

# S-BSL7R

Code(d) **516639**

Code(e) **518637**

Refractive Index $n_d$	<b>1.51633</b>	Abbe Number $\nu_d$	<b>63.89</b>	Dispersion $n_F-n_C$	<b>0.008082</b>
Refractive Index $n_e$	1.516330	Abbe Number $\nu_e$	63.67	Dispersion $n_F-n_C'$	0.008140

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.48860
$n_{1970}$	1.97009	1.49438
$n_{1530}$	1.52958	1.50037
$n_{1129}$	1.12864	1.50530
$n_t$	1.01398	1.50681
$n_s$	0.85211	1.50931
$n_{A'}$	0.76819	1.51095
$n_f$	0.70652	1.51241
$n_C$	0.65627	1.51385
$n_{C'}$	0.64385	1.51424
$n_{\text{He-Ne}}$	0.6328	1.51461
$n_D$	0.58929	1.51626
$n_d$	0.58756	1.51633
$n_e$	0.54607	1.51826
$n_F$	0.48613	1.52193
$n_{F'}$	0.47999	1.52238
$n_{\text{He-Cd}}$	0.44157	1.52569
$n_g$	0.435835	1.52627
$n_h$	0.404656	1.52987
$n_i$	0.365015	1.53602

Constants of Dispersion Formula	
$A_1$	1.25482260E+00
$A_2$	1.51111808E-02
$A_3$	1.01493883E+00
$B_1$	8.05680214E-03
$B_2$	5.29921282E-02
$B_3$	1.03372690E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	81.4
Rigidity Modulus G (GPa)	33.6
Poisson's Ratio $\sigma$	0.211
Knoop Hardness Hk(Class)	580   6
Abrasion Aa	93

Partial Dispersions	
$n_C-n_t$	0.007038
$n_C-n_{A'}$	0.002897
$n_d-n_C$	0.002484
$n_e-n_C$	0.004412
$n_g-n_d$	0.009938
$n_g-n_F$	0.004340
$n_h-n_g$	0.003598
$n_i-n_g$	0.009755
$n_C-n_t$	0.007436
$n_e-n_{C'}$	0.004014
$n_{F'}-n_e$	0.004126
$n_i-n_{F'}$	0.013639

Relative Partial Dispersions	
$\theta_{C,t}$	0.8708
$\theta_{C,A'}$	0.3585
$\theta_{d,C}$	0.3073
$\theta_{e,C}$	0.5459
$\theta_{g,d}$	1.2296
$\theta_{g,F}$	0.5370
$\theta_{h,g}$	0.4452
$\theta_{i,g}$	1.2070
$\theta'_{C,t}$	0.9135
$\theta'_{e,C}$	0.4931
$\theta'_{F',e}$	0.5069
$\theta'_{i,F'}$	1.6756

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0243
$\Delta \theta_{C,A'}$	0.0052
$\Delta \theta_{g,d}$	-0.0024
$\Delta \theta_{g,F}$	-0.0011
$\Delta \theta_{i,g}$	0.0170

Thermal Properties	
Strain Point StP (°C)	535
Annealing Point AP (°C)	562
Transformation Temperature Tg (°C)	591
Yield Point At (°C)	638
Softening Point SP (°C)	724
Expansion Coefficients (-30~+70°C)	69
$\alpha$ (10 <sup>-7</sup> K <sup>-1</sup> ) (+100~+300°C)	82
Thermal Conductivity $\lambda$ W/(m·K)	1.16

Coloring			
$\lambda_{80}$	410	$\lambda_5$	365
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	402	$\lambda_{0.05}$	362

CCI		
B	G	R
0.00	3.54	3.85

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	0.02
370	0.18
380	0.44
390	0.66
400	0.79
420	0.915
440	0.953
460	0.967
480	0.974
500	0.979
550	0.987
600	0.991
650	0.994
700	0.997
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.974
1600	0.992
1800	0.979
2000	0.955
2200	0.86
2400	0.81

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative (10 <sup>-6</sup> K <sup>-1</sup> )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.5	2.8	2.8	2.9	3.0	3.3	3.5
-20~ 0	2.5	2.8	2.8	2.9	3.1	3.3	3.6
0~20	2.6	2.9	2.9	3.0	3.1	3.4	3.7
20~40	2.6	3.0	3.0	3.1	3.2	3.5	3.8
40~60	2.7	3.1	3.1	3.2	3.3	3.6	3.9
60~80	2.8	3.2	3.2	3.3	3.5	3.8	4.1

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	2.86
Specific Gravity d	2.50
Remarks	

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.