



KIGRE, INC.



M-18 Faraday Rotator Glass

Kigre, Inc. manufactures Faraday Rotator/Optical Isolator glass that exhibits a high Verdet Constant and the highest laser bulk damage threshold measured on any Terbium-doped glasses available to date. This platinum free high laser damage threshold material has been developed so as to facilitate high yields of optical quality material.

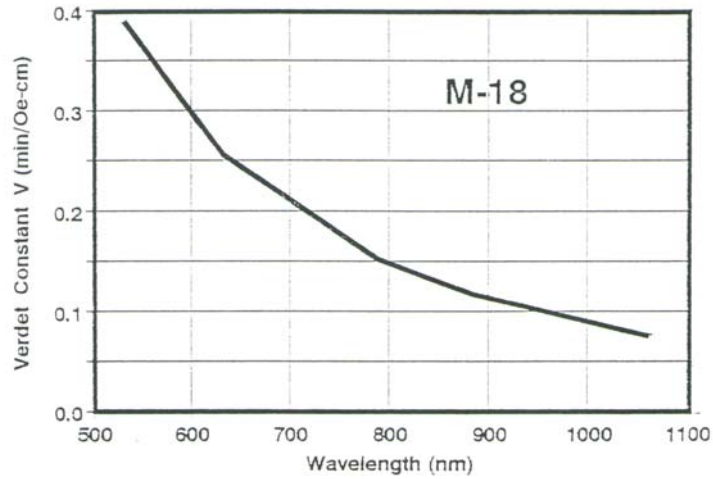
PROPERTIES	M-18
Verdet Constant	
@ 1064nm (min/Oe-cm)	0.0771
@ 532nm (min/Oe-cm)	0.2578
Isolation Requirements, (typical)	
@ 1064nm (Kilogauss/cm)	< 4.5
High Transmission Window (nm)	520 - 1500
Index of Refraction (n_D)	1.682
Index @ 1064nm	1.667
Abbe Number	48.81
Nonlinear refractive index ($\times 10^{-13}$ esu)	2.7
dn/dt (20-40 °C) $\times 10^{-6}/^{\circ}\text{C}$	+7.5
Attenuation Coef. @1064nm (+/-0.002)	0.005/cm
Density (grams/cm³)	4.331
C T E ($\times 10^{-7}/^{\circ}\text{C}$)	56.3
Glass Transformation Temperature (°C)	757
Glass Deformation Temperature (°C)	799
Knoop Hardness (N/mm²)	7380
Bulk Laser Damage Threshold (Joules/cm²) 10ns pulse width	>40



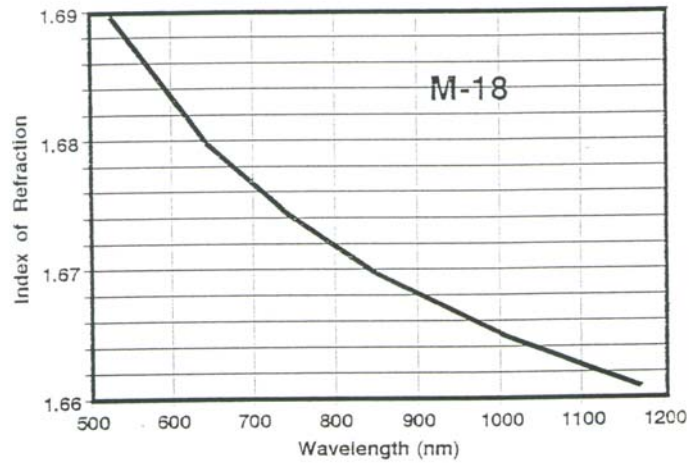
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WAVELENGTH vs VERDET CONSTANT



WAVELENGTH vs INDEX OF REFRACTION



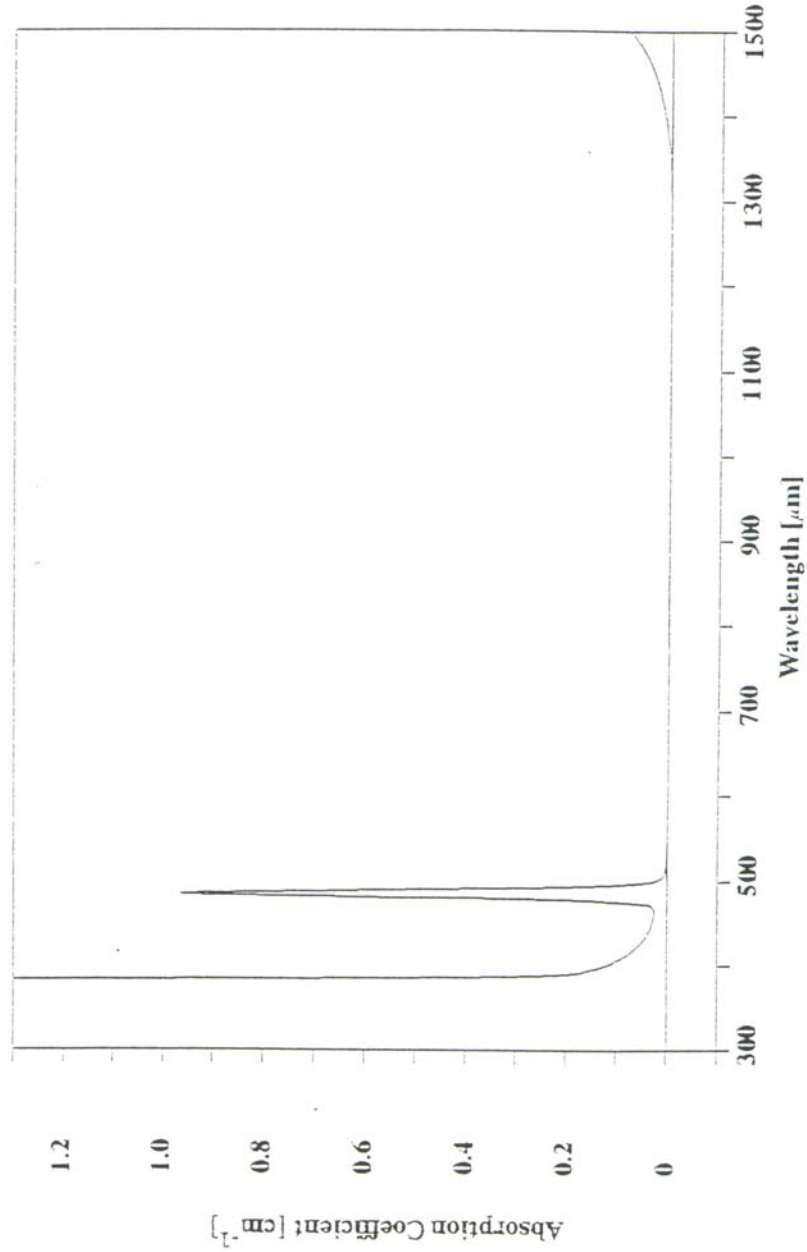
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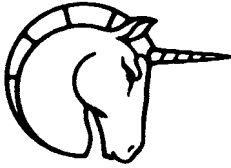
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M-18
ABSORPTION COEFFICIENT Vs. WAVELENGTH



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FARADAY ROTATOR GLASS

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Kigre, Inc. manufactures (made-to-order) custom melts of M-24 and M-32 Faraday Rotator/Optical Isolator glasses. M-32 exhibits the highest Verdet Constants of any Terbium-doped glasses available to date. These platinum free high laser damage threshold materials have been developed so as to facilitate high yields of optical quality material.

PROPERTIES	M-18	M-24	M-32
Verdet Constant			
@ 1064nm (min/Oe-cm)	0.0771	0.0900	0.1000
@ 532nm (min/Oe-cm)	0.2578	0.3040	0.3393
@ 1064nm (Rad/T-m)	-20.59	-26.1	-29.0
@ 632nm (Rad/T-m)	-74.76	-88.16	-98.40
Isolation Requirements, (typical)			
@ 1064nm (Kilogauss/cm)	< 4.5	< 4.0	< 3.5
High Transmission Window (nm)	520 - 1500	520 - 1500	520 - 1500
Index of Refraction (nD)	1.682	1.701	1.727
Index @ 1064nm	1.667	1.687	1.713
Abbe Number	48.81	52.03	51.12
Nonlinear refractive index (x10⁻¹³ esu)	2.7	2.6	2.9
dn/dt (20-40oC) x 10⁻⁶/oC	+7.5		
Attenuation Coef. @1064nm (+/-0.002)	0.005/cm	0.007/cm	0.009/cm
Density (grams/cm³)	4.331	4.450	4.850
C T E (x10⁻⁷/oC)	56.3	55.9	60.0
Glass Transformation Temperature (oC)	757	775	774
Glass Deformation Temperature (oC)	799	810	810
Knoop Hardness (N/mm²)	7380	7500	7930
Bulk Laser Damage Threshold (Joules/cm²) 10ns pulse width	>40	>35	>25