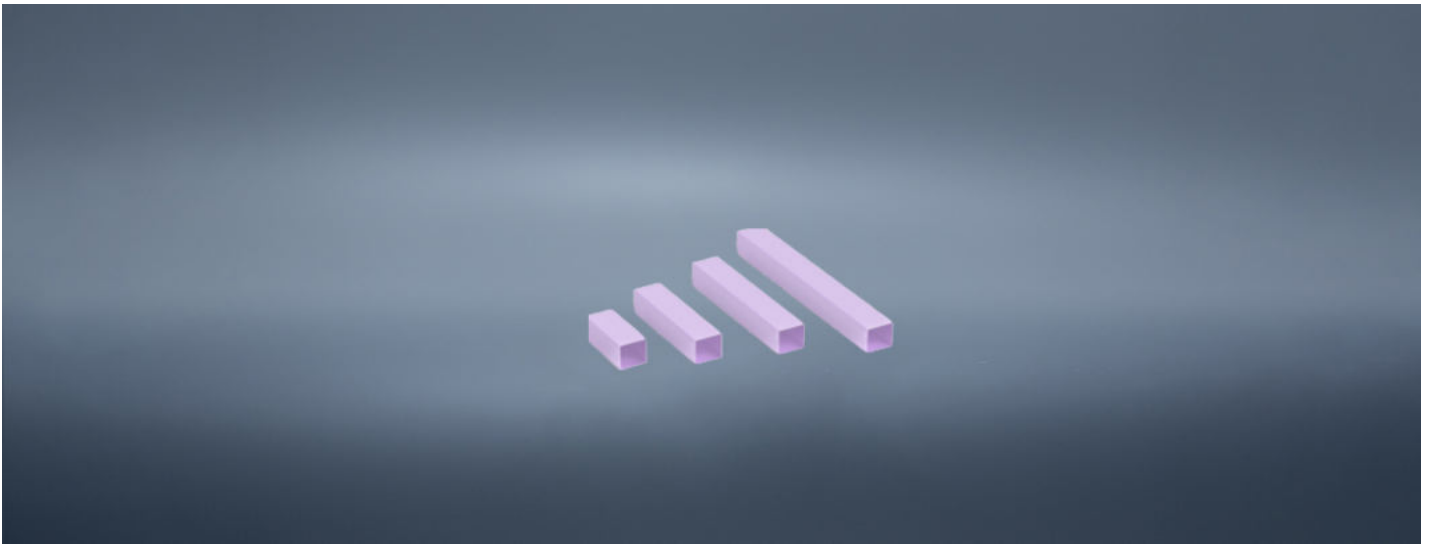


Nd:YLF



DESCRIPTION

CRYLINK's Nd:YLF crystal products, also known as neodymium doped yttrium lithium fluoride. It is a kind of crystal product with excellent comprehensive performance. It is widely used in the fields of mode-locked laser, continuous laser and material processing. The product has the characteristics of large fluorescence line width, low thermal lens effect and natural polarization. Can be used in linear polarized resonators, mode-locked lasers, diode pumped Nd:YLF lasers, Ti: sapphire chirped pulse amplifier products.

FEATURES

- Natural polarization
- High UV transparency
- Low thermal lensing effect
- Long lifetime of 4F3/2 Nd level
- Large fluorescence linewidth
- Much softer and more brittle than Nd:YAG
- Continuous lasers apply a lower excitation light threshold
- High power, low beam divergence, effective single-mode operation

APPLICATIONS

- Mode-locked laser
- Ultrashort pulse laser
- Diode pump Nd:YLF laser
- Ti: Sapphire pulse amplifier
- Material processing, welding, cutting
- Linear polarization resonator Q switch and octave
- 1047nm and 1053 nm continuous wave pulses operate



Nd:YLF

TECHNICAL FEATURES

Absorption peak wavelength	792 nm
Peak absorption coefficient	10 cm ⁻¹
Peak absorption bandwidth	~5 nm
Laser wavelength	1047, 1053 nm
4F3/2 Nd level lifetime	485 μs
Emission cross-section	15×10 ⁻²⁰ (e ∥ C)cm ² @1047nm 10×10 ⁻²⁰ (e ⊥ C)cm ² @1053 nm
Refractive index@1064 nm	n _o =1.448 n _e =1.470
Crystal structure	tetragon
Density	3.95g/cm ³
Mohs hardness	5
Thermal conductivity	6Wm ⁻¹ K ⁻¹
dn/dT	-4.6×10 ⁻⁶ (//c)K ⁻¹ , -6.6×10 ⁻⁶ (//a)K ⁻¹
Coefficient of thermal expansion	8×10 ⁻⁶ (//c)K ⁻¹ , 13×10 ⁻⁶ (//a)K ⁻¹
Typical doping level	1-2 at.%

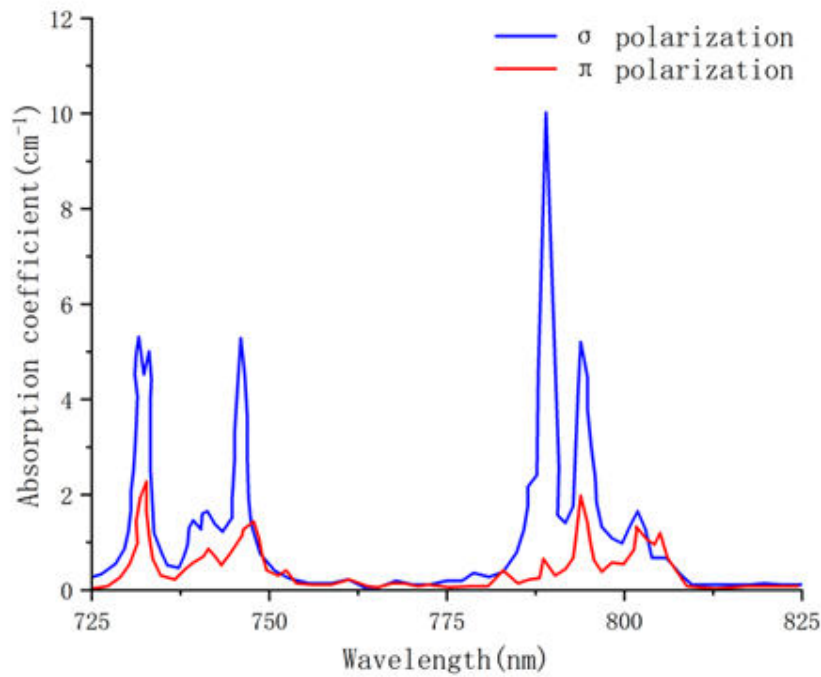
DETAILED PARAMETERS

Directional	a-cut, c-cut
Clear aperture	>90%
Surface tolerance	+0/-0.1mm
Length tolerance	±0.1mm
Parallelity error	<10 arcsec
Error of perpendicularity	<10 arcmin
Protection slot	<0,1 mm @ 45°
Surface quality	10-5 S-D
Surface flatness	<λ/8@6328 nm
Wavefront distortion	λ/4@6328 nm
Coating	R<0.5%@790-810 nm + R<0.2%@1047-1053 nm
Laser damage threshold	>10 J/cm ² @1064 nm, 10 ps

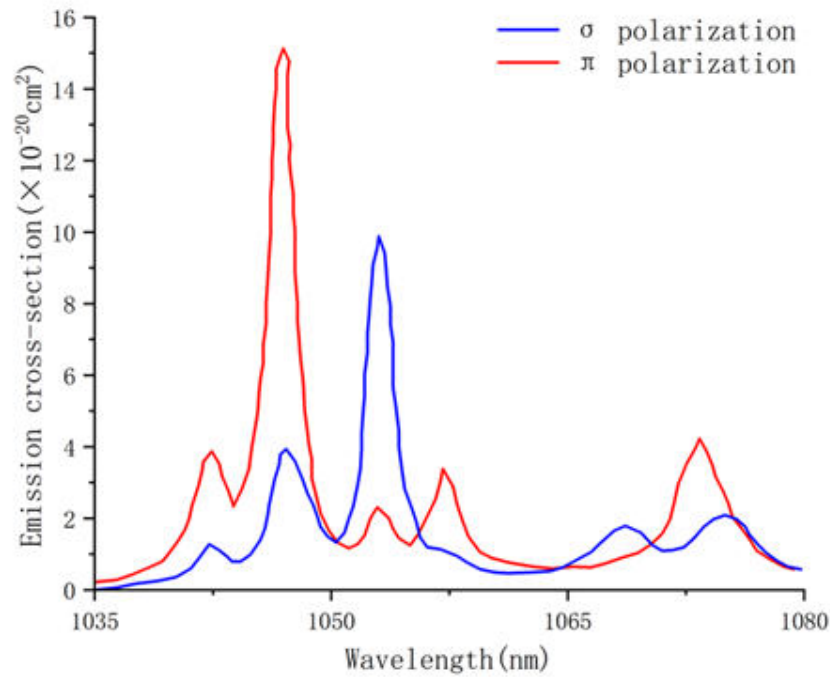


Nd:YLF

SPECTROGRAM



Nd(1%):YLF absorption curve



Nd(1%):YLF emission curve

