



Electro-Optics Technology, Inc.



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Faraday Rotators & Isolators  
1525 nm to 1575 nm

Innovative High Quality  
Laser Solutions



EOT's 1525 nm to 1575 nm Faraday devices rotate the plane of polarized light 45° in the forward direction and an additional 45° of non-reciprocal rotation in the reverse direction while maintaining the light's linear polarization. An optical isolator shields lasers from destabilizing and potentially destructive back-reflected light from interfaces on downstream optics or back-scattered ASE from optical amplifiers.

Based on high Verdet constant, low absorption coefficient rotating material, and developed to work with up to 20 W of average input power in the 1525 nm to 1575 nm wavelength range, these EOT devices provide the ultimate protection for polarized lasers.

## FEATURES

- Completely passive; no tuning required
- All isolators contain escape ports; all rejected beams are deflected at 90°.

## OPTIONS

- Optional waveplate for manipulation of polarization
- Customization available

## APPLICATIONS

- Mapping
- LIDAR
- Medical & Biosciences
- Chirped Pulsed Amplification (CPA)

## SPECIFICATIONS

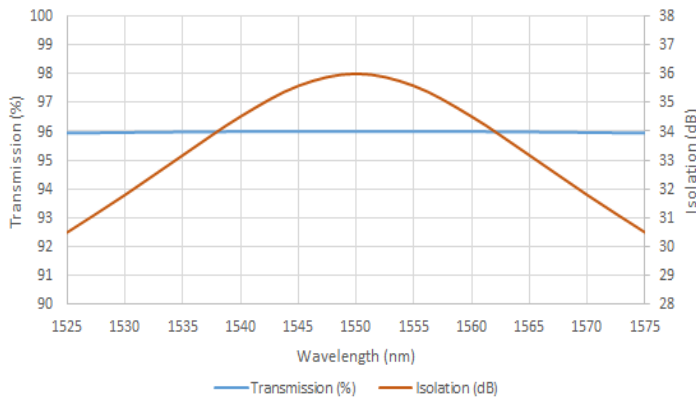
	Rotator	Isolator <sup>a</sup>
Clear Aperture	4 mm	4 mm
Transmission at 22 °C	≥92%	≥92%
Isolation at 22 °C	N/A	>30 dB
Pulsed Damage Threshold	1 J/cm <sup>2</sup> at 10 ns	1 J/cm <sup>2</sup> at 10 ns
Power Handling	20 W	20 W

Product specifications are typical and subject to change. All products are RoHS compliant.

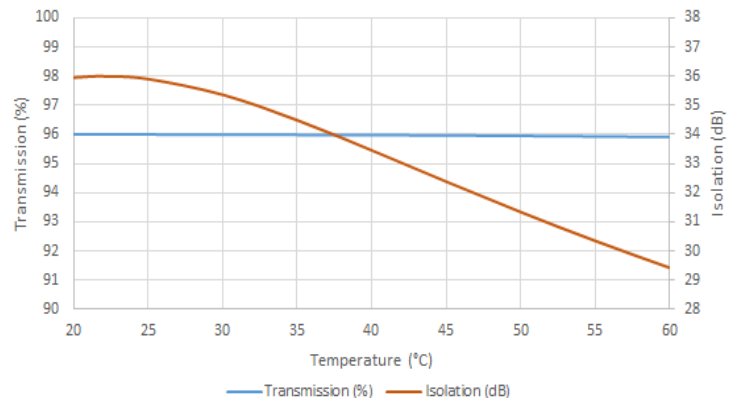
<sup>a</sup> Escape ports should be used if rejected light is >1 W or 0.15 J/cm<sup>2</sup> at 10 ns. All stray beams should be properly terminated.

NOTE: Return loss-free working distance ≥ 25 mm for a collimated beam

Typical 1550nm Isolator Performance



Typical 1550nm Isolator Performance





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## Innovative High Quality Laser Solutions

### MESOS

Faraday Rotators & Isolators

4500 nm to 4600 nm



EOT's MESOS line of Faraday devices builds on over 30 years of experience in successfully protecting lasers from destabilizing and potentially damaging back reflections. The MESOS line has been specifically designed to meet the needs of the 4.5  $\mu\text{m}$  (4500 nm to 4600 nm) laser market.

Our MESOS rotators and isolators deliver industry-best laser reliability and performance while providing superior isolation and maintaining very high transmission.

EOT's MESOS products rely on the Faraday effect from high Verdet constant, low absorption materials to rotate the plane of linearly polarized light in the forward direction and an additional 45° of non-reciprocal rotation in the reverse direction. When these Faraday rotators are placed between crossed polarizers, they can be used as a Faraday Isolator. The MESOS is available as a rotator or an isolator.

#### FEATURES

- Completely passive; no tuning required
- Stable performance to 2.5 W
- Rugged design suitable for harsh operating environments
- All isolators contain rejected beam escape ports; all rejected beams are deflected at 90°

#### OPTIONS

- Input/Output waveplates can be included to adjust for various linear polarization angles
- Customization requests encouraged

#### APPLICATIONS

- Environmental Sensing
- Spectroscopy
- Medical Systems, Research, & Device Manufacturing



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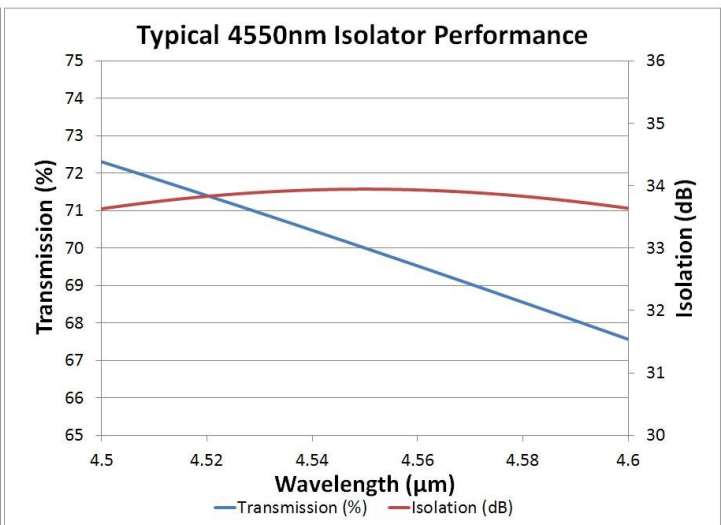
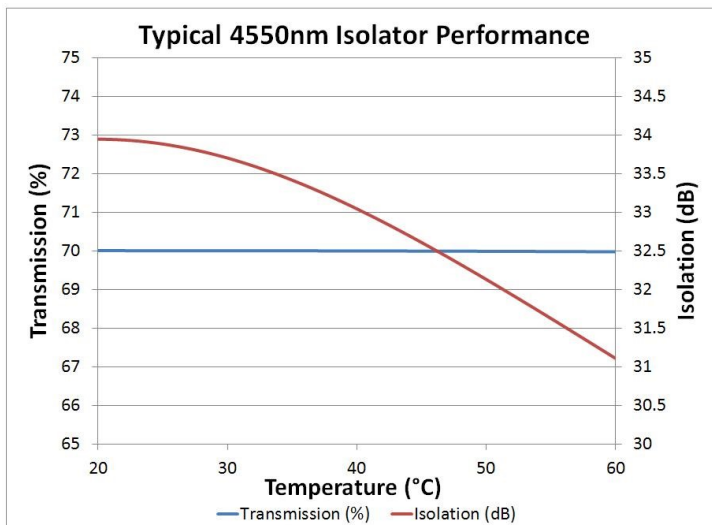
# Innovative High Quality Laser Solutions

## SPECIFICATIONS

	Rotator	Isolator
Clear Aperture	4 mm	4 mm
Transmission at 22 °C	>70%	>65%
Isolation at 22 °C	N/A	>30 dB
Power Handling	2.5 W	2.5 W

Product specifications are subject to change. All products are RoHS compliant.

NOTE: Return loss-free working distance  $\geq 25$  mm for a collimated beam



The standard MESOS models are designed for 4500 nm to 4600 nm wavelengths but non-standard wavelengths and various operating temperatures can be considered upon request. All customization requests are strongly encouraged. For questions or quotations please email or call our sales representatives at [SALES@EOTECH.COM](mailto:SALES@EOTECH.COM) or +1.231.935.4044.





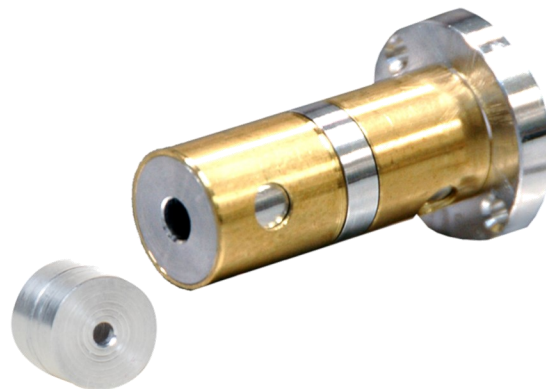
## Innovative High Quality Laser Solutions

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### Low Power Faraday Rotators & Isolators 1050 nm to 1080 nm

EOT's 1050 nm to 1080 nm Low Power Faraday Rotators rotate the plane of polarized light  $45^\circ$  in the forward direction and an additional  $45^\circ$  of non-reciprocal rotation in the reverse direction while maintaining the light's linear polarization. When placed between crossed polarizers, a Faraday rotator becomes an optical isolator. An optical isolator provides high transmission in the forward direction and strongly attenuates any light traveling in the reverse direction effectively protecting seed sources from the deleterious effects of back reflections.

EOT's 1050 nm to 1080 nm Low Power Isolators can be ordered with either dichroic glass polarizers or with polarizing beam splitter cubes. If protecting a seed source from back reflections from a Q-switched laser, EOT recommends using polarizing beam splitter cubes due to their ability to withstand high pulse energies. Two isolators can be used in series if 60 dB isolation is required to assure back reflections do not cause frequency instability from a single frequency single seed laser.



### SPECIFICATIONS

	Rotator	Isolator	
Polarizer Type	N/A	Polarcor	PBS Cube
Clear Aperture	1.5 mm	1.5 mm	1.5 mm
Transmission at 22 °C	$\geq 78\%$	$\geq 75\%$	$\geq 75\%$
Isolation at 22 °C	N/A	$\geq 30$ dB	$\geq 30$ dB
Damage Threshold	8 J/cm <sup>2</sup> at 10 ns or 20 ns	500 mW CW	1 MW/cm <sup>2</sup> at 10 ns

Product specifications are subject to change. All products are RoHS compliant.

### FEATURES

- Completely passive; no tuning required
- Compact size

### OPTIONS

- Choice of dichroic glass polarizers or polarizing beam splitter cube polarizers
- Customization available

### APPLICATIONS

- Laser Pumping
- Amplification
- Protection of single frequency injection seed source