LYTKARINO OPTICAL GLASS FACTORY, JSC

BK10
glass type

n_e 1.574860	υ_e 57.20	$n_{F'} - n_{C'}$ 0.010050
n_d 1.568891	υ_d 56.05	$n_F - n_C$ 0.010150

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
2	t [°C]	525	575	660	720

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	-0.018	-0.0006	+0.0008	-0.0020
Δ υ_e	-2.0	-0.4	+1.3	+2.7
	i – F	g – F	F - e	F – r
ΔP	-0.017	+/-0	+0.0010	-0.0013
Δ υ_d	-1.7	+/-0	+1.7	+2.4

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
3.00	0.71	0.75	0.78	0.80

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.045	$1 \cdot 10^4$	0.050
	$1 \cdot 10^5$	0.33

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
7490	3010				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.244	3.12	65	71	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.59417
404.66	h	1.58620
435.83	g	1.581543
479.99	F'	1.576553
486.13	F	1.575971
546.07	e	1.571309
587.56	d	1.568891
589.29	D	1.568800
643.85	C'	1.566308
656.27	C	1.565821
706.52	r	1.56408
768.2	-	1.56235
852.1	-	1.56047
1013.9	-	1.55774
1128.6	-	1.55614
1395.1	-	1.55310
1529.6	-	1.55161
1813.1	-	1.54837
1970.1	-	1.54645
2249.3	-	1.54270
2325.4	-	1.54160

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	46.4
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	55.76
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	56.05
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	56.04
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	36.7

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	0.778	0.785
h - g	0.4546	0.4588
g – F	0.5439	0.5490
g – F'	0.4870	0.4916
F - e	0.4551	0.4593
F - D	0.7000	0.7065
F' - e	0.5119	0.5167
d - D	0.0089	0.0090
D - C	0.2908	0.2935
e – C'	0.4881	0.4927
e - C	0.5357	0.5407
C' - r	0.217	0.219
C - r	0.169	0.171
r – 852.1	0.353	0.357
852.1 – 1013.9	0.266	0.269
1013.9 – 1128.6	0.151	0.152
1128.6 – 1395.1	0.302	0.305
1395.1 – 1529.6	0.145	0.147
1529.6 – 1813.1	0.316	0.319
1813.1 – 1970.1	0.188	0.189
1970.1 – 2249.3	0.366	0.369
2249.3 – 2325.4	0.108	0.109

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	0.155	0.009
340	0.612	0.293
360	0.849	0.664
380	0.933	0.841
400	0.978	0.946
420	0.982	0.956
440	0.986	0.966
460	0.990	0.975
480	0.992	0.980
500	0.994	0.985
520	0.995	0.987
540	0.996	0.990
560	0.996	0.990
580	0.995	0.987
600	0.994	0.985
620	0.994	0.985
640	0.993	0.983
660	0.993	0.983
680	0.993	0.983
700	0.993	0.983
750	0.992	0.980
800	0.990	0.975
900	0.987	0.968
1000	0.986	0.966
1050	0.985	0.963
1100	0.986	0.966
1200	0.986	0.966
1300	0.986	0.966
1400	0.985	0.963
1500	0.983	0.958

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.57580
514.0	1.57359
520.8	1.57307
530.0	1.57240
568.2	1.56995
632.8	1.56676
647.1	1.56618
694.3	1.56448
890.0	1.55974
1060.0	1.55709

Radiation resistant analogue glass type-

BK110