L-LAM60

Code(d) **743493**
Code(e) **747490**

Refractive Index n_d	**1.743 20** 1.743 198	Abbe Number ν_d	**49.29**	Dispersion $n_F - n_C$	**0.015 077**
Refractive Index n_e	1.746 788	Abbe Number ν_e	49.05	Dispersion $n_{F'} - n_{C'}$	0.015 226

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.704 09
n_{1970}	1.970 09	1.710 82
n_{1530}	1.529 58	1.718 04
n_{1129}	1.128 64	1.724 58
n_t	1.013 98	1.726 81
n_s	0.852 11	1.730 78
$n_{A'}$	0.768 19	1.733 54
n_r	0.706 52	1.736 09
n_C	0.656 27	1.738 66
$n_{C'}$	0.643 85	1.739 37
$n_{He\text{-}Ne}$	0.632 8	1.740 05
n_D	0.589 29	1.743 06
n_d	0.587 56	1.743 20
n_e	0.546 07	1.746 79
n_F	0.486 13	1.753 73
$n_{F'}$	0.479 99	1.754 60
$n_{He\text{-}Cd}$	0.441 57	1.760 96
n_g	0.435 835	1.762 07
n_h	0.404 656	1.769 05
n_i	0.365 015	1.781 08

Constants of Dispersion Formula	
A_1	1.475 741 84E+00
A_2	4.961 327 43E-01
A_3	1.237 962 36E+00
B_1	7.369 500 00E-03
B_2	2.518 917 46E-02
B_3	9.803 066 51E+01

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)	114.7	
Rigidity Modulus G (GPa)	44.5	
Poisson's Ratio σ	0.289	
Knoop Hardness Hk[Class]	670	7
Abrasion Aa	92	

Partial Dispersions	
$n_C - n_t$	0.011 847
$n_C - n_{A'}$	0.005 115
$n_d - n_C$	0.004 543
$n_e - n_C$	0.008 133
$n_g - n_d$	0.018 870
$n_g - n_F$	0.008 336
$n_h - n_g$	0.006 984
$n_i - n_g$	0.019 016
$n_{C'} - n_t$	0.012 567
$n_e - n_{C'}$	0.007 413
$n_{F'} - n_e$	0.007 813
$n_i - n_{F'}$	0.026 483

Relative Partial Dispersions	
$\theta_{C,t}$	0.785 8
$\theta_{C,A'}$	0.339 3
$\theta_{d,C}$	0.301 3
$\theta_{e,C}$	0.539 4
$\theta_{g,d}$	1.251 6
$\theta_{g,F}$	0.552 9
$\theta_{h,g}$	0.463 2
$\theta_{i,g}$	1.261 3
$\theta'_{C,t}$	0.825 4
$\theta'_{e,C'}$	0.486 9
$\theta'_{F,e}$	0.513 1
$\theta'_{i,F'}$	1.739 3

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.007 9
$\Delta\theta_{C,A'}$	0.003 7
$\Delta\theta_{g,d}$	-0.010 8
$\Delta\theta_{g,F}$	-0.008 8
$\Delta\theta_{i,g}$	-0.051 0

Coloring			
λ_{80}	370	λ_5	310
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	347	$\lambda_{0.05}$	308

CCI		
B	G	R
0.00	0.37	0.38

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	0.09
320	0.33
330	0.56
340	0.72
350	0.83
360	0.904
370	0.944
380	0.965
390	0.977
400	0.983
420	0.988
440	0.991
460	0.993
480	0.996
500	0.997
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.998
1 600	0.997
1 800	0.991
2 000	0.974
2 200	0.936
2 400	0.75

Thermal Properties		
Strain Point StP (°C)		511
Annealing Point AP (°C)		533
Transformation Temperature Tg (°C)		541
Yield Point At (°C)		587
Softening Point SP (°C)		623
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	75
	(100 °C ~ 300 °C)	92
Thermal Conductivity λ (W/(m·K))		0.876

Linear coefficient of thermal expansion	
Temperature range (°C)	α_l (10^{-7} K^{-1})
-100 ~ -90	58
-90 ~ -80	59
-80 ~ -70	61
-70 ~ -60	63
-60 ~ -50	64
-50 ~ -40	66
-40 ~ -30	67
-30 ~ -20	69
-20 ~ -10	70
-10 ~ 0	71
0 ~ 10	73
10 ~ 20	74
20 ~ 30	75
30 ~ 40	76
40 ~ 50	78
50 ~ 60	79
60 ~ 70	80
70 ~ 80	81
80 ~ 90	82
90 ~ 100	83
100 ~ 110	84
110 ~ 120	85
120 ~ 130	86
130 ~ 140	87
140 ~ 150	88
150 ~ 160	89
160 ~ 170	90
170 ~ 180	91
180 ~ 190	92
190 ~ 200	92
200 ~ 210	93
210 ~ 220	94
220 ~ 230	95
230 ~ 240	95
240 ~ 250	96
250 ~ 260	96
260 ~ 270	97
270 ~ 280	98
280 ~ 290	98
290 ~ 300	99

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.83
Specific Gravity *d*	4.20
Remarks	

Temperature Coefficients of Refractive Index												
Range of Temperature (°C)	Δn_{rel} / ΔT (10^{-6} K^{-1})											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	2.7	2.8	3.2	3.4	3.4	3.6	3.7	4.1	4.1	4.6	5.0	5.9
-60 ~ -40	2.4	2.7	3.0	3.2	3.2	3.4	3.6	4.0	4.1	4.5	4.9	5.8
-40 ~ -20	2.4	2.5	2.9	3.0	3.2	3.4	3.5	3.9	4.0	4.4	4.9	5.8
-20 ~ 0	2.4	2.6	3.0	3.1	3.1	3.3	3.5	4.0	4.1	4.6	5.0	5.9
0 ~ 20	2.4	2.6	3.0	3.1	3.1	3.4	3.6	4.1	4.1	4.6	5.1	6.1
20 ~ 40	2.4	2.6	3.1	3.2	3.2	3.5	3.7	4.1	4.2	4.8	5.3	6.3
40 ~ 60	2.5	2.7	3.1	3.3	3.3	3.5	3.8	4.3	4.4	4.9	5.5	6.5
60 ~ 80	2.6	2.8	3.3	3.4	3.5	3.7	3.9	4.4	4.5	5.0	5.6	6.7
80 ~ 100	2.5	2.8	3.4	3.5	3.6	3.8	4.1	4.6	4.6	5.2	5.8	6.9
100 ~ 120	2.6	2.8	3.3	3.5	3.5	3.8	4.2	4.7	4.8	5.4	6.0	7.1
120 ~ 140	2.6	2.9	3.5	3.7	3.7	4.0	4.3	4.8	4.9	5.5	6.1	7.3
140 ~ 160	2.7	3.0	3.5	3.7	3.7	4.0	4.3	4.8	4.9	5.6	6.2	7.4
160 ~ 180	2.7	3.0	3.5	3.7	3.8	4.0	4.3	4.9	5.0	5.7	6.3	7.6

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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.