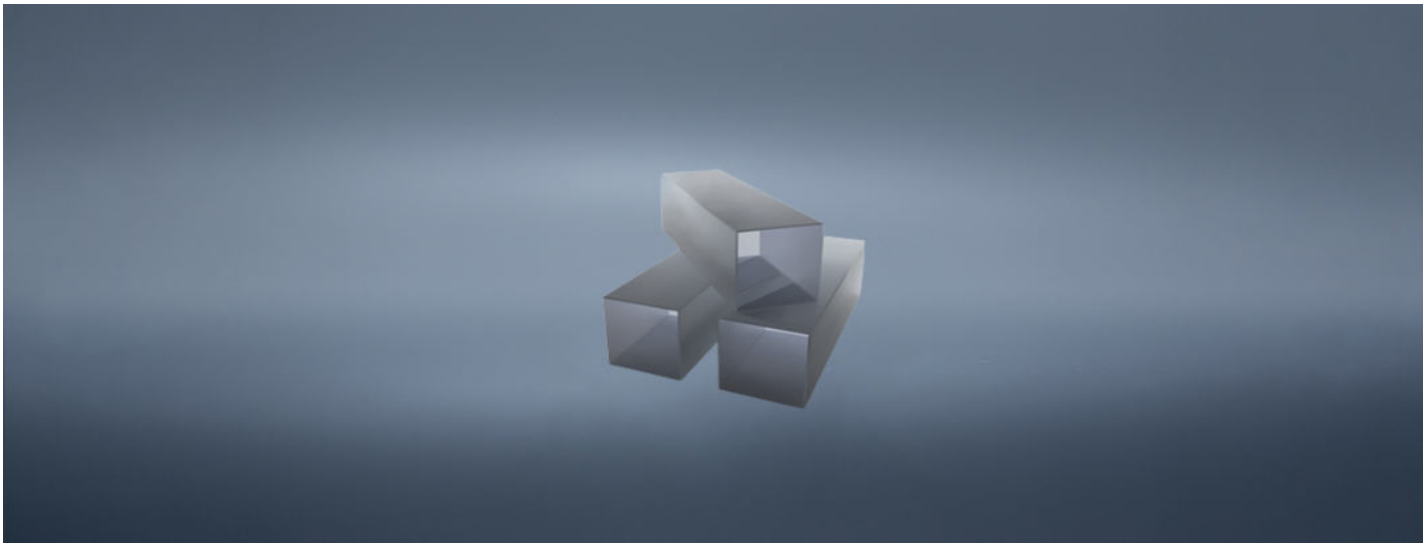
Yb:YAP



DESCRIPTION

CRYLINK's Yb:YAP crystal products, also known as ytterbium aluminate. It is a kind of laser crystal product with excellent comprehensive performance. It is widely used in femtosecond laser, sensor and neutrino detection. The product is characterized by high anisotropic thermal expansion coefficient, birefringence and low quantum defects. Can be used in femtosecond lasers, regenerative amplifiers, photoelectric sensors, neutrino detector products.

FEATURES

- Infrared
- Low quantum defects
- High thermal conductivity
- Dual-axis orthogonal crystals
- High-power continuous wave
- The emission spectrum is approximately 1 μm
- The high-absorption meson cross-section depends on the orientation of the crystal

APPLICATIONS

- Femtosecond laser
- Neutrino detectors
- Photoelectric sensors
- Regeneration amplifier
- Solar neutrino detector
- High-efficiency sheet lasers
- Continuous and passive locking thin disc lasers
- High-power continuous wave-adjusting Q-locking laser

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Yb:YAP

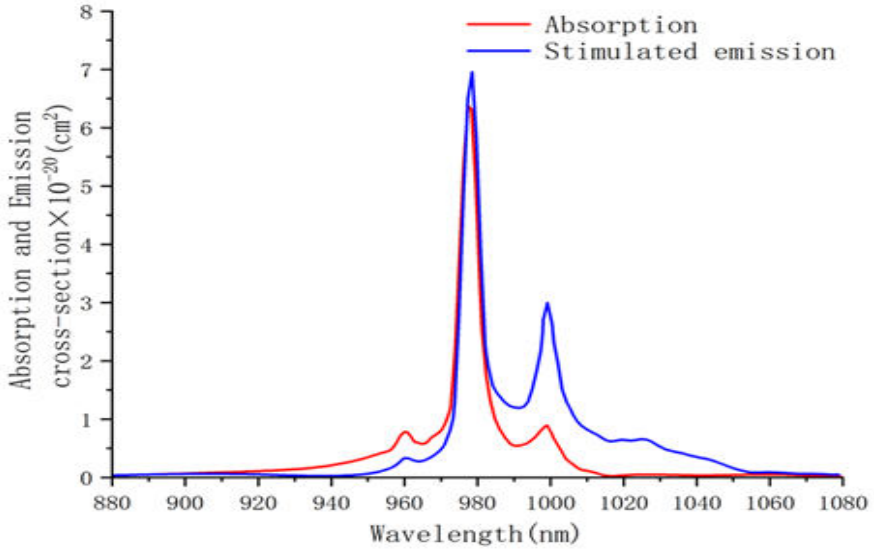
TECHNICAL FEATURES

Laser wavelength	1040 nm
2F5/2 energy level lifetime	500 μs
Emission cross-section@1040 nm	0.5×10-20cm2
Refractive index@632.8 nm	1.96(//a), 1.94(⊥b), 1.97(⊥c)
Crystal structure	Orthorhombic
Density	5.35g/cm3
Mohs hardness	8.5
Thermal conductivity	11.7 (//a), 10.0 (//b), 13.3 (//c) W/m·K
dn/dT	7.7×10-6 (//a) K-1, 11.7×10-6 (//b) K-1, 8.3×10-6 (//c) K-1
Coefficient of thermal expansion	2.32×10-6 (//a) K-1, 8.08×10-6 (//b) K-1, 8.7×10-6 (⊥c) K-1
Typical doping level	<2 at.%

STANDARD SPECIFICATIONS

Directional	a-cut
Clear aperture	>90%
Face size tolerances	+0/-0.1mm
Length tolerance	±0.1mm
Parallelity error	<10 arcsec
Perpendicularity error	<10 arcmin
Protection slot	<0,1 mm @45°
Surface finish	10-5 S-D
Surface flatness	<λ/10@6328 nm
Coating	Ar(R<0.25%) @978 nm + AR(R<0.15%) @1020-1070 nm
Laser damage threshold	>10 J/cm2@1030 nm, 10 ns

SPECTROGRAM



Yb:YAP (E//c) absorption and emission curve characteristics