

D-ZF10A	689311	$n_d = 1.68893$	$v_d = 31.08$	$n_F - n_C = 0.022169$
		$n_e = 1.69417$	$v_e = 30.85$	$n_F - n_C = 0.022498$

Refractive Indices		
	λ (nm)	n_λ
n_{2325}	2325.42	
n_{1970}	1970.09	
n_{1530}	1529.58	
n_{1129}	1128.64	1.66447
n_{1064}	1064.00	1.66585
n_t	1013.98	1.66704
n_s	852.11	1.67193
$n_{A'}$	768.19	1.67553
n_f	706.52	1.67895
n_C	656.27	1.68249
$n_{C'}$	643.85	1.68350
n_{He-Ne}	632.80	1.68444
n_D	589.29	1.68874
n_d	587.56	1.68893
n_e	546.07	1.69417
n_F	486.13	1.70466
$n_{F'}$	479.99	1.70600
n_g	435.84	1.71795
n_h	404.66	1.72975
n_i	365.01	1.75193

Relative Partial Dispersion	
$P_{d,C}$	0.2905
$P_{e,d}$	0.2364
$P_{g,F}$	0.5995
$P'_{d,c'}$	0.2414
$P'_{e,d}$	0.2329
$P'_{g,F'}$	0.5312

Chemical Properties (grade)	
RC (S)	1
RA (S)	1
D _w	1
D _A	1
R _{OH} (S)	1
RP (S)	1
CR	1

Internal Transmittance		
λ (nm)	τ_{5mm}	τ_{10mm}
2400	0.968	0.937
2200	0.976	0.952
2000	0.987	0.974
1800	0.992	0.984
1600	0.998	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
750	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.996
500	0.996	0.992
480	0.995	0.990
460	0.993	0.986
440	0.990	0.980
420	0.984	0.968
400	0.964	0.929
390	0.939	0.881
380	0.880	0.774
370	0.724	0.524
360	0.387	0.150
350		
340		
330		
320		
310		
300		
290		
280		

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0075
$\Delta P_{C,t}$	0.0062
$\Delta P_{C,s}$	0.0013

Expansion Coefficient α ($\times 10^{-7}/K$)	
$^{\circ}C$	α
-50/-40	88
-40/-30	90
-30/-20	94
-20/-10	93
-10/0	96
0/10	98
10/20	96
20/30	101
30/40	96
40/50	101
50/60	104
60/70	109
70/80	111
80/90	110
90/100	108
100/110	113
110/120	119
120/130	125
130/140	128
140/150	128
150/160	123

Thermal Properties	
T _g ($^{\circ}C$)	510
T _s ($^{\circ}C$)	547
T ₁₀ ^{14.5} ($^{\circ}C$)	462
T ₁₀ ¹³ ($^{\circ}C$)	490
$\alpha_{-50/80^{\circ}C}$ ($10^{-7}/K$)	98
$\alpha_{100/300^{\circ}C}$ ($10^{-7}/K$)	129
λ (W/(m K))	1.14
β_d	195

Constants of Dispersion Formula	
A ₀	2.76027780E+00
A ₁	-1.06941385E-02
A ₂	2.92240616E-02
A ₃	1.44064372E-03
A ₄	-7.09323241E-05
A ₅	1.25693927E-05

Mechanical Properties	
HK (10^7 Pa)	528
F _A	149
E (GPa)	88.3
G (GPa)	35.0
μ	0.260
σ_b (MPa)	101
B (10^{-12} /Pa)	2.92

Density		Solarization	
ρ (g/cm ³)	2.90	$\Delta\lambda$ (%)	-0.5

Range of Temperature ($^{\circ}C$)	Temperature Coefficients of Refractive Index									
	dn/dt relative ($\times 10^{-6} / ^{\circ}C$)									
	t	s	C	C'	He-Ne	d	e	F	F'	g
-60 ~ -40	-0.7	-0.5	-0.4	-0.3	-0.1	0.0	0.5	0.9	1.1	2.0
-40 ~ -20	-0.6	-0.4	-0.3	-0.1	0.0	0.3	0.7	1.1	1.2	2.1
-20 ~ 0	-0.6	-0.3	-0.2	0.0	0.1	0.4	0.7	1.2	1.3	2.3
0 ~ 20	-0.5	-0.3	-0.1	0.1	0.3	0.6	0.9	1.3	1.5	2.5
20 ~ 40	-0.4	-0.2	-0.1	0.2	0.3	0.7	1.1	1.4	1.5	2.6
40 ~ 60	-0.3	0.0	0.2	0.3	0.5	0.8	1.2	1.6	1.7	2.9
60 ~ 80	-0.3	0.1	0.4	0.5	0.8	1.2	1.5	1.7	1.9	3.2
80 ~ 100	-0.3	0.2	0.5	0.6	0.9	1.5	1.8	1.9	2.0	3.4
100 ~ 120	-0.1	0.3	0.6	0.8	1.0	1.7	2.0	2.1	2.2	3.8
120 ~ 140	0.0	0.5	0.8	1.0	1.3	1.9	2.1	2.3	2.5	4.2
140 ~ 160	0.1	0.6	1.0	1.2	1.5	2.0	2.3	2.6	2.8	4.4

Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	400/360
Coloration of Internal Transmittance	
$\lambda\tau_{80}/\lambda\tau_5$	382/355

Constants of dn/dt		
D ₀	D ₁	D ₂
-4.60E-06	1.48E-08	-1.77E-11
E ₀	E ₁	λ_{TK}
7.06E-07	6.24E-10	2.74E-01