LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

LF7
glass type

n_e 1.581756	υ_e 40.83	$n_{F'} - n_{C'}$ 0.014247
n_d 1.578423	υ_d 41.11	$n_F - n_C$ 0.014070

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
2	t [°C]	435	475	570	650

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	-0.006	-0.0008	-0.0001	-0.0002
Δ υ_e	-0.7	-0.5	-0.2	+0.3
	i – F	g – F	F - e	F – r
ΔP	-0.006	-0.0008	-0.0001	-0.0001
Δ υ_d	-0.6	-0.4	-0.1	+0.2

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
3.25	-	-	0.67	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.047	$1 \cdot 10^4$	0.080
	$1 \cdot 10^5$	0.58

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
5680	2347				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.210	3.23	71	75	Group	B

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.61581
404.66	h	1.60336
435.83	g	1.596409
479.99	F'	1.589157
486.13	F	1.588325
546.07	e	1.581756
587.56	d	1.578423
589.29	D	1.578300
643.85	C'	1.574910
656.27	C	1.574255
706.52	r	1.57194
768.2	-	1.55966
852.1	-	1.56723
1013.9	-	1.56383
1128.6	-	1.56198
1395.1	-	1.55843
1529.6	-	1.55680
1813.1	-	1.55335
1970.1	-	1.55135
2249.3	-	1.54752
2325.4	-	1.54641

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	31.1
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	40.83
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	41.11
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	41.10
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	34.1

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	0.874	0.885
h - g	0.4879	0.4940
g – F	0.5674	0.5746
g – F'	0.5090	0.5154
F - e	0.4611	0.4669
F - D	0.7036	0.7125
F' - e	0.5195	0.5260
d - D	0.0086	0.0087
D - C	0.2839	0.2875
e – C'	0.4805	0.4865
e - C	0.5625	0.5331
C' - r	0.208	0.211
C - r	0.162	0.165
r – 852.1	0.330	0.334
852.1 – 1013.9	0.239	0.242
1013.9 – 1128.6	0.130	0.132
1128.6 – 1395.1	0.249	0.252
1395.1 – 1529.6	0.115	0.116
1529.6 – 1813.1	0.242	0.245
1813.1 – 1970.1	0.140	0.142
1970.1 – 2249.3	0.269	0.272
2249.3 – 2325.4	0.078	0.079

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	0.059	-
340	0.699	0.408
360	0.944	0.866
380	0.986	0.966
400	0.988	0.971
420	0.990	0.975
440	0.991	0.978
460	0.993	0.983
480	0.994	0.985
500	0.994	0.985
520	0.995	0.987
540	0.995	0.987
560	0.995	0.997
580	0.995	0.987
600	0.994	0.985
620	0.994	0.985
640	0.995	0.987
660	0.996	0.990
680	0.998	0.995
700	0.999	0.998
750	0.998	0.995
800	0.998	0.995
900	0.998	0.995
1000	0.998	0.995
1050	0.998	0.995
1100	0.998	0.995
1200	-	-
1300	-	-
1400	-	-
1500	-	-

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.58808
514.0	1.58495
520.8	1.58422
530.0	1.58328
568.2	1.57988
632.8	1.57552
647.1	1.57474
694.3	1.57246
890.0	1.56632
1060.0	1.56305

Radiation resistant analogue glass type-