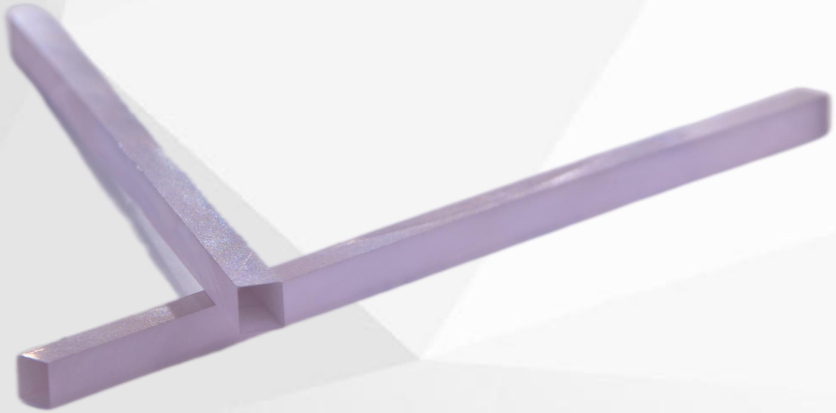
Nd:YAP crystals

Nd:YAP AlO3 perovskite (YAP) is a well known host for solid state lasers. The crystal anisotropy of YAP offers numerous advantages.It permits a small tuning of wavelength by varyingthe wave vector direction in the crystal. Furthermore, the output beam is linearly polarised.



- Comparable threshold and slope efficiency at 1079nm to Nd:YAG at 1064nm
- Higher efficiency at 1340nm compared to Nd:YAG at 1319nm
- Linearly polarized output beam
- Higher absorption in water and body fluid of 1340nm compared to 1319nm

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Basic properties:	
Chemical Formula	YAlO3:Nd3+
Crystal structure	D162h
Lattice Constant	a=5,176, b=5,307, c=7,355
Refractive Index	na=1,929, nb=1,943, nc=1,952
dn/dT	na:9,7x10-6 K-1 nc:14,5x10-6 K-1
Density	5,35 g/cm3
Melting Point	1870°C
Specific Heat	400 J/(kg K)
Thermal Conductivity	0,11 W/(cm K)
Thermal Expansion	9,5 x 10-6 K-1 (a axis) 4,3 x 10-6 K-1 (b axis) 10,8 x 10-6 K-1 (c axis)
Knoop Hardness	977 (a axis)

Specifications	
Dopant concentration	Nd 0.7-0.9 at% for cwand pulse t 1079nm 0.85~0.95 at% for cwat 1340nm Other doping are available upon request.
Orientation	within 5°
Rod sizes	Diameter 2~10mn\ Length 20~150mm Upon request of customer
Dimensional tolerances	Diameter +0.00/-0.05mm, Length: ± 0.5mm
Barrel finish	Ground and polished
Parallelism	**≤10"**
Perpendicularity	**≤5'**
Flatness	< λ/10 @632.8nm
Surface Quality	10-5(MIL-0-13830B)
Chamfer	0.15±0.05mm
AR Coating Reflectivity	< 0.25% (@W64nm)