

BBO Pockels cells

Accurate, fast, adjustable wavelength selector

The **BBO Pockels cells** are laser devices developed based on the electro-optic effect. When a voltage is applied to the electro-optic crystal, the refractive index of the crystal changes. The phase difference caused by birefringence for the polarized light transmitted along the optical axis will lead to a change in the polarization state after exiting. The working principle of BBO Pockels cells is based on the transverse electro-optic effect. Therefore, the working voltage can be effectively reduced by changing the size of the BBO crystal.

CASTECH can provide BBO Pockels cells with different specifications and requirements. The products can be applied to different usage environments. Due to the low ringing effect of BBO Pockels cells, combined with CASTECH's self-made driver, a repetition rate of 1 MHz can be achieved. In addition, CASTECH also provide water-cooled or other special accessory customizations.



Applications

- Q-switching
- Regenerative amplifier
- Pulse picker
- Cavity dumping

CASTECH's products are produced independently throughout the entire process and can be customized according to customer needs. Refer to the following list for standard products.

Model Number: BPt-alq-b-w

| Type (t) | Effective Clear Aperture (a) | Crystal length (l) | Cascade type(q) | Optional Accessories(b) | Wavelength (w) |
|--|---------------------------------|-------------------------------|---|--|---------------------------|
| A (Square) C (Round) S (special) | 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 ... |

Typical Specifications

| Aperture* | Extinction ratio | Rise/Fall Time | Cascade Type | Transmission | Representative Model | $\lambda/4$ voltage*** |
|-----------|------------------|----------------|--------------|---------------|----------------------|------------------------|
| 3-6 mm | $\geq 1200:1$ | < 10 ns | Single | $\geq 99\%$ | 3AS | 3.6kV |
| 3-6 mm | $\geq 1000:1$ | < 10 ns | Double | $\geq 98.5\%$ | 3AD | 1.8kV |
| 7-12 mm | $\geq 500:1$ | < 20 ns | Double | $\geq 98.5\%$ | 10AD | 5.8kV |

Damage threshold 10 J/cm², 10 ns, 10 Hz

*Recommend to use a light spot ($1/e^2$) less than 0.6 times the clear aperture

**The actual value is affected by the drive.

*** Relate to the model, and it is recommended that the maximum operating voltage does not exceed 1.3 times the standard voltage of the customized model (e.g. for a clear aperture of 3mm, it is recommended that the maximum operating voltage does not exceed 3.9kV).

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Housing dimensions(mm):

