

Magneto-optic Crystal

Terbium Gallium Garnet Crystal (TGG)

YOFC TGG crystal is manufactured by advanced crystal pulling (CZ) technology, with series of superior characteristics such as high magneto-optical merit value, low light absorption, good thermal conductivity, and high laser damage threshold. It is the best magneto-optical material used for Faraday rotators and isolators. The suitable wavelength is 400nm~1100 nm (not including 470nm~500 nm). The size of TGG product can be customized according to customer's special needs.

Characteristics

- High Verdet constant
- High laser damage threshold
- High extinction ratio

Applications

- Isolator
- Faraday rotator



Specifications

Product Type	TGG $\phi 5 \times 15$, TGG $3.5 \times 8 \times 5$		
Basic Performance		Optical Performance	
Chemical Formula	$Tb_3Ga_5O_{12}$	Refractive Index	1.954@1064 nm
Structure	Cubic Garnet	Laser Damage Threshold (W/cm ²)	>1G
Lattice Constant (Å)	a = 12.355	Verdet Constant (Rad/T·m)	35@1064 nm
Orientation	< 111 >	Extinction Ratio (dB)	≥ 35
Density (g/cm ³)	7.13	Optical Losses(%/cm)	<0.1
Moh's Hardness	8.0	Antireflection Coating(%@1064 ± 30 nm)	AR:R<0.2
Processing Quality			
Directional (')	± 15	Diameter (mm)	+ 0.00/- 0.05
Length (mm)	± 0.1	Cleanliness	10/5
Flatness	< λ / 8@633 nm	Parallelism (")	<30
Verticality (')	<10	Chipping (mm)	<0.1