J-LASF09A

n_d = 1.816000 n_e = 1.820169

ν_d = 46.59 ν_e = 46.35

Glass code (d)
816466
Glass code (e)
820464

Spectral l.	Refractive idx
2.058	1.77826
1.970	1.77991
1.530	1.78761
1.129	1.79474
1.064	1.79609
t	1.79723
s	1.80171
A'	1.804861
r	1.807791
C	1.810744
C'	1.811575
He-Ne	1.812353
D	1.815845
d	1.816000
e	1.820169
F	1.828257
F'	1.829271
g	1.838004
h	1.846196
0.389	1.851236
i	1.860365

Partial dispersion	
F-C	0.017513
F'-C'	0.017696
C-t	0.013518
C-A'	0.005883
d-C	0.005256
e-C	0.009425
g-d	0.022004
g-F	0.009747
h-g	0.008192
i-g	0.022361
C'-t	0.014349
e-C'	0.008594
F'-e	0.009102
i-F'	0.031094

Relative partial dispersion	
C-t／F-C	0.7719
C-A'／F-C	0.3359
d-C／F-C	0.3001
e-C／F-C	0.5382
g-d／F-C	1.2564
g-F／F-C	0.5566
h-g／F-C	0.4678
i-g／F-C	1.2768
C'-t／F'-C'	0.8109
e-C'／F'-C'	0.4856
F'-e／F'-C'	0.5144
i-F'／F'-C'	1.7571

Deviation of relative partial disp.	
ΔPdC	0.0019
ΔPgF	−0.0096

Internal CC (80%/5%)
348/283
Color Code (80%/5%)
380/285

CCI	
B	0.00
G	0.39
R	0.38

Thermal properties	
CTE(−30,70) [1E-7/℃]	56
CTE(100,300) [1E-7/℃]	73
Tg [℃]	702
At [℃]	731
StP [℃]	659
AP [℃]	686
SP [℃]	786
Ht cndct. [W/m･K]	0.772
Sp. heat [kJ/kg･K]	0.434
Ht diffus. [1E-6 m2/sec]	0.357

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

Mechanical properties	
Knoop hardness	653 (7)
Abrasion hardness	57
Young's mod. [GPa]	124.4
Shear mod. [GPa]	47.9
Poisson's ratio	0.299
Stress optical coef. [1E-5 nm/cm／Pa]	1.33

Internal trans. (10mm)	
λ [nm]	τ
280	−
290	0.08
300	0.18
310	0.27
320	0.45
330	0.62
340	0.73
350	0.82
360	0.89
370	0.928
380	0.955
390	0.970
400	0.980
420	0.989
440	0.993
460	0.995
480	0.997
500	0.998
550	0.999
600	0.999
650	0.998
700	0.999
800	0.996
900	0.72
1000	0.71
1200	0.999
1400	0.997
1600	0.995
1800	0.987
2000	0.965
2200	0.911
2400	0.72

Specific gravity
4.99

Coef. disp. form. (pwr ser.)	
A0	3.21676146E+00
A1	−1.39424450E-02
A2	−1.18797124E-04
A3	2.79205286E-02
A4	6.01395043E-04
A5	−4.64990540E-06
A6	1.72221463E-06
A7	−3.69002554E-08
A8	0.00000000E+00

Relative Δn/ΔT [1E-6/℃]

Temp. [℃]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389
80 to 90 (ref.)	4.2	4.3	4.5	4.8	4.9	5.1	5.2	5.3	5.5	5.8	6.4	6.5	7.2	7.9	8.3
60 to 80 (ref.)	4.1	4.2	4.5	4.6	4.8	5.0	5.1	5.1	5.4	5.6	6.2	6.3	7.0	7.6	8.1
40 to 60	4.0	4.0	4.3	4.5	4.6	4.8	4.9	4.9	5.2	5.4	6.0	6.1	6.7	7.4	7.8
20 to 40	3.9	3.9	4.2	4.3	4.5	4.7	4.7	4.8	5.0	5.3	5.8	5.9	6.5	7.1	7.5
0 to 20	3.8	3.9	4.1	4.3	4.4	4.6	4.6	4.7	4.9	5.2	5.7	5.7	6.3	6.9	7.3
−20 to 0	3.8	3.9	4.1	4.2	4.4	4.5	4.6	4.6	4.8	5.1	5.6	5.6	6.2	6.8	7.2
−40 to −20	3.9	3.9	4.1	4.3	4.4	4.6	4.6	4.7	4.9	5.1	5.6	5.6	6.2	6.7	7.1
−60 to −40 (ref.)	4.0	4.1	4.3	4.4	4.6	4.7	4.8	4.8	5.0	5.2	5.6	5.7	6.2	6.8	7.1
−70 to −60 (ref.)	4.2	4.3	4.5	4.6	4.8	4.9	4.9	5.0	5.2	5.4	5.8	5.9	6.4	6.9	7.2

Absolute Δn/ΔT [1E-6/℃]

Temp. [℃]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389
80 to 90	3.1	3.2	3.4	3.6	3.8	4.0	4.1	4.1	4.4	4.7	5.3	5.3	6.0	6.7	7.1
60 to 80	2.9	3.0	3.2	3.4	3.6	3.8	3.8	3.9	4.1	4.4	5.0	5.0	5.7	6.4	6.8
40 to 60	2.6	2.7	2.9	3.1	3.3	3.4	3.5	3.5	3.8	4.0	4.6	4.7	5.3	5.9	6.3
20 to 40	2.3	2.4	2.6	2.8	2.9	3.1	3.2	3.2	3.4	3.7	4.2	4.3	4.9	5.5	5.9
0 to 20	2.0	2.1	2.3	2.5	2.6	2.8	2.8	2.9	3.1	3.3	3.8	3.9	4.5	5.0	5.4
−20 to 0	1.7	1.8	2.0	2.2	2.3	2.5	2.5	2.5	2.7	3.0	3.4	3.5	4.0	4.6	5.0
−40 to −20	1.4	1.5	1.7	1.8	2.0	2.1	2.2	2.2	2.4	2.6	3.1	3.1	3.6	4.2	4.5
−60 to −40	1.2	1.2	1.4	1.5	1.7	1.8	1.8	1.9	2.0	2.3	2.7	2.7	3.2	3.7	4.1
−70 to −60	0.9	1.0	1.2	1.3	1.4	1.6	1.6	1.6	1.8	2.0	2.4	2.4	2.9	3.4	3.7

Coef. disp. form. (frac. eq.)(ref.)	
P1	1.26284136E-01
Q1	8.29136708E+01
P2	5.50433653E-02
Q2	2.36945638E-02
P3	3.69870773E-01
Q3	4.86867246E-03

Fitting error of disp. form. σ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.8	4.8
Frac. eq. (ref.)	0.9	5.5

Prod. Freq. (A to D)	A

Similar glass type			
OHARA	S-LAH59	HOYA	TAF5
CDGM	H-ZLaF69	SCHOTT	−

2022-7-1	StP, AP, SP
2019-4-1	Transmittance
2017-4-1	1st edition

HIKARI GLASS CO., LTD.