

# J-LASF013

$n_d = 1.804400$

$n_e = 1.809220$

$v_d = 39.61$

$v_e = 39.36$

Glass code (d)
804396
Glass code (e)
809394

Spectral l.	Refractive idx
2.058	1.76221
1.970	1.76404
1.530	1.77251
1.129	1.78037
1.064	1.78186
t	1.78312
s	1.78814
A'	1.791690
r	1.795010
C	1.798372
C'	1.799322
He-Ne	1.800212
D	1.804221
d	1.804400
e	1.809220
F	1.818682
F'	1.819880
g	1.830298
h	1.840270
0.389	1.846513
i	1.858063

Coef. disp. form. (pwr ser.)	
A0	3.16350950E+00
A1	-1.45894059E-02
A2	-2.12587159E-04
A3	3.15033746E-02
A4	5.85519102E-04
A5	5.85508847E-05
A6	-3.44096993E-06
A7	3.17840715E-07
A8	0.00000000E+00

Partial dispersion	
F-C	0.020310
F'-C'	0.020558
C-t	0.015248
C-A'	0.006682
d-C	0.006028
e-C	0.010848
g-d	0.025898
g-F	0.011616
h-g	0.009972
i-g	0.027765
C'-t	0.016198
e-C'	0.009898
F'-e	0.010660
i-F'	0.038183

Relative partial dispersion	
C-t/F-C	0.7508
C-A'/F-C	0.3290
d-C/F-C	0.2968
e-C/F-C	0.5341
g-d/F-C	1.2751
g-F/F-C	0.5719
h-g/F-C	0.4910
i-g/F-C	1.3671
C'-t/F'-C'	0.7879
e-C'/F'-C'	0.4815
F'-e/F'-C'	0.5185
i-F'/F'-C'	1.8573

Deviation of relative partial disp.	
$\Delta PdC$	0.0017
$\Delta PgF$	-0.0060

Internal CC (80%/5%)	
372/332	

Color Code (80%/5%)	
410/335	

CCI	
B	0.00
G	1.22
R	1.28

Thermal properties	
CTE(-30,70) [1E-7/°C]	51
CTE(100,300) [1E-7/°C]	67
Tg [°C]	618
At [°C]	649
Ht condct. [W/m·K]	0.884
Sp. heat [kJ/kg·K]	0.530
Ht diffus. [1E-6 m2/sec]	0.395

Chemical properties [class]	
Acid res. (surface)	4
Alkaline detergent res.	2
Climate resistance	1
Water res. (powder)	1
Acid res. (powder)	4

Mechanical properties	
Knoop hardness	626 (6)
Abrasion hardness	76
Young's mod. [GPa]	112.6
Shear mod. [GPa]	43.4
Poisson's ratio	0.297
Stress optical coef. [1E-5 nm/cm/Pa]	2.31

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.00
290	0.00
300	0.00
310	0.00
320	0.00
330	0.03
340	0.17
350	0.42
360	0.64
370	0.78
380	0.86
390	0.910
400	0.939
420	0.966
440	0.978
460	0.985
480	0.990
500	0.993
550	0.997
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.995
1600	0.990
1800	0.979
2000	0.951
2200	0.86
2400	0.63

Specific gravity	
4.2	

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.)	6.2	6.3	6.5	6.8	7.0	7.2	7.3	7.4	7.7	8.0	8.9	9.0	9.9	11.0	11.7	
60 to 80 (ref.)	6.0	6.1	6.4	6.6	6.8	7.0	7.1	7.1	7.4	7.8	8.6	8.7	9.7	10.7	11.3	
40 to 60	5.8	5.9	6.1	6.3	6.5	6.8	6.8	6.9	7.2	7.5	8.3	8.4	9.3	10.3	10.9	
20 to 40	5.6	5.7	5.9	6.1	6.3	6.5	6.6	6.6	6.9	7.3	8.0	8.1	9.0	9.9	10.5	
0 to 20	5.5	5.5	5.8	5.9	6.1	6.3	6.4	6.5	6.7	7.1	7.7	7.8	8.7	9.6	10.2	
-20 to 0	5.4	5.5	5.7	5.8	6.0	6.2	6.3	6.3	6.6	6.9	7.6	7.6	8.4	9.3	9.9	
-40 to -20	5.4	5.4	5.6	5.8	6.0	6.2	6.2	6.3	6.5	6.8	7.4	7.5	8.3	9.1	9.6	
-60 to -40 (ref.)	5.5	5.5	5.7	5.9	6.0	6.2	6.3	6.3	6.6	6.8	7.4	7.5	8.2	9.0	9.5	
-70 to -60 (ref.)	5.6	5.7	5.8	6.0	6.2	6.3	6.4	6.4	6.7	6.9	7.5	7.6	8.3	9.0	9.5	

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	5.1	5.2	5.4	5.6	5.9	6.1	6.2	6.2	6.5	6.9	7.7	7.8	8.8	9.8	10.5	
60 to 80	4.8	4.9	5.1	5.3	5.6	5.8	5.9	5.9	6.2	6.6	7.3	7.4	8.4	9.4	10.1	
40 to 60	4.5	4.5	4.8	5.0	5.2	5.4	5.4	5.5	5.8	6.1	6.9	7.0	7.9	8.8	9.5	
20 to 40	4.1	4.2	4.4	4.6	4.8	5.0	5.0	5.1	5.4	5.7	6.4	6.5	7.3	8.2	8.9	
0 to 20	3.7	3.8	4.0	4.2	4.4	4.6	4.6	4.7	4.9	5.2	5.9	6.0	6.8	7.7	8.3	
-20 to 0	3.4	3.4	3.6	3.8	4.0	4.1	4.2	4.2	4.5	4.8	5.4	5.5	6.3	7.1	7.7	
-40 to -20	3.0	3.0	3.2	3.4	3.6	3.7	3.8	3.8	4.1	4.4	5.0	5.0	5.8	6.5	7.1	
-60 to -40	2.6	2.7	2.8	3.0	3.1	3.3	3.4	3.4	3.6	3.9	4.5	4.5	5.2	6.0	6.5	
-70 to -60	2.3	2.4	2.5	2.7	2.8	3.0	3.1	3.1	3.3	3.6	4.1	4.2	4.9	5.6	6.0	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.07014916E-01
Q1	6.46906731E+01
P2	2.05151386E-02
Q2	4.51374212E-02
P3	3.98531952E-01
Q3	6.50186587E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.7	9.7
Frac. eq. (ref.)	0.8	9.5

Prod. Freq. (A to D)	A
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Similar glass type			
OHARA	S-LAH63	HOYA	NBFD3
CDGM	H-ZLAF51	SCHOTT	-

2019-4-1	Transmittance
2015-4-1	Color Code, Prod. Freq
2009-9-1	1st edition