

# L-LAH53

Code(d) **806409**

Code(e) **811407**

Refractive Index $n_d$	<b>1.80625</b> 1.806250	Abbe Number $\nu_d$	<b>40.91</b>	Dispersion $n_F-n_C$	<b>0.019709</b>
Refractive Index $n_e$	1.810931	Abbe Number $\nu_e$	40.66	Dispersion $n_F-n_{C'}$	0.019946

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.76094
$n_{1970}$	1.97009	1.76797
$n_{1530}$	1.52958	1.77569
$n_{1129}$	1.12864	1.78303
$n_t$	1.01398	1.78566
$n_s$	0.85211	1.79048
$n_{A'}$	0.76819	1.79391
$n_f$	0.70652	1.79713
$n_C$	0.65627	1.80039
$n_{C'}$	0.64385	1.80132
$n_{\text{He-Ne}}$	0.6328	1.80218
$n_D$	0.58929	1.80608
$n_d$	0.58756	1.80625
$n_e$	0.54607	1.81093
$n_F$	0.48613	1.82010
$n_{F'}$	0.47999	1.82126
$n_{\text{He-Cd}}$	0.44157	1.82981
$n_g$	0.435835	1.83132
$n_h$	0.404656	1.84090
$n_i$	0.365015	1.85783

Constants of Dispersion Formula	
$A_1$	1.87409991E+00
$A_2$	2.97921402E-01
$A_3$	1.35064285E+00
$B_1$	9.93318344E-03
$B_2$	4.05501825E-02
$B_3$	1.00502200E+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	51.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	115.1
Rigidity Modulus G (GPa)	44.3
Poisson's Ratio $\sigma$	0.298
Knoop Hardness Hk(Class)	660 * 7
Abrasion Aa	83

Partial Dispersions	
$n_C-n_t$	0.014736
$n_C-n_{A'}$	0.006484
$n_d-n_C$	0.005856
$n_e-n_C$	0.010537
$n_g-n_d$	0.025070
$n_g-n_F$	0.011217
$n_h-n_g$	0.009578
$n_i-n_g$	0.026514
$n_C-n_t$	0.015658
$n_e-n_{C'}$	0.009615
$n_{F'}-n_e$	0.010331
$n_i-n_{F'}$	0.036572

Relative Partial Dispersions	
$\theta_{C,t}$	0.7477
$\theta_{C,A'}$	0.3290
$\theta_{d,C}$	0.2971
$\theta_{e,C}$	0.5346
$\theta_{g,d}$	1.2720
$\theta_{g,F}$	0.5691
$\theta_{h,g}$	0.4860
$\theta_{i,g}$	1.3453
$\theta'_{C,t}$	0.7850
$\theta'_{e,C}$	0.4821
$\theta'_{F',e}$	0.5179
$\theta'_{i,F'}$	1.8336

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0091
$\Delta \theta_{C,A'}$	0.0036
$\Delta \theta_{g,d}$	-0.0077
$\Delta \theta_{g,F}$	-0.0062
$\Delta \theta_{i,g}$	-0.0372

Thermal Properties	
Strain Point StP (°C)	534
Annealing Point AP (°C)	558
Transformation Temperature Tg (°C)	574
Yield Point At (°C)	607
Softening Point SP (°C)	646
Expansion Coefficients (-30~+70°C)	59
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	72
Thermal Conductivity $\lambda$ W/(m·K)	0.862

Coloring			
$\lambda_{80}$	400	$\lambda_5$	335
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	367	$\lambda_{0.05}$	338

CCI		
B	G	R
0.00	0.88	0.94

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.16
350	0.47
360	0.70
370	0.83
380	0.89
390	0.929
400	0.950
420	0.970
440	0.979
460	0.985
480	0.989
500	0.993
550	0.997
600	0.997
650	0.998
700	0.998
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.988
2000	0.969
2200	0.919
2400	0.73

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	6.5	7.4	7.4	7.7	8.0	8.8	9.6
-20~ 0	6.6	7.4	7.5	7.7	8.1	8.9	9.7
0~20	6.6	7.5	7.5	7.8	8.2	9.0	9.9
20~40	6.5	7.5	7.5	7.8	8.2	9.1	10.0
40~60	6.6	7.6	7.7	8.0	8.3	9.2	10.2
60~80	6.8	7.8	7.9	8.2	8.6	9.5	10.5

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	1.88
Specific Gravity d	4.49
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.