

Er:YAG Rods (2940 nm)



- A wide pump band of 600 nm – 800 nm
- High optical quality
- Operate in a long-wavelength, high water peak region
- Rod Lengths: 3 mm – 152.4 mm
- Rod Diameters: 2 mm – 12.7 mm

Standard Specifications	
Material Parameters	
Host:	Yttrium Aluminum Garnet (Y ₃ Al ₅ O ₁₂)
Dopant:	Erbium (Er ³⁺)
Dopant Concentration:	50 Atomic % (~ 7 x 10 ²¹ cm ⁻³)
Orientation:	[111] crystallographic directions (± 5°)
Wavefront Distortion:	1/2 wave per inch of length, as measured in a double pass interferometer operating @ 1 micron
Dimensional Tolerances	
Diameter:	+0.000" / -0.002"
Length:	+0.040" / -0.000"
Barrel Finish:	55 ± 5 micro-inch
Chamfer:	0.005" ± 0.003" at 45° ± 5°
End Configuration	
Flatness:	within λ / 10 wave at 633 nm wavelength
Parallelism:	within 30 seconds of arc
Perpendicularity:	within 5 minutes of arc
Surface Quality:	scratch-dig 10 - 5 per MIL-O-13830A
Anti-Reflection End Coatings	
Reflectivity:	less than 0.25% at 2.94 microns
Adhesion and Durability:	meets MIL-C-48497A standards
Pulsed Damage Threshold:	greater than 10 J / cm ²
Laser Properties of Er:YAG	
Lasing Transition:	⁴ I _{11/2} to ⁴ I _{13/2}
Stimulated Emission Cross-Section:	3 x 10 ⁻²⁰ cm ²
Pump Bands:	600 - 800 nm

50% Er:YAG Absorption Coefficient

Corrected for Fresnel loss

