

# J-SF13

 $n_d = 1.740770$ 
 $n_e = 1.747068$ 
 $v_d = 27.74$ 
 $v_e = 27.52$ 

Glass code (d)
741277
Glass code (e)
747275

Spectral l.	Refractive idx
2.058	1.69539
1.970	1.69688
1.530	1.70418
1.129	1.71187
1.064	1.71347
t	1.71484
s	1.72056
A'	1.724801
r	1.728868
C	1.733069
C'	1.734269
He-Ne	1.735397
D	1.740539
d	1.740770
e	1.747068
F	1.759772
F'	1.761414
g	1.776029
h	1.790639
0.389	1.800152
i	-

Coef. disp. form. (pwr ser.)	
A0	2.91742250E+00
A1	-1.21278695E-02
A2	0.00000000E+00
A3	3.44734103E-02
A4	2.66756706E-03
A5	-4.32503622E-04
A6	1.00646069E-04
A7	-1.00610625E-05
A8	4.80261151E-07

Partial dispersion	
F-C	0.026703
F'-C'	0.027145
C-t	0.018225
C-A'	0.008268
d-C	0.007701
e-C	0.013999
g-d	0.035259
g-F	0.016257
h-g	0.014610
i-g	-
C'-t	0.019425
e-C'	0.012799
F'-e	0.014346
i-F'	-

Relative partial dispersion	
C-t/F-C	0.6825
C-A'/F-C	0.3096
d-C/F-C	0.2884
e-C/F-C	0.5242
g-d/F-C	1.3204
g-F/F-C	0.6088
h-g/F-C	0.5471
i-g/F-C	-
C'-t/F'-C'	0.7156
e-C'/F'-C'	0.4715
F'-e/F'-C'	0.5285
i-F'/F'-C'	-

Deviation of relative partial disp.	
$\Delta PdC$	-0.0013
$\Delta PgF$	0.0110

Internal CC (80%/5%)	
394/362	
Color Code (80%/5%)	
420/365	
CCI	
B	0.00
G	2.73
R	2.85

Thermal properties	
CTE(-30,70) [1E-7/°C]	86
CTE(100,300) [1E-7/°C]	103
Tg [°C]	604
At [°C]	636
StP [°C]	553
AP [°C]	585
SP [°C]	704
Ht condct. [W/m·K]	1.132
Sp. heat [kJ/kg·K]	0.718
Ht diffus. [1E-6 m2/sec]	0.506

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	160
Young's mod. [GPa]	89.5
Shear mod. [GPa]	35.7
Poisson's ratio	0.254
Stress optical coef. [1E-5 nm/cm/Pa]	2.79

Internal trans. (10mm)		
$\lambda$ [nm]	$\tau$	
280	-	
290	-	
300	-	
310	-	
320	-	
330	-	
340	-	
350	-	
360	0.03	
370	0.20	
380	0.51	
390	0.74	
400	0.85	
420	0.938	
440	0.962	
460	0.972	
480	0.979	
500	0.984	
550	0.992	
600	0.994	
650	0.994	
700	0.995	
800	0.994	
900	0.993	
1000	0.994	
1200	0.995	
1400	0.994	
1600	0.987	
1800	0.971	
2000	0.961	
2200	0.925	
2400	0.89	

Specific gravity	
3.1	

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.)	0.7	0.8	1.1	1.4	1.7	2.0	2.1	2.2	2.6	3.2	4.4	4.6	6.4	8.6	10.2	
60 to 80 (ref.)	0.5	0.6	1.0	1.3	1.5	1.8	1.9	2.0	2.4	3.0	4.2	4.4	6.1	8.2	9.8	
40 to 60	0.4	0.5	0.8	1.1	1.4	1.7	1.7	1.8	2.2	2.7	3.9	4.0	5.7	7.6	9.2	
20 to 40	0.3	0.4	0.7	1.0	1.2	1.5	1.6	1.6	2.0	2.5	3.6	3.8	5.3	7.2	8.6	
0 to 20	0.2	0.3	0.6	0.9	1.1	1.4	1.4	1.5	1.9	2.3	3.4	3.5	5.0	6.7	8.1	
-20 to 0	0.2	0.3	0.6	0.8	1.0	1.3	1.4	1.4	1.8	2.2	3.2	3.3	4.7	6.3	7.6	
-40 to -20	0.3	0.4	0.6	0.8	1.1	1.3	1.4	1.4	1.8	2.2	3.1	3.2	4.5	6.0	7.2	
-60 to -40 (ref.)	0.4	0.5	0.8	1.0	1.2	1.4	1.5	1.5	1.8	2.2	3.1	3.2	4.4	5.8	6.9	
-70 to -60 (ref.)	0.6	0.7	0.9	1.1	1.3	1.6	1.6	1.7	2.0	2.3	3.1	3.3	4.4	5.8	6.8	

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	-0.4	-0.3	0.1	0.3	0.6	0.9	1.0	1.1	1.5	2.1	3.3	3.5	5.3	7.4	9.1	
60 to 80	-0.6	-0.5	-0.2	0.1	0.4	0.7	0.8	0.8	1.3	1.8	3.0	3.1	4.8	6.9	8.5	
40 to 60	-0.9	-0.8	-0.5	-0.2	0.0	0.3	0.4	0.5	0.9	1.4	2.5	2.7	4.3	6.2	7.8	
20 to 40	-1.2	-1.1	-0.8	-0.5	-0.3	0.0	0.1	0.1	0.5	1.0	2.1	2.2	3.7	5.6	7.0	
0 to 20	-1.5	-1.4	-1.1	-0.9	-0.6	-0.4	-0.3	-0.2	0.1	0.6	1.6	1.7	3.2	4.9	6.2	
-20 to 0	-1.7	-1.7	-1.4	-1.2	-0.9	-0.7	-0.6	-0.6	-0.2	0.2	1.1	1.3	2.6	4.2	5.5	
-40 to -20	-2.0	-2.0	-1.7	-1.5	-1.3	-1.1	-1.0	-0.9	-0.6	-0.2	0.7	0.8	2.0	3.6	4.7	
-60 to -40	-2.3	-2.2	-2.0	-1.8	-1.6	-1.4	-1.3	-1.3	-1.0	-0.6	0.2	0.3	1.5	2.9	4.0	
-70 to -60	-2.5	-2.5	-2.2	-2.0	-1.9	-1.7	-1.6	-1.5	-1.3	-0.9	-0.1	0.0	1.1	2.4	3.4	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.12550486E-01
Q1	8.07969473E+01
P2	2.33049439E-02
Q2	6.13187337E-02
P3	3.66354523E-01
Q3	8.63804110E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.9	4.8
Frac. eq. (ref.)	2.3	10.7

Prod. Freq. (A to D)	C
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Similar glass type			
OHARA	S-TIH13	HOYA	E-FD13
CDGM	H-ZF50	SCHOTT	-

2022-7-1	StP, AP, SP
2019-4-1	Transmittance
2018-4-1	Prod. Freq.