

# J-LLF2

$n_d = 1.540720$

$n_e = 1.543455$

$v_d = 46.97$

$v_e = 46.68$

Glass code (d)	541470
Glass code (e)	543467

Spectral l.	Refractive idx
2.058	1.51518
1.970	1.51636
1.530	1.52179
1.129	1.52671
1.064	1.52762
t	1.52838
s	1.53136
A'	1.533429
r	1.535348
C	1.537280
C'	1.537824
He-Ne	1.538332
D	1.540618
d	1.540720
e	1.543455
F	1.548793
F'	1.549466
g	1.555303
h	1.560866
0.389	1.564340
i	1.570753

Coef. disp. form. (pwr ser.)	
A0	2.32991556E+00
A1	-8.66190637E-03
A2	-5.64810656E-05
A3	1.50203800E-02
A4	4.20176461E-04
A5	-1.21206332E-05
A6	2.27699343E-06
A7	0.00000000E+00
A8	0.00000000E+00

Partial dispersion	
F-C	0.011513
F'-C'	0.011642
C-t	0.008899
C-A'	0.003851
d-C	0.003440
e-C	0.006175
g-d	0.014583
g-F	0.006510
h-g	0.005563
i-g	0.015450
C'-t	0.009443
e-C'	0.005631
F'-e	0.006011
i-F'	0.021287

Relative partial dispersion	
C-t/F-C	0.7730
C-A'/F-C	0.3345
d-C/F-C	0.2988
e-C/F-C	0.5364
g-d/F-C	1.2667
g-F/F-C	0.5654
h-g/F-C	0.4832
i-g/F-C	1.3420
C'-t/F'-C'	0.8111
e-C'/F'-C'	0.4837
F'-e/F'-C'	0.5163
i-F'/F'-C'	1.8285

Deviation of relative partial disp.	
$\Delta PdC$	0.0004
$\Delta PgF$	-0.0001

Internal CC (80%/5%)	
365/337	

Color Code (80%/5%)	
370/340	

CCI	
B	0.00
G	0.34
R	0.33

Thermal properties	
CTE(-30,70) [1E-7/°C]	88
CTE(100,300) [1E-7/°C]	107
Tg [°C]	460
At [°C]	522
Ht condct. [W/m·K]	1.129
Sp. heat [kJ/kg·K]	0.771
Ht diffus. [1E-6 m2/sec]	0.577

Chemical properties [class]	
Acid res. (surface)	1
Alkaline detergent res.	1
Climate resistance	1
Water res. (powder)	3
Acid res. (powder)	1

Mechanical properties	
Knoop hardness	455 (5)
Abrasion hardness	120
Young's mod. [GPa]	69.8
Shear mod. [GPa]	28.4
Poisson's ratio	0.227
Stress optical coef. [1E-5 nm/cm/Pa]	2.95

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	0.09
350	0.37
360	0.70
370	0.87
380	0.940
390	0.970
400	0.984
420	0.993
440	0.995
460	0.996
480	0.997
500	0.998
550	0.999
600	0.999
650	0.998
700	0.999
800	0.998
900	0.997
1000	0.998
1200	0.999
1400	0.999
1600	0.990
1800	0.964
2000	0.920
2200	0.84
2400	0.79

Specific gravity	
2.53	

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.)	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.2	1.4	1.6	2.0	2.1	2.7	3.3	3.7	
60 to 80 (ref.)	0.5	0.5	0.7	0.8	0.9	1.1	1.1	1.1	1.3	1.5	2.0	2.0	2.6	3.2	3.6	
40 to 60	0.4	0.5	0.7	0.8	0.9	1.0	1.1	1.1	1.3	1.5	1.9	2.0	2.5	3.1	3.5	
20 to 40	0.4	0.5	0.6	0.8	0.9	1.0	1.0	1.1	1.2	1.4	1.9	1.9	2.4	3.0	3.4	
0 to 20	0.5	0.5	0.7	0.8	0.9	1.0	1.1	1.1	1.3	1.4	1.8	1.9	2.4	2.9	3.3	
-20 to 0	0.6	0.6	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.5	1.9	1.9	2.4	2.9	3.3	
-40 to -20	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.6	2.0	2.0	2.5	3.0	3.4	
-60 to -40 (ref.)	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6	1.8	2.2	2.2	2.7	3.2	3.5	
-70 to -60 (ref.)	1.2	1.2	1.4	1.5	1.6	1.7	1.7	1.7	1.9	2.0	2.4	2.4	2.9	3.3	3.7	

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	-0.4	-0.2	-0.1	0.0	0.2	0.2	0.2	0.4	0.6	1.1	1.1	1.7	2.3	2.8	
60 to 80	-0.6	-0.5	-0.3	-0.2	-0.1	0.0	0.1	0.1	0.3	0.5	0.9	1.0	1.5	2.1	2.5	
40 to 60	-0.7	-0.7	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	0.1	0.3	0.7	0.8	1.3	1.9	2.3	
20 to 40	-0.9	-0.8	-0.7	-0.6	-0.4	-0.3	-0.3	-0.3	-0.1	0.1	0.5	0.5	1.1	1.6	2.0	
0 to 20	-1.0	-1.0	-0.8	-0.7	-0.6	-0.5	-0.5	-0.4	-0.3	-0.1	0.3	0.3	0.8	1.4	1.7	
-20 to 0	-1.2	-1.1	-1.0	-0.9	-0.8	-0.7	-0.7	-0.6	-0.5	-0.3	0.1	0.1	0.6	1.1	1.5	
-40 to -20	-1.3	-1.3	-1.2	-1.1	-1.0	-0.9	-0.8	-0.8	-0.7	-0.5	-0.1	-0.1	0.4	0.8	1.2	
-60 to -40	-1.5	-1.5	-1.3	-1.2	-1.1	-1.0	-1.0	-1.0	-0.8	-0.7	-0.4	-0.3	0.1	0.6	0.9	
-70 to -60	-1.6	-1.6	-1.5	-1.4	-1.3	-1.2	-1.1	-1.1	-1.0	-0.8	-0.5	-0.5	-0.1	0.4	0.7	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.13935561E-01
Q1	8.42051318E+01
P2	1.02232092E-02
Q2	5.03254636E-02
P3	2.96865573E-01
Q3	6.54412936E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.8	3.9
Frac. eq. (ref.)	0.6	3.8

Prod. Freq. (A to D)	C
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Similar glass type			
OHARA	S-TIL2	HOYA	E-FEL2
CDGM	H-QF8	SCHOTT	-

2019-4-1	Transmittance
2018-4-1	Prod. Freq.
2015-4-1	Color Code, Prod. Freq.