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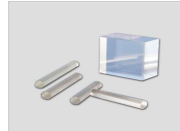
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Yb: YAG Laser Crystal



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Description

Online Message

**Applications**

- ◆Generate 1.03μm laser output pumped at 0.94μm
- ◆Can be used in high power diode-pumped lasers and others potential applications.

**Features**

- ◇ Ideal for diode pumping;
- ◇ Very low frictional heating, less than 11%
- ◇ Very high slope efficiency
- ◇ Broad absorption bands, about 8nm@940nm
- ◇ No excited-state absorption or up-conversion
- ◇ Conveniently pumped by reliable InGaAs diodes at 940nm(or 970nm)
- ◇ High thermal conductivity and large mechanical strength
- ◇ High optical quality

Yb-dopant concentration	0.2%---30% at% (Tolerance 10% of concentration)
Diameter	20 mm (+0.0/ -0.025mm)
Length	1~70mm, (+/-0.05mm)
Dimensional Tolerance	+0/-0.05 mm Length ±0.1 mm
Rod size	Diameter 2~20mm, Length 5~150mm Upon request of customer

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 <b>Main Specification</b>	Coating	Open request of customer a) AR @ 940nm or HR @940nm b) AR @ 1053nm or AR @1030nm or HR @1053nm
	Barrel finish	Ground Finish: 400# Grit
	Orientation	[111]
	Wavefront Distortion	<math>\lambda/10</math> per inch at 632.8nm for <math><7\text{mm}</math>
	Surface quality Scratch/Dig	10-5(MIL-PRF-13830B)
	Parallelism	<math><10</math> arc sec
	Perpendicularity	<math><5</math> arc min
	Surface flatness	<math>\lambda/10</math> at 632.8nm
	Clear aperture	Central 95%
	Chamfer	0.15×45°
<b>Physical and Chemical Properties</b>	Chemical Formula	Yb:Y <sub>3</sub> Al <sub>5</sub> O <sub>12</sub>
	Crystal Structure	Cubic
	Lattice Constants	12.01Å
	Melting Point	1970°C
	Density	4.56 g/cm <sup>3</sup>
	Mohs Hardness	8.5
	Refractive Index	1.82
	Thermal Expansion Coefficient	7.8×10 <sup>-6</sup> /K, [111], 0-250°C
<b>Optical properties</b>	Thermal Conductivity	14 W.s /m /K @ 20°C
	Lasing Wavelength	1030 nm
	Laser Transition	<sup>2</sup> F <sub>5/2</sub> → <sup>2</sup> F <sub>7/2</sub>
	Photon Energy	1.93×10 <sup>-19</sup> J (@1030nm)
	Scattering	1.82
	Extinction Ratio	>=28 dB
	Emission Cross Section	2.0×10 <sup>-20</sup> cm <sup>2</sup>
	Fluorescent Lifetime	1.2ms
	Loss Coefficient	0.003 cm <sup>-1</sup>
	Pump Wavelength	940 nm
	Absorption band at pump wavelength	10 nm
	Diode pump band	940nm or 970nm
	Emission Linewidth	9nm
	Thermal Optical Coefficient	9×10 <sup>-6</sup> /°C
Single pass loss	<math><3\times 10^{-3}</math> cm <sup>-1</sup>	

Previous page: Nd:YAG Laser Rod (<http://laserton.com/index.php?m=content&c=index&a=show&catid=37&id=84>)

Next page: Cr4+:YAG Crystal (<http://laserton.com/index.php?m=content&c=index&a=show&catid=37&id=93>)

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Laserton (<http://www.laserton.com>) specialize in technical development, manufacture, marketing c

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