

J-KZFH11

$n_d = 1.849340$

$n_e = 1.857324$

$v_d = 25.08$

$v_e = 24.89$

Glass code (d)
849251
Glass code (e)
857249

Spectral l.	Refractive idx
2.058	1.79293
1.970	1.79477
1.530	1.80374
1.129	1.81316
1.064	1.81513
t	1.81682
s	1.82391
A'	1.829208
r	1.834313
C	1.839605
C'	1.841119
He-Ne	1.842544
D	1.849048
d	1.849340
e	1.857324
F	1.873474
F'	1.875564
g	1.894198
h	1.912850
0.389	1.924986
i	1.948532

Coef. disp. form. (pwr ser.)	
A0	3.27154343E+00
A1	-1.58798974E-02
A2	0.00000000E+00
A3	4.25178613E-02
A4	5.33307755E-03
A5	-1.01514038E-03
A6	1.98676075E-04
A7	-1.79935663E-05
A8	7.55791557E-07

Partial dispersion	
F-C	0.033869
F'-C'	0.034445
C-t	0.022783
C-A'	0.010397
d-C	0.009735
e-C	0.017719
g-d	0.044858
g-F	0.020724
h-g	0.018652
i-g	0.054334
C'-t	0.024297
e-C'	0.016205
F'-e	0.018240
i-F'	0.072968

Relative partial dispersion	
C-t/F-C	0.6727
C-A'/F-C	0.3070
d-C/F-C	0.2874
e-C/F-C	0.5232
g-d/F-C	1.3245
g-F/F-C	0.6119
h-g/F-C	0.5507
i-g/F-C	1.6042
C'-t/F'-C'	0.7054
e-C'/F'-C'	0.4705
F'-e/F'-C'	0.5295
i-F'/F'-C'	2.1184

Deviation of relative partial disp.	
ΔPdC	-0.0011
ΔPgF	0.0096

Internal CC (80%/5%)	
389/352	
Color Code (70%/5%)	
400/355	
CCI	
B	0.00
G	2.80
R	3.14

Thermal properties	
CTE(-30,70) [1E-7/°C]	67
CTE(100,300) [1E-7/°C]	91
Tg [°C]	571
At [°C]	610
StP [°C]	519
AP [°C]	554
SP [°C]	682
Ht condct. [W/m·K]	1.060
Sp. heat [kJ/kg·K]	0.650
Ht diffus. [1E-6 m2/sec]	0.462

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

Mechanical properties	
Knoop hardness	578 (6)
Abrasion hardness	141
Young's mod. [GPa]	104.4
Shear mod. [GPa]	41.7
Poisson's ratio	0.253
Stress optical coef. [1E-5 nm/cm/Pa]	3.25

Internal trans. (10mm)	
λ [nm]	τ
280	-
290	-
300	-
310	-
320	-
330	-
340	-
350	0.02
360	0.23
370	0.53
380	0.71
390	0.81
400	0.86
420	0.920
440	0.946
460	0.959
480	0.968
500	0.976
550	0.988
600	0.995
650	0.996
700	0.996
800	0.998
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.989
2000	0.983
2200	0.955
2400	0.940

Specific gravity
3.53

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.)	2.7	2.8	3.2	3.5	3.9	4.3	4.4	4.5	5.1	5.7	7.3	7.5	9.7	12.3	14.3	
60 to 80 (ref.)	2.5	2.6	3.0	3.3	3.6	4.0	4.1	4.2	4.8	5.4	6.9	7.1	9.2	11.7	13.6	
40 to 60	2.2	2.3	2.7	3.0	3.3	3.7	3.8	3.9	4.4	5.0	6.4	6.6	8.6	11.0	12.7	
20 to 40	2.0	2.1	2.4	2.7	3.0	3.4	3.5	3.6	4.0	4.6	6.0	6.2	8.0	10.3	11.9	
0 to 20	1.8	1.9	2.2	2.5	2.8	3.1	3.2	3.3	3.7	4.3	5.6	5.7	7.5	9.6	11.1	
-20 to 0	1.7	1.8	2.1	2.3	2.6	2.9	3.0	3.1	3.5	4.0	5.2	5.4	7.0	9.0	10.4	
-40 to -20	1.6	1.7	2.0	2.2	2.5	2.7	2.8	2.9	3.3	3.8	4.9	5.1	6.6	8.4	9.8	
-60 to -40 (ref.)	1.7	1.7	2.0	2.2	2.5	2.7	2.8	2.9	3.2	3.7	4.8	4.9	6.3	8.0	9.3	
-70 to -60 (ref.)	1.8	1.8	2.1	2.3	2.5	2.8	2.9	2.9	3.3	3.7	4.7	4.9	6.2	7.8	9.0	

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	1.6	1.7	2.1	2.4	2.7	3.1	3.2	3.4	3.9	4.6	6.1	6.4	8.5	11.1	13.0	
60 to 80	1.3	1.4	1.7	2.1	2.4	2.8	2.9	3.0	3.5	4.2	5.6	5.9	7.9	10.4	12.3	
40 to 60	0.9	1.0	1.3	1.6	1.9	2.3	2.4	2.5	3.0	3.6	5.0	5.2	7.1	9.5	11.2	
20 to 40	0.4	0.5	0.8	1.1	1.4	1.8	1.9	2.0	2.4	3.0	4.3	4.5	6.4	8.6	10.2	
0 to 20	0.0	0.1	0.4	0.7	0.9	1.3	1.4	1.4	1.9	2.4	3.7	3.9	5.6	7.6	9.2	
-20 to 0	-0.4	-0.3	0.0	0.2	0.5	0.8	0.8	0.9	1.3	1.9	3.0	3.2	4.8	6.7	8.1	
-40 to -20	-0.8	-0.7	-0.5	-0.3	0.0	0.3	0.3	0.4	0.8	1.3	2.4	2.5	4.0	5.8	7.1	
-60 to -40	-1.2	-1.2	-0.9	-0.7	-0.5	-0.2	-0.2	-0.1	0.3	0.7	1.7	1.9	3.2	4.9	6.1	
-70 to -60	-1.5	-1.5	-1.3	-1.1	-0.8	-0.6	-0.5	-0.5	-0.1	0.3	1.2	1.4	2.6	4.2	5.3	

Coef. disp. form. (frac. eq.) (ref.)	
P1	5.98846067E-02
Q1	4.13978242E+01
P2	3.07567172E-02
Q2	5.84554752E-02
P3	3.99482781E-01
Q3	8.83760941E-03

Fitting error of disp. form. σ [1E-6]		
	Visible	Infrared
Power ser. eq.	1.9	13.7
Frac. eq. (ref.)	5.2	47.3

Prod. Freq. (A to D)	A
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Similar glass type			
OHARA	S-NBH56	HOYA	NBFD25
CDGM	-	SCHOTT	-

-	-
-	-
2023-9-1	1st edition