L-BAL42P

Code(d) **586592**
Code(e) **588590**

Refractive Index	n_d	**1.58593** 1.585930	Abbe Number	ν_d	**59.24**	Dispersion	n_F-n_C **0.009890**
Refractive Index	n_e	1.588288	Abbe Number	ν_e	58.99	Dispersion	$n_{F'}$-$n_{C'}$ 0.009972

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.55671
n_{1970}	1.97009	1.56222
n_{1530}	1.52958	1.56806
n_{1129}	1.12864	1.57311
n_t	1.01398	1.57475
n_s	0.85211	1.57757
$n_{A'}$	0.76819	1.57947
n_r	0.70652	1.58120
n_C	0.65627	1.58292
$n_{C'}$	0.64385	1.58340
$n_{He\text{-}Ne}$	0.6328	1.58385
n_D	0.58929	1.58584
n_d	0.58756	1.58593
n_e	0.54607	1.58829
n_F	0.48613	1.59281
$n_{F'}$	0.47999	1.59337
$n_{He\text{-}Cd}$	0.44157	1.59746
n_g	0.435835	1.59817
n_h	0.404656	1.60262
n_i	0.365015	1.61020

Constants of Dispersion Formula	
A_1	8.81090017E-01
A_2	5.95038859E-01
A_3	1.22582098E+00
B_1	1.48496655E-02
B_2	1.63577371E-03
B_3	1.25113720E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	1～2
Acid Resistance(Surface) Group SR	5.2
Phosphate Resistance PR	2.0

Mechanical Properties		
Young's Modulus E (GPa)	89.1	
Rigidity Modulus G (GPa)	35.7	
Poisson's Ratio σ	0.247	
Knoop Hardness Hk[Class]	590	6
Abrasion Aa	117	

Partial Dispersions	
n_C-n_t	0.008169
n_C-$n_{A'}$	0.003449
n_d-n_C	0.003013
n_e-n_C	0.005371
n_g-n_d	0.012242
n_g-n_F	0.005365
n_h-n_g	0.004451
n_i-n_g	0.012026
n_C-n_t	0.008649
n_e-$n_{C'}$	0.004891
$n_{F'}$-n_e	0.005081
n_i-$n_{F'}$	0.016829

Relative Partial Dispersions	
$\theta_{C,t}$	0.8260
$\theta_{C,A'}$	0.3487
$\theta_{d,C}$	0.3047
$\theta_{e,C}$	0.5431
$\theta_{g,d}$	1.2378
$\theta_{g,F}$	0.5425
$\theta_{h,g}$	0.4501
$\theta_{i,g}$	1.2160
$\theta'_{C',t}$	0.8673
$\theta'_{e,C'}$	0.4905
$\theta'_{F',e}$	0.5095
$\theta'_{i,F'}$	1.6876

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0014
$\Delta\theta_{C,A'}$	0.0010
$\Delta\theta_{g,d}$	-0.0039
$\Delta\theta_{g,F}$	-0.0031
$\Delta\theta_{i,g}$	-0.0130

Thermal Properties		
Strain Point StP (℃)		467
Annealing Point AP (℃)		494
Transformation Temperature Tg (℃)		506
Yield Point At (℃)		538
Softening Point SP (℃)		607
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	72
	(+100~+300℃)	88
Thermal Conductivity λ W/(m·K)		1.03

Coloring			
λ_{80}	340	λ_5	285
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	326	$\lambda_{0.05}$	282

CCI		
B	G	R
0.00	0.17	0.14

Internal Transmittance	
λ(nm)	τ 10mm
280	0.03
290	0.14
300	0.32
310	0.55
320	0.73
330	0.85
340	0.924
350	0.960
360	0.978
370	0.987
380	0.992
390	0.994
400	0.995
420	0.996
440	0.996
460	0.996
480	0.998
500	0.998
550	0.999
600	0.999
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.988
1600	0.993
1800	0.983
2000	0.968
2200	0.901
2400	0.83

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	3.3	3.7	3.7	3.8	4.0	4.3	4.6
-20~ 0	3.2	3.6	3.6	3.8	3.9	4.3	4.6
0~20	3.1	3.6	3.6	3.7	3.9	4.2	4.6
20~40	3.1	3.5	3.6	3.7	3.9	4.2	4.6
40~60	3.1	3.6	3.6	3.7	3.9	4.3	4.6
60~80	3.2	3.7	3.7	3.8	4.0	4.4	4.8

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	2.19
Specific Gravity d	3.05
Remarks	

OHARA 23-05

※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.