New Source Technology, LLC 6678 Owens Drive, Suite 105, Pleasanton, CA 94588 USA
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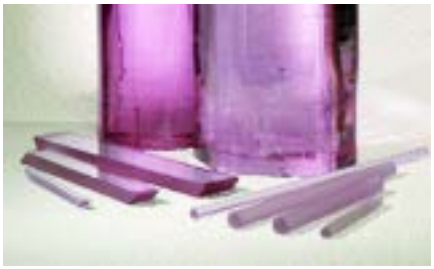
Nd:YAG Rods (1064 nm)

- High Gain, Low Threshold, High Efficiency
- Low Loss at 1064 nm
- High Optical Quality
- Good Mechanical and Thermal Properties

- Rod Lengths: 3 mm – 152.4 mm
- Rod Diameters: 2 mm – 12.7 mm
- Slab Size Max: 7 mm x 26 mm x 250 mm
- Nd Concentration Range(±0.1%): 0.6%-1.3%



Standard Rod Specifications	
Nd Concentrations Available	0.6 – 1.3 ± 0.1 at %
Wavefront Distortion	> λ / 4 per inch of rod length (λ = 632 nm) standard > λ / 16 per inch of rod length Opto-Lase
Extinction Ratio	25 dB minimum
Dimensional / Mechanical Specifications	
Diameter Tolerance	+.000" / -.002"
Length Tolerance	+.040" / -.000"
Rod End Polished Flatness	λ / 10
End Face Parallelism	within 10 arc seconds
End Face Perpendicularity	within 5 arc minutes
Chamfer	0.005" ± 0.003" x 45°
Surface Quality	10 - 5 scratch-dig per MIL-O-1 3830A
Barrel Finish	55 ± 5 microinches (other finishes available on request)
Standard Coating (High & Partially Reflective coatings available on request)	Anti-Reflection where R < 0.25% Durability per MIL-C-48497 Damage threshold exceeds 10 J / cm^2

Properties of Nd:YAG at 25°C (1.0 at % Nd)	
Formula:	$Y_{2.97}Nd_{0.03}Al_5O_{12}$
Weight % Nd:	0.725
Nd Atoms / cm^3:	1.38×10^{20}
Wavelength:	1.064 micron
Transition:	$^4F_{3/2} — {}^4I_{11/2}$
Fluorescent Lifetime:	230 µsec
Thermal Conductivity:	0.14 W cm^{-1} K^{-1}
Specific Heat:	0.59 Jg^{-1} K^{-1}
Thermal Expansion:	6.9×10^{-6} °C^{-1}
dn / dt:	$7.3 \times 1\ 0^{-6}$ °C^{-1}
Young's Modulus:	3.17×10^4 Kg / mm^{-2}
Poisson Ratio:	0.25

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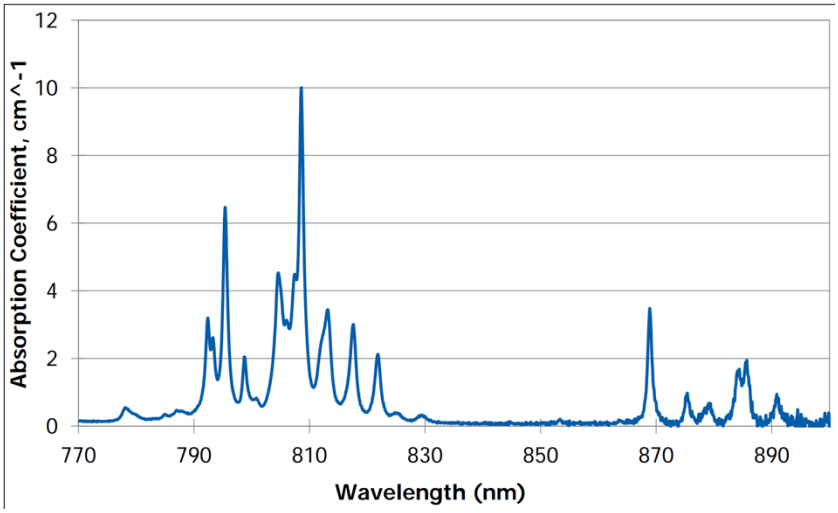
YAG Physical and Chemical Properties	
Formula:	$Y_3Al_5O_{12}$
Molecular Weight:	596.7
Crystal Structure:	Cubic
Moh Hardness:	8 - 8.5
Melting Point:	1950°C (3540°F)
Density:	4.55 g / cm^{-3}

Refractive Index of YAG	
Wavelength	**Index n (25˚C)**
.8	1.8245
.9	1.8222
1.0	1.8197
1.2	1.8152
1.4	1.8121

Nd:YAG Absorption Coefficient

1% Nd-doped YAG, corrected for Fresnel loss



Nd:YAG Absorption Coefficient

0.62% Nd-doped YAG, corrected for Fresnel loss