

# LBO Crystals



## Description

**Lithium Triborate** LBOs high damage threshold, wide acceptance angle, good thermal stability and wide transmission range make it ideal for frequency doubling of high power lasers.

It is unique in many aspects, especially its wide transparency range, moderately high non-linear coupling, high damage threshold and good chemical and mechanical properties. Its transmission range is from 0.16  $\mu\text{m}$  to 2.6  $\mu\text{m}$ . LBO allows temperature-controllable non-critical phase-matching operation (NCPM) for 1.0-1.3  $\mu\text{m}$ , Type I SHG, and also provides room temperature NCPM for Type II SHG at 0.8-1.1  $\mu\text{m}$ . It possesses a relatively large angular acceptance bandwidth, reducing the beam quality requirements for source lasers.

## Features

- Broad transparency range from 160 nm to 2800 nm
- Relatively large effective SHG coefficient (about three times that of KDP)
- High damage threshold
- Wide acceptance angle and small walk-off
- Type I and Type II non-critical phase matching in a wide wavelength range

## Standard specifications

Transparency range	160-2800 nm
Dimensions tolerance	+0/-0.1 mm
Length tolerance	$\pm 0.1$ mm
Orientation accuracy of cut angle	<30 arcmin
Surface quality	20-10 S-D after coating
Wavefront distortion	$< \lambda/8$ @ 632.8 nm
Parallelism error	<20 arcsec
Perpendicularity	<5 arcmin
Protective chamfers	<0.1 mm x 45°
Material optical damage threshold	>1 GW/cm <sup>2</sup> for 10 ns pulses @ 1064 nm