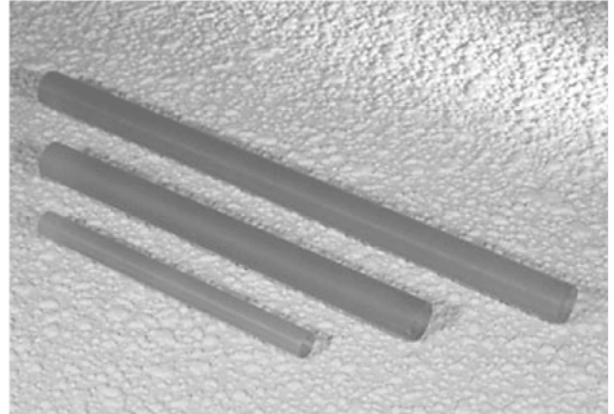


Nd:YLF (1047nm and 1053nm)

(Neodymium doped Yttrium Lithium Fluoride)

Advantages

- High power, low beam divergence, efficient single mode operation.
- High average power Q-switched at a moderate repetition rate.
- Linear polarized resonators for Q-switching and frequency doubling.
- Potential uniform mode for large diameter rods or slabs.
- Stimulated emission cross section and lifetime product is favorable for low CW threshold.
- 1.053 μm output matches gain curves of Nd:Glass and performs well as an oscillator and pre-amplifier for this host.



Specifications

Nd Concentration Range	0.5% - 3.0%
Standard dopant	1.1 \pm 0.1%
Parallelism	<10 arc seconds
Perpendicularity	<5 arc minutes
End coating	R<0.15%@1047/1053nm

Dimensional / Mechanical Specifications

Diameter	2mm to 9.525mm (\pm 0.013mm)
Length	1mm to 150mm (\pm 0.5mm)
Max. slab size	up to 6.35mm x 15mm
Chamfer	0.13 \pm 0.07mm @45°
Surface Flatness	λ /10@632.8nm
Surface Quality	10/5 (scratch-dig)

Material Properties

Formula	Nd:LiYF ₄
Crystal Structure	Tetragonal
Growth Direction	Along a axis [100]
Moh Hardness	4-5
Melting Point	825°C
Density	3.95 g/cm ³
Thermal Conductivity	0.06 W/cm°C
Heat Capacity	0.79 J g ⁻¹ K ⁻¹
Thermal Expansion (x 10⁻⁶ °C⁻¹)	13 (along a axis) 8 (along c axis)
Index of Refraction at 633 nm	1.453 (e ray) 1.476 (o ray)
Index of Refraction at 1064 nm	1.448 (e ray) 1.470 (o ray)
Young's Modulus	7.65x10 ⁸ g/cm ²
Poisson's Ratio	0.33

	T or L (mm)	Diameter (mm)					
		2.00	3.00	4.00	5.00	6.35	9.52
Diode pumped slab standard sizes (Dia. x Thickness)	1	•	•				
	2	•	•				
	3	•	•				
	5	•	•				
Flashlamp pumped rod standard sizes (Dia. x Length)	10	•	•				
	30		•	•	•	•	
	50		•	•	•	•	•
	65		•	•	•	•	•
	78		•	•	•	•	•
	104		•	•	•	•	•
	115				•	•	•

