

# Q-LAF010S

$n_d = 1.743000$

$n_e = 1.746593$

$v_d = 49.25$

$v_e = 49.00$

Glass code (d)	743493
Glass code (e)	747490

Spectral l.	Refractive idx
2.058	1.70964
1.970	1.71115
1.530	1.71813
1.129	1.72449
1.064	1.72568
t	1.72668
s	1.73061
A'	1.733353
r	1.735899
C	1.738458
C'	1.739177
He-Ne	1.739850
D	1.742866
d	1.743000
e	1.746593
F	1.753545
F'	1.754415
g	1.761895
h	1.768890
0.389	1.773183
i	1.780938

Coef. disp. form. (pwr ser.)	
A0	2.97048240E+00
A1	-1.18584636E-02
A2	-1.66775197E-04
A3	2.36062466E-02
A4	3.56836115E-04
A5	1.23565080E-05
A6	1.07206448E-07
A7	0.00000000E+00
A8	0.00000000E+00

Partial dispersion	
F-C	0.015087
F'-C'	0.015238
C-t	0.011778
C-A'	0.005105
d-C	0.004542
e-C	0.008135
g-d	0.018895
g-F	0.008350
h-g	0.006995
i-g	0.019043
C'-t	0.012497
e-C'	0.007416
F'-e	0.007822
i-F'	0.026523

Relative partial dispersion	
C-t/F-C	0.7807
C-A'/F-C	0.3384
d-C/F-C	0.3011
e-C/F-C	0.5392
g-d/F-C	1.2524
g-F/F-C	0.5535
h-g/F-C	0.4636
i-g/F-C	1.2622
C'-t/F'-C'	0.8201
e-C'/F'-C'	0.4867
F'-e/F'-C'	0.5133
i-F'/F'-C'	1.7406

Deviation of relative partial disp.	
$\Delta PdC$	0.0016
$\Delta PgF$	-0.0083

Internal CC (80%/5%)	
347/275	
Color Code (80%/5%)	
370/275	
CCI	
B	0.00
G	0.36
R	0.37

Thermal properties	
CTE(-30,70) [1E-7/°C]	54
CTE(100,300) [1E-7/°C]	71
Tg [°C]	560
At [°C]	592
StP [°C]	514
AP [°C]	543
SP [°C]	654
Ht condct. [W/m·K]	0.849
Sp. heat [kJ/kg·K]	0.547
Ht diffus. [1E-6 m2/sec]	0.415

Chemical properties [class]	
Acid res. (surface)	5
Alkaline detergent res.	4
Climate resistance	1
Water res. (powder)	1
Acid res. (powder)	3

Mechanical properties	
Knoop hardness	612 (6)
Abrasion hardness	73
Young's mod. [GPa]	108.1
Shear mod. [GPa]	41.3
Poisson's ratio	0.309
Stress optical coef. [1E-5 nm/cm/Pa]	2.52

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.08
290	0.16
300	0.25
310	0.34
320	0.48
330	0.62
340	0.74
350	0.83
360	0.89
370	0.935
380	0.960
390	0.974
400	0.982
420	0.989
440	0.992
460	0.994
480	0.997
500	0.998
550	0.998
600	0.999
650	0.999
700	0.999
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.995
1600	0.990
1800	0.977
2000	0.953
2200	0.89
2400	0.68

Specific gravity	
4.29	

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.)	8.1	8.2	8.4	8.7	8.9	9.1	9.1	9.2	9.4	9.8	10.4	10.5	11.2	12.0	12.5		
60 to 80(ref.)	8.0	8.0	8.3	8.5	8.7	8.9	9.0	9.0	9.3	9.6	10.2	10.3	11.0	11.7	12.2		
40 to 60	7.8	7.9	8.1	8.3	8.5	8.7	8.7	8.8	9.0	9.3	9.9	10.0	10.7	11.4	11.9		
20 to 40	7.6	7.7	8.0	8.2	8.3	8.5	8.6	8.6	8.9	9.1	9.7	9.8	10.5	11.2	11.6		
0 to 20	7.5	7.6	7.8	8.0	8.2	8.4	8.4	8.5	8.7	9.0	9.5	9.6	10.3	11.0	11.4		
-20 to 0	7.5	7.6	7.8	8.0	8.1	8.3	8.4	8.4	8.6	8.9	9.4	9.5	10.1	10.8	11.2		
-40 to -20	7.5	7.6	7.8	8.0	8.1	8.3	8.3	8.4	8.6	8.9	9.4	9.4	10.1	10.7	11.1		
-60 to -40(ref.)	7.6	7.7	7.9	8.1	8.2	8.4	8.4	8.5	8.7	8.9	9.4	9.5	10.1	10.7	11.1		
-70 to -60(ref.)	7.8	7.8	8.1	8.2	8.4	8.5	8.6	8.6	8.8	9.1	9.6	9.6	10.2	10.8	11.2		

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	7.0	7.1	7.4	7.6	7.8	8.0	8.0	8.1	8.4	8.7	9.3	9.4	10.1	10.9	11.4		
60 to 80	6.8	6.9	7.1	7.3	7.5	7.7	7.8	7.8	8.1	8.4	9.0	9.1	9.8	10.5	11.0		
40 to 60	6.5	6.6	6.8	7.0	7.2	7.4	7.4	7.5	7.7	8.0	8.6	8.7	9.4	10.1	10.5		
20~40	6.2	6.2	6.5	6.7	6.8	7.0	7.1	7.1	7.3	7.6	8.2	8.3	8.9	9.6	10.1		
0 to 20	5.8	5.9	6.1	6.3	6.5	6.7	6.7	6.7	7.0	7.2	7.8	7.9	8.5	9.2	9.6		
-20 to 0	5.5	5.6	5.8	6.0	6.1	6.3	6.3	6.4	6.6	6.9	7.4	7.4	8.1	8.7	9.1		
-40 to -20	5.2	5.2	5.5	5.6	5.8	5.9	6.0	6.0	6.2	6.5	7.0	7.0	7.6	8.2	8.6		
-60 to -40	4.9	4.9	5.1	5.3	5.4	5.6	5.6	5.7	5.9	6.1	6.6	6.6	7.2	7.8	8.2		
-70 to -60	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.4	5.6	5.8	6.3	6.3	6.9	7.4	7.8		

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.02889335E-01
Q1	7.07717253E+01
P2	3.99262106E-02
Q2	2.45708717E-02
P3	3.56547103E-01
Q3	5.24737051E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.6	8.4
Frac. eq. (ref.)	0.8	7.9

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
2015-4-1	Color Code