L-LAH94

Code(d) **861371**
Code(e) **867368**

Refractive Index n_d	**1.861 00** 1.861 000	Abbe Number ν_d	**37.10**	Dispersion $n_F - n_C$	**0.023 209**
Refractive Index n_e	1.866 504	Abbe Number ν_e	36.85	Dispersion $n_{F'} - n_{C'}$	0.023 517

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.812 15
n_{1970}	1.970 09	1.819 04
n_{1530}	1.529 58	1.826 77
n_{1129}	1.128 64	1.834 49
n_t	1.013 98	1.837 36
n_s	0.852 11	1.842 76
$n_{A'}$	0.768 19	1.846 67
n_r	0.706 52	1.850 38
n_C	0.656 27	1.854 16
$n_{C'}$	0.643 85	1.855 23
$n_{He\text{-}Ne}$	0.632 8	1.856 24
n_D	0.589 29	1.860 80
n_d	0.587 56	1.861 00
n_e	0.546 07	1.866 50
n_F	0.486 13	1.877 37
$n_{F'}$	0.479 99	1.878 75
$n_{He\text{-}Cd}$	0.441 57	1.888 99
n_g	0.435 835	1.890 80
n_h	0.404 656	1.902 38
n_i	0.365 015	

Constants of Dispersion Formula	
A_1	2.006 214 20E+00
A_2	3.470 298 88E-01
A_3	1.416 883 82E+00
B_1	1.054 992 38E-02
B_2	4.458 450 13E-02
B_3	1.059 952 50E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	2.0

Mechanical Properties		
Young's Modulus E (GPa)	112.1	
Rigidity Modulus G (GPa)	43.0	
Poisson's Ratio σ	0.305	
Knoop Hardness Hk[Class]	650	7
Abrasion Aa	81	

Partial Dispersions	
$n_C - n_t$	0.016 800
$n_C - n_{A'}$	0.007 490
$n_d - n_C$	0.006 839
$n_e - n_C$	0.012 343
$n_g - n_d$	0.029 797
$n_g - n_F$	0.013 427
$n_h - n_g$	0.011 584
$n_i - n_g$	
$n_{C'} - n_t$	0.017 873
$n_e - n_{C'}$	0.011 270
$n_{F'} - n_e$	0.012 247
$n_i - n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.723 9
$\theta_{C,A'}$	0.322 7
$\theta_{d,C}$	0.294 7
$\theta_{e,C}$	0.531 8
$\theta_{g,d}$	1.283 9
$\theta_{g,F}$	0.578 5
$\theta_{h,g}$	0.499 1
$\theta_{i,g}$	
$\theta'_{C,t}$	0.760 0
$\theta'_{e,C'}$	0.479 2
$\theta'_{F,e}$	0.520 8
$\theta'_{i,F'}$	

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.003 2
$\Delta\theta_{C,A'}$	0.001 9
$\Delta\theta_{g,d}$	-0.003 8
$\Delta\theta_{g,F}$	-0.002 9
$\Delta\theta_{i,g}$	

Coloring			
λ_{80}		λ_5	350
λ_{70}	390		

Internal transmission			
$\lambda_{0.80}$	385	$\lambda_{0.05}$	349

CCI		
B	G	R
0.00	1.80	1.88

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	
350	0.06
360	0.31
370	0.58
380	0.75
390	0.85
400	0.908
420	0.957
440	0.975
460	0.983
480	0.989
500	0.993
550	0.998
600	0.998
650	0.999
700	0.999
800	0.999
900	0.998
1 000	0.999
1 200	0.999
1 400	0.997
1 600	0.996
1 800	0.989
2 000	0.970
2 200	0.923
2 400	0.74

Thermal Properties		
Strain Point StP (℃)		560
Annealing Point AP (℃)		583
Transformation Temperature Tg (℃)		595
Yield Point At (℃)		635
Softening Point SP (℃)		664
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	66
	(100 ℃ ~ 300 ℃)	81
Thermal Conductivity λ (W/(m·K))		0.817

Linear coefficient of thermal expansion	
Temperature range (℃)	α_l (10^{-7} K^{-1})
-100 ~ -90	53
-90 ~ -80	54
-80 ~ -70	55
-70 ~ -60	57
-60 ~ -50	58
-50 ~ -40	59
-40 ~ -30	60
-30 ~ -20	61
-20 ~ -10	62
-10 ~ 0	64
0 ~ 10	65
10 ~ 20	66
20 ~ 30	67
30 ~ 40	68
40 ~ 50	69
50 ~ 60	70
60 ~ 70	71
70 ~ 80	72
80 ~ 90	73
90 ~ 100	73
100 ~ 110	74
110 ~ 120	75
120 ~ 130	76
130 ~ 140	77
140 ~ 150	77
150 ~ 160	78
160 ~ 170	79
170 ~ 180	79
180 ~ 190	80
190 ~ 200	81
200 ~ 210	81
210 ~ 220	82
220 ~ 230	82
230 ~ 240	83
240 ~ 250	83
250 ~ 260	84
260 ~ 270	84
270 ~ 280	85
280 ~ 290	85
290 ~ 300	86

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.71
Specific Gravity *d*	4.89
Remarks	

Temperature Coefficients of Refractive Index

Range of Temperature (℃)	Δn_{rel} / ΔT (10^{-6} K^{-1})											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	3.8	4.0	4.6	4.8	4.9	5.2	5.5	6.2	6.3	7.2	8.3	-
-60 ~ -40	3.8	4.1	4.7	4.9	4.9	5.2	5.6	6.3	6.4	7.3	8.4	-
-40 ~ -20	3.8	4.2	4.8	5.0	5.0	5.3	5.7	6.5	6.6	7.5	8.6	-
-20 ~ 0	4.0	4.3	4.9	5.1	5.2	5.6	5.9	6.7	6.8	7.8	8.9	-
0 ~ 20	4.2	4.5	5.1	5.3	5.3	5.8	6.2	6.9	7.1	8.1	9.2	-
20 ~ 40	4.3	4.7	5.3	5.5	5.6	5.9	6.3	7.2	7.3	8.4	9.6	-
40 ~ 60	4.5	4.8	5.4	5.7	5.7	6.1	6.5	7.4	7.6	8.7	9.9	-
60 ~ 80	4.5	4.9	5.7	5.9	6.0	6.3	6.7	7.6	7.7	8.9	10.1	-
80 ~ 100	4.6	5.0	5.7	5.9	6.0	6.4	6.8	7.8	7.9	9.1	10.4	-
100 ~ 120	4.7	5.1	5.8	6.0	6.1	6.5	7.0	7.9	8.0	9.2	10.7	-
120 ~ 140	4.7	5.1	5.8	6.1	6.1	6.6	7.0	8.0	8.1	9.3	10.8	-
140 ~ 160	4.6	5.0	5.8	6.1	6.1	6.6	7.0	8.0	8.1	9.5	10.9	-
160 ~ 180	4.5	4.9	5.8	6.1	6.2	6.6	7.1	8.1	8.2	9.5	11.0	-

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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.