

# Q-LASFPH3S

$n_d = 1.795256$

$n_e = 1.799438$

$v_d = 45.25$

$v_e = 45.01$

Glass code (d)	795453
Glass code (e)	799450

Spectral l.	Refractive idx
2.058	1.75803
1.970	1.75965
1.530	1.76712
1.129	1.77409
1.064	1.77541
t	1.77653
s	1.78098
A'	1.784115
r	1.787040
C	1.789992
C'	1.790824
He-Ne	1.791602
D	1.795101
d	1.795256
e	1.799438
F	1.807566
F'	1.808587
g	1.817388
h	1.825664
0.389	1.830767
i	1.840027

Coef. disp. form. (pwr ser.)	
A0	3.14195165E+00
A1	-1.29889243E-02
A2	-1.59736617E-04
A3	2.79148154E-02
A4	5.09887221E-04
A5	1.32658761E-05
A6	5.14839040E-07
A7	0.00000000E+00
A8	0.00000000E+00

Partial dispersion	
F-C	0.017574
F'-C'	0.017763
C-t	0.013458
C-A'	0.005877
d-C	0.005264
e-C	0.009446
g-d	0.022132
g-F	0.009822
h-g	0.008276
i-g	0.022639
C'-t	0.014290
e-C'	0.008614
F'-e	0.009149
i-F'	0.031440

Relative partial dispersion	
C-t/F-C	0.7658
C-A'/F-C	0.3344
d-C/F-C	0.2995
e-C/F-C	0.5375
g-d/F-C	1.2594
g-F/F-C	0.5589
h-g/F-C	0.4709
i-g/F-C	1.2882
C'-t/F'-C'	0.8045
e-C'/F'-C'	0.4849
F'-e/F'-C'	0.5151
i-F'/F'-C'	1.7700

Deviation of relative partial disp.	
$\Delta PdC$	0.0019
$\Delta PgF$	-0.0095

Internal CC (80%/5%)	
351/283	

Color Code (80%/5%)	
380/290	

CCI	
B	0.00
G	0.45
R	0.46

Thermal properties	
CTE(-30,70) [1E-7/°C]	59
CTE(100,300) [1E-7/°C]	75
Tg [°C]	586
At [°C]	628
Ht condct. [W/m·K]	0.849
Sp. heat [kJ/kg·K]	0.489
diffus. [1E-6 m2/sec]	0.360

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	660 (7)
Abrasion hardness	60
Young's mod. [GPa]	118.5
Shear mod. [GPa]	45.5
Poisson's ratio	0.303
Stress optical coef. [1E-5 nm/cm/Pa]	2.20

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.00
290	0.06
300	0.13
310	0.22
320	0.39
330	0.56
340	0.69
350	0.79
360	0.87
370	0.920
380	0.949
390	0.966
400	0.977
420	0.986
440	0.990
460	0.993
480	0.995
500	0.997
550	0.998
600	0.998
650	0.998
700	0.998
800	0.995
900	0.992
1000	0.994
1200	0.999
1400	0.994
1600	0.991
1800	0.980
2000	0.964
2200	0.920
2400	0.73

Specific gravity	
4.83	

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.)	6.9	7.0	7.2	7.5	7.7	7.9	8.0	8.0	8.3	8.6	9.3	9.4	10.2	-	-	
60 to 80(ref.)	6.8	6.9	7.1	7.3	7.5	7.7	7.8	7.8	8.1	8.4	9.1	9.2	10.0	-	-	
40 to 60	6.6	6.7	6.9	7.1	7.3	7.5	7.6	7.6	7.9	8.2	8.8	8.9	9.7	-	-	
20 to 40	6.4	6.5	6.7	6.9	7.1	7.3	7.4	7.4	7.7	8.0	8.6	8.7	9.5	-	-	
0 to 20	6.3	6.4	6.6	6.8	7.0	7.2	7.2	7.3	7.5	7.8	8.4	8.5	9.3	-	-	
-20 to 0	6.2	6.3	6.5	6.7	6.9	7.1	7.1	7.2	7.4	7.7	8.3	8.4	9.1	-	-	
-40 to -20	6.2	6.3	6.5	6.7	6.9	7.1	7.1	7.2	7.4	7.7	8.3	8.4	9.1	-	-	
-60 to -40(ref.)	6.3	6.4	6.6	6.8	7.0	7.2	7.2	7.3	7.5	7.8	8.3	8.4	9.1	-	-	
-70 to -60(ref.)	6.5	6.6	6.8	7.0	7.1	7.3	7.4	7.4	7.6	7.9	8.5	8.5	9.2	-	-	

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	5.8	5.9	6.2	6.4	6.6	6.8	6.8	6.9	7.2	7.5	8.1	8.2	9.0	-	-	
60 to 80	5.6	5.7	5.9	6.1	6.3	6.5	6.6	6.6	6.9	7.2	7.8	7.9	8.7	-	-	
40 to 60	5.2	5.3	5.6	5.8	5.9	6.1	6.2	6.2	6.5	6.8	7.4	7.5	8.3	-	-	
20~40	4.9	5.0	5.2	5.4	5.6	5.8	5.8	5.9	6.1	6.4	7.0	7.1	7.8	-	-	
0 to 20	4.5	4.6	4.9	5.0	5.2	5.4	5.4	5.5	5.7	6.0	6.6	6.7	7.4	-	-	
-20 to 0	4.2	4.3	4.5	4.7	4.8	5.0	5.1	5.1	5.4	5.6	6.2	6.3	7.0	-	-	
-40 to -20	3.9	3.9	4.1	4.3	4.5	4.7	4.7	4.7	5.0	5.2	5.8	5.9	6.6	-	-	
-60 to -40	3.5	3.6	3.8	4.0	4.1	4.3	4.3	4.4	4.6	4.9	5.4	5.5	6.1	-	-	
-70 to -60	3.2	3.3	3.5	3.7	3.8	4.0	4.1	4.1	4.3	4.6	5.1	5.2	5.8	-	-	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.13060928E-01
Q1	7.62209754E+01
P2	4.52648971E-02
Q2	2.65887976E-02
P3	3.71328872E-01
Q3	5.26870734E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.7	11.1
Frac. eq. (ref.)	0.8	11.0

Prod. Freq. (A to D)	A
----------------------	---

Similar glass type			
OHARA	-	HOYA	-
C.D.G.M	-	SCHOTT	-

-	
2019-4-1	Transmittance
2015-4-1	1st edition