



## Laser Crystal Manufactuer in China

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## LBO Crystal

LBO crystal is an excellent nonlinear optical crystal. For frequency doubling (SHG), tripling (THG) of Nd:YAG, Nd:YLF, Nd:YVO4 lasers, it is one of the most useful nonlinear optical materials in ultraviolet and visible laser applications.

### Diffusion Bonded Crystal

#### Laser Crystal

[Nd:YAG Laser Crystal](#)[Cr<sup>4+</sup>:YAG Laser Crystal](#)[Er:YAG Laser Crystal](#)[Nd:Ce:YAG Laser Crystal](#)[Yb:YAG Laser Crystal](#)[Nd:YLF Laser Crystal](#)[Nd:YVO<sub>4</sub> Laser Crystal](#)

#### Optical Windows

[BK7 Standard Windows](#)[BK7 High Precision Windows](#)[Fused Silica Standard Windows](#)[Fused Silica High Precision Windows](#)[Coating Film](#)[BK7 Plano-Convex Cylindrical Lens](#)

#### Lens

[BK7 Plano-Convex Lens](#)[Fused Silica Plano-Convex Lens](#)[BK7 Double Convex Lens](#)[Fused Silica Double Convex Lens](#)[BK7 Plano-Concave Lenses](#)[Fused Silica Plano-Concave Lens](#)[BK7 Double Concave Lenses](#)[Fused Silica Double Concave Lens](#)[Coating Film](#)[BK7 Plano-Convex Cylindrical Lens](#)

#### Optical Mirror

[BK7 Standard Substrate](#)[BK7 High Precision Substrate](#)[Fused Silica Standard Substrate](#)[Fused Silica High Precision Substrate](#)[Beam Splitter Plate](#)[Nd: YAG Laser Beam Combiner](#)[Scanning Mirror](#)[Coating Film](#)[BK7 Plano-Convex Cylindrical Lens](#)

### Advantages:

1. Broad transparency range from 160nm to 2.6mm(SHG range from 0.55m to 2.6mm)
2. Relatively large effective SHG coefficient (about three times larger than that of KDP)
3. High damage threshold (18.9 GW/cm<sup>2</sup> for a 1.3ns laser at 1.054mm)
4. Type I and type II non-critical phase-matching (NCPM) over a wide wavelength range
5. Wide acceptance angle and small walk-off

### Applications:

6. More than 480 mW output at 395 nm is generated by frequency-doubling a 2W mode-locked Ti:Sapphire laser (<2ps, 82MHz). The wavelength range of 700~900 nm is covered by a 5x3x8 mm<sup>3</sup> LBO crystal
7. The frequency-doubling of a Spectra-Physics TFR diode pumped Nd:YLF laser (>500mJ@1047 nm, < 7 ns, 0-10 KHz) reaches over 40% conversion efficiency in a 9 mm LBO.
8. The VUV output at 187.7 nm is obtained by sum-frequency generation
9. 2mJ/pulse diffraction-limited beam at 355 nm is obtained by intracavity tripling a Q-switched Nd:YAG laser

### Chemical and Structural properties of LBO:

Crystal Structure	Orthorhombic, Space group Pna2 <sub>1</sub> , Point group mm2
Lattice Parameter	a=8.4473Å, b=7.3788Å, c=5.1395Å, Z=2
Melting Point	About 834°C
Mohs Hardness	6
Density	2.47 g/cm <sup>3</sup>
Thermal Conductivity	3.5W/m/K
Thermal Expansion Coefficient	ax=10.8x10 <sup>-5</sup> /K, ay= -8.8x10 <sup>-5</sup> /K, az=3.4x10 <sup>-5</sup> /K

### Specifications:

Dimension tolerance	(W±0.1mm)x(H±0.1mm)x(L+0.5/-0.1mm) (L≥2.5mm) (W±0.1mm)x(H±0.1mm)x(L+0.1/-0.1mm) (L<2.5mm)
Clear aperture	Central 90% of the diameter
Flatness	Less than λ/8 @ 633nm
Transmitting wavefront distortion	Less than λ/8 @ 633nm
Chamfer	≤0.2mmx45°
Chip	≤0.1mm
Scratch/Dig code	Better than 10/ 5 to MIL-PRF-13830B
Parallelism	Better than 20 arc seconds
Perpendicularity	≤5 arc minutes
Angle tolerance	Δθ≤0.25°, ΔΦ≤0.25°

### Feedback Form



[NLO Crystal](#)

[LBO Crystal](#)

BBO Crystal  
KTP Crystal  
KDP, KD\*P Crystal  
LiNbO<sub>3</sub> / LN Crystal

Window Crystal

YAG Crystal  
Sapphire Crystal  
CaF<sub>2</sub> Crystal  
MgF<sub>2</sub> Crystal  
BaF<sub>2</sub> Crystal  
LiF Crystal

Laser Rod Repolishing

Laser Safety Glasses

Optical Filter

Medical IPL Filter  
Interference Filter

Light Pipe Homogenizing

Laser Beauty Supplies

Laser Handle  
Laser Bonding Crystal



\*Email

\*Content

Product Name

Your Name

Company

Tel./Fax.

Related Products



[BBO Crystal](#)

High Temperature form BBO (a-BaB<sub>2</sub>O<sub>4</sub>) is a negative uniaxial crystal. Following exceptional properties make it a very important nonlinear crystal:..