

# S-LAH60

Code(d) **834372**

Code(e) **839369**

Refractive Index $n_d$	<b>1.83400</b> 1.834000	Abbe Number $\nu_d$	<b>37.16</b>	Dispersion $n_F-n_C$	<b>0.022443</b>
Refractive Index $n_e$	1.839323	Abbe Number $\nu_e$	36.92	Dispersion $n_F-n_{C'}$	0.022736

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.78473
$n_{1970}$	1.97009	1.79205
$n_{1530}$	1.52958	1.80018
$n_{1129}$	1.12864	1.80807
$n_t$	1.01398	1.81094
$n_s$	0.85211	1.81627
$n_{A'}$	0.76819	1.82009
$n_r$	0.70652	1.82370
$n_C$	0.65627	1.82738
$n_{C'}$	0.64385	1.82842
$n_{\text{He-Ne}}$	0.6328	1.82939
$n_D$	0.58929	1.83380
$n_d$	0.58756	1.83400
$n_e$	0.54607	1.83932
$n_F$	0.48613	1.84982
$n_{F'}$	0.47999	1.85115
$n_{\text{He-Cd}}$	0.44157	1.86103
$n_g$	0.435835	1.86278
$n_h$	0.404656	1.87396
$n_i$	0.365015	1.89403

Constants of Dispersion Formula	
$A_1$	1.95243469E+00
$A_2$	3.07100210E-01
$A_3$	1.56578094E+00
$B_1$	1.06442437E-02
$B_2$	4.56735302E-02
$B_3$	1.10281410E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	4.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1248
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	481
Poisson's Ratio $\sigma$	0.296
Knoop Hardness Hk[Class]	670   7
Abrasion Aa	79
Photoelastic Constant $\beta$ nm/(cm· $10^5\text{Pa}$ )	2.15

Partial Dispersions	
$n_C-n_t$	0.016437
$n_C-n_{A'}$	0.007283
$n_d-n_C$	0.006624
$n_e-n_C$	0.011947
$n_g-n_d$	0.028781
$n_g-n_F$	0.012962
$n_h-n_g$	0.011183
$n_i-n_g$	0.031249
$n_C-n_t$	0.017477
$n_e-n_{C'}$	0.010907
$n_F-n_e$	0.011829
$n_i-n_{F'}$	0.042878

Relative Partial Dispersions	
$\theta_{C,t}$	0.7324
$\theta_{C,A'}$	0.3245
$\theta_{d,C}$	0.2951
$\theta_{e,C}$	0.5323
$\theta_{g,d}$	1.2824
$\theta_{g,F}$	0.5776
$\theta_{h,g}$	0.4983
$\theta_{i,g}$	1.3924
$\theta'_{C,t}$	0.7687
$\theta'_{e,C'}$	0.4797
$\theta'_{F,e}$	0.5203
$\theta'_{i,F'}$	1.8859

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0114
$\Delta\theta_{C,A'}$	0.0036
$\Delta\theta_{g,d}$	-0.0051
$\Delta\theta_{g,F}$	-0.0037
$\Delta\theta_{i,g}$	-0.0215

Thermal Properties	
Strain Point StP (°C)	
Annealing Point AP (°C)	
Transformation Temperature Tg (°C)	612
Yield Point At (°C)	632
Softening Point SP (°C)	676
Expansion Coefficients (-30~+70°C)	56
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	71
Thermal Conductivity $\lambda$ W/(m·K)	0.872

Coloring			
$\lambda_{80}$	420	$\lambda_5$	340
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	377	$\lambda_{0.05}$	341

CCI		
B	G	R
0.00	1.57	1.66

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.03
350	0.27
360	0.54
370	0.72
380	0.83
390	0.88
400	0.924
420	0.957
440	0.972
460	0.980
480	0.986
500	0.990
550	0.996
600	0.997
650	0.997
700	0.998
800	0.999
900	0.998
1000	0.997
1200	0.996
1400	0.993
1600	0.992
1800	0.984
2000	0.964
2200	0.906
2400	0.72

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	6.0	6.9	6.9	7.3	7.6	8.4	9.3
-20~ 0	6.3	7.0	7.1	7.4	7.7	8.6	9.6
0~20	6.3	7.1	7.2	7.6	7.9	8.8	9.8
20~40	6.4	7.3	7.3	7.7	8.1	9.0	10.1
40~60	6.6	7.4	7.5	7.9	8.3	9.3	10.3
60~80	6.7	7.5	7.6	8.0	8.4	9.5	10.6

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.43
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.