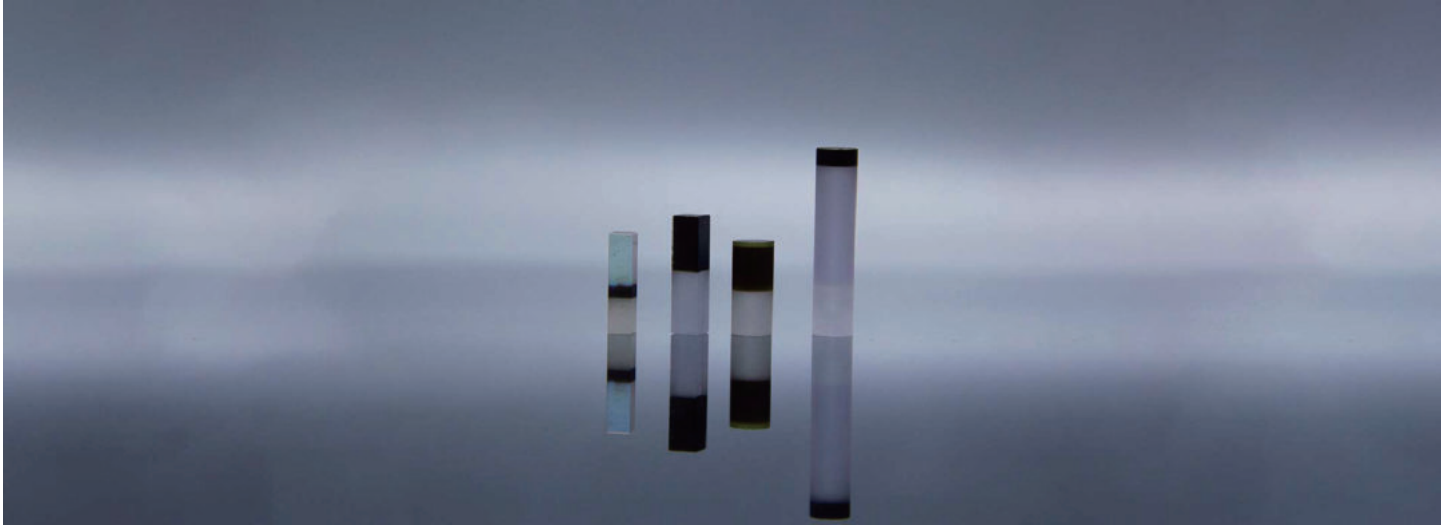


# YAG+Yb:YAG+YAG



## DESCRIPTION

YAG+Yb:YAG+YAG bonding crystal is a bonding crystal formed by bonding pure YAG at both ends of Yb:YAG, which can effectively improve the comprehensive performance of Yb:YAG laser.

Yb:YAG the thermal conductivity of YAG is  $0.14 \text{ w/cm}^{\circ}\text{k}$  @  $25^{\circ}\text{C}$ , and the thermal conductivity of pure YAG crystal is  $14 \text{ w/m/ K}$  @  $20^{\circ}\text{C}$ ,  $10.5 \text{ w/m/ K}$  @  $100^{\circ}\text{C}$ , the two ends are bonded to form YAG+Yb:YAG+YAG bonded crystal, which can effectively improve the thermal effect of Yb:YAG crystal, reduce the thermal lens effect formed during laser pumping, improve high quantum efficiency, have simple crystal spectrum, no excited state absorption and energy up conversion, realize high concentration doping, good thermal management performance, long absorption band, and can be effectively coupled with the pump wavelength of diode.

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 YAG+Yb:YAG+YAG bonding crystal has 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 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@1030nm, etc. YAG+Yb:YAG+YAG bonded crystals are widely used in holography, interference, optical storage and other fields. They can also be used in high-efficiency and high-power diode pumped solid-state lasers.



# YAG+Yb:YAG+YAG

## FEATURES

- Effectively improve the thermal effect of yb:yag crystal
- Reduce the thermal lens effect formed during laser pumping
- Improve high quantum efficiency, simple crystal spectrum, no excited state absorption and energy up conversion
- High concentration doping can be realized, with good thermal management performance and long absorption band
- It can be effectively coupled with the pump wavelength of the diode
- It can improve the stability of the output capacity of the laser and the service life of the laser
- Improve the service life of the laser

## APPLICATIONS

- Humanization in the field of oral treatment
- Holographic, interference, optical storage and other fields
- Laser cutting and welding
- Lidar and optical refrigeration
- Ultrashort pulse research
- Material micromachining
- Multiphoton microscope

## PRODUCT PARAMETERS

YAG+Yb:YAG+YAG			
Materials	YAG	Yb:YAG	YAG
Concentrations	/	1%, 2%, 2.5%, 5%, 7.5%, 10%	
Structure	Rods/Slabs/Sandwich/Waveguide/		
End-face Configuration	Flat/Convex/Wedge		
Side Configuration	Polish/Fine Ground		
Coating available	AR@1030nm	/	AR@1030nm
	others	/	others

