Faraday Glass

DESCRIPTION

Faraday rotating glass is a magneto-optical glass with good transmittance in the visible and infrared range (520-1400nm). It can rotate the polarization plane of a beam of polarized light passing parallel to the magnetic field direction and is a glass functional material with a strong Faraday effect. Because of its "non-reciprocity", it can rotate the polarization plane of both forward- and reverse-incident light of the same wavelength in the same direction by the same angle, regardless of the direction of light beam propagation. This material is widely used to make Faraday rotators based on these properties. TG20 has been widely used in switches, modulators, sensors, and magneto-optical isolators.

FEATURES

- Verdet constant high
- Good chemical durability
- Excellent transparency

APPLICATIONS

- Magneto optic switch
- Magneto optic isolator
- Extinction ratio tester
- Raman fiber amplifier

PHYSICOCHEMICAL PROPERTIES

material	TG20	TG28
Refractive index thermal coefficient (10^{-7} / ℃)	74	–
Thermal coefficient of optical path (10^{-7} / ℃)	105	–
Transmission window (nm)	520-1400	520-1400
Coefficient of thermal expansion (10^{-7} / ℃)	51.3	69
Transition temperature (℃)	760	759
Depression temperature (℃)	800	800
Density (g / cm^3)	4.32	4.99
Young's modulus (Gpa)	108	
Poisson's ratio	0.22	

www.crylink.com
sales@crylink.com
+86-21-66566068
Building 7, No.718 Baoqi Road, Baoshan District, Shanghai, China

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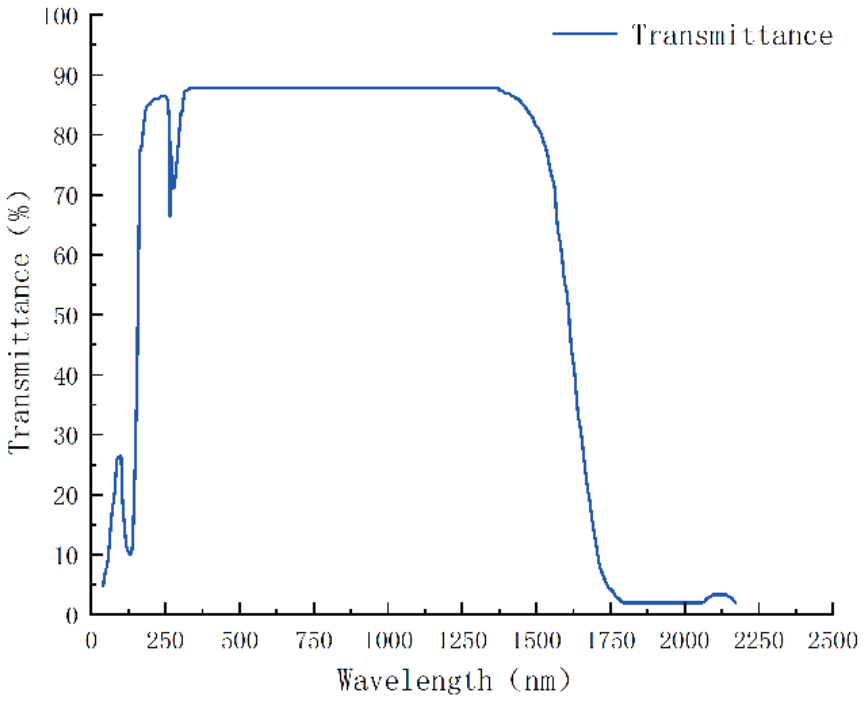
MATERIALS AND SPECIFICATIONS

Diameter tolerance	< λ/8 @ 633nm
Length tolerance	±0.05mm
Flatness	<λ/8 @ 633nm
Surface quality	10/5 s scratches / dents
Parallelism	< 5 〃
Luminous aperture	>90%
Chamfer	0.1mm x 45°

OPTICAL CHARACTERISTICS

Material	TG20	TG28
Refractive index (1064nm)	1.6721	1.736
Refractive index (@589.3nm)	1.6888	1.75
Nonlinear refractive index (10^{-13} e.s.u)	2.46	2.42
Abbe number	53.14	50.98

SPECTROGRAM



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