Photonics On Crystals

POC-OC-120215-BBO Pockels Cells Datasheet

Key Features

- **High Electro-Optic Performance:** Provides precise wavelength selection with low transmission losses.
- **Wide Repetition Rate Range:** Capable of operating at up to 1 MHz.
- **Customizable Specifications:** Options for aperture size, crystal length, and accessories.
- **High Extinction Ratio:** Greater than 1200:1 for optimal optical performance.
- **Flexible Applications:** Suitable for Q-switching, pulse picking, and regenerative amplifiers.

General Description

BBO Pockels Cells, developed by POC, are advanced laser devices designed using the transverse electro-optic effect. When voltage is applied to the BBO crystal, the refractive index changes, allowing modulation of the polarization state of transmitted light. This technology enables high-speed modulation and precise optical control, making BBO Pockels Cells an essential component for applications requiring fast switching and high damage thresholds.

With low ringing effects and customizable features, POC BBO Pockels Cells are engineered for optimal performance, ensuring a high single-pass transmission of up to 99%. The devices are available in multiple configurations to suit various operational needs, including water cooling for enhanced thermal dissipation.

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By employing high-quality BBO crystals and leveraging state-of-the-art manufacturing techniques, POC ensures durability and efficiency in a wide wavelength range (1030–1064 nm and beyond).

Applications

1. **Q-Switching:** Enables high-power pulsed laser operations for material processing and micromachining.
2. **Pulse Picking:** Precisely selects specific pulses for laser diagnostics and time-resolved experiments.
3. **Regenerative Amplifiers:** Provides efficient optical feedback for ultra-fast laser systems.
4. **Cavity Dumping:** Optimizes energy output in laser cavities with rapid switching speeds.

Standard Products and Model Numbers

Type	Effective Clear Aperture (a)	Crystal Length (l)	Cascade Type (q)	Optional Accessories (b)	Wavelength (w)
A (Square), C (Round)	3 (2.6 mm), 4 (3.6 mm)	A (20 mm), B (25 mm)	S (Single), D (Double), T (Triple)	C (Ceramic), L (Water Cooling), N (Nothing)	1030 nm, 1064 nm

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Typical Specifications

Aperture*	Extinction Ratio	Rise/Fall Time	Cascade Type	Transmission	Representative Model	1/4 Voltage***
3–6 mm	>1200:1	<10 ns	Single	>99%	3 AS	3.6 kV
3–6 mm	>1000:1	<10 ns	Double	>98.5%	3 AD	1.8 kV
7–12 mm	>500:1	<20 ns	Double	>98.5%	10 AD	5.8 kV

Note: Recommended to use a light spot diameter ($1/e^2$) less than 0.6 times the clear aperture.

Housing Dimensions

Model BPC-XXX-C

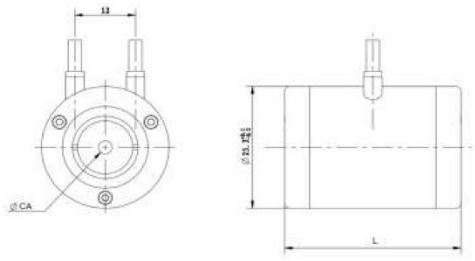
- Compact cylindrical design for efficient integration.
- Dimensions: Refer to technical diagrams provided.

Model BPS-10AD-L

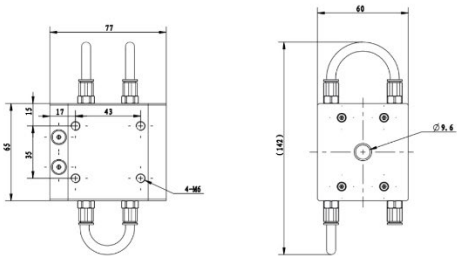
- Rectangular housing with water-cooling compatibility.

- Dimensions: Refer to detailed specifications.

BPC-XXX-C



BPS-10AD-L



POC Strengths and Capabilities

Photonics of Crystals (POC) is a global leader in developing high-precision optical devices tailored to meet unique customer needs. Our expertise lies in advanced material processing, rigorous quality control, and innovative design. With a dedicated R&D team and state-of-the-art facilities, we deliver solutions that drive success in various fields, including industrial laser systems, quantum technologies, and spectroscopy.

POC is committed to excellence, ensuring that every product offers unmatched reliability, efficiency, and value. By partnering with us, you gain access to cutting-edge technology and superior customer support, backed by decades of industry expertise.