

## **TSAG crystals**

TSAG Faraday crystal is an ideal magnetooptical crystal, which is mainly used in the wavelength range of 400-1600 nanometers, namely the visible and infrared bands. TSAG is an indispensable crystal for the next generation of high-power lasers due to its advantages of high constant, good thermal and mechanical properties. Compared with TGG, the Verdet constant at 1064 nm of TSAG is 20 % higher and the absorption is 30 % lower. Recently, the optical and scintillation properties of TSAG (Tb3Sc2Al3O12) crystal was investigated, and capabilities to be used as a scintillator screen was demonstrated.



## Main Applications:

- Faraday Rotator;
- Optical Isolator.



CHENGDU DIEN PHOTOELECTRIC TECHNOLOGY CO., LTD

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Basic Properties	
Transmittance Range(bulk/uncoated)	400-1600nm
Crystal Structure	Cubic, Space group Ia3d
Chemical Formula	Tb3Sc2Al3O12
Lattice Parameter	a=12.3Å
Growth Method	Czochralski
Density	5.91g/cm3
Melting Point	1970°C±10°C

## Main Features of TSAG:

- Large Verdet constant ( 48radT-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.

Technical pa	rameter
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Orientation	±15'
Wavefront Distortion	<λ/8
Extinction Ratio	> 30dB
Diameter Tolerance	+0.00mm/-0.05mm
Length Tolerance	+0.2mm/-0.2mm
Chamfer	0.1mm @ 45°
Flatness	<λ/10 at 633nm
Parallelism	< 3'
Perpendicularity	< 5'
Surface Quality	10/5
AR coating	<0.3% @ 1064nm

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