

# S-LAH55VS

Code(d) **835427**

Code(e) **839425**

Refractive Index $n_d$	<b>1.83481</b> 1.834810	Abbe Number $\nu_d$	<b>42.74</b>	Dispersion $n_F-n_C$	<b>0.019531</b>
Refractive Index $n_e$	1.839452	Abbe Number $\nu_e$	42.49	Dispersion $n_F-n_{C'}$	0.019756

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.78945
$n_{1970}$	1.97009	1.79652
$n_{1530}$	1.52958	1.80427
$n_{1129}$	1.12864	1.81164
$n_t$	1.01398	1.81428
$n_s$	0.85211	1.81910
$n_{A'}$	0.76819	1.82253
$n_r$	0.70652	1.82574
$n_C$	0.65627	1.82899
$n_{C'}$	0.64385	1.82991
$n_{\text{He-Ne}}$	0.6328	1.83077
$n_D$	0.58929	1.83464
$n_d$	0.58756	1.83481
$n_e$	0.54607	1.83945
$n_F$	0.48613	1.84852
$n_{F'}$	0.47999	1.84966
$n_{\text{He-Cd}}$	0.44157	1.85807
$n_g$	0.435835	1.85955
$n_h$	0.404656	1.86892
$n_i$	0.365015	1.88534

Constants of Dispersion Formula	
$A_1$	1.92591095E+00
$A_2$	3.48953460E-01
$A_3$	1.42230744E+00
$B_1$	9.61152490E-03
$B_2$	3.65132980E-02
$B_3$	1.03364090E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	122.3
Rigidity Modulus G (GPa)	47.2
Poisson's Ratio $\sigma$	0.297
Knoop Hardness Hk(Class)	730   7
Abrasion Aa	60

Partial Dispersions	
$n_C-n_t$	0.014712
$n_C-n_{A'}$	0.006462
$n_d-n_C$	0.005822
$n_e-n_C$	0.010464
$n_g-n_d$	0.024741
$n_g-n_F$	0.011032
$n_h-n_g$	0.009365
$n_i-n_g$	0.025786
$n_C-n_t$	0.015630
$n_e-n_{C'}$	0.009546
$n_{F'}-n_e$	0.010210
$n_i-n_{F'}$	0.035675

Relative Partial Dispersions	
$\theta_{C,t}$	0.7533
$\theta_{C,A'}$	0.3309
$\theta_{d,C}$	0.2981
$\theta_{e,C}$	0.5358
$\theta_{g,d}$	1.2668
$\theta_{g,F}$	0.5648
$\theta_{h,g}$	0.4795
$\theta_{i,g}$	1.3203
$\theta'_{C,t}$	0.7912
$\theta'_{e,C'}$	0.4832
$\theta'_{F',e}$	0.5168
$\theta'_{i,F'}$	1.8058

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0061
$\Delta\theta_{C,A'}$	0.0032
$\Delta\theta_{g,d}$	-0.0091
$\Delta\theta_{g,F}$	-0.0075
$\Delta\theta_{i,g}$	-0.0468

Thermal Properties	
Strain Point StP (°C)	639
Annealing Point AP (°C)	667
Transformation Temperature Tg (°C)	677
Yield Point At (°C)	709
Softening Point SP (°C)	738
Expansion Coefficients (-30~+70°C)	63
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	77
Thermal Conductivity $\lambda$ W/(m·K)	0.864

Coloring			
$\lambda_{80}$	395	$\lambda_5$	320
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	356	$\lambda_{0.05}$	319

CCI		
B	G	R
0.00	0.65	0.68

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	0.06
330	0.28
340	0.55
350	0.73
360	0.84
370	0.90
380	0.936
390	0.957
400	0.970
420	0.982
440	0.988
460	0.991
480	0.994
500	0.996
550	0.999
600	0.999
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.988
2000	0.968
2200	0.920
2400	0.74

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative ( $10^{-6} \text{K}^{-1}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.9	4.6	4.6	4.9	5.2	5.8	6.5
-20~ 0	3.8	4.6	4.7	4.9	5.2	5.9	6.6
0~20	3.8	4.6	4.7	4.9	5.2	6.0	6.7
20~40	3.8	4.6	4.7	5.0	5.3	6.0	6.8
40~60	3.9	4.8	4.8	5.1	5.4	6.2	7.0
60~80	4.0	4.9	5.0	5.3	5.6	6.4	7.3

Other Properties	
Photoelastic Constant $\beta$ nm/(cm $\cdot$ 10 $^5$ Pa)	1.31
Specific Gravity d	4.58
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.