



Electro-Optics Technology, Inc.

Innovative High Quality  
Laser Solutions

## TORNOS

Faraday Rotators & Isolators  
500 nm to 1030 nm



EOT's TORNOS Faraday Rotators 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. 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 laser diodes from the deleterious effects of back reflections.

TORNOS Optical Isolators can be ordered with dichroic glass polarizers to minimize the size of the device for low power applications or they can be ordered with polarizing beam splitter cube polarizers for applications where maximum transmission is required and power levels do not permit the use of dichroic glass polarizers. By aligning the output polarizer orthogonal to the backward traveling light, isolation can be maximized within the usable wavelength range of the optical isolator.

### FEATURES

- Wavelength tunability
- Attain 60 dB using two isolators in series
- Mounting clamp
- All isolators contain rejected beam escape ports

### OPTIONS

- Choice of dichroic glass polarizers or polarizing beam splitter cube polarizers
- Input/Output waveplates available
- Customization available

### APPLICATIONS

- Environmental Sensing
- Microscopy
- Spectroscopy
- DNA Sequencing
- Laboratory and R&D use
- Protecting pump lasers in amplified systems



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## SPECIFICATIONS

Rotators			
Center Wavelength	Isolation at 22 °C <sup>a</sup>	Transmission at 22 °C <sup>b</sup>	Pulsed Damage Threshold
532 nm	≥ 30 dB	>97%	3 J/cm <sup>2</sup> at 10 ns
650 nm	≥ 30 dB	>98%	3 J/cm <sup>2</sup> at 10 ns
780 nm	≥ 30 dB	>98%	3 J/cm <sup>2</sup> at 10 ns
850 nm	≥ 30 dB	>98%	3 J/cm <sup>2</sup> at 10 ns
980 nm	≥ 30 dB	>98%	3 J/cm <sup>2</sup> at 10 ns

Isolators					
Center Wavelength	Spectral Range	Isolation at 22 °C <sup>c</sup>	Transmission at 22 °C <sup>b</sup>	Polarizer Type	Damage Threshold <sup>d</sup>
650 nm	630 nm to 700 nm	>30 dB	>72.5%	Dichroic Glass	25 W/cm <sup>2</sup> CW
780 nm	740 nm to 860 nm	>30 dB	>82%	Dichroic Glass	25 W/cm <sup>2</sup> CW
850 nm	840 nm to 960 nm	>30 dB	>88%	Dichroic Glass	25 W/cm <sup>2</sup> CW
980 nm	960 nm to 1030 nm	>30 dB	>90%	Dichroic Glass	25 W/cm <sup>2</sup> CW
532 nm	500 nm to 600 nm	>27 dB	>88%	PBS Cube	1 J/cm <sup>2</sup> at 10 ns
650 nm	600 nm to 680 nm	>27 dB	>88%	PBS Cube	1 J/cm <sup>2</sup> at 10 ns
780 nm	730 nm to 830 nm	>27 dB	>88%	PBS Cube	1 J/cm <sup>2</sup> at 10 ns
850 nm	800 nm to 880 nm	>27 dB	>88%	PBS Cube	1 J/cm <sup>2</sup> at 10 ns
980 nm	950 nm to 1010 nm	>27 dB	>88%	PBS Cube	1 J/cm <sup>2</sup> at 10 ns

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

<sup>a</sup> When placed between crossed polarizers having an extinction ratio of ≥ 1000:1

<sup>b</sup> At center wavelength

<sup>c</sup> When tuned for maximum isolation

<sup>d</sup> Isolators with PBS cube polarizers have CW damage threshold of 2 KW/cm<sup>2</sup>.

Note: The addition of a waveplate may restrict wavelength range.

