S-LAL12Q

Code(d) **678553**

Code(e) **681551**

Refractive Index	n_d	**1.67790** 1.677900	Abbe Number	ν_d **55.35**	Dispersion	n_F-n_C **0.012248**
Refractive Index	n_e	1.680821	Abbe Number	ν_e 55.12	Dispersion	$n_{F'}$-$n_{C'}$ 0.012351

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.64108
n_{1970}	1.97009	1.64821
n_{1530}	1.52958	1.65566
n_{1129}	1.12864	1.66200
n_t	1.01398	1.66404
n_s	0.85211	1.66754
$n_{A'}$	0.76819	1.66990
n_r	0.70652	1.67204
n_C	0.65627	1.67417
$n_{C'}$	0.64385	1.67476
n_{He-Ne}	0.6328	1.67532
n_D	0.58929	1.67779
n_d	0.58756	1.67790
n_e	0.54607	1.68082
n_F	0.48613	1.68642
$n_{F'}$	0.47999	1.68712
n_{He-Cd}	0.44157	1.69219
n_g	0.435835	1.69307
n_h	0.404656	1.69860
n_i	0.365015	1.70803

Constants of Dispersion Formula	
A_1	1.09887025E+00
A_2	6.65500482E-01
A_3	1.07183658E+00
B_1	5.38103754E-03
B_2	1.86717709E-02
B_3	8.30816500E+01

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	51.0
Phosphate Resistance PR	3.0

Mechanical Properties		
Young's Modulus E (GPa)	106.8	
Rigidity Modulus G (GPa)	41.4	
Poisson's Ratio σ	0.289	
Knoop Hardness Hk[Class]	700	7
Abrasion Aa	62	

Partial Dispersions	
n_C-n_t	0.010130
n_C-$n_{A'}$	0.004273
n_d-n_C	0.003729
n_e-n_C	0.006650
n_g-n_d	0.015174
n_g-n_F	0.006655
n_h-n_g	0.005527
n_i-n_g	0.014954
n_C-n_t	0.010724
n_e-$n_{C'}$	0.006056
$n_{F'}$-n_e	0.006295
n_i-$n_{F'}$	0.020912

Relative Partial Dispersions	
$\theta_{C,t}$	0.8271
$\theta_{C,A'}$	0.3489
$\theta_{d,C}$	0.3045
$\theta_{e,C}$	0.5429
$\theta_{g,d}$	1.2389
$\theta_{g,F}$	0.5434
$\theta_{h,g}$	0.4513
$\theta_{i,g}$	1.2209
$\theta'_{C',t}$	0.8683
$\theta'_{e,C'}$	0.4903
$\theta'_{F',e}$	0.5097
$\theta'_{i,F'}$	1.6931

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0207
$\Delta\theta_{C,A'}$	0.0059
$\Delta\theta_{g,d}$	-0.0109
$\Delta\theta_{g,F}$	-0.0085
$\Delta\theta_{i,g}$	-0.0406

Thermal Properties		
Strain Point StP (℃)		637
Annealing Point AP (℃)		670
Transformation Temperature Tg (℃)		689
Yield Point At (℃)		717
Softening Point SP (℃)		750
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	49
	(+100~+300℃)	59
Thermal Conductivity λ W/(m·K)		0.914

Coloring			
λ_{80}	380	λ_5	310
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	363	$\lambda_{0.05}$	308

CCI		
B	G	R
0.00	0.53	0.50

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	0.01
310	0.06
320	0.15
330	0.30
340	0.48
350	0.64
360	0.77
370	0.86
380	0.917
390	0.950
400	0.969
420	0.987
440	0.993
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.998
700	0.998
800	0.998
900	0.996
1000	0.996
1200	0.996
1400	0.981
1600	0.988
1800	0.975
2000	0.944
2200	0.82
2400	0.59

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}$$K^{-1}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	5.3	5.7	5.7	5.8	6.0	6.3	6.7
-20~ 0	5.3	5.7	5.8	5.9	6.1	6.4	6.8
0~20	5.3	5.8	5.8	5.9	6.1	6.5	6.9
20~40	5.3	5.8	5.8	6.0	6.1	6.5	6.9
40~60	5.4	5.9	5.9	6.0	6.2	6.6	7.0
60~80	5.6	6.1	6.1	6.2	6.4	6.8	7.3

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	1.97
Specific Gravity d	3.59
Remarks	

OHARA 24-01

※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.