

BiBO crystals

BiB3O6 (BIBO) is a newly developed nonlinear optical crystal. It possesses large effective nonlinear coefficient, high damage threshold and inertness with respect to moisture. Its nonlinear coefficient is 3.5 - 4 times higher than that of LBO, 1.5 -2 times higher than that of BBO. It is a promising doubling crystal to produce blue laser.



Basic Properties	
Crystal Structure	Monoclinic, Point group 2
Lattice Parameter	$a=7.116\text{\AA}$, $b=4.993\text{\AA}$, $c=6.508\text{\AA}$, $\beta=105.62^\circ$, $Z=2$
Melting Point	726°C
Mohs	5-5.5
Density	5.033 g/cm ³
Thermal Expansion Coefficient	$\alpha_a=4.8 \times 10^{-5}/\text{K}$, $\alpha_b= 4.4 \times 10^{-6}/\text{K}$, $\alpha_c=-2.69 \times 10^{-5}/\text{K}$
Transparency Range	286- 2500 nm
Absorption Coefficient	<0.1%/cm at 1064nm
SHG of 1064/532nm	Phase matching angle: 168.9° from Z axis in YZ plan Deff : 3.0 +/- 0.1 pm/V Angular acceptance: 2.32 mrad·cm Walk-off angle : 25.6 mrad Temperature acceptance: 2.17 °C·cm
Physical Axis	X // b, (Z,a)=31.6°, (Y,c)=47.2°