

# L-BAL42

Code(d) **583594**

Code(e) **585591**

Refractive Index $n_d$	<b>1.58313</b>	Abbe Number $\nu_d$	<b>59.38</b>	Dispersion $n_F-n_C$	<b>0.009820</b>
	1.583126				
Refractive Index $n_e$	1.585468	Abbe Number $\nu_e$	59.13	Dispersion $n_F-n_C'$	0.009901

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.55402
$n_{1970}$	1.97009	1.55949
$n_{1530}$	1.52958	1.56533
$n_{1129}$	1.12864	1.57038
$n_t$	1.01398	1.57201
$n_s$	0.85211	1.57482
$n_{A'}$	0.76819	1.57671
$n_f$	0.70652	1.57843
$n_C$	0.65627	1.58013
$n_{C'}$	0.64385	1.58061
$n_{\text{He-Ne}}$	0.6328	1.58106
$n_D$	0.58929	1.58304
$n_d$	0.58756	1.58313
$n_e$	0.54607	1.58547
$n_F$	0.48613	1.58995
$n_{F'}$	0.47999	1.59051
$n_{\text{He-Cd}}$	0.44157	1.59457
$n_g$	0.435835	1.59528
$n_h$	0.404656	1.59969
$n_i$	0.365015	1.60719

Constants of Dispersion Formula	
$A_1$	1.39528097E+00
$A_2$	7.25519520E-02
$A_3$	1.66335848E+00
$B_1$	1.11862030E-02
$B_2$	-2.46748575E-02
$B_3$	1.67717958E+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 $\sigma$	0.247
Knoop Hardness Hk(Class)	590   6
Abrasion Aa	117

Partial Dispersions	
$n_C-n_t$	0.008122
$n_C-n_{A'}$	0.003426
$n_d-n_C$	0.002992
$n_e-n_C$	0.005334
$n_g-n_d$	0.012153
$n_g-n_F$	0.005325
$n_h-n_g$	0.004412
$n_i-n_g$	0.011910
$n_C-n_t$	0.008599
$n_e-n_{C'}$	0.004857
$n_{F'}-n_e$	0.005044
$n_i-n_{F'}$	0.016677

Relative Partial Dispersions	
$\theta_{C,t}$	0.8271
$\theta_{C,A'}$	0.3489
$\theta_{d,C}$	0.3047
$\theta_{e,C}$	0.5432
$\theta_{g,d}$	1.2376
$\theta_{g,F}$	0.5423
$\theta_{h,g}$	0.4493
$\theta_{i,g}$	1.2128
$\theta'_{C,t}$	0.8685
$\theta'_{e,C}$	0.4906
$\theta'_{F,e}$	0.5094
$\theta'_{i,F'}$	1.6844

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0018
$\Delta \theta_{C,A'}$	0.0010
$\Delta \theta_{g,d}$	-0.0038
$\Delta \theta_{g,F}$	-0.0031
$\Delta \theta_{i,g}$	-0.0150

Thermal Properties	
Strain Point StP (°C)	467
Annealing Point AP (°C)	494
Transformation Temperature Tg (°C)	506
Yield Point At (°C)	538
Softening Point SP (°C)	607
Expansion Coefficients (-30~+70°C)	72
$\alpha$ (10 <sup>-7</sup> K <sup>-1</sup> ) (+100~+300°C)	88
Thermal Conductivity $\lambda$ W/(m·K)	1.03

Coloring			
$\lambda_{80}$	340	$\lambda_5$	285
$\lambda_{70}$			

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

CCI		
B	G	R
0.00	0.17	0.14

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 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 (°C)	$\Delta n/\Delta T$ relative (10 <sup>-6</sup> K <sup>-1</sup> )						
	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 $\beta$ nm/(cm·10 <sup>5</sup> Pa)	2.19
Specific Gravity d	3.05
Remarks	

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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.