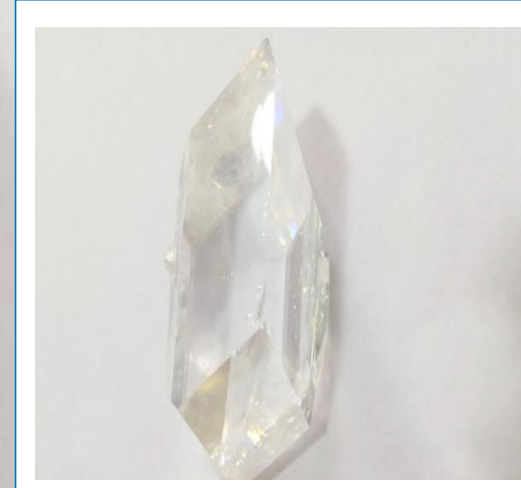


BiB3O6(BIBO)

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°

Technical Parameters	
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 $\lambda/8$ @ 633nm
Transmitting wavefront distortion	less than $\lambda/8$ @ 633nm
Chamfer	$\leq 0.2\text{mm} \times 45^\circ$
Chip	$\leq 0.1\text{mm}$
Scratch/Dig	better than 10/ 5 to MIL-PRF-13830B
Parallelism	better than 20 arc seconds
Perpendicularity	≤ 5 arc minutes
Angle tolerance	$\Delta\theta \leq 0.25^\circ$, $\Delta\varphi \leq 0.25^\circ$
Damage threshold[GW/cm ²]	>0.3 for 1064nm, TEM00, 10ns, 10HZ