LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС ⊙ LZOS **OF1**
glass type

n_e 1.531924	υ_e 51.57	$n_{F'} - n_{C'}$ 0.010315
n_d 1.529492	υ_d 51.81	$n_F - n_C$ 0.010220

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
2	t [°C]	415	450	540	615

Relative partial dispersion deviations from the 'Normal Line'

	i – F'	g – F'	F' - e	F' - r
ΔP	-0.038	-0.0049	-0.0013	+0.0019
$\Delta \upsilon_e$	-4.0	-3.3	-2.3	-2.6
	i – F	g – F	F - e	F – r
ΔP	-0.039	-0.0054	-0.0013	+0.0017
$\Delta \upsilon_d$	-3.9	3.1	-2.2	-3.1

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
3.90	0.62	0.68	0.71	0.73

Optical density increment on irradiation

Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment ΔD [cm^{-1}]
0.040	$1 \cdot 10^4$	0.025
	$1 \cdot 10^5$	0.12

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	IV
5410	2208				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.225	2.56	59	63	Group	A

Refractive indices

λ [nm]		n
312.6	-	-
334.1	-	-
365.0	i	1.55515
404.66	h	1.54698
435.83	g	1.542251
479.99	F'	1.537207
486.13	F	1.536620
546.07	e	1.531924
587.56	d	1.529492
589.29	D	1.529400
643.85	C'	1.526892
656.27	C	1.526400
706.52	r	1.52464
768.2	-	1.52287
852.1	-	1.52093
1013.9	-	1.51805
1128.6	-	1.51636
1395.1	-	1.51285
1529.6	-	1.51110
1813.1	-	1.50723
1970.1	-	1.50489
2249.3	-	1.50029
2325.4	-	1.49893

Dispersion coefficients

$$\nu_h = \frac{n_h - 1}{n_i - n_g} \qquad 42.4$$

$$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}} \qquad 51.57$$

$$\nu_d = \frac{n_d - 1}{n_F - n_C} \qquad 51.81$$

$$\nu_D = \frac{n_D - 1}{n_F - n_C} \qquad 51.80$$

$$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}} \qquad 28.8$$

Relative partial dispersions

Δ n	$\dfrac{\Delta n}{n_{F'} - n_{C'}}$	$\dfrac{\Delta n}{n_F - n_C}$
312.6 – 334.1	-	-
334.1 - i	-	-
i - h	0.792	0.799
h - g	0.4585	0.4627
g – F	0.5459	0.5510
g – F'	0.4890	0.4935
F - e	0.4553	0.4595
F - D	0.7000	0.7065
F' - e	0.5122	0.5169
d - D	0.0089	0.0090
D - C	0.2908	0.2935
e – C'	0.4878	0.4924
e - C	0.5355	0.5405
C' - r	0.218	0.220
C - r	0.170	0.172
r – 852.1	0.360	0.363
852.1 – 1013.9	0.280	0.282
1013.9 – 1128.6	0.163	0.165
1128.6 – 1395.1	0.341	0.344
1395.1 – 1529.6	0.169	0.171
1529.6 – 1813.1	0.376	0.379
1813.1 – 1970.1	0.226	0.229
1970.1 – 2249.3	0.446	0.450
2249.3 – 2325.4	0.132	0.133

Internal transmittance

λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	-	-
340	-	-
360	0.537	0.209
380	0.805	0.581
400	0.906	0.781
420	0.952	0.884
440	0.971	0.929
460	0.983	0.958
480	0.989	0.972
500	0.992	0.980
520	0.994	0.985
540	0.995	0.987
560	0.996	0.990
580	0.994	0.985
600	0.994	0.985
620	0.994	0.985
640	0.994	0.985
660	0.994	0.985
680	0.995	0.987
700	0.996	0.990
750	0.997	0.993
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	1.53644
514.0	1.53422
520.8	1.53370
530.0	1.53302
568.2	1.53056
632.8	1.52735
647.1	1.52676
694.3	1.52504
890.0	1.52018
1060.0	1.51735

Radiation resistant analogue glass type-

OF101