S-LAH58

Code(d) **883408**
Code(e) **888405**

Refractive Index n_d	**1.883 00** 1.882 997	Abbe Number ν_d	**40.76**	Dispersion $n_F - n_C$	**0.021 661**
Refractive Index n_e	1.888 146	Abbe Number ν_e	40.52	Dispersion $n_{F'} - n_{C'}$	0.021 919

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.835 90
n_{1970}	1.970 09	1.842 64
n_{1530}	1.529 58	1.850 23
n_{1129}	1.128 64	1.857 76
n_t	1.013 98	1.860 54
n_s	0.852 11	1.865 72
$n_{A'}$	0.768 19	1.869 46
n_r	0.706 52	1.872 98
n_C	0.656 27	1.876 56
$n_{C'}$	0.643 85	1.877 57
$n_{He\text{-}Ne}$	0.632 8	1.878 52
n_D	0.589 29	1.882 81
n_d	0.587 56	1.883 00
n_e	0.546 07	1.888 15
n_F	0.486 13	1.898 22
$n_{F'}$	0.479 99	1.899 49
$n_{He\text{-}Cd}$	0.441 57	1.908 85
n_g	0.435 835	1.910 50
n_h	0.404 656	1.920 92
n_i	0.365 015	1.939 17

Constants of Dispersion Formula	
A_1	1.787 649 64E+00
A_2	6.526 356 00E-01
A_3	1.799 145 64E+00
B_1	8.473 785 36E-03
B_2	3.131 264 08E-02
B_3	1.327 880 01E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1～2
Acid Resistance(Surface) Group SR	2.2
Phosphate Resistance PR	1.0

Mechanical Properties		
Young's Modulus E (GPa)	126.8	
Rigidity Modulus G (GPa)	48.7	
Poisson's Ratio σ	0.301	
Knoop Hardness Hk[Class]	720	7
Abrasion Aa	62	

Partial Dispersions	
$n_C - n_t$	0.016 022
$n_C - n_{A'}$	0.007 103
$n_d - n_C$	0.006 437
$n_e - n_C$	0.011 586
$n_g - n_d$	0.027 500
$n_g - n_F$	0.012 276
$n_h - n_g$	0.010 422
$n_i - n_g$	0.028 677
$n_{C'} - n_t$	0.017 035
$n_e - n_{C'}$	0.010 573
$n_{F'} - n_e$	0.011 346
$n_i - n_{F'}$	0.039 682

Relative Partial Dispersions	
$\theta_{C,t}$	0.739 7
$\theta_{C,A'}$	0.327 9
$\theta_{d,C}$	0.297 2
$\theta_{e,C}$	0.534 9
$\theta_{g,d}$	1.269 6
$\theta_{g,F}$	0.566 7
$\theta_{h,g}$	0.481 1
$\theta_{i,g}$	1.323 9
$\theta'_{C',t}$	0.777 2
$\theta'_{e,C'}$	0.482 4
$\theta'_{F',e}$	0.517 6
$\theta'_{i,F'}$	1.810 4

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.001 8
$\Delta\theta_{C,A'}$	0.002 6
$\Delta\theta_{g,d}$	-0.010 5
$\Delta\theta_{g,F}$	-0.008 8
$\Delta\theta_{i,g}$	-0.059 8

Coloring			
λ_{80}		λ_5	315
λ_{70}	375		

Internal transmission			
$\lambda_{0.80}$	374	$\lambda_{0.05}$	320

CCI		
B	G	R
0.00	1.69	1.75

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	0.05
330	0.17
340	0.34
350	0.51
360	0.66
370	0.77
380	0.84
390	0.89
400	0.924
420	0.951
440	0.965
460	0.974
480	0.982
500	0.988
550	0.995
600	0.995
650	0.995
700	0.995
800	0.995
900	0.995
1 000	0.995
1 200	0.996
1 400	0.996
1 600	0.996
1 800	0.992
2 000	0.980
2 200	0.956
2 400	0.84

Thermal Properties		
Strain Point StP (℃)		666
Annealing Point AP (℃)		714
Transformation Temperature Tg (℃)		737
Yield Point At (℃)		767
Softening Point SP (℃)		803
Expansion Coefficients	(-30 ℃ ~ 70 ℃)	67
α_l (10^{-7} K^{-1})	(100 ℃ ~ 300 ℃)	80
Thermal Conductivity λ (W/(m·K))		0.827

Linear coefficient of thermal expansion	
Temperature range (℃)	α_l (10^{-7} K^{-1})
-100 ～ -90	54
-90 ～ -80	56
-80 ～ -70	57
-70 ～ -60	58
-60 ～ -50	59
-50 ～ -40	60
-40 ～ -30	61
-30 ～ -20	63
-20 ～ -10	64
-10 ～ 0	65
0 ～ 10	66
10 ～ 20	67
20 ～ 30	68
30 ～ 40	69
40 ～ 50	69
50 ～ 60	70
60 ～ 70	71
70 ～ 80	72
80 ～ 90	73
90 ～ 100	74
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	80
200 ～ 210	81
210 ～ 220	81
220 ～ 230	82
230 ～ 240	82
240 ～ 250	83
250 ～ 260	83
260 ～ 270	84
270 ～ 280	84
280 ～ 290	84
290 ～ 300	85

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.30
Specific Gravity *d*	5.52
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	2.4	2.7	3.2	3.4	3.4	3.8	4.0	4.6	4.7	5.3	6.1	7.5
-60 ~ -40	2.3	2.6	3.1	3.3	3.4	3.6	4.0	4.6	4.6	5.3	6.1	7.5
-40 ~ -20	2.3	2.6	3.1	3.3	3.4	3.7	4.0	4.6	4.7	5.4	6.2	7.7
-20 ~ 0	2.4	2.6	3.3	3.5	3.5	3.8	4.1	4.7	4.8	5.5	6.4	7.9
0 ~ 20	2.5	2.7	3.4	3.6	3.6	4.0	4.3	4.9	5.0	5.7	6.6	8.1
20 ~ 40	2.6	2.9	3.5	3.7	3.7	4.1	4.5	5.1	5.2	6.0	6.8	8.4
40 ~ 60	2.7	3.0	3.6	3.8	3.9	4.3	4.5	5.3	5.4	6.2	7.0	8.7
60 ~ 80	2.8	3.2	3.9	4.1	4.1	4.5	4.8	5.5	5.6	6.4	7.3	9.0
80 ~ 100	3.0	3.3	3.9	4.2	4.2	4.7	5.0	5.7	5.8	6.7	7.5	9.2
100 ~ 120	3.1	3.4	4.1	4.3	4.4	4.7	5.1	5.8	5.9	6.9	7.8	9.5
120 ~ 140	3.2	3.5	4.2	4.4	4.5	4.9	5.2	6.0	6.1	7.1	8.0	9.8
140 ~ 160	3.2	3.6	4.3	4.5	4.6	4.9	5.3	6.2	6.3	7.2	8.2	10.0
160 ~ 180	3.3	3.7	4.4	4.7	4.7	5.1	5.5	6.3	6.4	7.3	8.3	10.2

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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.