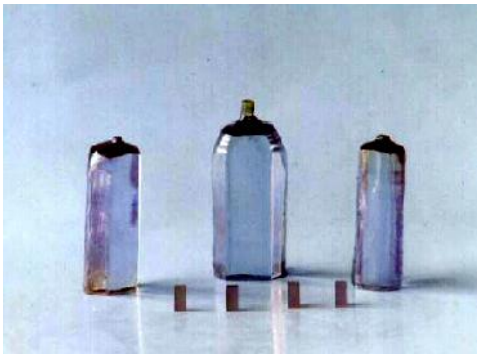
Nd: YVO_4
Neodymium doped Yttrium Vanadate Crystal

YVO_4 is one of the most efficient kaser crystal for diode pumping, especially in application for low to middle range powder density of lasers. Nd:YVO4 crystal has been used with NLO crystal (KTP, BBO, LBO etc.) to shift frequency of laser out put from green to UV. MTI produces various doping levels of high quality Nd:YVO_4 crystal to meet every customer specifications.

	Typical Properties of YVO4 crystal
Crystal Structure	Tetragonal: a = b = 7.119 Å c = 6.289 Å
Growth Method	Czochralski
Melt Point	1825 ^oC
Density	4.22 g/cm^3
Hardness	4 ~ 5 (mohs)
Thermal Expansion	α_a= 4.43 $x10^{-6}/\ ^oC$ α_c= 11.37 $x10^{-6}/\ ^oC$
Thermal Conductivity,	A axis 5.32 W/(m.k) C axis = 5.10 W/(m.k)
Thermal Optic Coefficient	$d\eta_a / dT$: 8.5$x10^{-6}/\ ^oC$ $d\eta_c / dT$: 3.0 $x10^{-6}/\ ^oC$
Lasing wavelength	1064 nm, 1342 nm
Stimulated emission cross-section	25 x 10^{19} cm^2 at 1064 nm
Fluorescent lifetime	90 μs
Absorption Coefficient	31.4 cm^{-1} at 810 nM
Intrinsic Loss	0.02 cm^{-1} at 1064 nm
Gain bandwidth	0.96 nm at 1064 nm
Polarized laser emission	Pai polarization , parallel to C axis
Diode pumped optical to optical efficiency	> 60 %

Standard Products and Specs

As - grown boules <100 > or <001> ori.± 0.5^o	20 – 35 mm diameter x 30 – 40 mm length Doping level: 0.27 , 1.0 or 2.0 atm % upon customer request
Standard Nd:YVO4 components Polished from 2 to 6 sides	3 x 3 x 1 mm 10x10x0.5 mm 3 x 3 x 2 mm 3 x 3 x 5 mm
Optically polished parts Specs	Dimension Tolerance : ± 0.05 mm Orientation Tolerance : ± 0.5^o Tolerance Parallelism : < 15" Flatness: < λ/8 Surface quality: 10/5
Optical coating:	AR coating: R < 0.2% @1064 nm (available upon request) HR coating: R > 99.8% at 1064 nm , T . 95% at 808 nm



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