

# L-LAH84

Code(d) **809404**

Code(e) **813402**

Refractive Index $n_d$	<b>1.80860</b>	Abbe Number $v_d$	<b>40.4</b>	Dispersion $n_F-n_C$	<b>0.02001</b>
	1.808600		40.42		0.020004
Refractive Index $n_e$	1.813352	Abbe Number $v_e$	40.17	Dispersion $n_F-n_C'$	0.020247

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.76414
$n_{1970}$	1.97009	1.77076
$n_{1530}$	1.52958	1.77809
$n_{1129}$	1.12864	1.78523
$n_t$	1.01398	1.78783
$n_s$	0.85211	1.79265
$n_{A'}$	0.76819	1.79610
$n_r$	0.70652	1.79935
$n_C$	0.65627	1.80266
$n_{C'}$	0.64385	1.80360
$n_{He-Ne}$	0.6328	1.80447
$n_D$	0.58929	1.80842
$n_d$	0.58756	1.80860
$n_e$	0.54607	1.81335
$n_F$	0.48613	1.82267
$n_{F'}$	0.47999	1.82384
$n_{He-Cd}$	0.44157	1.83252
$n_g$	0.435835	1.83405
$n_h$	0.404656	1.84376
$n_i$	0.365015	1.86089

Partial Dispersions	
$n_C-n_t$	0.014833
$n_C-n_{A'}$	0.006559
$n_d-n_C$	0.005939
$n_e-n_C$	0.010691
$n_g-n_d$	0.025449
$n_g-n_F$	0.011384
$n_h-n_g$	0.009709
$n_i-n_g$	0.026840
$n_C-n_t$	0.015767
$n_e-n_{C'}$	0.009757
$n_{F'}-n_e$	0.010490
$n_i-n_{F'}$	0.037047

Relative Partial Dispersions	
$\theta_{C,t}$	0.7415
$\theta_{C,A'}$	0.3279
$\theta_{d,C}$	0.2969
$\theta_{e,C}$	0.5344
$\theta_{g,d}$	1.2722
$\theta_{g,F}$	0.5691
$\theta_{h,g}$	0.4854
$\theta_{i,g}$	1.3417
$\theta'_{C,t}$	0.7787
$\theta'_{e,C'}$	0.4819
$\theta'_{F',e}$	0.5181
$\theta'_{i,F}$	1.8298

Thermal Properties	
Strain Point StP (°C)	
Annealing Point AP (°C)	
Transformation Temperature Tg (°C)	527
Yield Point At (°C)	568
Softening Point SP (°C)	
Expansion Coefficients (-30~+70°C)	64
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	79
Thermal Conductivity k (W/m-K)	0.875

Coloring			
$\lambda_{80}$	40	$\lambda_5$	34
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	0.2
350	0.54
360	0.76
370	0.87
380	0.922
390	0.95
400	0.965
420	0.979
440	0.985
460	0.99
480	0.993
500	0.996
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.998
1600	0.997
1800	0.992
2000	0.975
2200	0.942
2400	0.79

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0052
$\Delta\theta_{C,A'}$	0.0031
$\Delta\theta_{g,d}$	-0.0086
$\Delta\theta_{g,F}$	-0.0070
$\Delta\theta_{i,g}$	-0.0449

Mechanical Properties	
Young's Modulus E (10 <sup>8</sup> N/m <sup>2</sup> )	1116
Rigidity Modulus G (10 <sup>8</sup> N/m <sup>2</sup> )	428
Poisson's Ratio $\sigma$	0.303
Knoop Hardness Hk[Class]	610   6
Abrasion Aa	78
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	2.35

Constants of Dispersion Formula	
A <sub>1</sub>	1.86267109E+00
A <sub>2</sub>	3.15564131E-01
A <sub>3</sub>	1.30716934E+00
B <sub>1</sub>	1.01627115E-02
B <sub>2</sub>	3.94096655E-02
B <sub>3</sub>	1.03774464E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	51.3
Phosphate Resistance PR	2.2

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.62
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 <sup>-6</sup> /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~20	7.2	8.1	8.1	8.4	8.7	9.6	10.4
-20~ 0	7.1	8.1	8.1	8.4	8.8	9.7	10.6
0~20	7.1	8.1	8.2	8.5	8.7	9.8	10.7
20~40	7.1	8.1	8.2	8.5	8.9	9.8	10.8
40~60	7.2	8.2	8.3	8.6	9.0	10.0	11.0
60~80	7.3	8.4	8.5	8.8	9.3	10.3	11.3