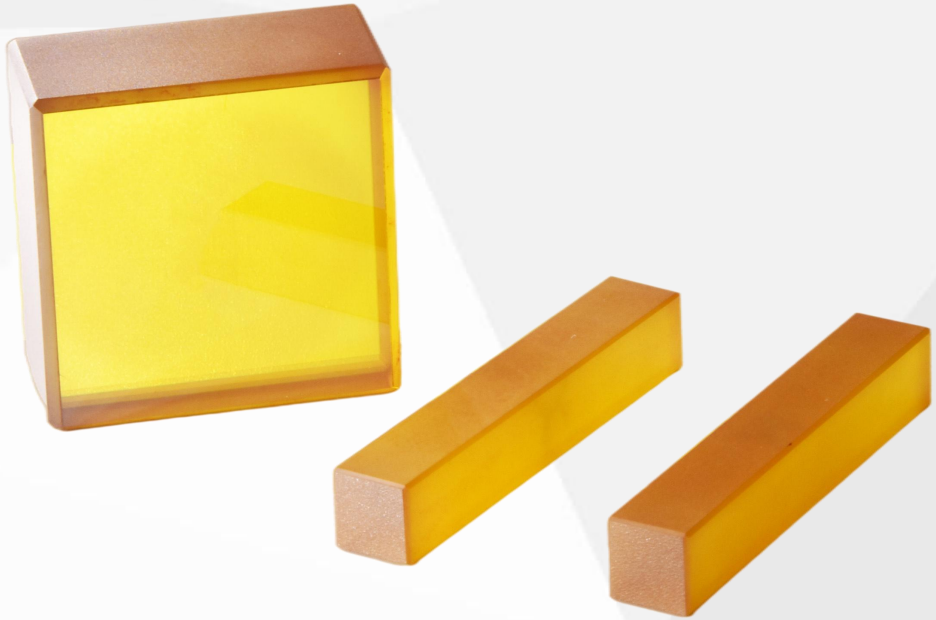
BaGa4Se7 crystals



High-quality crystals of BGSe (BaGa4Se7) is the selenide analogue of the chalcogenide compound BaGa4S7, whose acentric orthorhombic structure was identified in 1983 and the IR NLO effect was reported in 2009, is a newly developed IR NLO crystal. It was obtained via the Bridgman–Stockbarger technique. This crystal exhibits high transmittance over the wide range of 0.47–18 μm, except for an absorption peak at around 15 μm.
The FWHM of the (002) peak rocking curve is about 0.008° and the transmittance through a polished 2 mm thick (001) plate is around 65% over the wide range of 1–14 μm. Various thermophysical properties were measured on crystals.

BGSe (BaGa4Se7) crystal exhibits a powder second harmonic generation (SHG) response that is approximately 2–3 times that of AgGaS2. The surface laser damage threshold is about 3.7 times that of AgGaS2 crystal under identical conditions.
BGSe crystal has a large nonlinear susceptibility, and may have a broad prospect for practical applications in the mid-IR spectral region.It shows interesting terahertz phonon-polaritons and high nonlinear coefficients for terahertz generation.
The surface laser damage threshold of BGSe was measured to be 557 MW/cm2 using a Nd:YAG (1.064 μm) laser under conditions of 5 ns pulse width, 1 Hz frequency, and D=0.4 mm spot size.

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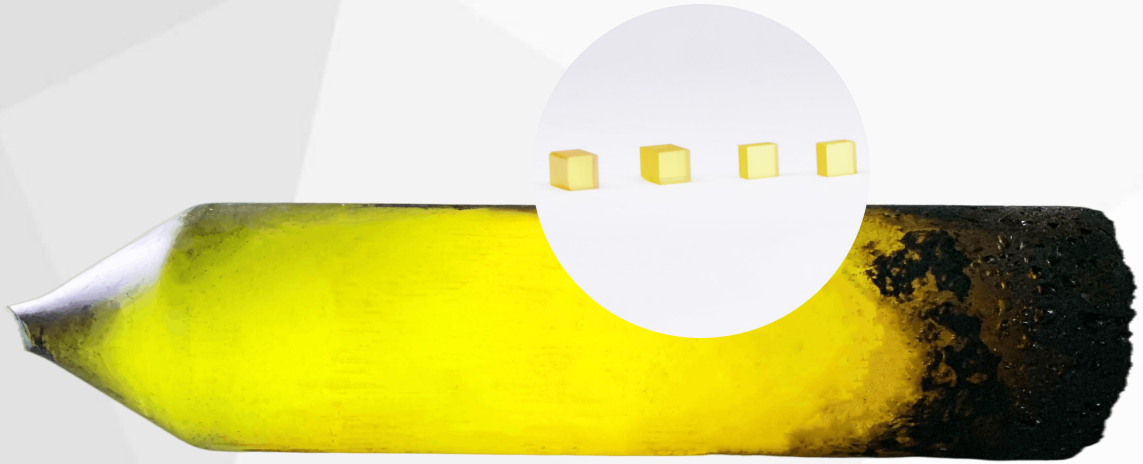

Technical Properties	
Dimension tolerance	(W +/-0.1 mm) x (H +/-0.1 mm) x (L + 1 mm/-0.5 mm)
Clear aperture	> 90% central area
Flatness	λ/8 @ 633 nm for T>=1 mm
Surface Quality	Scratch/dig 60-40 after coating
Parallelism	better than 30 arc seconds
Perpendicularity	10 arc minutes
Orentation accuracy	<30''

Advantages for IR laser output:

Suitable for various pumping source (1-3μm)

Wide tunable IR output range (3-18μm)

OPA, OPO, DFG, intracavity/extravity, cw/pulse pumping

Important notice: Since this this a new type crystal, inside crystal may have few streaks, but we do not accept returnment due to this defect.

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