LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

TK20
glass type

n_e 1.624702	υ_e 56.43	$n_{F'} - n_{C'}$ 0.011071
n_d 1.622097	υ_d 56.71	$n_F - n_C$ 0.010970

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
3	t [°C]	605	640	710	770

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	-0.022	-0.0008	+0.0010	-0.0026
Δ υ_e	-2.3	-0.5	+1.7	+3.6
	i – F	g – F	F - e	F – r
ΔP	-0.020	-0.0003	+0.0012	-0.0019
Δ υ_d	-2.0	-0.1	+2.1	+3.5

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
1.85	-	-	-	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.051	$1 \cdot 10^4$	0.040
	$1 \cdot 10^5$	0.26

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	III
8260	3247				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.272	3.58	67	73	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.64930
404.66	h	1.64074
435.83	g	1.635746
479.99	F'	1.630367
486.13	F	1.629739
546.07	e	1.624702
587.56	d	1.622097
589.29	D	1.622000
643.85	C'	1.619296
656.27	C	1.618769
706.52	r	1.61689
768.2	-	1.61501
852.1	-	1.61297
1013.9	-	1.61002
1128.6	-	1.60835
1395.1	-	1.60501
1529.6	-	1.60342
1813.1	-	1.59998
1970.1	-	1.59797
2249.3	-	1.59409
2325.4	-	1.59296

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	47.3
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	56.43
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	56.71
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	56.70
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	37.9

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	0.773	0.780
h - g	0.4511	0.4552
g – F	0.5426	0.5476
g – F'	0.4859	0.4903
F - e	0.4550	0.4592
F - D	0.6991	0.7055
F' - e	0.5117	0.5164
d - D	0.0088	0.0088
D - C	0.2919	0.2945
e – C'	0.4883	0.4928
e - C	0.5359	0.5408
C' - r	0.217	0.219
C - r	0.170	0.171
r – 852.1	0.354	0.357
852.1 – 1013.9	0.267	0.269
1013.9 – 1128.6	0.151	0.152
1128.6 – 1395.1	0.301	0.304
1395.1 – 1529.6	0.144	0.145
1529.6 – 1813.1	0.310	0.313
1813.1 – 1970.1	0.182	0.184
1970.1 – 2249.3	0.350	0.354
2249.3 – 2325.4	0.102	0.103

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	0.023	-
340	0.334	0.064
360	0.748	0.484
380	0.904	0.777
400	0.968	0.922
420	0.986	0.966
440	0.989	0.972
460	0.991	0.978
480	0.994	0.985
500	0.995	0.987
520	0.996	0.990
540	0.996	0.990
560	0.996	0.990
580	0.995	0.987
600	0.995	0.987
620	0.994	0.985
640	0.994	0.985
660	0.994	0.985
680	0.994	0.985
700	0.994	0.985
750	0.993	0.983
800	0.992	0.980
900	0.989	0.972
1000	0.989	0.972
1050	0.989	0.972
1100	0.989	0.972
1200	-	-
1300	-	-
1400	-	-
1500	-	-

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.62955
514.0	1.62717
520.8	1.62661
530.0	1.62589
568.2	1.62324
632.8	1.61979
647.1	1.61916
694.3	1.61732
890.0	1.61219
1060.0	1.60932

Radiation resistant analogue glass type-

TK120