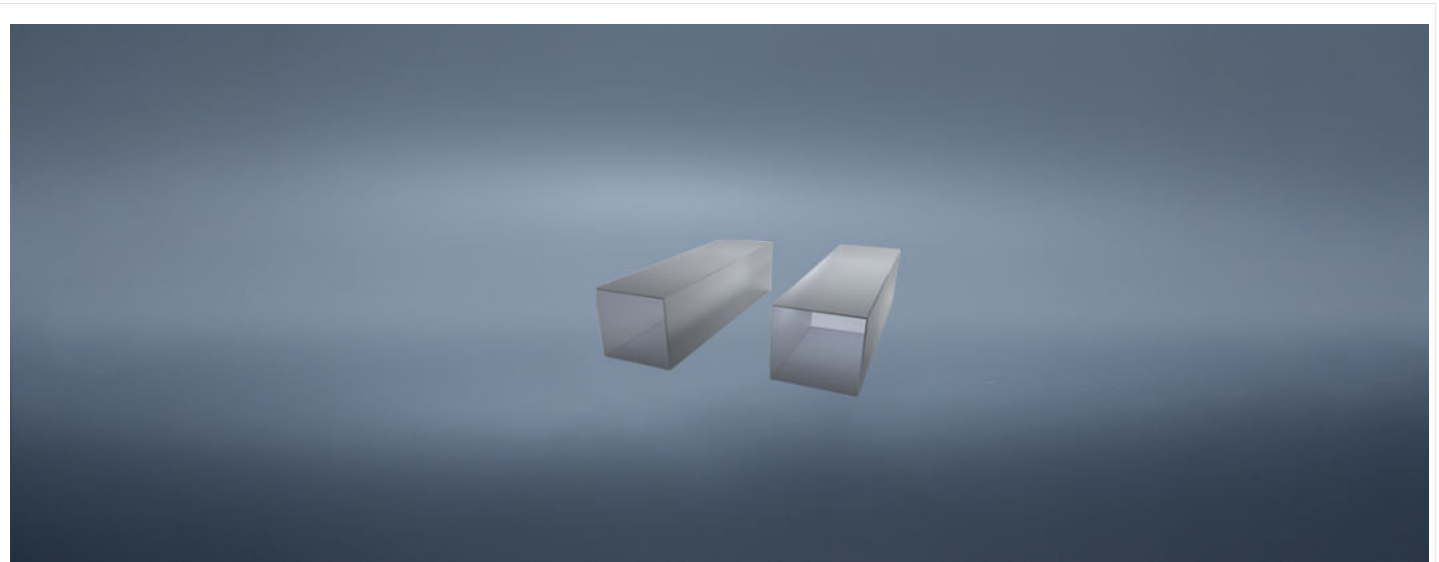


Yb:YLF



DESCRIPTION

CRYLINK's Yb:YLF crystal products are laser crystal products with excellent comprehensive performance. It is widely used in laser cooling, low temperature detection and diode pumping. The product is characterized by low quantum defects, high thermal conductivity and wide tuning range. Can be used in mode-locked lasers, subpicosecond pulse lasers, diode pumped chirped pulse regeneration amplifier, thin disk laser products.

FEATURES

- Low thermal load
- Wide tuning range
- High average power
- Low quantum defects
- High thermal conductivity
- A wide range of tunability
- Wide laser emission spectrum
- Absorption spectra are well matched to the emission wavelength of the InGaAs laser diode
- Simple electronic structures exclude excitation state absorption and various harmful annihilation processes

APPLICATIONS

- Laser cooling
- Thin disc laser
- Low temperature detection
- Diode pump-type locking laser
- Diode pumping pulse regeneration amplifier
- High average power subpicosecond pulse laser



Yb:YLF

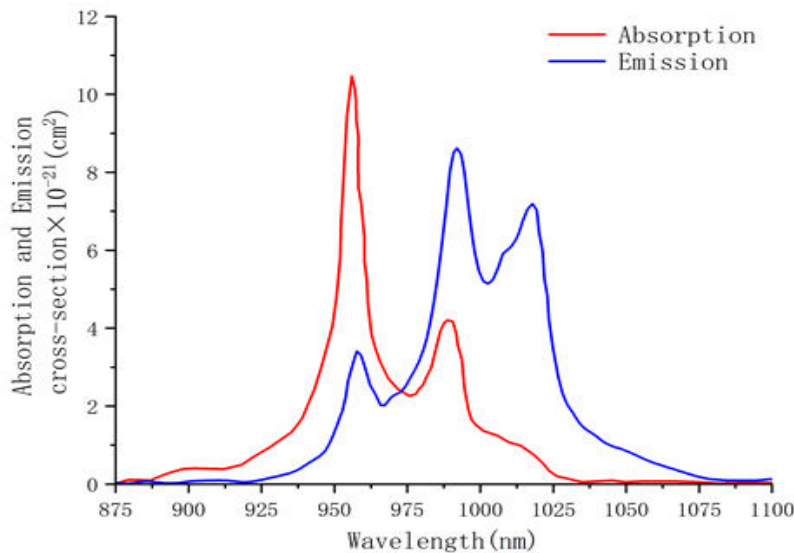
SPECTROSCOPIC AND THERMOMECHANIC PROPERTIES

Absorption peak wavelength	960 nm
Peak absorption cross section	$10.5 \times 10^{-21} \text{cm}^2$
Peak absorption bandwidth	~10 nm
Laser wavelength	1017 nm
2F5/2 energy level lifetime	2.1ms
Emission cross-section@1053 nm	$4.1 \times 10^{-21} \text{cm}^2$
Refractive index@1040 nm	~1.4
Crystal structure	Tetragon
Density	3.95g/cm^3
Mohs hardness	5
Thermal conductivity	6 Wm ⁻¹ K ⁻¹
dn/dT	$-4.6 \times 10^{-6} (\text{IIc}) \text{k}^{-1}$, $-6.6 \times 10^{-6} (\text{IIa}) \text{k}^{-1}$
Coefficient of thermal expansion	$8 \times 10^{-6} (\text{IIc}) \text{k}^{-1}$, $13 \times 10^{-6} (\text{IIa}) \text{k}^{-1}$
Typical doping level	5%-20%

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 quality	10-5 S-D
Surface flatness	$<\lambda/10 @ 6328 \text{ nm}$
Coating	AR(R<0.5%) @960 nm + AR(R<0.15%) @1000~1060 nm
Laser damage threshold	>10 J/cm ² @1030 nm, 10 ns

SPECTROGRAM



Yb:YLF π polarization absorption and emission curve

