



## CTH: YAG

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## Detailed introduction

CTH:YAG (Cr:Tm:Ho:YAG) is a high efficient laser material which lasers at 2.1 $\mu$ m.It has wide applications in medical and meteorology fields.

### PRODUCT FEATURE

High slope efficiency

Pumped by flash lamp or diode

Operates well at room temperature

Suitable for lamp pump,can also be suitable for diode pump

Operates in a relatively eye-safe wavelength range

### Specifications

Concentration	Ho:0.3%~0.4at%,Cr:0.3%~1.2%,Tm:5%~6%
Crystal orientation	<111> $\pm$ 5°
Dimensions	Diameter:3mm-6mm,Length:50-120mm(Customized available)
Dimension Tolerance	$\Phi$ :+0/0.04mm,L:+0.5/-0mm
Perpendicularity	$\leq$ 5'
Parallelism	$\leq$ 10"
Chamfer	0.15 $\pm$ 0.05mm
Surface Quality	10/5(MIL-PRF-13830B)
Barrel	Fine Ground, Polishing, Grooving
Flatness	$\leq$ $\lambda$ /10@623.8nm
Wavefront Distortion	$\leq$ 0.125 $\lambda$ /25mm@1064nm
Extinction Ratio	$\geq$ 25dB
Anti-reflection Coating	R $\leq$ 0.25%@2094nm
Damage Threshold	$\geq$ 1GW/cm <sup>2</sup> @1064nm, 10ns, 10Hz

### Optical Properties

Laser Transition	5I7 $\rightarrow$ 5I8
Wavelength	2.094 $\mu$ m
Emission Line-width	4nm
Emission Cross Section	7 $\times$ 10-21cm <sup>2</sup>
Fluorescence Lifetime	8.5ms
Pump Absorption Bandwidth	781nm
Main Pump Wavelength Range	400~800nm
Melting Point	1970°C
Density	4.56 $\pm$ 0.04g/cm <sup>3</sup>
Mohs Hardness	8.5
Poisson's Ratio	0.3
Tensile Strength	0.13~0.26GPa
Thermal Optical Coefficient	7.3 $\times$ 10-6/K
Refractive Index	1.80@2094nm