

Q-LASFH11S

$n_d = 1.773870$

$n_e = 1.777769$

$v_d = 47.25$

$v_e = 47.01$

Glass code (d)	774473
Glass code (e)	778470

Spectral l.	Refractive idx
2.058	1.73794
1.970	1.73956
1.530	1.74703
1.129	1.75387
1.064	1.75515
t	1.75623
s	1.76047
A'	1.763430
r	1.766181
C	1.768949
C'	1.769728
He-Ne	1.770456
D	1.773725
d	1.773870
e	1.777769
F	1.785326
F'	1.786274
g	1.794427
h	1.802070
0.389	1.806771
i	-

Partial dispersion	
F-C	0.016377
F'-C'	0.016546
C-t	0.012720
C-A'	0.005519
d-C	0.004921
e-C	0.008820
g-d	0.020557
g-F	0.009101
h-g	0.007643
i-g	-
C'-t	0.013499
e-C'	0.008041
F'-e	0.008505
i-F'	-

Relative partial dispersion	
C-t/F-C	0.7767
C-A'/F-C	0.3370
d-C/F-C	0.3005
e-C/F-C	0.5386
g-d/F-C	1.2552
g-F/F-C	0.5557
h-g/F-C	0.4667
i-g/F-C	-
C'-t/F'-C'	0.8158
e-C'/F'-C'	0.4860
F'-e/F'-C'	0.5140
i-F'/F'-C'	-

Deviation of relative partial disp.	
ΔPdC	0.0020
ΔPgF	-0.0094

Internal CC (80%/5%)	
339/273	
Color Code (80%/5%)	
365/275	
CCI	
B	0.00
G	0.27
R	0.26

Thermal properties	
CTE(-30,70) [1E-7/°C]	60
CTE(100,300) [1E-7/°C]	75
Tg [°C]	566
At [°C]	610
StP [°C]	523
AP [°C]	554
SP [°C]	667
Ht condct. [W/m·K]	0.917
Sp. heat [kJ/kg·K]	0.542
Ht diffus. [1E-6 m2/sec]	0.365

Chemical properties [class]	
Acid res. (surface)	4
Alkaline detergent res.	2
Climate resistance	1
Water res. (powder)	1
Acid res. (powder)	3

Mechanical properties	
Knoop hardness	668 (7)
Abrasion hardness	69
Young's mod. [GPa]	107.2
Shear mod. [GPa]	41.2
Poisson's ratio	0.302
Stress optical coef. [1E-5 nm/cm/Pa]	2.19

Internal trans. (10mm)	
λ [nm]	τ
280	0.11
290	0.22
300	0.32
310	0.38
320	0.56
330	0.71
340	0.80
350	0.87
360	0.924
370	0.954
380	0.972
390	0.982
400	0.987
420	0.992
440	0.995
460	0.996
480	0.998
500	0.998
550	0.999
600	0.999
650	0.999
700	0.998
800	0.997
900	0.996
1000	0.996
1200	0.997
1400	0.997
1600	0.992
1800	0.981
2000	0.963
2200	0.918
2400	0.72

Specific gravity	
4.64	

Coef. disp. form. (pwr ser.)	
A0	3.07264726E+00
A1	-1.31831327E-02
A2	-1.35807482E-04
A3	2.56144151E-02
A4	4.99234278E-04
A5	4.16805552E-06
A6	7.01662918E-07
A7	0.00000000E+00
A8	0.00000000E+00

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.)	6.8	6.9	7.1	7.3	7.5	7.7	7.8	7.9	8.1	8.5	9.2	9.2	10.1	10.9	11.4	
60 to 80(ref.)	6.6	6.7	7.0	7.2	7.4	7.6	7.6	7.7	8.0	8.3	8.9	9.0	9.8	10.6	11.1	
40 to 60	6.5	6.6	6.8	7.0	7.2	7.4	7.4	7.5	7.7	8.1	8.7	8.8	9.5	10.3	10.7	
20 to 40	6.4	6.4	6.7	6.8	7.0	7.2	7.3	7.3	7.6	7.9	8.5	8.5	9.3	9.9	10.4	
0 to 20	6.3	6.3	6.6	6.7	6.9	7.1	7.1	7.2	7.4	7.7	8.3	8.3	9.0	9.7	10.1	
-20 to 0	6.2	6.3	6.5	6.7	6.8	7.0	7.1	7.1	7.3	7.6	8.1	8.2	8.9	9.5	9.8	
-40 to -20	6.3	6.3	6.5	6.7	6.9	7.0	7.1	7.1	7.3	7.6	8.1	8.2	8.8	9.3	9.7	
-60 to -40(ref.)	6.4	6.5	6.7	6.8	7.0	7.1	7.2	7.2	7.4	7.6	8.1	8.2	8.8	9.3	9.6	
-70 to -60(ref.)	6.6	6.6	6.8	7.0	7.1	7.3	7.3	7.4	7.6	7.8	8.3	8.3	8.9	9.4	9.7	

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	5.7	5.8	6.0	6.2	6.4	6.6	6.7	6.8	7.0	7.4	8.0	8.1	8.9	9.7	10.2	
60 to 80	5.5	5.5	5.8	6.0	6.2	6.4	6.4	6.5	6.8	7.1	7.7	7.8	8.6	9.4	9.8	
40 to 60	5.2	5.2	5.5	5.6	5.8	6.0	6.1	6.1	6.4	6.7	7.3	7.4	8.1	8.8	9.3	
20~40	4.8	4.9	5.1	5.3	5.5	5.7	5.7	5.8	6.0	6.3	6.9	7.0	7.7	8.3	8.8	
0 to 20	4.5	4.6	4.8	5.0	5.1	5.3	5.4	5.4	5.6	5.9	6.5	6.5	7.2	7.8	8.2	
-20 to 0	4.2	4.3	4.5	4.6	4.8	5.0	5.0	5.1	5.3	5.5	6.1	6.1	6.7	7.3	7.7	
-40 to -20	3.9	4.0	4.2	4.3	4.5	4.6	4.7	4.7	4.9	5.2	5.6	5.7	6.3	6.8	7.2	
-60 to -40	3.6	3.7	3.8	4.0	4.1	4.3	4.3	4.4	4.5	4.8	5.2	5.3	5.8	6.3	6.6	
-70 to -60	3.4	3.4	3.6	3.7	3.9	4.0	4.0	4.1	4.3	4.5	4.9	5.0	5.5	6.0	6.2	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.19883894E-01
Q1	7.82325824E+01
P2	5.95526753E-02
Q2	2.28375819E-02
P3	3.49042354E-01
Q3	4.69309032E-03

Fitting error of disp. form. σ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.6	5.9
Frac. eq. (ref.)	0.6	6.7

Prod. Freq. (A to D)	A
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Similar glass type			
OHARA	-	HOYA	-
C.D.G.M	-	SCHOTT	-

2020-4-1	StP, AP, SP
2019-4-1	Transmittance
2018-4-1	Prod. Freq