



POTAPENKO GLASS & FILTERS

(POTAPENKO S.V.).

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GLC32 (Nd-P2O5) PHOSPHATE LASER GLASS

	unit	lambda, nm	data
LASER ATTRIBUTES:			
Nd ₂ O ₃ (standard doping)	wt %		1.62
Nd ³⁺ Activator concentration,	10 ²⁰ ions/cm ³		2.0
P ₂ O ₅	wt %		51.31
BaO	wt %		27.48
Al ₂ O ₃	wt %		2.52
Nb ₂ O ₅	wt %		1.46
Fe ²⁺ , Sm ³⁺ , Pr ³⁺ , Dy ³⁺ , Co, Ni, Cu			none
Cross section for stimulated emission	10 ⁻²⁰ cm ²		3.2
Fluorescence lifetime	micro sec		270
Specific gain	cm ⁻¹ /J/cm ³		0.67
Attenuation coeff	cm ⁻¹	1060	0.0015
Central lasing wavelength	nm		1060
Full Width at Half Maximum (FWHM)	nm		6
OPTIC ATTRIBUTES:			
Non-linear index	10 ⁻¹³ e.s.u.		1.75
Index		1060	1.587
Index		546	1.595
Abbe			standard
Absorbance		586	0.260
MECHANIC ATTRIBUTES:			
Specific Gravity	g/cm ³		3.38
Grindability			standard
Knoop Hardness			standard
THERMIC ATTRIBUTES:			
Coeff of thermal expansion	10 ⁻⁷ Celsius		106
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 1.62% neodymium oxide. It's neodymium phosphate 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 GLC32