

PAVOS

Faraday Rotators and Isolators – 1010 nm to 1080 nm

The Coherent PAVOS line of Faraday devices builds on over 30 years of experience in successfully protecting lasers from destabilizing and potentially damaging back reflections. These products have been specifically designed to meet the needs of high power and high energy 1 μm (1010 nm to 1080 nm) lasers.

Our PAVOS rotators and isolators deliver industry-best laser reliability and performance while providing superior isolation and maintaining very high transmission. Our PAVOS products rely on the Faraday effect from high Verdet constant, low absorption materials to rotate the plane of linearly polarized light in the forward direction and an additional 45° of non-reciprocal rotation in the reverse direction. The PAVOS is available as a rotator or an isolator.



FEATURES

- Completely passive; no tuning required
- Rugged design suitable for harsh operating environments
- Specified performance to 50 W; tested to >400 W
- Optically contacted PBS cubes for improved damage threshold
- All isolators contain rejected beam escape ports
- Input polarization adjustability

APPLICATIONS

- Ultrafast, pulsed, and CW lasers
- Microelectronics
- Medical Systems and Device Manufacturing
- Micromachining
- Particle Acceleration

OPTIONS

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

SPECIFICATIONS	Small Aperture Rotators	Small Aperture Isolators ¹	Large Aperture Rotators	Large Aperture Isolators ¹
Clear Aperture (mm)	2, 5	2, 5	8, 12, 15, 20, 25, 35, 45	8, 12, 15, 20, 25, 35, 45
Peak Transmission ² (%)	>98	>95	>98	>92
Peak Isolation ² (dB)	N/A	>33 (typical >37)	N/A	>30 (typical >35)
Peak Rotation ² (°)	45 +/- 0.5 Clockwise	45 +/- 0.5 Clockwise	45 +/- 2 Clockwise	45 +/- 2 Clockwise
Damage Threshold	10 J/cm ² at 10 ns 1 J/cm ² at 8 ps 1 MW/cm ² CW	10 J/cm ² at 10 ns 1 J/cm ² at 8 ps 1 MW/cm ² CW	10 J/cm ² at 10 ns 1 J/cm ² at 8 ps 1 MW/cm ² CW	10 J/cm ² at 10 ns 1 J/cm ² at 8 ps 1 MW/cm ² CW
Storage Temperature Range (°C)	-40 to 70	-40 to 70	-10 to 60	-10 to 60
Factory Tunable Temperature Range ³ (°C)	10 to 30	10 to 30	Upon request	Upon request
Isolated Beam Pointing ⁴ (°mrad)	N/A	<5	N/A	Upon request

Notes:

1. Escape ports should be used if rejected light is >1 W or 0.15 J/cm² at 10 ns or for ward light is >25 W. All stray beams should be properly terminated.
2. At specified wavelength and temperature.
3. Device will be tuned to 22 C unless otherwise specified by customer.
4. Input cube only.

