LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

F13
glass type

n_e 1.624083	υ_e 36.09	$n_{F'} - n_{C'}$ 0.017294
n_d 1.620048	υ_d 36.35	$n_F - n_C$ 0.017060

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
1	t [°C]	415	460	550	625

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	+/-0	+/-0	+/-0	+/-0
Δ υ_e	+/-0	+/-0	+/-0	+/-0
	i – F	g – F	F - e	F – r
ΔP	+/-0	+/-0	+/-0	+/-0
Δ υ_d	+/-0	+/-0	+/-0	+/-0

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
2.85	-	-	0.62	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.050	$1 \cdot 10^4$	0.080
	$1 \cdot 10^5$	0.45

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
5770	2374				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.215	3.63	71	73	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.666345
404.66	h	1.65069
435.83	g	1.642054
479.99	F'	1.633116
486.13	F	1.632096
546.07	e	1.624083
587.56	d	1.620048
589.29	D	1.619900
643.85	C'	1.615822
656.27	C	1.615036
706.52	r	1.612272
768.2	-	1.60957
852.1	-	1.60671
1013.9	-	1.60278
1128.6	-	1.60068
1395.1	-	1.59678
1529.6	-	1.59503
1813.1	-	1.59142
1970.1	-	1.58937
2249.3	-	1.58548
2325.4	-	1.58435

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	26.8
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	36.09
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	36.35
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	36.34
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	34.4

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	0.905	0.917
h - g	0.4993	0.5065
g – F	0.5758	0.5837
g – F'	0.5168	0.5239
F - e	0.4633	0.4697
F - D	0.7052	0.7149
F' - e	0.5223	0.5295
d - D	0.0086	0.0087
D - C	0.2812	0.2851
e – C'	0.4777	0.4843
e - C	0.5231	0.5303
C' - r	0.205	0.218
C - r	0.160	0.162
r – 852.1	0.321	0.326
852.1 – 1013.9	0.228	0.231
1013.9 – 1128.6	0.121	0.123
1128.6 – 1395.1	0.226	0.229
1395.1 – 1529.6	0.101	0.102
1529.6 – 1813.1	0.209	0.211
1813.1 – 1970.1	0.119	0.120
1970.1 – 2249.3	0.225	0.228
2249.3 – 2325.4	0.065	0.066

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	-	-
340	0.288	0.044
360	0.720	0.440
380	0.893	0.754
400	0.964	0.913
420	0.978	0.946
440	0.983	0.958
460	0.989	0.972
480	0.992	0.980
500	0.994	0.985
520	0.995	0.987
540	0.996	0.990
560	0.996	0.990
580	0.996	0.990
600	0.996	0.990
620	0.996	0.990
640	0.995	0.987
660	0.995	0.987
680	0.996	0.990
700	0.997	0.993
750	0.998	0.995
800	0.998	0.995
900	0.998	0.995
1000	0.997	0.993
1050	0.997	0.993
1100	0.998	0.995
1200	0.997	0.993
1300	0.997	0.993
1400	0.993	0.983
1500	0.994	0.985

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.63179
514.0	1.62798
520.8	1.62709
530.0	1.62594
568.2	1.62181
632.8	1.61656
647.1	1.61561
694.3	1.61289
890.0	1.60564
1060.0	1.60189

Radiation resistant analogue glass type-

F113