LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

TF2
glass type

n_e 1.677617	υ_e 31.99	$n_{F'} - n_{C'}$ 0.021180
n_d 1.672680	υ_d 32.23	$n_F - n_C$ 0.020870

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
1	t [°C]	405	440	520	590

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	+0.018	+0.0011	+0.0002	-0.0001
Δ υ_e	+1.9	+0.7	+0.3	+0.1
	i – F	g – F	F - e	F – r
ΔP	+0.019	+0.0012	+0.0001	-0.0001
Δ υ_d	+1.9	+0.7	+0.2	+0.2

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
2.20	-	-	-	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.058	$1 \cdot 10^4$	0.080
	$1 \cdot 10^5$	0.60

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	II
5610	2286				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.227	4.09	73	78	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.73062
404.66	h	1.71068
435.83	g	1.699831
479.99	F'	1.688733
486.13	F	1.687472
546.07	e	1.677617
587.56	d	1.672680
589.29	D	1.672500
643.85	C'	1.667553
656.27	C	1.666602
706.52	r	1.66327
768.2	-	1.66003
852.1	-	1.65665
1013.9	-	1.65208
1128.6	-	1.64970
1395.1	-	1.64546
1529.6	-	1.64362
1813.1	-	1.63993
1970.1	-	1.63785
2249.3	-	1.63394
2325.4	-	1.63281

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	23.1
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	31.99
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	32.23
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	32.22
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	35.5

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	0.941	0.955
h - g	0.5122	0.5198
g – F	0.5835	0.5922
g – F'	0.5240	0.5318
F - e	0.4653	0.4722
F - D	0.7069	0.7174
F' - e	0.5248	0.5325
d - D	0.0085	0.0086
D - C	0.2785	0.2826
e – C'	0.4752	0.4822
e - C	0.5201	0.5278
C' - r	0.202	0.205
C - r	0.157	0.160
r – 852.1	0.313	0.317
852.1 – 1013.9	0.216	0.219
1013.9 – 1128.6	0.112	0.114
1128.6 – 1395.1	0.206	0.203
1395.1 – 1529.6	0.087	0.088
1529.6 – 1813.1	0.175	0.177
1813.1 – 1970.1	0.098	0.099
1970.1 – 2249.3	0.185	0.187
2249.3 – 2325.4	0.053	0.054

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	-	-
340	0.015	-
360	0.400	0.101
380	0.741	0.473
400	0.903	0.775
420	0.956	0.894
440	0.973	0.934
460	0.983	0.958
480	0.989	0.972
500	0.981	0.953
520	0.994	0.985
540	0.995	0.987
560	0.995	0.987
580	0.995	0.987
600	0.995	0.987
620	0.995	0.987
640	0.993	0.983
660	0.993	0.983
680	0.994	0.985
700	0.995	0.987
750	0.997	0.993
800	0.997	0.993
900	0.996	0.990
1000	0.996	0.990
1050	0.996	0.990
1100	0.996	0.990
1200	0.996	0.990
1300	0.996	0.990
1400	0.994	0.985
1500	0.993	0.983

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.68710
514.0	1.68239
520.8	1.68130
530.0	1.67989
568.2	1.67484
632.8	1.66844
647.1	1.66730
694.3	1.66401
890.0	1.65539
1060.0	1.65106

Radiation resistant analogue glass type-

TF102