

TORNOS

Faraday Rotators and Isolators 500 nm to 1030 nm

The Coherent 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



SPECIFICATIONS

Rotators					
Center Wavelength (nm)	Isolation at 22 °C ¹ (dB)	Transmission at 22 °C ² (%)	Pulsed Damage Threshold		
532	≥30	>97	3 J/cm ² at 10 ns		
650	≥30	>98	3 J/cm ² at 10 ns		
780	≥30	>98	3 J/cm ² at 10 ns		
850	≥30	>98	3 J/cm ² at 10 ns		
980	≥30	>98	3 J/cm ² at 10 ns		
Isolators					
Center Wavelength (nm)	Spectral Range (nm)	Isolation at 22 °C ³ (dB)	Transmission at 22 °C ² (%)	Polarizer Type	Damage Threshold ⁴
650	630 to 700	≥30	>72.5	Dichroic Glass	25 W/cm ² CW
780	740 to 860	≥30	>82	Dichroic Glass	25 W/cm ² CW
850	840 to 960	≥30	>88	Dichroic Glass	25 W/cm ² CW
980	960 to 1030	≥30	>90	Dichroic Glass	25 W/cm ² CW
532	500 to 600	≥27	>88	PBS Cube	1 J/cm ² at 10 ns
650	600 to 680	≥27	>88	PBS Cube	1 J/cm ² at 10 ns
780	730 to 830	≥27	>88	PBS Cube	1 J/cm ² at 10 ns
850	800 to 800	≥27	>88	PBS Cube	1 J/cm ² at 10 ns
980	950 to 1010	≥27	>88	PBS Cube	1 J/cm ² at 10 ns

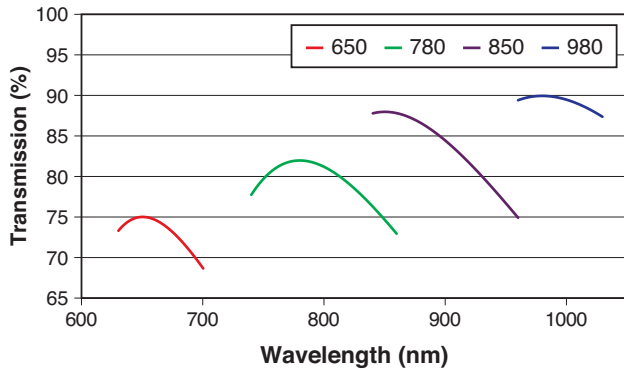
1 When placed between crossed polarizers having an extinction ratio of ≥1000:1.

2 At center wavelength.

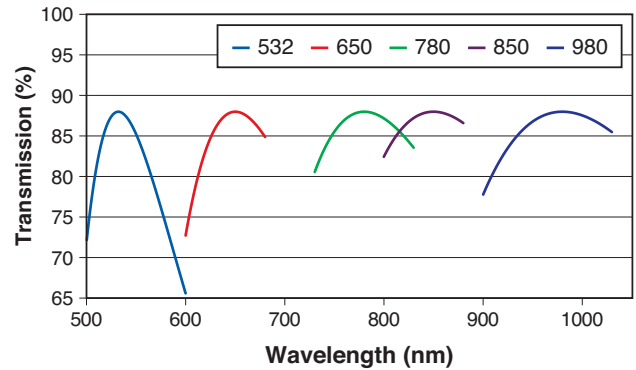
3 When tuned for maximum isolation.

4 Isolators with PBS cube polarizers have CW damage threshold of 2 KW/cm². Note: The addition of a waveplate may restrict wavelength range.

Low Power Isolator Transmission by Model



Medium Power Isolator Transmission by Model



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. All products are RoHS compliant.

Coherent offers a limited warranty for all TORNOS Rotators and Isolators. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative. Copyright ©10/21 Coherent, Inc.