

## Ho:Tm:YLF

**Ho:Tm:YLF** crystal is a 2 $\mu$ m laser crystal sensitized by Tm ions, and the output wavelength is 2.05 $\mu$ m linearly polarized laser. The pump wavelength is 792nm, and the working mode is: Tm ions absorb the 792nm pump light energy, transfer the energy to the upper energy level of the Ho ion laser through a non-radiative transition method, and emit laser light from the Ho ion. The advantage of this working method is that the structure of the laser is relatively simple, the laser efficiency is high, and it can be miniaturized. Its disadvantage is that the crystal has to bear a large heat loss and is not suitable for high-power output lasers.

### Main features:

Linearly polarized laser output

The thermal effect of laser operation is small

Suitable for diode pumped

Suitable for miniaturized compact lasers

### Material properties :

Crystal structure	Tetragonal
Melting point	825°C
Moh's hardness	4-5
Density	3.95g/cm <sup>3</sup>
Thermal conductivity	0.06W/cm/K
Young's modulus	7.5×10 <sup>11</sup> dynes cm <sup>-2</sup>
Tensile strength	3.3×10 <sup>8</sup> dynes cm <sup>-2</sup>
Coefficient of thermal expansion	[100] Direction: 13×10 <sup>-6</sup> /K
	[001] Direction: 8×10 <sup>-6</sup> /K

### Product parameters:

Doping concentration	Doping concentration Tm:0~10at% Ho:0~3at% Can be customized according to customer requirements
Orientation	[100] or [001], deviation within 5°
Wavefront distortion	≤0.25λ/25mm @632.8nm
Crystal rod size	Diameter: 3~9.5mm, Length: 5~120mm, can be customized
Dimensional tolerance	Diameter: +0.00/-0.05mm, Length: ± 0.5mm
Cylindrical processing	Grinding or Polishing
Parallelism of end faces	≤10"
Perpendicularity between end face and rod axis	≤5'
Flatness of end face	≤λ/10@632.8nm
Surface Quality	10-5 (MIL-O-13830A)
Chamfer	0.15±0.05mm
AR Coating Reflectance	≤0.25%