

BBO Crystal (Beta-Barium Borate Crystal)

BBO crystal is an important nonlinear optical crystals with combination of unique optical properties. Broad transmission and phase matching ranges, large nonlinear coefficient, high damage threshold and excellent optical homogeneity provide attractive possibilities for various nonlinear optical applications.

Advantages:

- Broad phase matching (SHG) range from 409.6nm to 3500nm
- Wide transmission region from 190nm to 3500nm
- Large effective SHG coefficient
- High damage threshold of 10 GW/cm² for 100 ps pulse-widths at 1064nm
- High optical homogeneity with $Dn \leq 10^{-6}/\text{cm}^2$
- Wide temperature bandwidth of about 55 ° (for type I SHG 1064nm)
- Good mechanical and physical properties

BBO's main applications:

- SHG, THG, 4HG, 5HG of Nd lasers
- SHG, THG, 4HG of Ti:Al₂O₃ and Alexandrite lasers
- SHG, THG and Frequency-mixing of Dye lasers
- SHG of Argon ion, Cu-vapor and Ruby lasers
- OPA and OPO
- Pockels' Cell

HG offer BBO specification:

Tolerance of cutting angle	$\Delta \theta \leq \pm 0.25^\circ, \Delta \varphi \leq \pm 0.25^\circ$
Tolerance of dimension	Dimension +0.0/-0.05 mm, L: $\pm 0.1\text{mm}$
Flatness	$\lambda/8$ @ 632.8nm
Wavefront distortion	$\lambda/10$ @ 632.8nm
Surface quality	10/5 per MIL-O-13830A
Parallelism	10''
Perpendicularity	5'
Bevel/chamfer	<0.1mm @ 45deg.
Chips	<0.1mm
CA	>95%
Coating	AR/P-coating Upon customer's request
Warranty	One year under proper use