

# S-LAH60V

Code(d) **834372**

Code(e) **839370**

Refractive Index $n_d$	<b>1.83400</b> 1.834000	Abbe Number $\nu_d$	<b>37.21</b>	Dispersion $n_F-n_C$	<b>0.022416</b>
Refractive Index $n_e$	1.839313	Abbe Number $\nu_e$	36.95	Dispersion $n_F-n_C'$	0.022716

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.78608
$n_{1970}$	1.97009	1.79301
$n_{1530}$	1.52958	1.80073
$n_{1129}$	1.12864	1.80833
$n_t$	1.01398	1.81114
$n_s$	0.85211	1.81638
$n_{A'}$	0.76819	1.82016
$n_r$	0.70652	1.82374
$n_C$	0.65627	1.82740
$n_{C'}$	0.64385	1.82844
$n_{\text{He-Ne}}$	0.6328	1.82941
$n_D$	0.58929	1.83380
$n_d$	0.58756	1.83400
$n_e$	0.54607	1.83931
$n_F$	0.48613	1.84981
$n_{F'}$	0.47999	1.85115
$n_{\text{He-Cd}}$	0.44157	1.86107
$n_g$	0.435835	1.86283
$n_h$	0.404656	1.87412
$n_i$	0.365015	1.89456

Constants of Dispersion Formula	
$A_1$	2.05081962E+00
$A_2$	2.08475257E-01
$A_3$	1.31486394E+00
$B_1$	1.16035991E-02
$B_2$	5.26489359E-02
$B_3$	9.93806500E+01

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	51.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1114
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	445
Poisson's Ratio $\sigma$	0.253
Knoop Hardness Hk[Class]	660   7
Abrasion Aa	61
Photoelastic Constant $\beta$ nm/(cm $\cdot$ 10 $^5$ Pa)	2.10

Partial Dispersions	
$n_C-n_t$	0.016264
$n_C-n_{A'}$	0.007235
$n_d-n_C$	0.006601
$n_e-n_C$	0.011914
$n_g-n_d$	0.028833
$n_g-n_F$	0.013018
$n_h-n_g$	0.011289
$n_i-n_g$	0.031732
$n_C-n_t$	0.017300
$n_e-n_{C'}$	0.010878
$n_F-n_e$	0.011838
$n_i-n_{F'}$	0.043414

Relative Partial Dispersions	
$\theta_{C,t}$	0.7256
$\theta_{C,A'}$	0.3228
$\theta_{d,C}$	0.2945
$\theta_{e,C}$	0.5315
$\theta_{g,d}$	1.2863
$\theta_{g,F}$	0.5807
$\theta_{h,g}$	0.5036
$\theta_{i,g}$	1.4156
$\theta'_{C,t}$	0.7616
$\theta'_{e,C'}$	0.4789
$\theta'_{F,e}$	0.5211
$\theta'_{i,F'}$	1.9112

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0043
$\Delta\theta_{C,A'}$	0.0018
$\Delta\theta_{g,d}$	-0.0011
$\Delta\theta_{g,F}$	-0.0006
$\Delta\theta_{i,g}$	0.0022

Thermal Properties	
Strain Point StP ( $^{\circ}\text{C}$ )	570
Annealing Point AP ( $^{\circ}\text{C}$ )	588
Transformation Temperature Tg ( $^{\circ}\text{C}$ )	603
Yield Point At ( $^{\circ}\text{C}$ )	635
Softening Point SP ( $^{\circ}\text{C}$ )	669
Expansion Coefficients (-30~+70 $^{\circ}\text{C}$ )	58
$\alpha$ ( $10^{-7}/^{\circ}\text{C}$ ) (+100~+300 $^{\circ}\text{C}$ )	73
Thermal Conductivity $\lambda$ W/(m $\cdot$ K)	0.880

Coloring			
$\lambda_{80}$	430	$\lambda_5$	350
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	383	$\lambda_{0.05}$	350

CCI		
B	G	R
0.00	1.88	1.93

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.05
360	0.29
370	0.59
380	0.77
390	0.86
400	0.909
420	0.951
440	0.968
460	0.979
480	0.986
500	0.991
550	0.996
600	0.996
650	0.996
700	0.997
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.996
1600	0.993
1800	0.984
2000	0.961
2200	0.905
2400	0.72

Temperature Coefficients of Refractive Index							
Range of Temperature ( $^{\circ}\text{C}$ )	$\Delta n/\Delta T$ relative ( $10^{-6}/^{\circ}\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	7.4	8.4	8.5	8.8	9.2	10.1	11.2
-20~ 0	7.5	8.5	8.6	8.9	9.4	10.4	11.5
0~20	7.5	8.6	8.7	9.0	9.5	10.5	11.7
20~40	7.5	8.7	8.7	9.1	9.5	10.6	11.9
40~60	7.7	8.8	8.9	9.2	9.7	10.8	12.1
60~80	7.8	9.0	9.1	9.5	10.0	11.2	12.5

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.