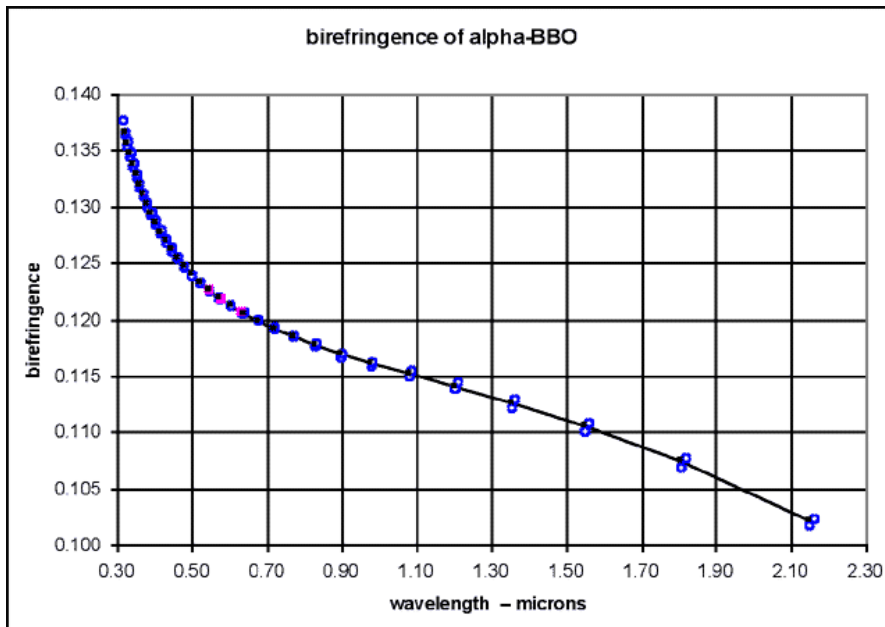


α -BBO Single Crystals

Chemical Formula	α -Ba ₂ B ₂ O ₄
Crystal Symmetry	uniaxial negative
Optical Symmetry	
Class	

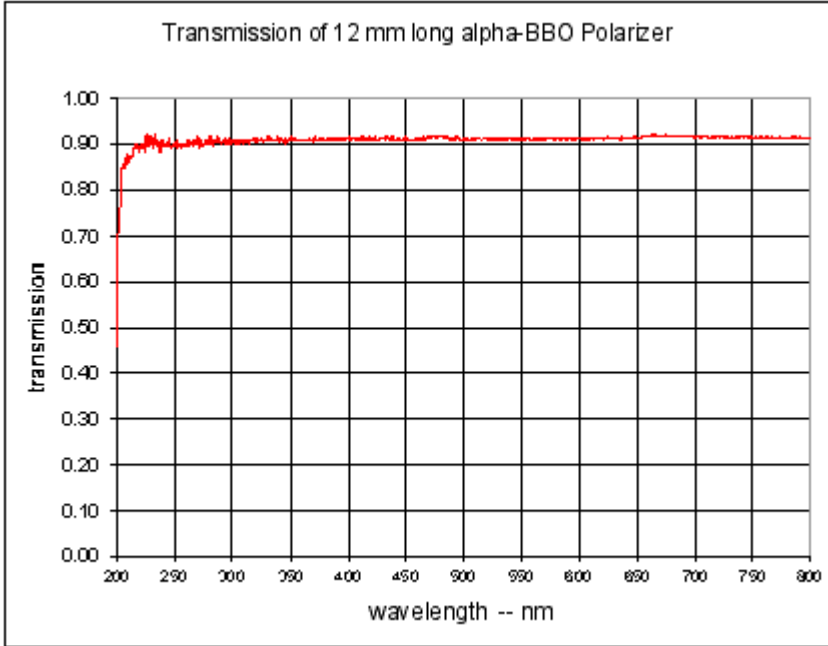
α -BBO is a birefringent optical material than can be used in high power optical applications. The refractive index and birefringence are similar to that of b-BBO; both types of BBO are grown at Inrad.

Birefringence of α -BBO Measured @ 22.5°C			
Wavelength	n _o	n _e	Birefringence
0.5461 m	1.6567	1.5342	0.1226
0.5780 m	1.6543	1.5325	0.1219
0.6328 m	1.6507	1.5301	0.1206



Because of its good transmission in the ultraviolet, uv polarizers made from α -BBO have attractive features.

Shown below is the transmission of an uncoated Rochon polarizer with a total crystal path length of 12 mm.



Several types of prism polarizers can be made from α -BBO.

Glan-Laser polarizers have a fairly narrow wavelength range of application due to the dispersion of the refractive index. At shorter wavelengths, the e-ray, which is normally transmitted, has a tendency to undergo total internal reflection.

Rochon polarizers can be made for applications in which the angular field-of-view is limited.

See the above transmission curve. A typical field-of-view for a Rochon polarizer made from α -BBO is 10 arcminutes.

Inrad typically custom-manufactures the Glan-Thompson type polarizer according to specific requirements. Following table shows typical properties of this type of polarizer. Please send as a Request For Quotation with your specific needs.

α -BBO Glan-Thompson Polarizer							
ϕ	Size (mm)	Wavelength Range	Transmission	Extinction	Field-of-View	Beam Deviation	Scratch-Dig
13 mm	13 x 13 x 25.5	230 nm — 800 nm	> 80% at all wavelengths	> 1000:1 at all wavelengths	+/- 2°	< 5 arcmin.	< 40-20