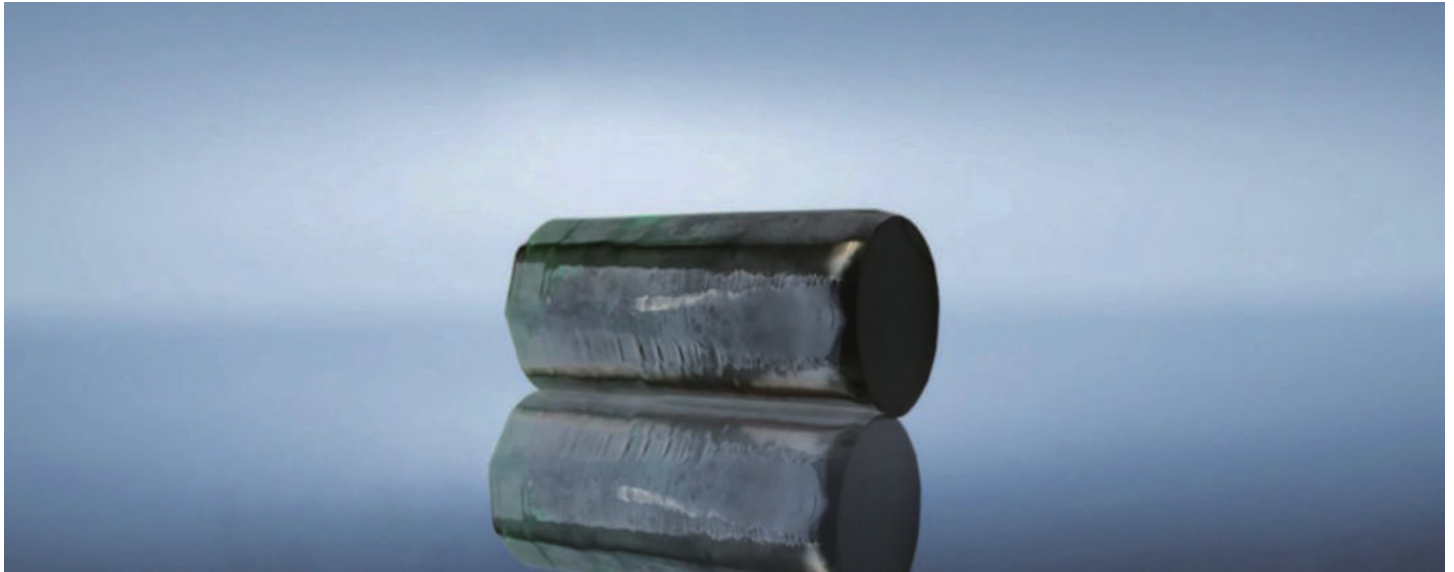


Cr,Tm,Ho:YAG



DESCRIPTION

Cr,Tm,Ho:YAG crystal products are high-efficiency laser crystals pumped by xenon lamps or diodes. They are laser crystals with good comprehensive performance.

Cr,Tm,Ho:YAG wavelength is 2.1 μm . The pump source mainly comes from the flash energy absorbed by Cr^{3+} , Ho^{3+} is the working ion, and Tm^{3+} acts as the intermediary for energy transfer. two point one μm laser can be well absorbed by water, easy to penetrate the atmosphere, and safe for eyes.

In addition, for 3-5 μm mid infrared optical parametric oscillator, 2.1 μm laser is an ideal pump source. Cr, Tm,Ho:YAG crystal has the characteristics of wide absorption band, high slope efficiency, can be pumped by flash lamp or diode, operates well at room temperature and works in a wavelength range relatively safe to human eyes. Therefore, it is widely used in medical, lidar, military and other fields.

FEATURES

- Wide absorption band
- The slope of high efficiency
- Can use flash or diode pumped
- 2.1 μm lasing wavelength is suitable for the eyes

APPLICATIONS

- Military
- Laser radar
- Laser medicine
- 2100 nm laser for medical applications

PHYSICAL AND CHEMICAL PROPERTIES

Structure	cubic
The lattice constant	12.01
Melting point	1970°C
The density	4.56g/cm ³
Orientation	< 111 > or < 100 > crystal within 5°
Thermal expansion	7.8×10 ⁻⁶ /K
Coefficient of thermal conductivity	14W/m/K, 20°C; 10.5W/m/K, 100°C
Mohs hardness	8.5
Dielectric constant	11.7



Cr,Tm,Ho:YAG

MATERIAL SPECIFICATIONS

Doping concentration	Ho:0.3~0.4at% Cr:0.3~1.2at% Tm:5~6at%
The crystal structure	Trigonal system, 3 m
Extinction ratio	≥25 dB
Rod size	The diameter:3~6mm;The length:50~120mm
Size tolerance	The diameter:+0.00/-0.05mm;The length:± 0.5mm
Precision grinding	50-80 Micro inches(RMS)
Parallelism	≤30"
Vertical	≤5'
Flatness	λ/10@ 633 nm
The surface quality	10/5 Scratch / Digger MIL-O-1380A
Chamfering	0.006"±0.002" at 45°± 5°
AR coating reflectivity	≤ 0.25% (@2094nm)

SCINTILLATOR PROPERTIES

Laser transition	F _{3/2} →F _{1/2}
The laser wavelength	2.094 nm
The photon energy	
Radiation cross section	
The fluorescence lifetime	8.5 ms
The refractive index	1.80 @2.08 μm
The aperture	>90%
The absorption line width	4 nm
Diode pump belt	781 nm
The main pump belt	400~800 nm

SPECTRA

