LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

CTK12
glass type

n_e 1.695010	υ_e 54.80	$n_{F'} - n_{C'}$ 0.012683
n_d 1.692012	υ_d 55.01	$n_F - n_C$ 0.012580

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
1	t [°C]	620	640	690	720

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	**g – F'**	**F' - e**	**F' - r**
ΔP	-0.056	-0.0066	-0.0022	+0.0018
Δ υ_e	-6.0	-4.5	-3.9	-2.6
	i – F	**g – F**	**F – e**	**F – r**
ΔP	-0.058	-0.0076	-0.0022	+0.0015
Δ υ_d	-5.8	-4.3	-3.7	-2.7

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
1.85	0.76	0.78	0.729	0.80

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.060	$1 \cdot 10^4$	0.045
	$1 \cdot 10^5$	0.34

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
11450	4445				
Poisson's ratio μ	**Density ρ [g · cm^{-3}]**	+20 ÷ -60°C	+20 ÷ +120°C	**Weather resistance**	
0.288	3.46	57	67	**Group**	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.72292
404.66	h	1.71328
435.83	g	1.707590
479.99	F'	1.701471
486.13	F	1.700756
546.07	e	1.695010
587.56	d	1.692012
589.29	D	1.691900
643.85	C'	1.688788
656.27	C	1.688176
706.52	r	1.68599
768.2	-	1.68378
852.1	-	1.68134
1013.9	-	1.67772
1128.6	-	1.67560
1395.1	-	1.67119
1529.6	-	1.66900
1813.1	-	1.66415
1970.1	-	1.66122
2249.3	-	1.65547
2325.4	-	1.65377

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	46.5
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	54.80
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	55.01
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	55.00
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	30.1

Internal transmittance		
λ [nm]	**τ_i (s=10mm)**	**τ_i (s=25mm)**
280	-	-
300	0.063	-
320	0.240	0.028
340	0.574	0.250
360	0.799	0.571
380	0.906	0.781
400	0.975	0.938
420	0.983	0.958
440	0.985	0.963
460	0.990	0.975
480	0.993	0.983
500	0.996	0.990
520	0.996	0.990
540	0.997	0.993
560	0.996	0.990
580	0.993	0.983
600	0.995	0.987
620	0.995	0.987
640	0.994	0.985
660	0.995	0.987
680	0.996	0.990
700	0.997	0.993
750	0.995	0.987
800	0.994	0.985
900	0.995	0.987
1000	0.995	0.987
1050	0.995	0.987
1100	0.996	0.990
1200	0.996	0.990
1300	0.997	0.993
1400	0.995	0.987
1500	0.994	0.985

Refractive indices at laser wavelengths	
λ [nm]	**n**
350.7	-
356.4	-
488.0	1.70054
514.0	1.69783
520.8	1.69719
530.0	1.69636
568.2	1.69333
632.8	1.68936
647.1	1.68862
694.3	1.68648
890.0	1.68040
1060.0	1.67684

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	0.760	0.766
h - g	0.4486	0.4523
g – F	0.5388	0.5432
g – F'	0.4824	0.4864
F - e	0.4530	0.4568
F - D	0.6982	0.7040
F' - e	0.5094	0.5136
d - D	0.0088	0.0089
D - C	0.2936	0.2960
e – C'	0.4906	0.4946
e - C	0.5388	0.5432
C' - r	0.221	0.223
C - r	0.173	0.174
r – 852.1	0.366	0.369
852.1 – 1013.9	0.285	0.288
1013.9 – 1128.6	0.167	0.168
1128.6 – 1395.1	0.348	0.351
1395.1 – 1529.6	0.173	0.174
1529.6 – 1813.1	0.383	0.386
1813.1 – 1970.1	0.231	0.232
1970.1 – 2249.3	0.454	0.457
2249.3 – 2325.4	0.134	0.135

Radiation resistant analogue glass type-

CTK112