Cr,Tm,Ho:YAG crystals

Cr, Tm, Ho: YAG-yttrium aluminium garnet laser crystals doped with chromium,thulium and holmium ions to provide lasing at 2.13 microns are finding more and more applications,especially in the medical industry.The inherent advantage of the crystal crystal is that it employs YAG as the host. YAG’ s physical,thermal and optical properties are well known and understood by every laser designer. It has wide applications in surgery, dentistry, atmospheric testing, etc.

Cr, Tm, Ho: YAG is high efficient laser crystal pumped by Xenon lamp or diode with wavelength of 2.1μm. the pump source main originates from the flashlamp energy absorbed by Cr3+, Ho3+ is working ion and Tm3+ acts as intermediary to transfer energy. 2.1 μm laser wave can be absorbed by water very well, transmits atmosphere easily and is safe to eye.

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- Wide absorption band
- Working at room temperature
- 2.1 mm lasing wavelength is for eye
- High slope efficiency
- Can be pumped by flash lamp or diode

Technical parameter	
Coefficient of Thermal Expansion	6.14 x 10^{-6} K^{-1}
Thermal Diffusivity	0.041 cm^2 s^{-2}
Thermal Conductivity	11.2 W m^{-1} K^{-1}
Specific Heat (Cp)	0.59 J g^{-1} K^{-1}
Thermal Shock Resistant	800 W m^{-1}
Refractive Index @ 632.8 nm	1.83
dn/dT (Thermal Coefficient of Refractive Index) @ 1064nm	7.8 10^{-6} K^{-1}
Melting Point	1965℃
Density	4.56 g cm^{-3}
MOHS Hardness	8.25
Crystal Structure	Cubic
Standard Orientation	<111>
Y3+ Site Symmetry	D_2
Lattice Constant	a=12.013 Å
Molecular Weight	593.7 g mol^{-1}

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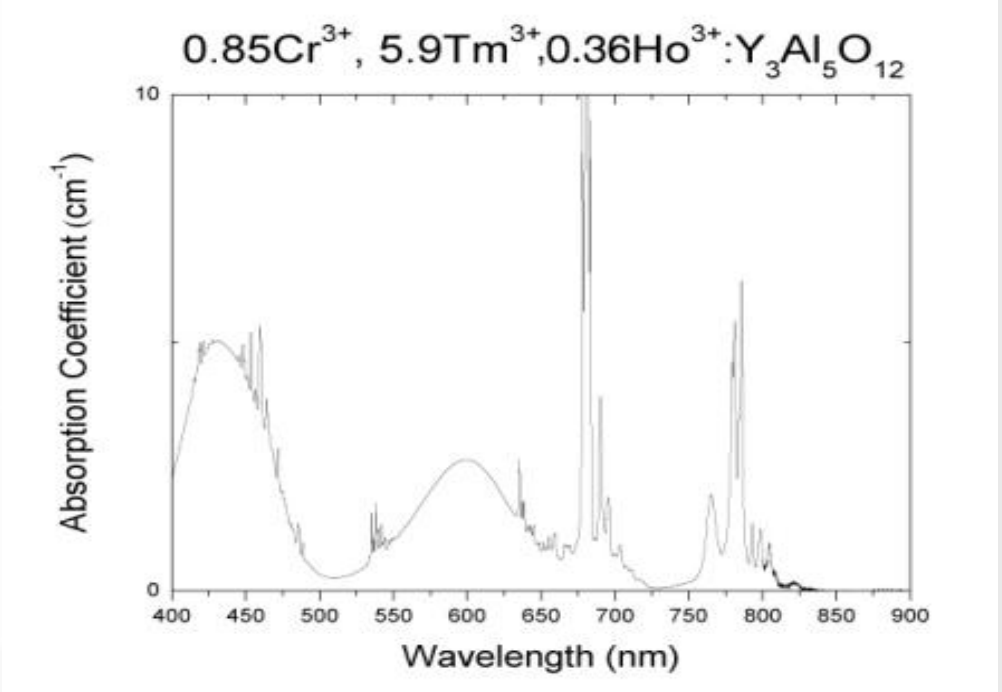
Technical parameters	
Wavefront Distortion	≤0.125Λ/inch@1064nm
Rod Sizes	Diameter:3-6mm ,Length:50-120mm, Upon request of customer
Dimensional Tolerances	Diameter:±0.05mm Length:±0.5mm
Barrel Finish	Ground finish:400#Grit
Parallelism	< 30"
Perpendicularity	≤5′
Flatness	Λ/10
Surface Quality	10/5
AR coating Reflectivity	≤0.25%@2094nm

Operating Spec	
Emission Wavelength	2.080 um
Laser Transition	$^5I_7 \rightarrow {}^5I_8$
Flouresence Lifetime	8.5 ms
Pump Wavelength	flash lamp or diode pumped @ 780nm



Standard doping	
Cr3+ Concentration	0.85%
Tm3+ Concentration	5.9%
Ho3+ Concentration	0.36%