LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

BF25
glass type

n_e 1.610853	υ_e 45.82	$n_{F'} - n_{C'}$ 0.013332
n_d 1.607716	υ_d 46.11	$n_F - n_C$ 0.013180

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
4	t [°C]	550	570	640	705

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	-0.015	-0.0012	+0.0002	-0.0013
Δ υ_e	-1.6	-0.8	+0.4	+1.8
	i – F	g – F	F - e	F – r
ΔP	-0.015	-0.0010	+0.0004	-0.0009
Δ υ_d	-1.5	-0.5	+0.6	+1.7

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
2.75	-	-	-	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.050	$1 \cdot 10^4$	0.070
	$1 \cdot 10^5$	0.40

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
7350	2940				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.250	3.47	66	73	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.64195
404.66	h	1.63077
435.83	g	1.624428
479.99	F'	1.617746
486.13	F	1.616974
546.07	e	1.610853
587.56	d	1.607716
589.29	D	1.607600
643.85	C'	1.604413
656.27	C	1.603794
706.52	r	1.60160
768.2	-	1.59944
852.1	-	1.59713
1013.9	-	1.59388
1128.6	-	1.59211
1395.1	-	1.58872
1529.6	-	1.58717
1813.1	-	1.58390
1970.1	-	1.58202
2249.3	-	1.57844
2325.4	-	1.57740

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.61675
514.0	1.61384
520.8	1.61316
530.0	1.61228
568.2	1.60909
632.8	1.60499
647.1	1.60425
694.3	1.60209
890.0	1.59625
1060.0	1.59313

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	36.0
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	45.82
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	46.11
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	46.10
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	38.0

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	0.839	0.848
h - g	0.4757	0.4812
g – F	0.5591	0.5656
g – F'	0.5012	0.5070
F - e	0.4591	0.4644
F - D	0.7031	0.7112
F' - e	0.5170	0.5230
d - D	0.0087	0.0088
D - C	0.2855	0.2888
e – C'	0.4830	0.4886
e - C	0.5295	0.5356
C' - r	0.211	0.213
C - r	0.164	0.166
r – 852.1	0.336	0.340
852.1 – 1013.9	0.224	0.246
1013.9 – 1128.6	0.133	0.134
1128.6 – 1395.1	0.254	0.257
1395.1 – 1529.6	0.117	0.118
1529.6 – 1813.1	0.245	0.248
1813.1 – 1970.1	0.141	0.143
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	-	-
340	0.302	0.050
360	0.715	0.432
380	0.873	0.712
400	0.955	0.891
420	0.974	0.936
440	0.979	0.949
460	0.985	0.963
480	0.990	0.975
500	0.992	0.980
520	0.994	0.985
540	0.995	0.987
560	0.995	0.987
580	0.995	0.987
600	0.994	0.985
620	0.992	0.980
640	0.991	0.978
660	0.991	0.978
680	0.991	0.978
700	0.991	0.978
750	0.991	0.972
800	0.989	0.966
900	0.986	0.963
1000	0.985	0.963
1050	0.985	0.963
1100	0.984	0.960
1200	0.985	0.963
1300	0.986	0.966
1400	0.985	0.963
1500	0.985	0.963

Radiation resistant analogue glass type-

BF125