



# *Crystals Land*

\* Welcome To BBO Crystal \*

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## Beta Barium Borate ( BBO, BaB<sub>2</sub>O<sub>4</sub> )

Because of a small acceptance angle and large walk-off, good laser beam quality beta barium borate is an efficient NLO crystal for second, third and forth harmonic generations of Nd:YAG laser.

Main properties:

Crystal structure:	trigonal
Space group:	R <sub>3c</sub>
Lattice parameters:	a = b = 12.532 Å° c = 12.809 Å° z = 6
Density:	3.85 g/cm <sup>3</sup>
Melting point:	1095 ± 5°C
Hardness (Mohs):	4
Color:	colorless, transparent
Transmission range:	0.189 μm - 3.5 μm
Refractive index:	
1.064 μm:	n <sub>e</sub> = 1.5425 n <sub>o</sub> = 1.6551
0.532 μm:	n <sub>e</sub> = 1.5555 n <sub>o</sub> = 1.6749
0.266 μm:	n <sub>e</sub> = 1.6146 n <sub>o</sub> = 1.7571
Phase matching output wavelength:	189 nm- 1750 nm
Nonlinearity coefficient:	d <sub>11</sub> = 5.8 x d <sub>33</sub> ( KDP ) d <sub>31</sub> = 5.8 x d <sub>11</sub> d <sub>22</sub> = 5.8 x d <sub>11</sub>
Light damage threshold:	1.064 μm: 5 GW/cm <sup>2</sup> (10 ns), 10 GW/cm <sup>2</sup> (1.3 ns) 0.532 μm: 1 GW/cm <sup>2</sup> (10 ns), 7 GW/cm <sup>2</sup> (250 ps)
Electro-optic constant:	γ <sub>11</sub> = 2.7 pm/V,     γ <sub>22</sub> , γ <sub>31</sub> < γ <sub>11</sub>

Specification:

Crystals with dimensions up to 20 x 20 x 25 mm<sup>3</sup> are available.

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[α-BBO](#)

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