EURYS

Broadband Faraday Rotators and Isolators – 720 nm to 950 nm

The Coherent 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

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

OPTIONS

- Input/Output waveplates available
- Precision mounting options
- Precision rejected beam pointing available
- Customization available

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Specifications	Rotator	Isolator[1]
Clear Aperture (mm)	5	5
Center Wavelength (nm)	800	800
Spectral Range (nm)	720 to 950	720 to 950
Transmission at 22 °C (%)	>98	>92
Isolation at 22 °C (dB)	N/A	>33
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

Notes:
1. 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 Coherent's EURYS Broadband Isolators. The Sellmeiers Equation for TGG used in the broadband isolators is:

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

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