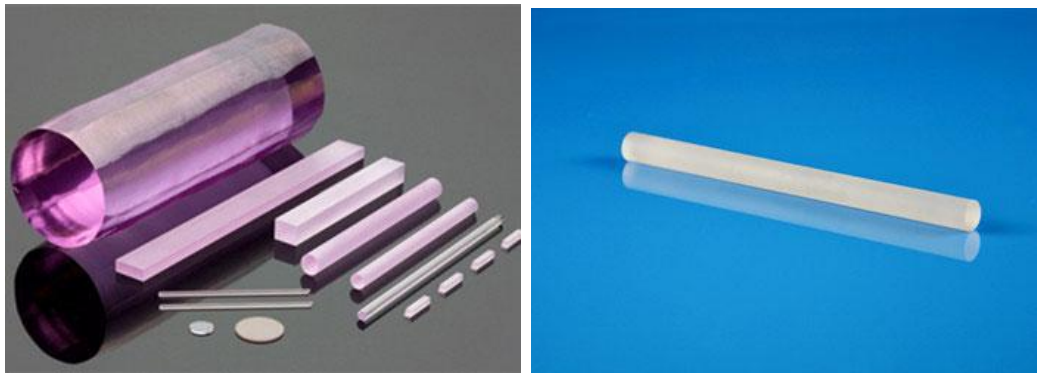


Nd:YAG Crystals

- **Diverse shaping and large dimension range**
- **Concave and convex end-surface available**
- **Groove rods available**

Neodymium Doped Yttrium Aluminum Garnet - Nd:YAG laser crystals has been and would continue to be the most popular lasing media for solid-state lasers. Good fluorescence lifetime, thermal conductivity and robust nature make **Nd:YAG laser crystals** suitable for high power continuous wave, high intensity Q-switched and single mode operation. Hangzhou Shalom EO offers the standard **Nd:YAG rods** with AR coating at 1064nm and also offer the custom rods or crystals upon customer's special request.



- Diverse shaping and large dimension range:
Cylindrical rods: diam.3 mm~28 mm; Length: 30 mm~220 mm
Rectangular Plate: (3 ~4 mm) × (6~24 mm) × (60 ~180 mm)
Circular disk: Diam.2 mm~39 mm; Thickness≥1 mm
- Large doping range: 0.1-2.0 at%
- < 100 > orientation rods available
- Concave and Convex surface available
- Grooved rods available
- Diverse coating:
AR-Coating: R < 0.25% per surface (@1064nm)
PR-Coating: Partial Reflection, transmission depends on your requirement
HR-Coating: R > 99.8%@1064nm and R < 5%@808nm
Other HR coatings, such as HR @ 1064/532 nm, HR @ 946nm, HR 1319 nm and other wavelengths are also available.
Damage Threshold: > 500MW/cm²

Specifications	
Orientation	<111> or <100> within 5 degree
Wavefront Distortion	$\leq \lambda/8$ @ 633nm
Extinction Ratio	≥ 28 dB
Parallelism	≤ 10 arc second
Perpendicularity	≤ 5 arc minute
Flatness	$\leq \lambda/10$ @ 633nm
Surface Quality	10/5 Scratch/Dig. (per MIL-O-13830A)
Chamfer	<0.1mm x 45 degree

The other customized specification is available.

Physical and optical properties	
Laser Wavelength	1064nm
Stimulate Emission Cross Section	2.8×10^{-19} cm ²
Relaxation Time of Terminal Lasing Level	30 ns
Radiative Lifetime	550 ms
Spontaneous Fluorescence	230 ms
Loss Coefficient	0.003 cm ⁻¹ @ 1064 nm
Effective Emission Cross Section	2.8×10^{-19} cm ²
Linewidth	0.6 nm
Index of Refraction	1.82
Pump Wavelength	807.5nm
Chemical Formula	Nd:Y3A15O12
Crystal Structure	Cubic
Lattice Parameters	12.01Å
Concentration	$\sim 1.2 \times 10^{20}$ cm ⁻³
Melting Point	1970°C
Mohs Hardness	8.5
Density	4.56g/cm ³
Thermal Expansion Coefficient	[111]Direction: $7.8 \times 10^{-6}/^{\circ}\text{C}$ (0~250°C)
Thermal Conductivity	14W/m/K(@20°C) and 10.5W/m/K(@100°C)