L-LAH85V

Code(d) **854404**
Code(e) **859401**

Refractive Index n_d	**1.854 00** 1.854 000	Abbe Number ν_d	**40.38**	Dispersion $n_F - n_C$	**0.021 151**
Refractive Index n_e	1.859 025	Abbe Number ν_e	40.13	Dispersion $n_{F'} - n_{C'}$	0.021 407

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.807 40
n_{1970}	1.970 09	1.814 25
n_{1530}	1.529 58	1.821 88
n_{1129}	1.128 64	1.829 34
n_t	1.013 98	1.832 07
n_s	0.852 11	1.837 14
$n_{A'}$	0.768 19	1.840 79
n_r	0.706 52	1.844 23
n_C	0.656 27	1.847 72
$n_{C'}$	0.643 85	1.848 71
n_{He-Ne}	0.632 8	1.849 64
n_D	0.589 29	1.853 81
n_d	0.587 56	1.854 00
n_e	0.546 07	1.859 03
n_F	0.486 13	1.868 87
$n_{F'}$	0.479 99	1.870 12
n_{He-Cd}	0.441 57	1.879 29
n_g	0.435 835	1.880 90
n_h	0.404 656	1.891 16
n_i	0.365 015	1.909 23

Constants of Dispersion Formula	
A_1	1.974 605 03E+00
A_2	3.619 035 92E-01
A_3	1.384 332 41E+00
B_1	1.018 542 58E-02
B_2	3.848 291 18E-02
B_3	1.037 136 27E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	4
Acid Resistance(Surface) Group SR	3.2
Phosphate Resistance PR	1.0

Mechanical Properties		
Young's Modulus E (GPa)	111.5	
Rigidity Modulus G (GPa)	42.7	
Poisson's Ratio σ	0.306	
Knoop Hardness Hk[Class]	670	7
Abrasion Aa	65	

Partial Dispersions	
$n_C - n_t$	0.015 652
$n_C - n_{A'}$	0.006 929
$n_d - n_C$	0.006 279
$n_e - n_C$	0.011 304
$n_g - n_d$	0.026 903
$n_g - n_F$	0.012 031
$n_h - n_g$	0.010 254
$n_i - n_g$	0.028 327
$n_{C'} - n_t$	0.016 640
$n_e - n_{C'}$	0.010 316
$n_{F'} - n_e$	0.011 091
$n_i - n_{F'}$	0.039 114

Relative Partial Dispersions	
$\theta_{C,t}$	0.740 0
$\theta_{C,A'}$	0.327 6
$\theta_{d,C}$	0.296 9
$\theta_{e,C}$	0.534 4
$\theta_{g,d}$	1.271 9
$\theta_{g,F}$	0.568 8
$\theta_{h,g}$	0.484 8
$\theta_{i,g}$	1.339 3
$\theta'_{C',t}$	0.777 3
$\theta'_{e,C'}$	0.481 9
$\theta'_{F',e}$	0.518 1
$\theta'_{i,F'}$	1.827 2

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.003 9
$\Delta\theta_{C,A'}$	0.002 8
$\Delta\theta_{g,d}$	-0.008 9
$\Delta\theta_{g,F}$	-0.007 3
$\Delta\theta_{i,g}$	-0.047 6

Coloring			
λ_{80}		λ_5	340
λ_{70}	380		

Internal transmission			
$\lambda_{0.80}$	373	$\lambda_{0.05}$	340

CCI		
B	G	R
0.00	1.17	1.20

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	0.05
350	0.30
360	0.58
370	0.77
380	0.86
390	0.915
400	0.944
420	0.971
440	0.981
460	0.987
480	0.992
500	0.995
550	0.999
600	0.999
650	0.999
700	0.999
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.999
1 600	0.998
1 800	0.992
2 000	0.973
2 200	0.933
2 400	0.77

Thermal Properties		
Strain Point StP (℃)		-
Annealing Point AP (℃)		-
Transformation Temperature Tg (℃)		616
Yield Point At (℃)		658
Softening Point SP (℃)		-
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	65
	(100 ℃ ~ 300 ℃)	77
Thermal Conductivity λ (W/(m·K))		0.819

Linear coefficient of thermal expansion	
Temperature range (℃)	α_l (10^{-7} K^{-1})
-100 ~ -90	54
-90 ~ -80	55
-80 ~ -70	55
-70 ~ -60	56
-60 ~ -50	57
-50 ~ -40	58
-40 ~ -30	59
-30 ~ -20	60
-20 ~ -10	61
-10 ~ 0	62
0 ~ 10	63
10 ~ 20	63
20 ~ 30	64
30 ~ 40	65
40 ~ 50	66
50 ~ 60	67
60 ~ 70	67
70 ~ 80	68
80 ~ 90	69
90 ~ 100	70
100 ~ 110	70
110 ~ 120	71
120 ~ 130	72
130 ~ 140	73
140 ~ 150	73
150 ~ 160	74
160 ~ 170	75
170 ~ 180	75
180 ~ 190	76
190 ~ 200	77
200 ~ 210	77
210 ~ 220	78
220 ~ 230	79
230 ~ 240	79
240 ~ 250	80
250 ~ 260	81
260 ~ 270	81
270 ~ 280	82
280 ~ 290	82
290 ~ 300	83

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.83
Specific Gravity d	5.25
Remarks	

Temperature Coefficients of Refractive Index

Range of Temperature (℃)	$\Delta n_{rel}/\Delta T$ (10^{-6} K^{-1})											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	4.8	5.1	5.6	5.8	5.8	6.1	6.3	7.0	7.1	7.7	8.5	9.9
-60 ~ -40	4.6	4.9	5.5	5.6	5.7	6.0	6.2	6.8	6.9	7.7	8.4	10.0
-40 ~ -20	4.5	4.9	5.4	5.6	5.6	5.9	6.2	6.9	7.0	7.7	8.5	10.2
-20 ~ 0	4.6	4.9	5.4	5.6	5.7	6.1	6.4	7.0	7.1	7.9	8.7	10.4
0 ~ 20	4.6	4.9	5.5	5.7	5.7	6.2	6.5	7.2	7.2	8.1	8.9	10.8
20 ~ 40	4.7	5.0	5.6	5.8	5.9	6.2	6.6	7.3	7.4	8.3	9.2	11.1
40 ~ 60	4.8	5.1	5.8	6.0	6.0	6.4	6.7	7.5	7.6	8.6	9.5	11.4
60 ~ 80	4.9	5.2	6.0	6.2	6.2	6.6	7.0	7.8	7.9	8.8	9.8	11.8
80 ~ 100	5.0	5.4	6.1	6.3	6.4	6.7	7.1	8.0	8.0	9.1	10.1	12.2
100 ~ 120	5.1	5.5	6.2	6.4	6.5	6.9	7.3	8.1	8.3	9.3	10.5	12.6
120 ~ 140	5.2	5.6	6.3	6.6	6.7	7.1	7.5	8.3	8.5	9.5	10.6	13.0
140 ~ 160	5.2	5.6	6.4	6.7	6.8	7.2	7.6	8.6	8.6	9.8	11.0	13.3
160 ~ 180	5.3	5.7	6.5	6.9	7.0	7.4	7.8	8.8	8.9	10.0	11.2	13.6

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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.