Electro-Optics Technology, Inc.

Innovative High Quality Laser Solutions

EURYS

Broadband Faraday Rotators & Isolators 720 nm to 950 nm

EOT's EURYS Broadband Rotators rotate the plane of polarized light 90° at 800 nm in the forward direction and 0° from 720 nm to 950 nm in the reverse direction while maintaining the light's linear polarization. When placed between crossed polarizers, a broadband Faraday rotator becomes a broadband optical isolator.

EURYS Broadband Optical Isolators provide high transmission in the forward direction and strongly attenuate back-reflected light between 720 nm to 950 nm in the reverse direction protecting Ti:Sapphire oscillators from the deleterious effects of back reflections and also eliminating preferential lasing at the lower gain wavelengths of Ti:Sapphire lasers. Utilizing optics with low refractive indices and short optical pathlengths minimizes pulse broadening due to dispersion in the optics associated with ultra-short laser pulses.

FEATURES

- Completely passive; no tuning required
- All isolators contain rejected beam escape ports
- Adjustable to handle any angle of linear input polarization without additional optics

OPTIONS

- Input/Output waveplates available
- Precision mounting options on the 5 mm version
- Precision rejected beam pointing available on the 5 mm version
- Customization available

APPLICATIONS

- Protect Ti:Sapphire oscillators from back reflections
- Eliminate preferential lasing at lower gain wavelengths of Ti:Sapphire lasers
- Eliminate ASE from high-gain amplifiers
- Minimize pulse broadening due to dispersion in the optics

Electro-Optics Technology, Inc.

Innovative High Quality Laser Solutions

SPECIFICATIONS

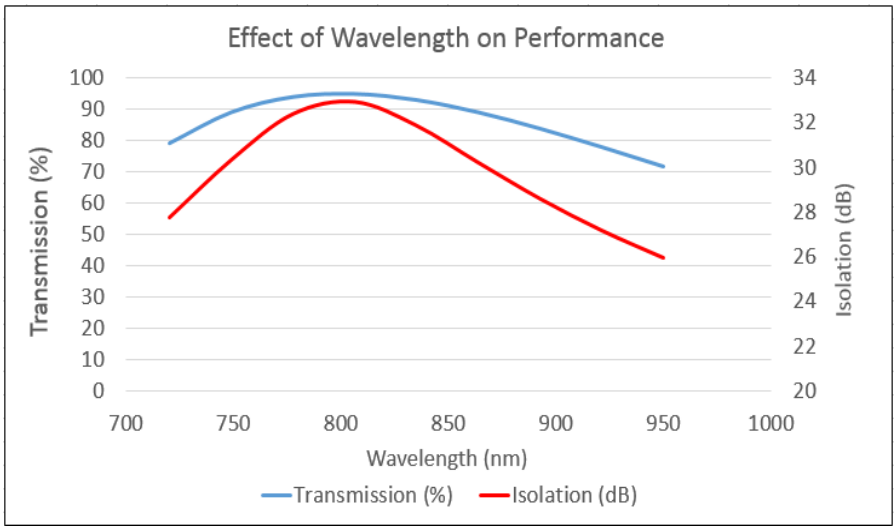
	Small Aperture Rotators	Small Aperture Isolators[a]	Large Aperture Rotators	Large Aperture Isolators[a]
Clear Aperture	5 mm	5 mm	8 mm, 10 mm	8 mm, 10 mm
Center Wavelength	800 nm	800 nm	800 nm	800 nm
Spectral Range	720 nm to 950 nm	720 nm to 950 nm	720 nm to 950 nm	720 nm to 950 nm
Transmission at 22 °C	>98%	>92%	>98%	>92%
Isolation at 22 °C	N/A	>33 dB	N/A	>30 dB
Damage Threshold	>3.4 J/cm^2 at 10 ns >1 J/cm^2 at 8 ps	>3.4 J/cm^2 at 10 ns >1 J/cm^2 at 8 ps	5 J/cm^2 at 10 ns 2 kW/cm^2 CW	1 J/cm^2 at 10 ns 2 kW/cm^2 CW

Product specifications are subject to change. All products are RoHS compliant.
[a] Escape ports should be used if rejected light is >1 W or 0.15 J/cm^2 at 10 ns or forward light is >25 W. All stray beams should be properly terminated.

Dispersion: Some pulse broadening does occur when using EOT's EURYS Broadband Isolators. The Sellmeiers Equation for TGG used in the broadband isolators is:

$$n^2 - 1 = \frac{E_d E_o}{E_0^2 - (hc/\lambda)^2}$$

where: $E_o = 9.223\text{eV}$ and $E_d = 25.208\text{eV}$



Electro-Optics Technology, Inc.

Innovative High Quality Laser Solutions

EURYS

Broadband Faraday Rotators & Isolators 720 nm to 950 nm

EOT's EURYS Broadband Rotators rotate the plane of polarized light 90° at 800 nm in the forward direction and 0° from 720 nm to 950 nm in the reverse direction while maintaining the light's linear polarization. When placed between crossed polarizers, a broadband Faraday rotator becomes a broadband optical isolator.

EURYS Broadband Optical Isolators provide high transmission in the forward direction and strongly attenuate back-reflected light between 720 nm to 950 nm in the reverse direction protecting Ti:Sapphire oscillators from the deleterious effects of back reflections and also eliminating preferential lasing at the lower gain wavelengths of Ti:Sapphire lasers. Utilizing optics with low refractive indices and short optical pathlengths minimizes pulse broadening due to dispersion in the optics associated with ultra-short laser pulses.

FEATURES

- Completely passive; no tuning required
- All isolators contain rejected beam escape ports
- Adjustable to handle any angle of linear input polarization without additional optics

OPTIONS

- Input/Output waveplates available
- Precision mounting options on the 5 mm version
- Precision rejected beam pointing available on the 5 mm version
- Customization available

APPLICATIONS

- Protect Ti:Sapphire oscillators from back reflections
- Eliminate preferential lasing at lower gain wavelengths of Ti:Sapphire lasers
- Eliminate ASE from high-gain amplifiers
- Minimize pulse broadening due to dispersion in the optics

Electro-Optics Technology, Inc.

Innovative High Quality Laser Solutions

SPECIFICATIONS

	Small Aperture Rotators	Small Aperture Isolators[a]	Large Aperture Rotators	Large Aperture Isolators[a]
Clear Aperture	5 mm	5 mm	8 mm, 10 mm	8 mm, 10 mm
Center Wavelength	800 nm	800 nm	800 nm	800 nm
Spectral Range	720 nm to 950 nm	720 nm to 950 nm	720 nm to 950 nm	720 nm to 950 nm
Transmission at 22 °C	>98%	>92%	>98%	>92%
Isolation at 22 °C	N/A	>33 dB	N/A	>30 dB
Damage Threshold	>3.4 J/cm^2 at 10 ns >1 J/cm^2 at 8 ps	>3.4 J/cm^2 at 10 ns >1 J/cm^2 at 8 ps	5 J/cm^2 at 10 ns 2 kW/cm^2 CW	1 J/cm^2 at 10 ns 2 kW/cm^2 CW

Product specifications are subject to change. All products are RoHS compliant.
[a] Escape ports should be used if rejected light is >1 W or 0.15 J/cm^2 at 10 ns or forward light is >25 W. All stray beams should be properly terminated.

Dispersion: Some pulse broadening does occur when using EOT's EURYS Broadband Isolators. The Sellmeiers Equation for TGG used in the broadband isolators is:

$$n^2 - 1 = \frac{E_d E_o}{E_0^2 - (hc/\lambda)^2}$$

where: $E_o = 9.223\text{eV}$ and $E_d = 25.208\text{eV}$