

# J-SF03

$n_d = 1.846660$

$n_e = 1.855032$

$v_d = 23.80$

$v_e = 23.61$

Glass code (d)	847238
Glass code (e)	855236

Spectral l.	Refractive idx
2.058	1.79055
1.970	1.79217
1.530	1.80027
1.129	1.80936
1.064	1.81132
t	1.81303
s	1.82027
A'	1.825725
r	1.831009
C	1.836505
C'	1.838080
He-Ne	1.839564
D	1.846354
d	1.846660
e	1.855032
F	1.872084
F'	1.874302
g	1.894197
h	1.914364
0.389	1.927659
i	-

Coef. disp. form. (pwr ser.)	
A0	3.25089291E+00
A1	-1.33244110E-02
A2	0.00000000E+00
A3	4.84040988E-02
A4	3.26383680E-03
A5	-4.01470701E-04
A6	1.16583198E-04
A7	-1.27242455E-05
A8	6.96171808E-07

Partial dispersion	
F-C	0.035579
F'-C'	0.036222
C-t	0.023473
C-A'	0.010780
d-C	0.010155
e-C	0.018527
g-d	0.047537
g-F	0.022113
h-g	0.020167
i-g	-
C'-t	0.025048
e-C'	0.016952
F'-e	0.019270
i-F'	-

Relative partial dispersion	
C-t/F-C	0.6597
C-A'/F-C	0.3030
d-C/F-C	0.2854
e-C/F-C	0.5207
g-d/F-C	1.3361
g-F/F-C	0.6215
h-g/F-C	0.5668
i-g/F-C	-
C'-t/F'-C'	0.6915
e-C'/F'-C'	0.4680
F'-e/F'-C'	0.5320
i-F'/F'-C'	-

Deviation of relative partial disp.	
$\Delta PdC$	-0.0025
$\Delta PgF$	0.0171

Internal CC (80%/5%)	
407/367	

Color Code (70%/5%)	
415/370	

CCI	
B	0.00
G	4.96
R	5.03

Thermal properties	
CTE(-30,70) [1E-7/°C]	81
CTE(100,300) [1E-7/°C]	102
Tg [°C]	615
At [°C]	648
Ht condct. [W/m·K]	0.970
Sp. heat [kJ/kg·K]	0.590
Ht diffus. [1E-6 m2/sec]	0.466

Chemical properties [class]	
Acid res. (surface)	1
Alkaline detergent res.	1
Climate resistance	1
Water res. (powder)	1
Acid res. (powder)	1

Mechanical properties	
Knoop hardness	492 (5)
Abrasion hardness	179
Young's mod. [GPa]	94.4
Shear mod. [GPa]	37.3
Poisson's ratio	0.266
Stress optical coef. [1E-5 nm/cm/Pa]	2.92

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.00
290	0.00
300	0.00
310	0.00
320	0.00
330	0.00
340	0.00
350	0.00
360	0.00
370	0.09
380	0.32
390	0.57
400	0.73
420	0.87
440	0.927
460	0.954
480	0.968
500	0.976
550	0.987
600	0.989
650	0.987
700	0.989
800	0.991
900	0.993
1000	0.994
1200	0.997
1400	0.999
1600	0.991
1800	0.983
2000	0.977
2200	0.962
2400	0.938

Specific gravity	
3.53	

Relative $\Delta n / \Delta T$ [1E-6/°C]															
Temp. [°C]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389
80 to 90 (ref.)	-0.4	-0.3	0.0	0.4	0.7	1.1	1.2	1.3	1.9	2.7	4.4	4.6	7.1	10.2	12.7
60 to 80 (ref.)	-0.6	-0.4	0.0	0.2	0.5	0.9	1.0	1.1	1.7	2.4	4.1	4.3	6.7	9.6	12.0
40 to 60	-0.7	-0.6	-0.2	0.0	0.3	0.7	0.8	0.9	1.4	2.1	3.7	3.9	6.1	8.9	11.2
20 to 40	-0.9	-0.7	-0.4	-0.1	0.2	0.5	0.6	0.7	1.2	1.8	3.3	3.5	5.6	8.3	10.3
0 to 20	-1.0	-0.8	-0.5	-0.3	0.0	0.3	0.4	0.5	1.0	1.6	3.0	3.2	5.2	7.6	9.6
-20 to 0	-1.0	-0.9	-0.6	-0.3	-0.1	0.2	0.3	0.4	0.9	1.4	2.8	3.0	4.8	7.1	8.9
-40 to -20	-0.9	-0.8	-0.5	-0.3	-0.1	0.2	0.3	0.4	0.8	1.3	2.6	2.8	4.5	6.6	8.2
-60 to -40 (ref.)	-0.8	-0.7	-0.4	-0.2	0.0	0.3	0.4	0.4	0.8	1.4	2.5	2.7	4.3	6.2	7.7
-70 to -60 (ref.)	-0.6	-0.5	-0.2	0.0	0.2	0.4	0.5	0.6	1.0	1.4	2.6	2.7	4.2	6.0	7.4

Absolute $\Delta n / \Delta T$ [1E-6/°C]															
Temp. [°C]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389
80 to 90	-1.6	-1.4	-1.0	-0.7	-0.4	0.0	0.1	0.2	0.8	1.5	3.2	3.4	5.9	9.0	11.4
60 to 80	-1.8	-1.7	-1.3	-1.0	-0.7	-0.3	-0.2	-0.1	0.4	1.2	2.8	3.0	5.4	8.3	10.7
40 to 60	-2.1	-2.0	-1.6	-1.4	-1.1	-0.7	-0.6	-0.5	0.0	0.7	2.2	2.5	4.7	7.4	9.7
20 to 40	-2.4	-2.3	-2.0	-1.7	-1.4	-1.1	-1.0	-0.9	-0.4	0.2	1.7	1.9	4.0	6.6	8.6
0 to 20	-2.7	-2.6	-2.3	-2.1	-1.8	-1.5	-1.4	-1.3	-0.9	-0.2	1.1	1.3	3.3	5.7	7.6
-20 to 0	-3.1	-2.9	-2.7	-2.4	-2.2	-1.9	-1.8	-1.7	-1.3	-0.7	0.6	0.8	2.6	4.8	6.6
-40 to -20	-3.4	-3.3	-3.0	-2.8	-2.6	-2.3	-2.2	-2.1	-1.7	-1.2	0.0	0.2	1.9	3.9	5.6
-60 to -40	-3.7	-3.6	-3.3	-3.1	-2.9	-2.7	-2.6	-2.5	-2.1	-1.7	-0.5	-0.4	1.2	3.1	4.5
-70 to -60	-3.9	-3.8	-3.6	-3.4	-3.2	-3.0	-2.9	-2.8	-2.5	-2.0	-0.9	-0.8	0.7	2.4	3.8

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.11923941E-01
Q1	8.28410074E+01
P2	3.04841319E-02
Q2	6.23699294E-02
P3	3.97973273E-01
Q3	9.10166610E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.9	6.0
Frac. eq. (ref.)	3.4	11.1

Prod. Freq. (A to D)	A
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Similar glass type			
OHARA	S-TIH53	HOYA	FDS90
CDGM	H-ZF52	SCHOTT	N-SF57

2019-4-1	Transmittance
2018-4-1	Similar glass type
2015-4-1	Color Code, Similar glass type