

# S-LAH71

Code(d) **850323**

Code(e) **856320**

Refractive Index $n_d$	<b>1.85026</b> 1.850259	Abbe Number $\nu_d$	<b>32.27</b>	Dispersion $n_F-n_C$	<b>0.026349</b>
Refractive Index $n_e$	1.856493	Abbe Number $\nu_e$	32.03	Dispersion $n_F-n_{C'}$	0.026744

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.80095
$n_{1970}$	1.97009	1.80685
$n_{1530}$	1.52958	1.81380
$n_{1129}$	1.12864	1.82133
$n_t$	1.01398	1.82429
$n_s$	0.85211	1.83004
$n_{A'}$	0.76819	1.83430
$n_r$	0.70652	1.83838
$n_C$	0.65627	1.84259
$n_{C'}$	0.64385	1.84378
$n_{\text{He-Ne}}$	0.6328	1.84491
$n_D$	0.58929	1.85003
$n_d$	0.58756	1.85026
$n_e$	0.54607	1.85649
$n_F$	0.48613	1.86893
$n_{F'}$	0.47999	1.87053
$n_{\text{He-Cd}}$	0.44157	1.88243
$n_g$	0.435835	1.88456
$n_h$	0.404656	1.89827
$n_i$	0.365015	

Constants of Dispersion Formula	
$A_1$	1.98280031E+00
$A_2$	3.16758450E-01
$A_3$	2.44472646E+00
$B_1$	1.18987459E-02
$B_2$	5.27156001E-02
$B_3$	2.13220697E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	2.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	110.0
Rigidity Modulus G (GPa)	42.9
Poisson's Ratio $\sigma$	0.281
Knoop Hardness Hk(Class)	590   6
Abrasion Aa	136

Partial Dispersions	
$n_C-n_t$	0.018292
$n_C-n_{A'}$	0.008288
$n_d-n_C$	0.007673
$n_e-n_C$	0.013907
$n_g-n_d$	0.034299
$n_g-n_F$	0.015623
$n_h-n_g$	0.013716
$n_i-n_g$	
$n_C-n_t$	0.019490
$n_e-n_{C'}$	0.012709
$n_{F'}-n_e$	0.014035
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6942
$\theta_{C,A'}$	0.3145
$\theta_{d,C}$	0.2912
$\theta_{e,C}$	0.5278
$\theta_{g,d}$	1.3017
$\theta_{g,F}$	0.5929
$\theta_{h,g}$	0.5206
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7288
$\theta'_{e,C'}$	0.4752
$\theta'_{F',e}$	0.5248
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0039
$\Delta\theta_{C,A'}$	-0.0005
$\Delta\theta_{g,d}$	0.0040
$\Delta\theta_{g,F}$	0.0036
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	656
Annealing Point AP (°C)	685
Transformation Temperature Tg (°C)	707
Yield Point At (°C)	752
Softening Point SP (°C)	802
Expansion Coefficients (-30~+70°C)	77
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	91
Thermal Conductivity $\lambda$ W/(m·K)	0.874

Coloring			
$\lambda_{80}$		$\lambda_5$	370
$\lambda_{70}$	425		

Internal transmission			
$\lambda_{0.80}$	417	$\lambda_{0.05}$	364

CCI		
B	G	R
0.00	6.64	6.89

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	0.01
370	0.11
380	0.29
390	0.49
400	0.65
420	0.83
440	0.913
460	0.945
480	0.963
500	0.976
550	0.992
600	0.995
650	0.995
700	0.997
800	0.998
900	0.999
1000	0.999
1200	0.999
1400	0.999
1600	0.998
1800	0.993
2000	0.989
2200	0.982
2400	0.959

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	1.9	2.9	2.9	3.3	3.7	4.7	5.8
-20~ 0	2.0	3.0	3.0	3.4	3.8	4.9	6.0
0~20	2.0	3.0	3.1	3.5	3.9	5.0	6.3
20~40	2.0	3.1	3.2	3.6	4.1	5.2	6.5
40~60	2.0	3.2	3.3	3.7	4.2	5.4	6.8
60~80	2.1	3.3	3.4	3.8	4.3	5.6	7.0

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	1.52
Specific Gravity d	4.36
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.