Eurys Series – Small Aperture (5mm)

Broadband Faraday Rotators and Isolators for Ti:Sapphire Lasers

EOT's *Eurys Series* Broadband Rotators rotate the plane of polarized light 90° at 800nm in the forward direction and 0° from 720–950nm 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 Series* broadband optical isolators provide high transmission in the forward direction and strongly attenuates back-reflected light between 720–950nm 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.

Benefits:

- Eliminate ASE from high-gain amplifiers that can cause parasitic or relaxation oscillations
- Prevent preferential lasing at low-gain wavelengths by providing broadband isolation

Features:

- 2° incident angle on polarizers for reduced return losses
- Orthogonal isolated beams
- Precision pointing of isolated beams
- Precision mounting options
- Lockable port covers

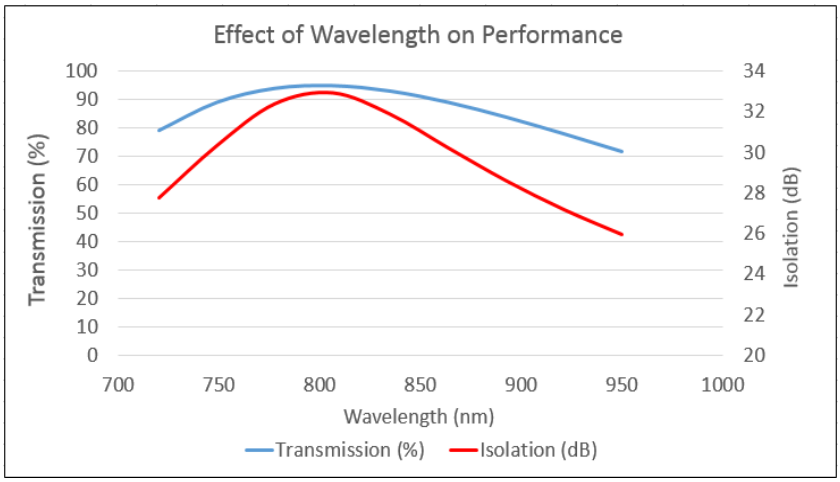
Specifications[a]:

	Rotator	Isolator[b]
Center Wavelength	800nm	800nm
Spectral Range	720–950nm	720–950nm
Polarizer Type	N/A	SF1 Glass
Transmission at 22°C	>98%	>92%
Isolation at 22°C	N/A	>33dB
Damage Threshold	>3.5J/cm^2 at 10ns >1J/cm^2 at 8ps	>3.5J/cm^2 at 10ns >1J/cm^2 at 8ps

[a] Product specifications are subject to change.
[b] Escape ports should be used if rejected light is >1W or 0.15J/cm^2 at 10ns or forward light is >25W. All stray beams should be properly terminated.
Note: All products are RoHS compliant.
Dispersion: Some pulse broadening does occur when using EOT's 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 $E_d = 25.208\text{eV}$



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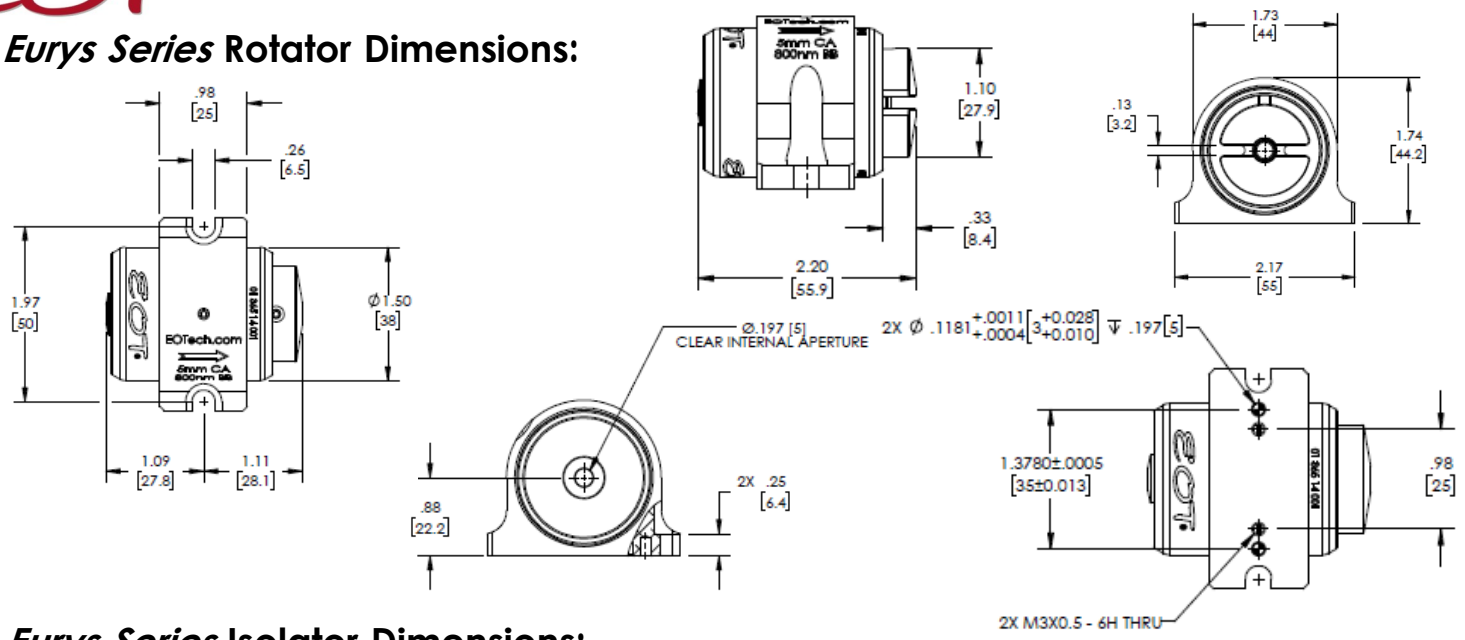
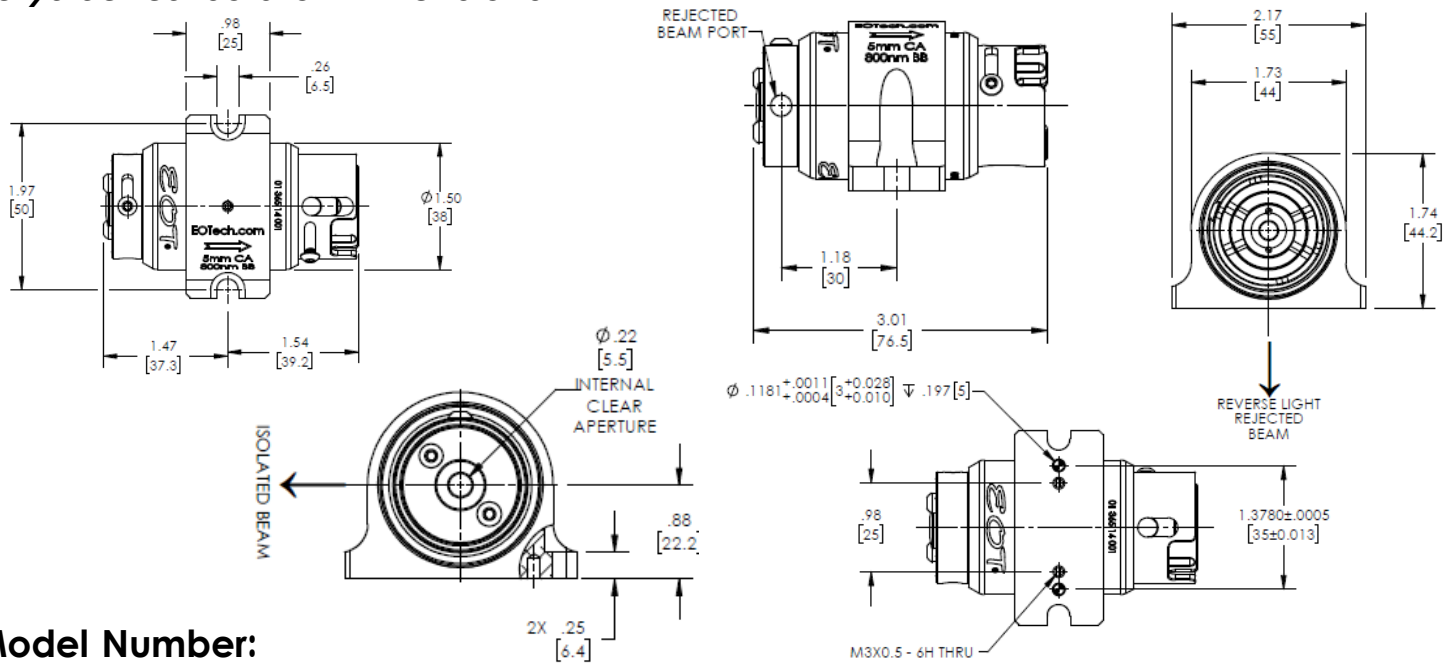
(07/25/2017)

Eurys Series Rotator Dimensions:



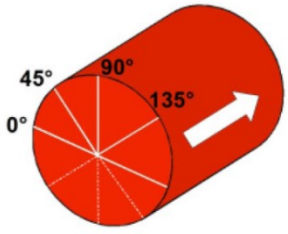
Eurys Series Isolator Dimensions:



Model Number:

A A	B B	C	D D D	E E E	F F F
Product Type	**Aperture Size (mm)**	**Device type**	**Oper. Wavelength**	**Input Polarization**	**Output Polarization**
BB	05	R–Rotator I–Isolator	800nm	000	000
				045	045
				090	090
				135	135

Example: Description: 5mm isolator centered at 800nm; input horizontal, output vertical
Model Number: BB–05–I–800–000–090



Input Polarization Reference

Notes: 1) Light is rotated clockwise 90° from input to output for all catalog devices.
2) λ/2 waveplate available on output for arbitrary output polarizations, if required.

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