

Advantages

High Gain

High Efficiency

Flashlamp or
Diode Pumped

High Optical
Quality

Good Mechanical
and Thermal
Properties

Operates Well
at Room
Temperature

New Source Technology is a major supplier of CTH:YAG rods for Industrial, Medical, and Scientific laser applications. We maintain the highest standards of quality and can deliver products to your exact specifications from our Pleasanton, California location. You are assured of the highest possible consistency and precision every time. For more information, please contact us at sales@newsourcetechnology.com.

Standard Rod Specifications

Material Parameters

Host: Yttrium Aluminum Garnet ($Y_3Al_5O_{12}$)
 Standard Melt Concentrations:
 Chromium (Cr^{3+}): 0.85 at %
 Thulium (Tm^{3+}): 5.90 at %
 Holmium (Ho^{3+}): 0.36 at %
 (Other Compositions Available)
 Orientation: [111] within 5 degrees
 Wavefront Distortion: less than 1/2 wave per
 inch of length
 (measured at 1064 nm)

Dimensional Tolerances

Diameter: +0.000" / -0.002"
 Length: +0.040" / -0.000"
 Barrel Finish: $55 \pm 5 \mu\text{inch}$ (RMS)
 Chamfer: $0.005" \pm 0.003"$ at $45^\circ \pm 5^\circ$

End Configuration

Flatness: less than $\lambda / 10$ wave
 (measured at 632.8 nm)
 Parallelism: less than 30 seconds of arc
 Perpendicularity: less than 5 minutes of arc
 Scratch-Dig: 10 - 5 per MIL-O-13830A

Anti-Reflection Coatings

Reflectivity: less than 0.25% at 2080 nm
 Adhesion and
 Durability: meets MIL-C-48497A standards
 Pulsed Damage
 Threshold: greater than 10 Jcm^{-2}

Properties Of Cr,Tm,Ho:YAG

Lasing Properties

Lasing Transition: $^5I_7 - ^5I_8$
 Lasing Wavelength: 2080 nm
 Fluorescence Lifetime: 8.5 ms
 Emission Cross Section⁽²⁾: $7 \times 10^{-21} \text{ cm}^2$

Spectral Properties

Index of Refraction: 1.80 (at 2080 nm)
 Diode Pump Band: 781 nm
 Absorption Linewidth: 4 nm
 Major Pump Bands: 400 - 800 nm

References

1. G. Huber, E. W. Duczynski and K. Petermann, "Laser Pumping of Ho-,Tm-,Er-Doped Garnet Lasers at Room Temperature," *J. Quantum Electronics*, **24**, (1988), 920.
2. T.Y. Fan, G. Huber, R.L. Byer and P. Mitzscherlich, "Spectroscopy and Diode Laser-Pumped Operation of Tm,Ho:YAG," *J. Quantum Electronics*, **24** (1988), 924.

Other laser crystals:

-Nd:YAG
 -Er:YAG
 -Alexandrite
 -KTP
 -LBO

You may also be interested in:

-Laser Pump Chambers
 -Flashlamps
 -Resonator Mirrors
 -Other Laser Optics
 -Safety Eyewear

