

PBL35Y

Code(d) **582409**

Code(e) **585406**

Refractive Index n_d	1.58159	Abbe Number ν_d	40.86	Dispersion n_F-n_C	0.014235
	1.581591				
Refractive Index n_e	1.584969	Abbe Number ν_e	40.58	Dispersion n_F-n_C'	0.014415

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.54982
n_{1970}	1.97009	1.55460
n_{1530}	1.52958	1.55990
n_{1129}	1.12864	1.56502
n_t	1.01398	1.56687
n_s	0.85211	1.57029
$n_{A'}$	0.76819	1.57273
n_r	0.70652	1.57504
n_C	0.65627	1.57738
$n_{C'}$	0.64385	1.57804
$n_{\text{He-Ne}}$	0.6328	1.57866
n_D	0.58929	1.58147
n_d	0.58756	1.58159
n_e	0.54607	1.58497
n_F	0.48613	1.59161
$n_{F'}$	0.47999	1.59246
$n_{\text{He-Cd}}$	0.44157	1.59868
n_g	0.435835	1.59979
n_h	0.404656	1.60681
n_i	0.365015	1.61937
n_{334}	0.334148	1.63392
n_{326}	0.326106	1.63880

Constants of Dispersion Formula	
A_1	1.31884698E+00
A_2	1.25014653E-01
A_3	2.15794324E-01
B_1	1.01474939E-02
B_2	4.81636043E-02
B_3	2.85517448E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	59.6
Rigidity Modulus G (GPa)	24.5
Poisson's Ratio σ	0.217
Knoop Hardness HK(Class)	450 5
Abrasion Aa	153

Partial Dispersions	
n_C-n_t	0.010505
$n_C-n_{A'}$	0.004644
n_d-n_C	0.004213
n_e-n_C	0.007591
n_g-n_d	0.018194
n_g-n_F	0.008172
n_h-n_g	0.007026
n_i-n_g	0.019583
n_C-n_t	0.011167
$n_e-n_{C'}$	0.006929
$n_{F'}-n_e$	0.007486
$n_i-n_{F'}$	0.026913

Relative Partial Dispersions	
$\theta_{C,t}$	0.7380
$\theta_{C,A'}$	0.3262
$\theta_{d,C}$	0.2960
$\theta_{e,C}$	0.5333
$\theta_{g,d}$	1.2781
$\theta_{g,F}$	0.5741
$\theta_{h,g}$	0.4936
$\theta_{i,g}$	1.3757
$\theta'_{C,t}$	0.7747
$\theta'_{e,C}$	0.4807
$\theta'_{F',e}$	0.5193
$\theta'_{i,F'}$	1.8670

※Refractive Indices of the wavelength nm can be calculated from 326 to 1129 nm by this constant. Use the appended list of the constants to calculate 1129-2325nm.

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0004
$\Delta\theta_{C,A'}$	0.0008
$\Delta\theta_{g,d}$	-0.0018
$\Delta\theta_{g,F}$	-0.0013
$\Delta\theta_{i,g}$	-0.0072

Thermal Properties	
Strain Point StP (°C)	345
Annealing Point AP (°C)	379
Transformation Temperature Tg (°C)	404
Yield Point At (°C)	454
Softening Point SP (°C)	550
Expansion Coefficients (-30~+70°C)	91
α (10^{-7}K^{-1}) (+100~+300°C)	107
Thermal Conductivity λ W/(m·K)	0.885

Coloring			
λ_{80}	335	λ_5	310
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	328	$\lambda_{0.05}$	306

CCI		
B	G	R
0.00	0.00	0.00

Internal Transmittance		
$\lambda(\text{nm})$	τ 10mm	τ 25mm
240		
250		
260		
270		
280		
290		
300		
310	0.08	
320	0.51	0.19
330	0.86	0.68
340	0.965	0.916
350	0.990	0.975
360	0.996	0.990
365	0.997	0.993
370	0.998	0.995
380	0.999	0.997
390	0.999	0.998
400	0.999	0.998
420	0.999	0.999
440	0.999	0.999
460	0.999	0.999
480	0.999	0.999
500	0.999	0.999
550	0.999	0.999
600	0.999	0.999
650	0.999	0.999
700	0.999	0.999
800	0.999	0.999
900	0.999	0.999
1000	0.999	0.999
1200	0.999	0.999
1400	0.998	0.996
1600	0.996	0.990
1800	0.980	0.952
2000	0.955	0.89
2200	0.911	0.79
2400	0.88	0.72

Other Properties	
Photoelastic Constant β nm/(cm \cdot 10 5 Pa)	2.88
Specific Gravity d	3.27
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.

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	$\Delta n / \Delta T$ relative (10^{-6}K^{-1})							
	t	C'	He-Ne	D	e	F'	g	i
-40~-20	1.0	1.7	1.7	1.9	2.2	2.8	3.4	5.5
-20~ 0	1.0	1.7	1.7	1.9	2.2	2.8	3.5	5.7
0~20	1.1	1.8	1.8	2.0	2.3	3.0	3.7	5.9
20~40	1.1	1.9	1.9	2.1	2.4	3.1	3.8	6.1
40~60	1.2	2.0	2.0	2.2	2.5	3.2	4.0	6.3
60~80	1.4	2.1	2.2	2.4	2.7	3.4	4.2	6.6