

# L-BBH1

Code(d) **102168**

Code(e) **102166**

Refractive Index $n_d$	2.10205 2.102050	Abbe Number $\nu_d$	16.8 16.77	Dispersion $n_F-n_C$	0.06571 0.065712
Refractive Index $n_e$	2.117373	Abbe Number $\nu_e$	16.62	Dispersion $n_F-n_{C'}$	0.067232

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	2.01117
$n_{1970}$	1.97009	2.01775
$n_{1530}$	1.52958	2.02665
$n_{1129}$	1.12864	2.03884
$n_t$	1.01398	2.04441
$n_s$	0.85211	2.05606
$n_{A'}$	0.76819	2.06522
$n_r$	0.70652	2.07429
$n_C$	0.65627	2.08390
$n_{C'}$	0.64385	2.08668
$n_{\text{He-Ne}}$	0.6328	2.08932
$n_D$	0.58929	2.10150
$n_d$	0.58756	2.10205
$n_e$	0.54607	2.11737
$n_F$	0.48613	2.14961
$n_{F'}$	0.47999	2.15391
$n_{\text{He-Cd}}$	0.44157	2.18749
$n_g$	0.435835	2.19378
$n_h$	0.404656	
$n_i$	0.365015	

Partial Dispersions	
$n_C-n_t$	0.039488
$n_C-n_{A'}$	0.018683
$n_d-n_C$	0.018150
$n_e-n_C$	0.033473
$n_g-n_d$	0.091729
$n_g-n_F$	0.044167
$n_h-n_g$	
$n_i-n_g$	
$n_C-n_t$	0.042271
$n_e-n_{C'}$	0.030690
$n_F-n_e$	0.036542
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6009
$\theta_{C,A'}$	0.2843
$\theta_{d,C}$	0.2762
$\theta_{e,C}$	0.5094
$\theta_{g,d}$	1.3959
$\theta_{g,F}$	0.6721
$\theta_{h,g}$	
$\theta_{i,g}$	
$\theta'_{C,t}$	0.6287
$\theta'_{e,C'}$	0.4565
$\theta'_{F',e}$	0.5435
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	
Annealing Point AP (°C)	
Transformation Temperature Tg (°C)	350
Yield Point At (°C)	378
Softening Point SP (°C)	
Expansion Coefficients (-30~+70°C)	107
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	126
Thermal Conductivity k (W/m·K)	0.653

Coloring			
$\lambda_{80}$		$\lambda_5$	430
$\lambda_{70}$	470		

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	-0.0244
$\Delta \theta_{C,A'}$	-0.0119
$\Delta \theta_{g,d}$	0.0660
$\Delta \theta_{g,F}$	0.0578
$\Delta \theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10 <sup>8</sup> N/m <sup>2</sup> )	2769
Rigidity Modulus G (10 <sup>8</sup> N/m <sup>2</sup> )	1088
Poisson's Ratio $\sigma$	0.273
Knoop Hardness Hk(Class)	330   3
Abrasion Aa	384
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	0.75

Constants of Dispersion Formula	
$A_1$	2.56880110E+00
$A_2$	5.24272983E-01
$A_3$	1.40153622E+00
$B_1$	2.05664312E-02
$B_2$	8.33505887E-02
$B_3$	1.19738822E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	53.2
Phosphate Resistance PR	2.2

Other Properties	
Bubble Quality Group B	
Specific Gravity d	6.57
Remarks	

Internal Transmittance		
$\lambda(\text{nm})$	$\tau$ 3mm	$\tau$ 10mm
280		
290		
300		
310		
320		
330		
340		
350		
360		
370		
380		
390		
400		
420	0.28	0.01
440	0.79	0.51
460	0.957	0.86
480	0.987	0.948
500	0.993	0.971
550	0.998	0.984
600	0.997	0.98
650	0.996	0.977
700	0.997	0.978
800	0.997	0.983
900	0.999	0.988
1000	0.999	0.991
1200	0.999	0.995
1400	0.999	0.995
1600	0.999	0.993
1800	0.999	0.987
2000	0.999	0.975
2200	0.992	0.945
2400	0.969	0.87

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 <sup>-6</sup> /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~20							
-20~ 0							
0~20							
20~40							
40~60							
60~80							