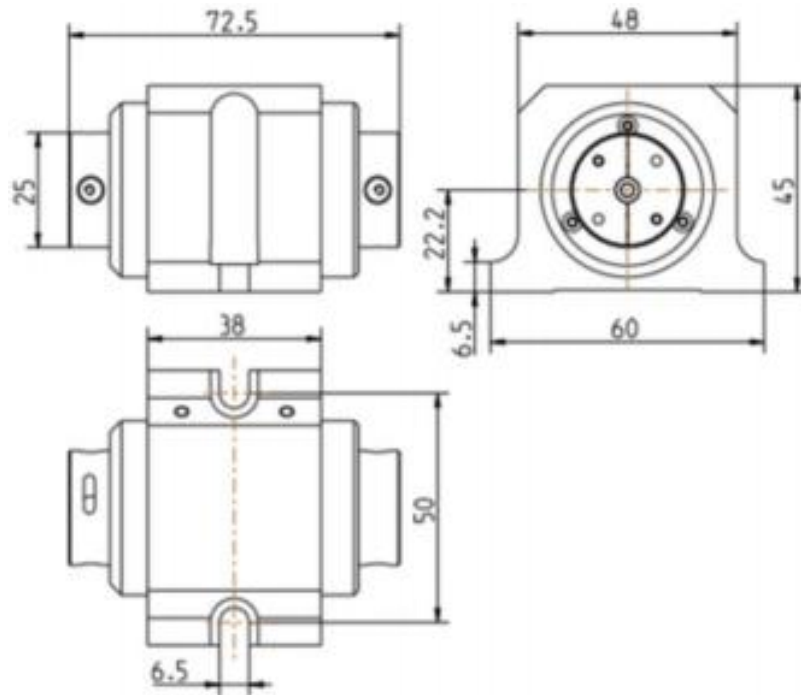
The operating temperature range for the product is 10°C to 30°C

* Only applicable to conventional isolators.

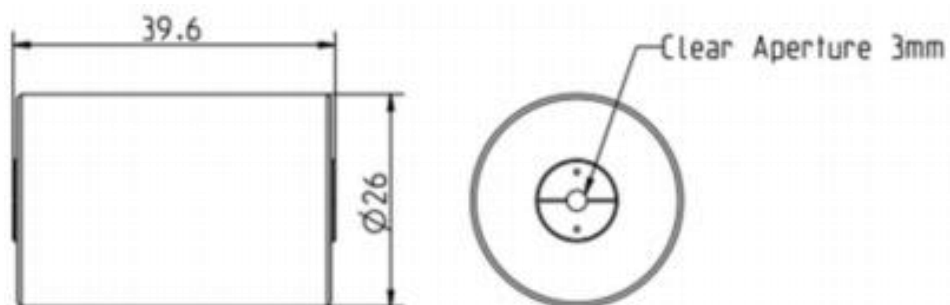
**Only applicable to dual-stage isolators.

Packaging Dimension Diagram (mm)

A04 (Aperture $\leq 5\text{mm}$)



A46 (Compact, 1064nm)



Polarization-Insensitive Model					
Type(t)	Power (p)	Apertur e(a)	Waveleng th(λ)	Wavelength(w)	Waveplate(h)
PI (Polarization-Inse nsitive)	50W	1.5 mm	980 nm	C	A16
	100W	5 mm	1030 nm	(Contain)	A29
	500 W	8 mm	1064 nm	N	A38
	1000W				A41
	...	...	...	(Not Contain)	...

Typical Specifications Reference				
Aperture	Damage Threshold	Power Handling	Transmission	Peak Isolation
1.5 mm	10J/cm ² at10ns @(980~1064)nm	50W	>93%	>33 dB
5 mm	10J/cm ² at10ns @(980~1064)nm	100W	>93%	>33 dB
8 mm	10J/cm ² at10ns @(980~1064)nm	1000W	>93%	>33 dB

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

