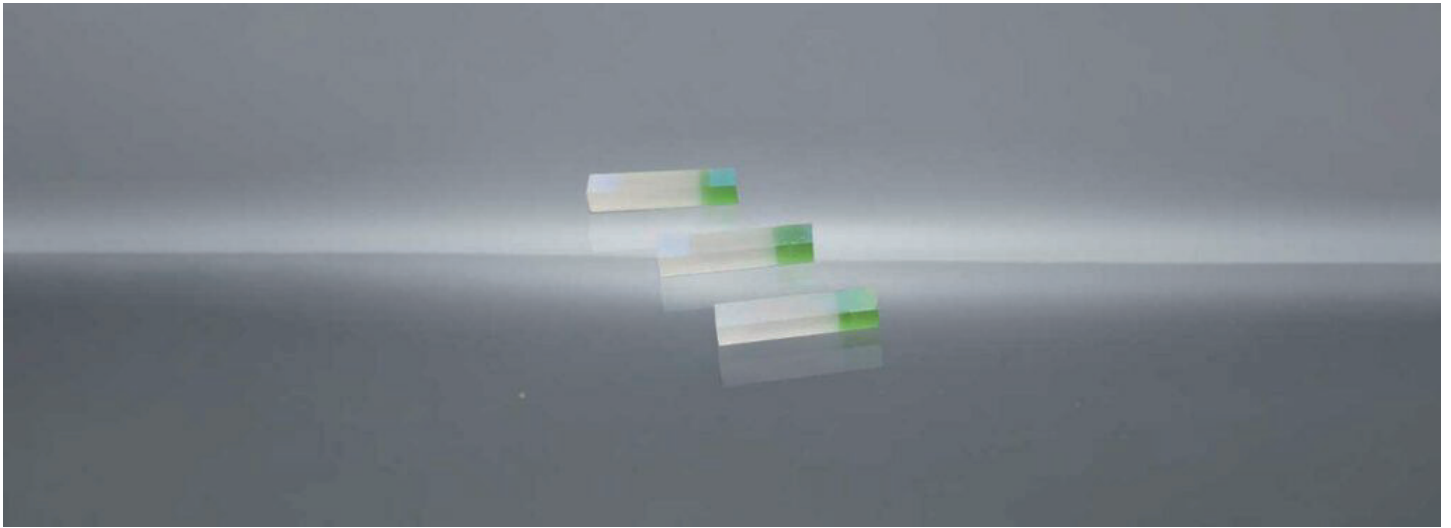


Nd:YAG+V:YAG



DESCRIPTION

Nd:YAG+V:YAG bonded crystal, the bonded crystal formed by bonding V:YAG at the end of Nd:YAG, can effectively improve the comprehensive performance of Nd:YAG lasers.

The thermal conductivity of Nd:YAG is 14w/m/k, 20°C, 10.5w/m/k, 100°C, and the thermal conductivity of V:YAG crystal is 17w/m/k. The two ends are bonded to form a Nd:YAG+V:YAG bonded crystal. The output characteristics of the passive Q-switched microchip laser with an output wavelength of 1338 nm. Under the condition of continuous pumping, the maximum output power is 0.73 W. at this time, a stable Q-switched pulse output with a pulse width of 139 ns is obtained. A passively mode-locked Q-switched laser with a maximum output power of 1.01 W and a corresponding pulse width of 80 ns is obtained under quasi continuous pumping. The single pulse width of the mode-locked series is about 70 PS. Nd:YAG+V:YAG bonded crystal is beneficial to obtain high-power and compact 1338 nm pulsed laser output. At the same time, quasi continuous pumping can effectively reduce the thermal effect of laser crystal and obtain higher power laser output.

CRYLINK uses surface activation bonding technology, which is a bonding technology at low or normal temperature. The typical features are surface cleaning and surface activation. Before bonding, the bombardment of fast atoms or ion beams on the bonding surface can effectively increase the bonding strength and achieve high-quality bonding between inorganic materials, metals and semiconductor materials. Compared with the high-temperature thermal bonding method, the surface activation bonding technology has higher bonding force interface, better optical absorption loss and surface shape change control, while the impurities on the thermal diffusion bonding surface cannot be removed and are bonded on the bonding surface. Surface activated bonding technology has the advantages of removing various polishing residual components, removing organic pollutants, removing surface oxide layer, breaking chemical bonds of materials, and improving activation energy.

The produced Nd:YAG+V:YAG bonded crystals have high bonding strength, small bonding surface absorption loss (generally less than 20ppm) and small change of bonding surface shape (bonding surface shape $< \lambda/8$). The initial transmission of YAG is 30 ~ 99%. The shape of the bonded crystal can be rod, plate, waveguide or sandwich. Various types of coatings can be provided at both ends of the bonded crystal, such as two end antireflection films ar/AR@1319nm+808nm , or s1: HR@1319nm&AR@808nm, S2: PR@1319nm&HR@808nm, etc. Nd:YAG+V:YAG bonded crystals are widely used in biophysics, medicine, military, machinery, scientific research and construction.



Nd:YAG+V:YAG

FEATURES

- Effectively improve the thermal effect of nd:yag crystal
- Reducing thermal lens effect during laser pumping
- Improving laser beam quality
- Get higher power laser output

APPLICATIONS

- Material processing, welding and cutting
- Medical laser system
- Pulse and continuous wave operation
- Slab technology

PRODUCT PARAMETERS

Nd:YAG+V:YAG		
Materials	Nd:YAG	V:YAG
Concentrations	0.6%\1.0%\1.1%	/
Initial Transmission	/	30 ~ 99%
Structure	Rods/Slabs/Sandwich/Waveguide/	
End-face Configuration	Flat/Convex/Wedge	
Side Configuration	Polish/Fine Ground	
Coating available	AR@1319nm+808nm	AR@1319nm+808nm
	HR@1319nm&AR@808nm	PR@1319nm&HR@808nm
	others	others

