

Structural and Physical Properties:

	Nd:YVO4	Nd:GdVO4	Nd (Cr:Yb;Ho;Er):YAG	Ti:Sapphire
Crystal structure	Zircon Tetragonal	Zircon Tetragonal	Cubic	Hexagonal
Space group	D _{4h} -I4/amd	D _{4h} -I4/amd		
Cell parameters	a=b=7.1193, c=6.2892	a=b=7.212, c=6.350	12.01Å	a=4.758, c=12.991
Melting point	1825	1780	1970 °C	2040°C
Mohs hardness	4-5	4-5	8.5	9
Density	4.22g/cm ³	5.47	4.5g/cm ³	3.98 g/cm ³
Thermal expansion coefficients:	$\alpha_a=4.43 \times 10^{-6}/K$ $\alpha_c=11.37 \times 10^{-6}/K$	$\alpha_a=1.5 \times 10^{-6}/K$ $\alpha_c=7.3 \times 10^{-6}/K$	$7.8 \times 10^{-6}/K$	
Thermal conductivity	//C: 5.23W/m/K ⊥ C: 5.10W/m/ K	⊥ C 11.7 W/m/ K	15 W/m/ K	52 W/m/k
Therm-optic coefficients:	$dn_o/dT=2.9 \times 10^{-6}/K$ $dn_e/dT=8.5 \times 10^{-6}/K$	$dn_e/dT=4.7 \times 10^{-6}/K$	$7.3 \times 10^{-6} / K$	