



POTAPENKO GLASS & FILTERS

(POTAPENKO S.V.).

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GLC6 (Nd-SiO₂) SILICATE LASER GLASS

	unit	lambda, nm	data
LASER ATTRIBUTES:			
Nd ₂ O ₃ (standard doping)	wt %		2.00
Nd ³⁺ Activator concentration,	10 ²⁰ ions/cm ³		1.96
SiO ₂	wt %		53.60
K ₂ O	wt %		26.40
BaO	wt %		12.00
TiO ₂	wt %		5.00
Fe ²⁺ , Sm ³⁺ , Pr ³⁺ , Dy ³⁺ , Co, Ni, Cu			none
Cross section for stimulated emission	10 ⁻²⁰ cm ²		1.0
Fluorescence lifetime	micro sec		600
Specific gain	cm ⁻¹ /J/cm ³		0.75
Attenuation coeff	cm ⁻¹	1060	0.0015
Central lasing wavelength	nm		1060
Full Width at Half Maximum (FWHM)	nm		15
OPTIC ATTRIBUTES:			
Non-linear index	10 ⁻¹³ e.s.u.		1.75
Index		1060	1.538
Index		546	1.520
Abbe			standard
Absorbance		586	0.260
MECHANIC ATTRIBUTES:			
Specific Gravity	g/cm ³		2.74
Grindability			standard
Knoop Hardness			standard
THERMIC ATTRIBUTES:			
Coeff of thermal expansion	10 ⁻⁷ Celsius		120
CHEMIC ATTRIBUTES:			
Climatic resistance	Gost Standard Method		standard
Stain resistance	Gost Standard Method		standard
OTHER ATTRIBUTES:			
Stress birefringence	nm/cm		10
Visible stria	grade		2
Visible bubble & inclusion	grade		1

RESUME:

The Nd glass is due to 2.00% neodymium oxide. It's neodymium silicate glass with doping Nd₂O₃ oxide for lasing at lambda 1060nm. The special glass material is Ukrainian Optical Industrial Standard PTM-31731, the glass lasing crown is typified the GLC6