

Faraday Rotators

Faraday rotator provides non-reciprocal rotation while maintaining linear polarization. The plane of polarization will be rotated 45° when light transmits through the Faraday rotator in the forward direction and rotated additional 45° in the same relative direction with respect to magnetic field when light travels backwards from the reverse direction. It will effectively reject the light traveling backward.

CASTECH is dedicated to grow magneto-optical crystals with high Verdet constant and low absorption coefficient to ensure higher level reliability and less degradation. Combined with our unique high LIDT process technology, we are able to supply customized Faraday rotators for high power applications, up to 500W average power. The working wavelength of our Faraday rotator family ranges from 355nm to 4500nm, and the aperture is up to 45mm.

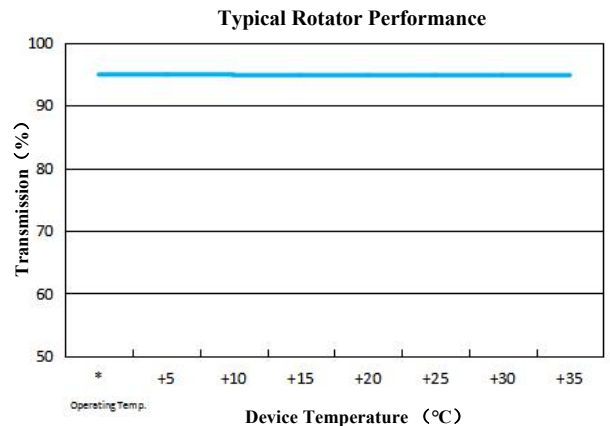
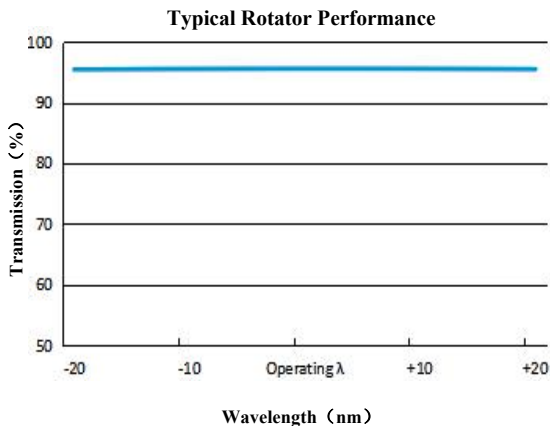
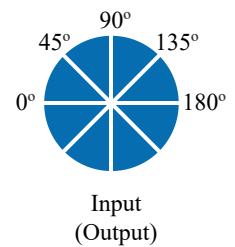


Applications

- Laser sensing system
- Ultrafast laser system
- OCT system
- Laser detection

Polarization Reference:

- All Faraday rotators non-reciprocally rotates the plane of polarized light in 45° .
- Extra half-wave plate for modifying output polarization is available on request.



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Faraday Rotators Model Number: HPRO-t-p-a-λ-w-h

Type(t)	Power(p)	Aperture(a)	Wavelength(λ)	Waveplate(w)	Housing(h)
FS (Common)	1 W 10 W 30 W 50 W 100 W 500 W* ...	2 mm 3 mm 4 mm 5 mm 8 mm 10 mm 12 mm 15 mm 25 mm 45 mm ...	355 nm	C (Contained) N (Not Contained)	A01 A02 A03 A12 A15 ...
			405 nm		
			532 nm		
			633 nm		
			780 nm		
			850 nm		
			980 nm		
			1030 nm		
			1064 nm		
			1319 nm		
			1550 nm		
			2000 nm		
			4500 nm		
			...		

*500W is only suitable for the wavelength of 1030/1064nm

Typical Specifications

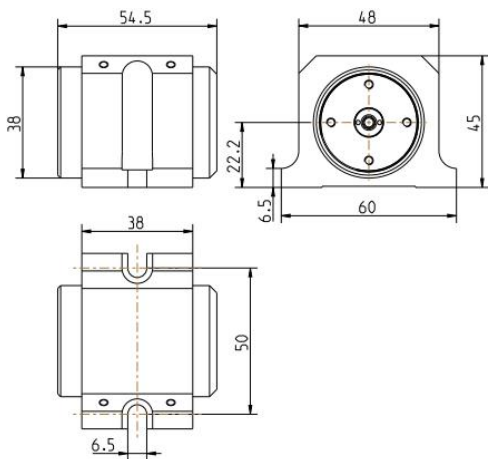
Aperture	Damage Threshold	Rotation angle	Withstand power*	Transmission
2~15 mm	3J/cm ² at 10ns @(532~980)nm 10J/cm ² at 10ns @1030/1064nm	45°±0.5°	50 W	>98%
2~10 mm	10J/cm ² at 10ns @(1319~2000)nm	45°±0.5°	50 W	>98%
15~25 mm	10J/cm ² at 10ns @1030/1064nm	45°±1°	500 W	>98%

Operating temperature range: 10°C-30°C.

*Indicates the maximum average power products can handle.

Housing dimensions(mm):

A01 (Aperture ≤5 mm)



A15 (Aperture ≤12 mm, Water-cool)

