

# S-FSL5Y

Code(d) **487703**

Code(e) **489702**

Refractive Index $n_d$	<b>1.48749</b> 1.487490	Abbe Number $\nu_d$	<b>70.3</b> 70.36	Dispersion $n_F-n_C$	<b>0.00693</b> 0.006929
Refractive Index $n_e$	1.489145	Abbe Number $\nu_e$	70.17	Dispersion $n_F-n_{C'}$	0.006971

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.46218
$n_{1970}$	1.97009	1.46761
$n_{1530}$	1.52958	1.47323
$n_{1129}$	1.12864	1.47778
$n_t$	1.01398	1.47915
$n_s$	0.85211	1.48138
$n_{A'}$	0.76819	1.48282
$n_r$	0.70652	1.48410
$n_C$	0.65627	1.48535
$n_{C'}$	0.64385	1.48569
$n_{\text{He-Ne}}$	0.6328	1.48601
$n_D$	0.58929	1.48743
$n_d$	0.58756	1.48749
$n_e$	0.54607	1.48915
$n_F$	0.48613	1.49228
$n_{F'}$	0.47999	1.49266
$n_{\text{He-Cd}}$	0.44157	1.49546
$n_g$	0.435835	1.49594
$n_h$	0.404656	1.49896
$n_i$	0.365015	1.50404
$n_{334}$	0.334148	1.50946
$n_{326}$	0.326106	1.51116

Partial Dispersions	
$n_C-n_t$	0.006201
$n_C-n_{A'}$	0.002523
$n_d-n_C$	0.002144
$n_e-n_C$	0.003799
$n_g-n_d$	0.008455
$n_g-n_F$	0.003670
$n_h-n_g$	0.003015
$n_i-n_g$	0.008099
$n_C-n_t$	0.006546
$n_e-n_{C'}$	0.003454
$n_F-n_e$	0.003517
$n_i-n_{F'}$	0.011382

Relative Partial Dispersions	
$\theta_{C,t}$	0.8949
$\theta_{C,A'}$	0.3641
$\theta_{d,C}$	0.3094
$\theta_{e,C}$	0.5483
$\theta_{g,d}$	1.2202
$\theta_{g,F}$	0.5297
$\theta_{h,g}$	0.4351
$\theta_{i,g}$	1.1689
$\theta'_{C,t}$	0.9390
$\theta'_{e,C'}$	0.4955
$\theta'_{F,e}$	0.5045
$\theta_{i,F}$	1.6328

Thermal Properties	
Strain Point StP (°C)	465
Annealing Point AP (°C)	502
Transformation Temperature Tg (°C)	500
Yield Point At (°C)	567
Softening Point SP (°C)	676
Expansion Coefficients (-30~+70°C)	89
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	97
Thermal Conductivity k (W/m·K)	1.002

Coloring			
$\lambda_{80}$	295	$\lambda_5$	270

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0181
$\Delta\theta_{C,A'}$	0.0029
$\Delta\theta_{g,d}$	0.0016
$\Delta\theta_{g,F}$	0.0021
$\Delta\theta_{i,g}$	0.0331

Mechanical Properties	
Young's Modulus E (10 <sup>9</sup> N/m <sup>2</sup> )	622
Rigidity Modulus G (10 <sup>9</sup> N/m <sup>2</sup> )	253
Poisson's Ratio $\sigma$	0.229
Knoop Hardness Hk[Class]	530   5
Abrasion Aa	113
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	2.87

Constants of Dispersion Formula *1	
A <sub>1</sub>	9.77409944E-01
A <sub>2</sub>	2.10950834E-01
A <sub>3</sub>	1.37142848E+00
B <sub>1</sub>	5.57649364E-03
B <sub>2</sub>	1.77000313E-02
B <sub>3</sub>	1.49211443E+02

\*1 By using these contents, refractive indices for any wavelength between 326 and 1129nm can be calculated. When calculateing refractive indices for any wavelength between 1129 and 2325nm, please refer to us.

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.46
Remarks	

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	3.0
Phosphate Resistance PR	2.0

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	i	
-40~20	-1.2	-1.2	-1.2	-1.1	-1.1	-0.9	-0.7	-0.3	
-20~ 0	-1.2	-1.1	-1.1	-1.0	-1.0	-0.8	-0.6	-0.2	
0~20	-1.2	-1.0	-1.0	-0.9	-0.8	-0.7	-0.5	0.0	
20~40	-1.1	-0.9	-0.9	-0.8	-0.7	-0.6	-0.4	0.1	
40~60	-1.0	-0.8	-0.8	-0.7	-0.6	-0.5	-0.3	0.3	
60~80	-1.0	-0.7	-0.7	-0.6	-0.5	-0.3	-0.1	0.4	

Internal Transmittance		
$\lambda(\text{nm})$	$\tau$ 10mm	$\tau$ 25mm
240		
250		
260		
270		
280	0.19	0.01
290	0.61	0.29
300	0.86	0.68
310	0.954	0.89
320	0.984	0.961
330	0.993	0.983
340	0.997	0.993
350	0.998	0.995
360	0.998	0.996
365	0.999	0.997
370	0.999	0.998
380	0.999	0.998
390	0.999	0.998
400	0.999	0.999
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	0.998
700	0.999	0.999
800	0.999	0.999
900	0.999	0.997
1000	0.998	0.994
1200	0.997	0.992
1400	0.981	0.952
1600	0.991	0.977
1800	0.983	0.958
2000	0.968	0.921
2200	0.86	0.70
2400	0.85	0.67