

# S-BAM12

Code(d) **639449**

Code(e) **643446**

Refractive Index $n_d$	<b>1.63930</b>	Abbe Number $\nu_d$	<b>44.87</b>	Dispersion $n_F-n_C$	<b>0.014247</b>
	1.639300				
Refractive Index $n_e$	1.642684	Abbe Number $\nu_e$	44.59	Dispersion $n_F-n_C'$	0.014414

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.60480
$n_{1970}$	1.97009	1.61040
$n_{1530}$	1.52958	1.61653
$n_{1129}$	1.12864	1.62223
$n_t$	1.01398	1.62422
$n_s$	0.85211	1.62781
$n_{A'}$	0.76819	1.63033
$n_f$	0.70652	1.63268
$n_C$	0.65627	1.63506
$n_{C'}$	0.64385	1.63573
$n_{\text{He-Ne}}$	0.6328	1.63635
$n_D$	0.58929	1.63917
$n_d$	0.58756	1.63930
$n_e$	0.54607	1.64268
$n_F$	0.48613	1.64930
$n_{F'}$	0.47999	1.65014
$n_{\text{He-Cd}}$	0.44157	1.65631
$n_g$	0.435835	1.65740
$n_h$	0.404656	1.66433
$n_i$	0.365015	1.67665

Constants of Dispersion Formula	
$A_1$	1.50161605E+00
$A_2$	1.26987445E-01
$A_3$	1.43544052E+00
$B_1$	9.40761826E-03
$B_2$	4.72602195E-02
$B_3$	1.41666499E+02

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	3.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	90.4
Rigidity Modulus G (GPa)	36.1
Poisson's Ratio $\sigma$	0.253
Knoop Hardness Hk(Class)	550   6
Abrasion Aa	154

Partial Dispersions	
$n_C-n_t$	0.010836
$n_C-n_{A'}$	0.004725
$n_d-n_C$	0.004243
$n_e-n_C$	0.007627
$n_g-n_d$	0.018101
$n_g-n_F$	0.008097
$n_h-n_g$	0.006929
$n_i-n_g$	0.019244
$n_C-n_t$	0.011505
$n_e-n_{C'}$	0.006958
$n_{F'}-n_e$	0.007456
$n_i-n_{F'}$	0.026505

Relative Partial Dispersions	
$\theta_{C,t}$	0.7606
$\theta_{C,A'}$	0.3316
$\theta_{d,C}$	0.2978
$\theta_{e,C}$	0.5353
$\theta_{g,d}$	1.2705
$\theta_{g,F}$	0.5683
$\theta_{h,g}$	0.4863
$\theta_{i,g}$	1.3507
$\theta'_{C,t}$	0.7982
$\theta'_{e,C}$	0.4827
$\theta'_{F',e}$	0.5173
$\theta'_{i,F'}$	1.8388

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0034
$\Delta \theta_{C,A'}$	0.0014
$\Delta \theta_{g,d}$	-0.0010
$\Delta \theta_{g,F}$	-0.0006
$\Delta \theta_{i,g}$	0.0014

Thermal Properties	
Strain Point StP (°C)	565
Annealing Point AP (°C)	592
Transformation Temperature Tg (°C)	608
Yield Point At (°C)	645
Softening Point SP (°C)	717
Expansion Coefficients (-30~+70°C)	76
$\alpha$ (10 <sup>-7</sup> K <sup>-1</sup> ) (+100~+300°C)	91
Thermal Conductivity $\lambda$ W/(m·K)	0.954

Coloring			
$\lambda_{80}$	385	$\lambda_5$	345
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	374	$\lambda_{0.05}$	348

CCI		
B	G	R
0.00	0.93	0.93

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.13
360	0.49
370	0.75
380	0.87
390	0.928
400	0.955
420	0.977
440	0.983
460	0.987
480	0.990
500	0.993
550	0.997
600	0.996
650	0.996
700	0.997
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.992
1600	0.995
1800	0.987
2000	0.976
2200	0.932
2400	0.86

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	2.3	2.6	2.7	2.8	3.0	3.5	4.1
-20~ 0	2.3	2.7	2.7	2.9	3.1	3.6	4.2
0~20	2.3	2.7	2.8	3.0	3.2	3.7	4.3
20~40	2.4	2.8	2.8	3.0	3.3	3.8	4.5
40~60	2.4	2.8	2.9	3.1	3.3	3.9	4.6
60~80	2.4	2.9	2.9	3.1	3.4	4.0	4.7

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>9</sup> Pa)	2.30
Specific Gravity d	3.18
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.