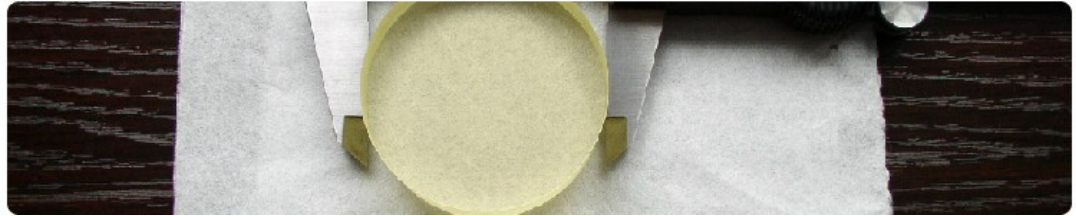




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### Optical Isolator

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A Faraday isolator or optical isolator is an optical component which allows the transmission of polarised light in only one direction. They are typically used to prevent unwanted feedback into an optical oscillator (A laser cavity is a good example.) The operation of the device depends on the Faraday effect which is used in the main component, the Faraday rotator.

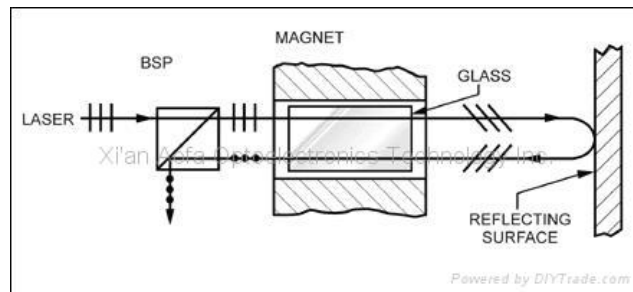
An isolator is made of three parts, an input polarizer (for this discussion we will assume it's polarized up and down), a

Faraday rotator, and an output polarizer (we will assume this one is 45° to the right.)

Light traveling in the forward direction becomes polarized (vertically in our case) by the input polarizer. The Faraday rotator will rotate the polarization 45° to the right. The output polarizer will allow all the light to escape and continue.

Light traveling in the backward direction becomes polarized (45°; to the right in this case) by the output polarizer. The Faraday Rotator will rotate the polarization 45° more to the right so that it is horizontally polarized (the rotation is insensitive to direction of propagation) and the input polarizer, which is vertically aligned, will block this light.

Faraday isolators are different from 1/4 wave plate based isolators because it can provide non-reciprocal rotation while maintaining linear polarization which allows higher isolation to be achieved.



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OPTICAL ISOLATOR			
MODEL NUMBER	TUNING RANGE	ISOLATION	TRANSMISSION
AF5-6	500 to 645	37-40dB	92%
AF3-3	350 to 390	28-30dB	85%
AF3-4C	390 to 450	28-30dB	85%
AF4-5	425 to 500	28-30dB	85%
AF5-7	532 to 715	37-40dB	92%

Optical Isolator - Faraday Rotator-Isolator-Faraday Optics-Micro

AF6-7	644 to 780	37-40dB	92%
AF7-9	700 to 900	37-40dB	92%
AF6-9	650 to 900	37-40dB	92%
AF7-9B	790 to 980	37-40dB	92%
AF6-10	680 to 1080	37-40dB	90%
AF9-11	965 to 1135	37-40dB	92%
AF Double Grade	Specify Center $\lambda$	56-60dB	88%
AF1064T	1064	56~60dB	88%



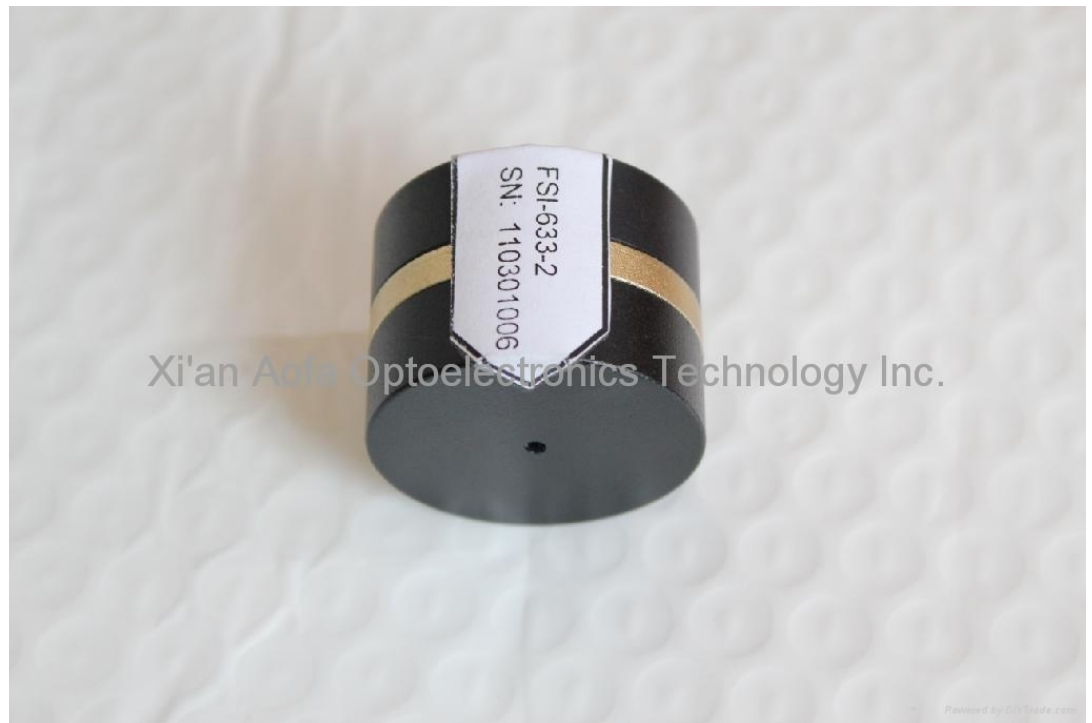




Polarization Dependent Free Space Isolator

1. Clear Aperture: 8mm
2. Central wavelength: 1064nm
3. Working wavelength range: +/-5nm
4. Transmission: > 92% (25 °C)
5. Rotation angle at specified wavelength: 45+/-2 degree
6. Isolation at 25 °C: > 33dB (25°C)
7. Insertion Loss: < 0.50dB
8. Input polarization (Degree): 0 degree
9. Output polarization (Degree): 45 degree
10. Operating Temperature: 20 °C to +30 °C







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