LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

LK5
glass type

n_e 1.479002	υ_e 65.44	$n_{F'} - n_{C'}$ 0.007334
n_d 1.478166	υ_d 65.59	$n_F - n_C$ 0.007290

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
6	t [°C]	520	625	715	820

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	-0.010	-0.0010	-0.0012	+0.0022
Δ υ_e	-1.1	-0.6	-2.1	-3.1
	i – F	g – F	F - e	F – r
ΔP	-0.011	-0.0012	-0.0012	+0.0021
Δ υ_d	-1.1	-0.7	-2.1	-3.9

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
3.55	-	-	0.87	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.036	$1 \cdot 10^4$	0.015
	$1 \cdot 10^5$	0.11

Young's modulus E [kp · mm^{-2}]	Shear modulus G [kp·mm^{-2}]	Coefficient of linear thermal expansion $\alpha_{20/t} \cdot 10^7$ [°C]		Chemical resistance	
				Stain resistance	
				Group	I
6980	2948				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.184	2.27	33	35	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.49561
404.66	h	1.49024
435.83	g	1.487065
479.99	F'	1.483601
486.13	F	1.483194
546.07	e	1.479902
587.56	d	1.478166
589.29	D	1.478100
643.85	C'	1.476267
656.27	C	1.475904
706.52	r	1.47459
768.2	-	1.47324
852.1	-	1.47171
1013.9	-	1.46933
1128.6	-	1.46786
1395.1	-	1.46463
1529.6	-	1.46296
1813.1	-	1.45918
1970.1	-	1.45687
2249.3	-	1.45233
2325.4	-	1.45098

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.48307
514.0	1.48152
520.8	1.48116
530.0	1.48068
568.2	1.47893
632.8	1.47660
647.1	1.47617
694.3	1.47489
890.0	1.47111
1060.0	1.46873

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	57.4
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	65.44
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	65.59
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	65.58
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	27.2

Relative partial dispersions		
Δ n	$\frac{\Delta n}{n_{F'} - n_{C'}}$	$\frac{\Delta n}{n_F - n_C}$
312.6 – 334.1	-	-
334.1 - i	-	-
i - h	0.732	0.737
h - g	0.4329	0.4355
g – F	0.5278	0.5310
g – F'	0.4724	0.4752
F - e	0.4489	0.4516
F - D	0.6946	0.6988
F' - e	0.5044	0.5074
d - D	0.0090	0.0091
D - C	0.2994	0.3012
e – C'	0.4956	0.4986
e - C	0.5452	0.5484
C' - r	0.229	0.230
C - r	0.179	0.180
r – 852.1	0.392	0.395
852.1 – 1013.9	0.325	0.327
1013.9 – 1128.6	0.200	0.202
1128.6 – 1395.1	0.441	0.443
1395.1 – 1529.6	0.227	0.229
1529.6 – 1813.1	0.516	0.519
1813.1 – 1970.1	0.314	0.316
1970.1 – 2249.3	0.620	0.624
2249.3 – 2325.4	0.183	0.184

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	0.141	0.008
340	0.596	0.274
360	0.854	0.673
380	0.914	0.799
400	0.973	0.934
420	0.973	0.934
440	0.975	0.938
460	0.984	0.960
480	0.987	0.968
500	0.990	0.975
520	0.992	0.980
540	0.993	0.983
560	0.993	0.983
580	0.991	0.978
600	0.990	0.975
620	0.990	0.975
640	0.990	0.975
660	0.991	0.978
680	0.992	0.980
700	0.993	0.983
750	0.995	0.987
800	0.995	0.987
900	0.995	0.987
1000	0.994	0.985
1050	0.994	0.985
1100	0.994	0.985
1200	0.994	0.985
1300	0.994	0.985
1400	0.970	0.927
1500	0.992	0.980

Radiation resistant analogue glass type-

LK105