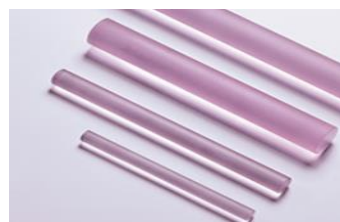


Nd:YLF

Nd:YLF is an excellent crystal that is very suitable for mode-locking to obtain short-pulse lasers. Its thermal lens effect is very small, the fluorescence line width is wide, and it outputs linearly polarized light. Nd:YLF crystals have gained important applications in inertial confinement laser fusion scientific research projects.



Main features:

Thermal lensing effect is much smaller than YAG crystal

Relatively small stimulated emission cross-section is conducive to low-threshold continuous operation

Suitable for medium repetition rate high average power Q-switched locks

Efficient single-mode operation with high output power and low beam divergence

The output linearly polarized laser is beneficial to obtain high-efficiency Q-switching and frequency-doubling output

Large diameter round rods or large size slats also obtain uniform pattern laser output

The 1053nm laser wavelength matches the gain curve of phosphate neodymium glass and is suitable as an oscillator and preamplifier for high power neodymium glass laser systems.

Material properties:

Crystal structure	Tetragonal
Melting point	825°C
Moh's hardness	4-5
Density	3.95g/cm ³
Thermal conductivity	0.06W/cm/K
Young's modulus	7.5×10 ¹¹ dynes cm ⁻²
Tensile strength	3.3×10 ⁸ dynes cm ⁻²
Coefficient of thermal expansion	[100] Direction: 13×10 ⁻⁶ /K
	[001] Direction: 8×10 ⁻⁶ /K

Product parameters:

Doping concentration	Nd:~1.0 at%
Orientation	[100] or [001], deviation 5 degrees within
Wavefront distortion	≤0.25λ/25mm @632.8nm
Crystal rod size	Diameter: 3~8mm, length: 10~120mm can be customized according to
Dimensional tolerance	Diameter: +0.00/-0.05mm, Length: ± 0.5mm
Cylindrical processing	Grinding or Polishing
Parallelism of end faces	≤10"
Perpendicularity between end face and	≤5'
Flatness of end face	≤λ/10@632.8nm
Surface Quality	10-5 (MIL-O-13830A)
Chamfer	0.15±0.05mm
AR Coating Reflectance	≤0.25% @1047/1053nm
Coating anti-laser damage threshold	≥500MW/cm ²

