Ho:YAG

Ho:YAG crystal is an excellent solid-state laser material for the 2μm wavelength band. It features high slope efficiency, long upper-state lifetime, and good thermal conductivity, enabling high pulse energy laser output.

Classification:Laser Crystals

Detailed introduction

Ho:YAG($Ho:Y_3Al_5O_{12}$) crystal is an excellent solid-state laser material for the 2μm wavelength band. It features high slope efficiency, long upper-state lifetime, and good thermal conductivity, enabling high pulse energy laser output. It is widely used in laser medicine, coherent lidar, remote sensing, and scientific research fields. Our company can provide high-quality Ho:YAG crystal rods and other customized components in various specifications.

PRODUCT FEATURE

- High slope efficiency
- Long upper-state lifetime, beneficial for energy storage
- Capable of achieving high pulse energy and high peak power
- High thermal conductivity and good thermal performance

SPECIFICATION	
Concentration&Dimension	0.5at%~2.0at% Φ:2~20mm, L:1~150mm (Customized available)
Orientation	<111> ±5°
Dimension Tolerance	Φ:+0/-0.04mm, L:+0.5/-0mm
Perpendicularity	≤5'
Parallelism	≤10"
Chamfer	0.15±0.05mm
Clear Aperture	＞95%
Surface Quality	10/5
Barrel	Fine Ground, Polished
Flatness	≤λ/10@632.8nm
Wavefront Distortion	≤λ/10 per inch@632.8nm
Coating	AR coating: R<0.2%@2090nm, R<1%@1908nm PR coating: Customized according to customer requirements HR coating: R>99.8%@2090nm
Damage Threshold	≥500MW/cm^2@2090nm,10ns,10Hz

OPTICAL PROPERTIES	
Lasing Transition	$^5I_7 \rightarrow {}^5I_8$
Lasing Wavelength	2090nm，2120nm
Emission Linewidth	4.5Å@1064nm
Emission Cross Section	2.7~8.8×10^{-19}cm^2@1at%Nd
Fluorescence Lifetime	8~15ms（随浓度和温度变化）
Diode Pumping Absorption Wavelength	1908nm
Extinction Ratio	≥30dB
Stimulated Emission Cross Section	1.2×10^{-20}cm²
Single Pass Loss	0.003cm⁻¹@2090nm

PHYSICAL AND CHEMICAL PROPERTIES	
Crystal Structure	Cubic
Melting Point	1970°C
Density	4.56±0.04g/cm³
Specific Heat	0.59J/g·cm³@0~20°C
Mohs Hardness	8.5
Poisson's Ratio	0.25
Thermal Expansion Coefficient	7.8x10⁻⁶/K in <111> direction
Thermal Conductivity	13W/m/K@20°C
Refractive Index	1.81

Keywords: YVO4

Previous: Tm:YAG

Next: Nd：YVO4