

D-ZF93	002207	$n_d = 2.00170$	$v_d = 20.70$	$n_F - n_C = 0.048520$
		$n_e = 2.01305$	$v_e = 20.52$	$n_{F'} - n_{C'} = 0.049470$

Refractive Indices		
	λ (nm)	n_λ
n_{2325}	2325.42	
n_{1970}	1970.09	
n_{1530}	1529.58	1.94163
n_{1129}	1128.64	1.95275
n_{1064}	1064.00	1.95521
n_t	1013.98	1.95737
n_s	852.11	1.96666
$n_{A'}$	768.19	1.97379
n_r	706.52	1.98077
n_C	656.27	1.98808
$n_{C'}$	643.85	1.99018
n_{He-Ne}	632.80	1.99217
n_D	589.29	2.00130
n_d	587.56	2.00170
n_e	546.07	2.01305
n_F	486.13	2.03647
$n_{F'}$	479.99	2.03954
n_g	435.84	2.06762
n_h	404.66	2.09696
n_i	365.01	

Constants of Dispersion Formula	
A_0	3.77967272E+00
A_1	-1.64802433E-02
A_2	6.48019989E-02
A_3	6.34631200E-03
A_4	-5.86190193E-04
A_5	8.72524412E-05

Density	
ρ (g/cm ³)	6.02

Solarization	
$\Delta\lambda$ (%)	-1.8

Relative Partial Dispersion	
$P_{d,C}$	0.2807
$P_{e,d}$	0.2339
$P_{g,F}$	0.6420
$P'_{d,c'}$	0.2329
$P'_{e,d}$	0.2294
$P'_{g,F'}$	0.5676

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	0.0039
$\Delta P_{g,F}$	0.0328
$\Delta P_{C,t}$	-0.0075
$\Delta P_{C,s}$	-0.0086

Thermal Properties	
Tg (°C)	445
Ts (°C)	471
T ₁₀ ^{14.5} (°C)	415
T ₁₀ ¹³ (°C)	433
$\alpha_{50/80^\circ C}$ (10 ⁻⁷ /K)	80
$\alpha_{100/300^\circ C}$ (10 ⁻⁷ /K)	98
λ (W/(m·K))	0.64
β_d	155

Mechanical Properties	
HK (10 ⁷ Pa)	418
F _A	267
E (GPa)	82.0
G (GPa)	32.0
μ	0.282
σ_b (MPa)	68.7
B (10 ⁻¹² /Pa)	1.16

Chemical Properties (grade)	
RC (S)	2
RA (S)	2
D _w	1
D _A	4
R _{OH} (S)	2
RP (S)	2

Expansion Coefficient α (×10 ⁻⁷ /K)	
°C	α
-50/-40	71
-40/-30	74
-30/-20	77
-20/-10	78
-10/0	80
0/10	80
10/20	82
20/30	83
30/40	83
40/50	84
50/60	84
60/70	85
70/80	85
80/90	86
90/100	87
100/110	88
110/120	89
120/130	90
130/140	91
140/150	93
150/160	97

Internal Transmittance		
λ (nm)	τ_{5mm}	τ_{10mm}
2400	0.880	0.774
2200	0.957	0.915
2000	0.984	0.968
1800	0.993	0.985
1600	0.996	0.991
1400	0.997	0.995
1200	0.996	0.993
1060	0.996	0.993
1000	0.995	0.990
950	0.998	0.995
900	0.996	0.992
850	0.994	0.987
800	0.993	0.987
750	0.996	0.992
700	0.997	0.994
650	0.996	0.993
600	0.996	0.992
550	0.995	0.990
500	0.961	0.923
480	0.927	0.859
460	0.873	0.762
440	0.772	0.596
420	0.523	0.274
400	0.141	0.020
390		
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	(490)/410
Coloration of Internal Transmittance	
$\lambda\tau_{80}/\lambda\tau_5$	466/402

Range of Temperature (°C)	Temperature Coefficients of Refractive Index									
	dn/dt relative (×10 ⁻⁶ / °C)									
	t	s	C	C'	He-Ne	d	e	F	F'	g
-60 ~ -40	7.8	8.5	10.4	10.6	10.9	11.9	13.2	15.3	15.7	20.6
-40 ~ -20	8.5	9.4	11.2	11.6	12.2	13.1	14.6	17.1	17.6	23.1
-20 ~ 0	9.1	10.1	12.2	12.5	12.9	14.1	15.8	19.0	19.5	25.4
0 ~ 20	9.9	10.8	13.4	13.7	14.0	15.2	16.9	20.8	21.3	27.2
20 ~ 40	10.8	11.8	14.5	14.8	15.3	16.6	18.2	22.5	23.1	29.7
40 ~ 60	11.4	12.6	16.1	16.4	16.8	18.3	20.4	24.6	25.5	32.2
60 ~ 80	12.4	13.9	17.1	17.5	17.8	19.5	21.6	26.4	27.1	34.3
80 ~ 100	13.0	14.2	17.9	18.3	18.7	20.2	22.5	27.9	28.6	36.4
100 ~ 120	13.3	14.6	18.4	18.9	19.6	20.6	23.2	28.9	29.2	37.4
120 ~ 140	13.9	15.0	19.4	19.8	20.3	21.3	23.9	30.2	30.7	39.3
140 ~ 160	14.3	15.4	19.9	20.4	20.9	22.2	25.3	31.0	31.9	40.9

Constants of dn/dt		
D ₀	D ₁	D ₂
9.63E-06	3.16E-08	-6.53E-11
E ₀	E ₁	λ_{TK}
2.42E-06	4.81E-09	2.98E-01