



Terbium Scandium Aluminum Garnet(TSAG) Crystal

Introduction

TSAG is a key isolator material for next generation fiber laser. As an ideal magneto-optic crystal in visible and infrared regions, TSAG has the advantages of high Verdet constant, excellent thermal and mechanical properties.

Main Features of TSAG:

- Large Verdet constant (48 rad T⁻¹m⁻¹ at 1064nm), about 20% higher than that of TGG;
- Low absorption(<3000ppm/cm at 1064nm), about 30% less than that of TGG;
- High power compliant;
- Low thermally-induced birefringence;
- Making the isolator small.

Main Applications:

- Faraday Rotator
- Optical Isolator

Table 1. Properties

Transmittance Range(bulk/uncoated)	400-1600nm
Crystal Structure	Cubic, Space group $Ia\bar{3}d$
Chemical Formula	Tb ₃ Sc ₂ Al ₃ O ₁₂
Lattice Parameter	a=12.3Å
Growth Method	Czochralski
Density	5.91g/cm ³
Melting Point	1970°C ± 10°C

CASTECH offers:

Orientation	within ± 15 arc min
Wavefront Distortion	< 1/8 wave
Extinction Ratio	> 30dB
Diameter Tolerance	+0.00mm/-0.05mm
Length Tolerance	+0.2mm/-0.2mm
Chamfer	0.10mm @ 45°
Flatness	< 1/10 wave at 633nm
Parallelism	< 3 arc min
Perpendicularity	< 5 arc min
Surface Quality	10/5 Scratch/Dig
AR coating	<0.3% at 1064nm

公司简介 INTRODUCTION



CASTECH INC.

(CASTECH) was founded by Fujian Institute of Research on the Structure of Matter, Chinese Academy of Science in 1988. Thanks to long term interactive partnership with the leaders in laser system manufacturing industry and ongoing efforts of our employees, we have established the largest mass production lines in the world for LBO, BBO, Nd:YVO₄ and TGG crystals, and implemented a complete quality control system for our products.

CASTECH is now a worldwide leading supplier of nonlinear optical crystals, laser crystals, precision optics, and a variety of laser components. In CASTECH, there are Flux/Czochralski/Water Solution/Bridgman Crystal Growth production lines, Crystal Orientation and Dicing workshop, Optical Polishing workshop and Optical Coating workshop with IBS, IAD, MS and EB coating technique. Our commitments are backed by our huge manufacturing capacity.

CASTECH's quality system is IATF 16949:2016 and ISO 9001:2015 certified. We have established a complete system for outgoing parts inspection. Our optical testing equipments include Zygo Interferometers, Agilent Cary 7000, Perkin-Elmer Lambda 950, Nikon Microscope, Photo-Thermal Common-Path Interferometers, Zygo Newview 8300, Taylor Hobson LupoSan 260, Extinction Ratio Measurement and Ellipsometers. These equipments along with many others, ensure that we comply with all specifications for our products.

Today, over 60% of CASTECH's products are exported to USA, Japan, Europe and other Asia Market. We have established a global sales network. We have set up our agencies and distributors in the main industrial countries and districts.

Our mission is to deliver the best products and solutions to our customers in photonics industry, and help them to realize their full potential in business. Here at CASTECH, we value comity, integrity, honesty, and innovation.