H-ZF10 689312

$n_d = 1.68893$	$\upsilon_d = 31.16$	$n_F - n_C = 0.022109$
$n_e = 1.69416$	$\upsilon_e = 30.92$	$n_{F'} - n_{C'} = 0.022450$

Refractive Indices		
	λ (nm)	n_λ
n_{2325}	2325.42	1.64510
n_{1970}	1970.09	1.65089
n_{1530}	1529.58	1.65759
n_{1129}	1128.64	1.66444
n_{1064}	1064.00	1.66585
n_t	1013.98	1.66704
n_s	852.11	1.67195
$n_{A'}$	768.19	1.67555
n_r	706.52	1.67898
n_C	656.27	1.68251
$n_{C'}$	643.85	1.68351
n_{He-Ne}	632.80	1.68445
n_D	589.29	1.68874
n_d	587.56	1.68893
n_e	546.07	1.69416
n_F	486.13	1.70462
$n_{F'}$	479.99	1.70596
n_g	435.84	1.71786
n_h	404.66	1.72964
n_i	365.01	1.75182

Relative Partial Dispersion	
$P_{d,C}$	0.2904
$P_{e,d}$	0.2366
$P_{g,F}$	0.5989
$P'_{d,c'}$	0.2414
$P'_{e,d}$	0.2330
$P'_{g,F'}$	0.5301

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0070
$\Delta P_{C,t}$	0.0086
$\Delta P_{C,s}$	0.0024

Thermal Properties	
Tg (℃)	597
Ts (℃)	631
$T_{10}^{14.5}$ (℃)	523
T_{10}^{13} (℃)	561
$\alpha_{-50/80℃}$ (10^{-7}/K)	89
$\alpha_{100/300℃}$ (10^{-7}/K)	109
λ (W/(m·K))	1.11

Mechanical Properties	
HK (10^7Pa)	545
F_A	139
E (GPa)	85.4
G (GPa)	34.7
μ	0.232
σ_b (MPa)	81.5
B (10^{-12}/Pa)	2.71

Chemical Properties (grade)	
RC (S)	1
RA (S)	1
D_W	1
D_A	1
R_{OH} (S)	1
RP (S)	1

Expansion Coefficient α ($\times 10^{-7}$/K)	
℃	α
-50/-40	79
-40/-30	82
-30/-20	84
-20/-10	87
-10/0	89
0/10	90
10/20	91
20/30	92
30/40	93
40/50	94
50/60	94
60/70	95
70/80	95
80/90	96
90/100	97
100/110	98
110/120	99
120/130	100
130/140	102
140/150	103
150/160	104

Internal Transmittance		
λ (nm)	τ5mm	τ10mm
2400	0.944	0.890
2200	0.966	0.933
2000	0.993	0.986
1800	0.998	0.996
1600	0.998	0.996
1400	0.998	0.996
1200	0.998	0.996
1060	0.998	0.996
1000	0.998	0.996
950	0.998	0.996
900	0.998	0.996
850	0.998	0.996
800	0.998	0.996
750	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.996	0.992
480	0.994	0.988
460	0.992	0.984
440	0.990	0.980
420	0.985	0.970
400	0.971	0.931
390	0.941	0.879
380	0.861	0.741
370	0.652	0.427
360	0.256	0.075
350		
340		
330		
320		
310		
300		
290		
280		

Constants of Dispersion Formula	
A_0	2.76089226E+00
A_1	-1.10845008E-02
A_2	2.89559966E-02
A_3	1.51547191E-03
A_4	-8.76539698E-05
A_5	1.38043475E-05

Density	
ρ (g/cm^3)	2.93

Solarization	
△λ (%)	-0.4

Range of Temperature (℃)	Temperature Coefficients of Refractive Index dn/dt relative ($\times 10^{-6}$ / ℃)									
	t	s	C	C'	He-Ne	d	e	F	F'	g
-60 ~ -40	0.7	1.2	1.6	1.6	1.7	1.9	2.2	3.1	3.1	4.1
-40 ~ -20	0.7	1.2	1.6	1.6	1.7	2.0	2.4	3.2	3.2	4.3
-20 ~ 0	0.8	1.2	1.6	1.6	1.7	2.1	2.4	3.3	3.3	4.4
0 ~ 20	0.7	1.3	1.7	1.7	1.7	2.1	2.4	3.3	3.4	4.5
20 ~ 40	0.7	1.2	1.7	1.8	1.8	2.1	2.5	3.4	3.5	4.7
40 ~ 60	0.7	1.3	1.8	1.8	1.8	2.3	2.5	3.6	3.7	4.9
60 ~ 80	0.8	1.4	1.8	1.9	1.9	2.4	2.7	3.9	3.9	5.2
80 ~ 100	0.8	1.5	1.9	2.0	2.1	2.6	2.9	4.1	4.1	5.4
100 ~ 120	0.9	1.6	2.0	2.1	2.2	2.8	3.0	4.3	4.3	5.5
120 ~ 140	1.0	1.7	2.1	2.2	2.3	2.8	3.2	4.3	4.4	5.6
140 ~ 160	1.2	1.8	2.2	2.3	2.4	3.0	3.5	4.5	4.6	5.9

Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	400/360
Coloration of Internal Transmittance	
$\lambda\tau_{80}/\lambda\tau_5$	383/359

Constants of dn/dt		
D_0	D_1	D_2
-2.36E-06	1.13E-08	-1.69E-11
E_0	E_1	λ_{TK}
9.20E-07	8.47E-10	2.63E-01