

# Terbium Gallium Garnet Crystal (TGG)

Everfoton 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, excellent 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 ~ 1100nm (not including 470nm ~ 500nm). The size of TGG product can be customized according to customer's special requirements.

## Characteristics

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

## Applications

- Isolator
- Faraday rotator



## Specifications

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