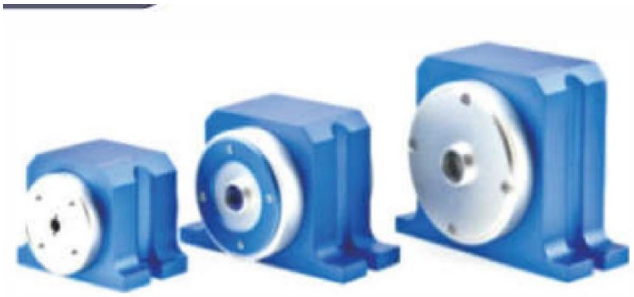
Photonics On Crystals

POC-OC-120201-Faraday Rotators Datasheet

Key Features of the Crystals Catalogue:

- **Non-reciprocal Polarization Rotation**: Enables a 45° rotation of laser polarization, ensuring efficient rejection of backward light propagation.
- **Wide Wavelength Range**: Operational from 355 nm to 4500 nm, adaptable to multiple laser systems.
- **High-Power Handling**: Customizable Faraday rotators capable of handling up to 500 W average power for high-performance applications.
- **High Extinction Ratio**: Delivers >30 dB extinction ratio for superior performance in demanding laser systems.
- **Advanced Quality Assurance**: Low absorption coefficients and high Verdet constant ensure reliability and minimal degradation.



General Description of the Device:

Faraday Rotators by POC provide precise non-reciprocal rotation of light polarization, ensuring efficient rejection of backward-propagating light. When light transmits through the rotator, its polarization rotates by 45° in the forward direction and an additional 45° upon reverse propagation. This unique behavior, driven by the magnetic field alignment, ensures superior isolation of laser beams.

Designed with cutting-edge magneto-optic crystals featuring high Verdet constants and low absorption coefficients, these devices deliver outstanding reliability and long-term performance. POC employs a proprietary high Laser-Induced Damage Threshold (LIDT) process technology, making these rotators suitable for high-power applications up to 500 W. They operate efficiently across wavelengths from 355 nm to 4500 nm, catering to diverse industrial and scientific requirements.

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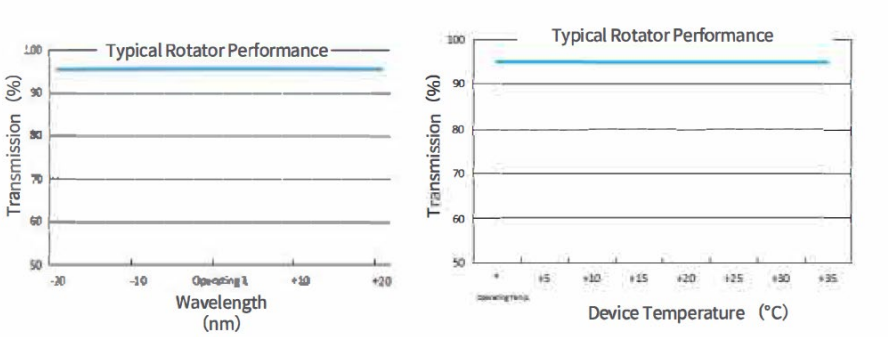

Applications and Examples:

- **Laser Sensing Systems**: Ensures accurate and precise polarization control in advanced optical sensors.
- **Ultrafast Laser Systems**: Compatible with high-power ultrafast lasers for material processing and research.
- **Optical Coherence Tomography (OCT)**: Provides stable polarization control for medical imaging systems.
- **Laser Detection Systems**: Enhances performance in spectroscopic and diagnostic applications.

Standard Products and Model Numbers:

Faraday Rotators Model Number Structure: HPRO-t-p-a-λ-w-h

- **t**: Type (e.g., FS for common use)
- **p**: Power (1–500 W)
- **a**: Aperture (2–20 mm)
- **λ**: Wavelength (355–4500 nm)
- **w**: Waveplate (Contained/Not Contained)
- **h**: Housing (e.g., A01, A15)

Typical Specifications:

Aperture (mm)	Wavelength (nm)	Extinction Ratio (dB)	Rotation Angle (°)	Power Handling (W)	Transmission (%)
2–15	355–1080	>30	45±0.5	100	>98
2–10	1310–4500	>30	45±0.5	100	>98
15–20	600–1080	>30	45±1	500	>98

*Operating temperature: 10–30°C. Power values represent maximum average power.

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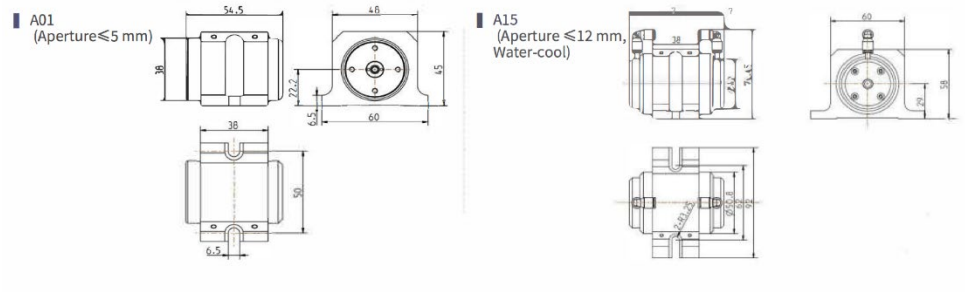
Housing Dimensions (mm):

- **A01**: Aperture ≤ 5 mm
    - Dimensions: 54.5 × 38 × 60 mm
- **A15**: Aperture ≤ 12 mm (Water-cooled)
    - Dimensions: 60 × 38 × 50 mm
    - 

POC Strength and Capabilities:

Photonics of Crystals (POC) is a leader in delivering cutting-edge Faraday Rotators designed for precision and reliability. With state-of-the-art crystal growth technology, POC ensures consistent quality with high Verdet constants and minimal absorption losses. Our proprietary manufacturing process achieves high Laser-Induced Damage Thresholds (LIDT), catering to high-power applications.

POC offers comprehensive customization options, including tailored aperture sizes, wavelength ranges, and power-handling capacities. Our meticulous quality assurance guarantees optimal performance, making POC's Faraday Rotators an ideal solution for diverse industrial and scientific applications.