

Faraday Rotator Glass



DESCRIPTION

Faraday rotator glass is a kind of magneto-optical glasses with good transmittance in the visible and infrared range (520~1400nm) . Faraday rotator glass is more suitable for medium and low power level lasers, and is cheaper compared with the other magneto-optic crystals such as TGG, TSAG. TG20 has been used widely in switch, modulator, sensor, magneto-optical isolator.

FEATURES

- High verdet constant
- Good chemical durability
- Excellent transparency

PARAMETERS

APPLICATIONS

- Extinction ratio tester
- Raman Fiber amplifier module
- Magneto optical switch
- Magneto-optical modulator
- Magneto-optical isolator

Physical and Chemical Properties

	TG20	TG28
Thermal Coefficient of Refractive Index ($10^{-7} / ^\circ\text{C}$)	74	
Thermal Coefficient of Optical Path ($10^{-7} / ^\circ\text{C}$)	105	
Transmission Window (nm)	520-1400	520-1400
Coefficient of Thermal Expansion ($10^{-7} / ^\circ\text{C}$)	51.3	69
Transition Temperature ($^\circ\text{C}$)	760	759
Sag Temperature ($^\circ\text{C}$)	800	800
Density (g/cm^3)	4.32	4.99
Young's Modulus GPa)	108	
Poisson's Ratio	0.22	
Knoop Hardness (Kg/cm^2)	760	



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Material and Specifications

Property	Value
Diameter Tolerance	$< \lambda/8$ @ 633nm
Length Tolerance	$\pm 0.05\text{mm}$
Flatness	$< \lambda/8$ @ 633nm
Surface Quality	10/5 scratch/dig
Parallelism	< 5 seconds
Clear Aperture	$> 90\%$
Edge Chamfer	0.1mm x 45°

Optical and Spectral Properties

	TG20	TG28
Refractive Index (1064nm)	1.6721	1.736
Refractive Index (d 589.3nm)	1.6888	1.75
Nonlinear Refractive Index (10^{-13} e.s.u .)	2.46	2.42
Abbe Number	53.14	50.98

Verdet Constant

Verdet Constant	TG20	TG28
Verdet Constant V (min/Oe.cm): 632.8nm	-0.258	-0.361
Verdet Constant V (min/Oe.cm): 1064nm	-0.075	-0.106

SPECTRA

