

KBBF



DESCRIPTION

$\text{KBe}_2\text{BO}_3\text{F}_2$ (Potassium Beryllium Fluoroborate), abbreviated as KBBF, is a uniaxial crystal system with R32 space group and has a wide transmission range with a UV cut-off edge of 150 nm. Compared to crystals such as BBO and LBO, KBBF crystals also have a large thermal conductivity (LBO: 3.5 W/mK, KBBF: ~2.5 W/mK), indicating that the crystal has a high laser damage threshold. For example, using an Nd:YAG laser (1064 nm, 80 ps, 1 kHz), the crystal has optical damage thresholds as high as 900 GW/cm² and 72 J/cm², which is nearly an order of magnitude greater than the anti-laser damage threshold of a BBO crystal under the same conditions. KBBF crystal is one of the crystals that can achieve multiplicative output of deep UV lasers below 200 nm.

FEATURES

- No moisture
- High damage threshold
- Small two-photon absorption
- No photorefractive effect
- Large refractive index
- Direct frequency doubling output deep UV laser

APPLICATIONS

- Deep ultraviolet laser
- Deep ultraviolet laser Raman spectrometer
- Vacuum ultraviolet laser angle resolved photoelectron spectrometer
- Deep UV laser light emission electron microscope duv-dpl PEEM



KBBF

PHYSICOCHEMICAL PROPERTIES

crystal structure	Uniaxial system, space group R32
Lattice parameters	a=b=4.427(4) Å, c=18.744(9) Å, Z=3
Light transmission range	150 nm-3.5 μm
Thermal conductivity	2.5 W/m K
damage threshold	900 GW/cm ² @1064 nm 60 GW/cm ² @390 nm
Sellmeier equation	$n_o^2 = 1 + 1.1713 \cdot \lambda^2 / (\lambda^2 - 0.00733) - 0.01022 \cdot \lambda^2$ $n_e^2 = 1 + 0.9316 \cdot \lambda^2 / (\lambda^2 - 0.00675) - 0.00169 \cdot \lambda^2$

SPECTRA

