

# S-LAM 3

Code(d) **717479**

Code(e) **721476**

Refractive Index $n_d$	<b>1.71700</b> 1.717004	Abbe Number $\nu_d$	<b>47.92</b>	Dispersion $n_F-n_C$	<b>0.014961</b>
Refractive Index $n_e$	1.720563	Abbe Number $\nu_e$	47.64	Dispersion $n_F-n_C'$	0.015124

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.68133
$n_{1970}$	1.97009	1.68699
$n_{1530}$	1.52958	1.69320
$n_{1129}$	1.12864	1.69905
$n_t$	1.01398	1.70111
$n_s$	0.85211	1.70488
$n_{A'}$	0.76819	1.70754
$n_r$	0.70652	1.71002
$n_C$	0.65627	1.71253
$n_{C'}$	0.64385	1.71323
$n_{\text{He-Ne}}$	0.6328	1.71390
$n_D$	0.58929	1.71687
$n_d$	0.58756	1.71700
$n_e$	0.54607	1.72056
$n_F$	0.48613	1.72749
$n_{F'}$	0.47999	1.72836
$n_{\text{He-Cd}}$	0.44157	1.73475
$n_g$	0.435835	1.73587
$n_h$	0.404656	1.74296
$n_i$	0.365015	1.75531

Constants of Dispersion Formula	
$A_1$	1.64258713E+00
$A_2$	2.39634610E-01
$A_3$	1.22483026E+00
$B_1$	8.68246020E-03
$B_2$	3.51226242E-02
$B_3$	1.16604369E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	53.2
Phosphate Resistance PR	4.2

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	868
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	335
Poisson's Ratio $\sigma$	0.294
Knoop Hardness Hk[Class]	510   5
Abrasion Aa	184
Photoelastic Constant $\beta$ nm/(cm · $10^5\text{Pa}$ )	1.51

Partial Dispersions	
$n_C-n_t$	0.011413
$n_C-n_{A'}$	0.004990
$n_d-n_C$	0.004476
$n_e-n_C$	0.008035
$n_g-n_d$	0.018871
$n_g-n_F$	0.008386
$n_h-n_g$	0.007085
$n_i-n_g$	0.019433
$n_C-n_t$	0.012120
$n_e-n_{C'}$	0.007328
$n_F-n_e$	0.007796
$n_i-n_{F'}$	0.026949

Relative Partial Dispersions	
$\theta_{C,t}$	0.7629
$\theta_{C,A'}$	0.3335
$\theta_{d,C}$	0.2992
$\theta_{e,C}$	0.5371
$\theta_{g,d}$	1.2613
$\theta_{g,F}$	0.5605
$\theta_{h,g}$	0.4736
$\theta_{i,g}$	1.2989
$\theta'_{C,t}$	0.8014
$\theta'_{e,C'}$	0.4845
$\theta'_{F,e}$	0.5155
$\theta'_{i,F'}$	1.7819

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0086
$\Delta\theta_{C,A'}$	-0.0004
$\Delta\theta_{g,d}$	-0.0039
$\Delta\theta_{g,F}$	-0.0034
$\Delta\theta_{i,g}$	-0.0249

Thermal Properties	
Strain Point StP (°C)	588
Annealing Point AP (°C)	614
Transformation Temperature Tg (°C)	630
Yield Point At (°C)	661
Softening Point SP (°C)	701
Expansion Coefficients (-30~+70°C)	80
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	94
Thermal Conductivity $\lambda$ W/(m·K)	0.655

Coloring			
$\lambda_{80}$	385	$\lambda_5$	340
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	368	$\lambda_{0.05}$	338

CCI		
B	G	R
0.00	0.65	0.63

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.10
350	0.41
360	0.69
370	0.83
380	0.916
390	0.951
400	0.968
420	0.982
440	0.987
460	0.990
480	0.993
500	0.995
550	0.997
600	0.996
650	0.996
700	0.997
800	0.999
900	0.997
1000	0.997
1200	0.996
1400	0.994
1600	0.992
1800	0.983
2000	0.966
2200	0.920
2400	0.77

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-0.8	-0.5	-0.5	-0.3	-0.1	0.3	0.8
-20~ 0	-0.8	-0.4	-0.4	-0.3	0.0	0.4	0.9
0~20	-0.8	-0.4	-0.4	-0.2	0.0	0.5	1.0
20~40	-0.8	-0.4	-0.3	-0.2	0.1	0.6	1.1
40~60	-0.8	-0.3	-0.3	-0.1	0.1	0.7	1.2
60~80	-0.8	-0.3	-0.3	-0.1	0.2	0.7	1.3

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.25
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.