



**Tm:YAG :**

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**Tm:YAG** is an excellent crystal suitable for AlGaAs diode pumping to emit 2μm band laser, and its application in medical, military and meteorological fields has attracted much attention.

**Main features:**

Work in the 2μm eye-safe band range

Effective cross-relaxation between Tm ions and high quantum efficiency

LD pumping efficiency is high

**Material properties:**

Crystal structure	Cubic system
Lattice constant	12.01 Å
Melting point	1970°C
Moh's hardness	8.5
Density	4.56±0.04g/cm <sup>3</sup>
Specific heat	0.59J/g.cm <sup>3</sup> @0-20°C
Elastic Modulus	310GPa
Young's modulus	3.17×10 <sup>4</sup> Kg/mm <sup>2</sup>
Poisson's ratio	0.3
Tensile strength	0.13~0.26 GPa
Coefficient of thermal expansion	[100] Direction: 8.2×10 <sup>-6</sup> /K @0~250°C
	[110] Direction: 7.7×10 <sup>-6</sup> /K @0~250°C
	[111] Direction: 7.8×10 <sup>-6</sup> /K @0~250°C
Thermal conductivity	14W/m/K @20°C
	10.5W/m/K @100°C
Thermo-optic coefficient	dn/dT = 7.3×10 <sup>-6</sup> /K
Thermal shock resistance	790W/m
Solubility	Insoluble in water, slightly soluble in common acids

**Product parameters:**

Doping concentration	Tm:0.5~5at%
Orientation	[111], ± 5°
Wavefront distortion	≤ 0.125λ/25 mm @632.8nm
Extinction Ratio	≥ 25dB @632.8nm
Crystal rod size	Diameter: 2~10mm, Length: 3~150mm
Dimensional tolerance	Diameter: +0.00/-0.05mm, Length: ± 0.5mm
Cylindrical processing	Grinding or Polishing
Parallelism of end faces	≤10"
Perpendicularity between end face	≤5'
Flatness of end face	≤λ/4@632.8nm
Surface Quality	10-5 (MIL-O-13830A)
Chamfer	0.15±0.05mm