

# S-LAM55

Code(d) **762401**

Code(e) **767398**

Refractive Index $n_d$	<b>1.76200</b> 1.762001	Abbe Number $\nu_d$	<b>40.10</b>	Dispersion $n_F-n_C$	<b>0.019003</b>
Refractive Index $n_e$	1.766509	Abbe Number $\nu_e$	39.82	Dispersion $n_F-n_C'$	0.019247

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.72020
$n_{1970}$	1.97009	1.72640
$n_{1530}$	1.52958	1.73328
$n_{1129}$	1.12864	1.73998
$n_t$	1.01398	1.74242
$n_s$	0.85211	1.74695
$n_{A'}$	0.76819	1.75020
$n_r$	0.70652	1.75327
$n_C$	0.65627	1.75639
$n_{C'}$	0.64385	1.75727
$n_{\text{He-Ne}}$	0.6328	1.75810
$n_D$	0.58929	1.76183
$n_d$	0.58756	1.76200
$n_e$	0.54607	1.76651
$n_F$	0.48613	1.77539
$n_{F'}$	0.47999	1.77652
$n_{\text{He-Cd}}$	0.44157	1.78487
$n_g$	0.435835	1.78634
$n_h$	0.404656	1.79580
$n_i$	0.365015	1.81280

Constants of Dispersion Formula	
$A_1$	1.85412979E+00
$A_2$	1.65450323E-01
$A_3$	1.27255422E+00
$B_1$	1.08438152E-02
$B_2$	5.14050980E-02
$B_3$	1.09986837E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	967
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	374
Poisson's Ratio $\sigma$	0.292
Knoop Hardness Hk[Class]	550   6
Abrasion Aa	145
Photoelastic Constant $\beta$ (nm/cm/ $10^9\text{Pa}$ )	1.88

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dT relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.5	3.1	3.1	3.3	3.6	4.3	5.1
-20~ 0	2.6	3.2	3.2	3.5	3.8	4.5	5.3
0~20	2.6	3.3	3.3	3.6	3.9	4.7	5.5
20~40	2.7	3.4	3.4	3.7	4.0	4.8	5.7
40~60	2.8	3.5	3.5	3.8	4.2	5.0	5.9
60~80	2.8	3.6	3.6	3.9	4.3	5.2	6.1

Partial Dispersions	
$n_C-n_t$	0.013960
$n_C-n_{A'}$	0.006182
$n_d-n_C$	0.005616
$n_e-n_C$	0.010124
$n_g-n_d$	0.024342
$n_g-n_F$	0.010955
$n_h-n_g$	0.009453
$n_i-n_g$	0.026457
$n_C-n_t$	0.014843
$n_e-n_{C'}$	0.009241
$n_F-n_e$	0.010006
$n_i-n_{F'}$	0.036285

Relative Partial Dispersions	
$\theta_{C,t}$	0.7346
$\theta_{C,A'}$	0.3253
$\theta_{d,C}$	0.2955
$\theta_{e,C}$	0.5328
$\theta_{g,d}$	1.2810
$\theta_{g,F}$	0.5765
$\theta_{h,g}$	0.4974
$\theta_{i,g}$	1.3923
$\theta'_{C,t}$	0.7712
$\theta'_{e,C'}$	0.4801
$\theta'_{F,e}$	0.5199
$\theta'_{i,F'}$	1.8852

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0002
$\Delta\theta_{C,A'}$	0.0008
$\Delta\theta_{g,d}$	-0.0004
$\Delta\theta_{g,F}$	-0.0001
$\Delta\theta_{i,g}$	0.0031

Thermal Properties	
Strain Point StP (°C)	589
Annealing Point AP (°C)	617
Transformation Temperature Tg (°C)	632
Yield Point At (°C)	662
Softening Point SP (°C)	709
Expansion Coefficients (-30~+70°C)	71
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	84
Thermal Conductivity k (W/m·K)	0.741

Coloring			
$\lambda_{80}$	405	$\lambda_5$	350
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	378	$\lambda_{0.05}$	350

CCI		
B	G	R
0.00	1.43	1.46

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.06
360	0.37
370	0.67
380	0.82
390	0.89
400	0.932
420	0.963
440	0.976
460	0.984
480	0.989
500	0.993
550	0.997
600	0.997
650	0.997
700	0.998
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.995
1600	0.994
1800	0.986
2000	0.970
2200	0.923
2400	0.78

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.22
Remarks	

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