

<b>H-ZF5</b>	<b>740283</b>	$n_d = 1.74000$	$v_d = 28.30$	$n_F - n_C = 0.026152$
		$n_e = 1.74617$	$v_e = 28.07$	$n_F - n_C = 0.026584$

Refractive Indices		
	$\lambda$ (nm)	$n_\lambda$
$n_{2325}$	2325.42	1.69091
$n_{1970}$	1970.09	1.69701
$n_{1530}$	1529.58	1.70416
$n_{1129}$	1128.64	1.71169
$n_{1064}$	1064.00	1.71325
$n_t$	1013.98	1.71459
$n_s$	852.11	1.72020
$n_{A'}$	768.19	1.72435
$n_f$	706.52	1.72833
$n_C$	656.27	1.73245
$n_{C'}$	643.85	1.73363
$n_{He-Ne}$	632.80	1.73474
$n_D$	589.29	1.73977
$n_d$	587.56	1.74000
$n_e$	546.07	1.74617
$n_F$	486.13	1.75861
$n_{F'}$	479.99	1.76021
$n_g$	435.84	1.77450
$n_h$	404.66	1.78876
$n_i$	365.01	1.81588

Relative Partial Dispersion	
$P_{d,C}$	0.2887
$P_{e,d}$	0.2359
$P_{g,F}$	0.6076
$P'_{d,c'}$	0.2396
$P'_{e,d}$	0.2321
$P'_{g,F'}$	0.5375

Chemical Properties (grade)	
RC (S)	1
RA (S)	1
D <sub>w</sub>	1
D <sub>A</sub>	1
R <sub>OH</sub> (S)	1
RP (S)	1
CR	

Internal Transmittance		
$\lambda$ (nm)	$\tau_{5mm}$	$\tau_{10mm}$
2400	0.937	0.878
2200	0.962	0.925
2000	0.991	0.982
1800	0.997	0.994
1600	0.997	0.994
1400	0.997	0.994
1200	0.997	0.994
1060	0.997	0.994
1000	0.997	0.994
950	0.997	0.994
900	0.997	0.994
850	0.997	0.994
800	0.997	0.994
750	0.997	0.994
700	0.997	0.994
650	0.997	0.994
600	0.997	0.994
550	0.995	0.992
500	0.992	0.987
480	0.990	0.985
460	0.984	0.973
440	0.980	0.966
420	0.971	0.949
400	0.935	0.875
390	0.892	0.800
380	0.776	0.603
370	0.491	0.236
360	0.109	0.013
350		
340		
330		
320		
310		
300		
290		
280		

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	0.0011
$\Delta P_{g,F}$	0.0110
$\Delta P_{C,t}$	0.0057
$\Delta P_{C,s}$	0.0001

Expansion Coefficient $\alpha$ ( $\times 10^{-7}/K$ )	
$^{\circ}C$	$\alpha$
-50/-40	76
-40/-30	78
-30/-20	80
-20/-10	82
-10/0	83
0/10	84
10/20	84
20/30	85
30/40	86
40/50	86
50/60	87
60/70	87
70/80	88
80/90	89
90/100	90
100/110	91
110/120	93
120/130	94
130/140	95
140/150	97
150/160	98

Thermal Properties	
T <sub>g</sub> ( $^{\circ}C$ )	604
T <sub>s</sub> ( $^{\circ}C$ )	647
T <sub>10</sub> <sup>14.5</sup> ( $^{\circ}C$ )	543
T <sub>10</sub> <sup>13</sup> ( $^{\circ}C$ )	574
$\alpha_{-50/80^{\circ}C}$ ( $10^{-7}/K$ )	86
$\alpha_{100/300^{\circ}C}$ ( $10^{-7}/K$ )	107
$\lambda$ (W/(m K))	1.15

Constants of Dispersion Formula	
A <sub>0</sub>	2.91687382E+00
A <sub>1</sub>	-1.18527790E-02
A <sub>2</sub>	3.42689145E-02
A <sub>3</sub>	2.02963652E-03
A <sub>4</sub>	-1.14580838E-04
A <sub>5</sub>	1.85928308E-05

Mechanical Properties	
HK ( $10^7$ Pa)	580
F <sub>A</sub>	162
E (GPa)	91.2
G (GPa)	35.6
$\mu$	0.283
$\sigma_b$ (MPa)	62
B ( $10^{-12}$ /Pa)	2.58

Density	Solarization
$\rho$ (g/cm <sup>3</sup> )	$\Delta\lambda$ (%)
3.09	0.0

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	-0.8	-0.5	-0.3	-0.3	-0.2	0.1	1.0	1.7	1.8	3.2
-40 ~ -20	-0.6	-0.3	-0.2	-0.2	-0.1	0.2	1.2	1.8	2.0	3.4
-20 ~ 0	-0.2	0.0	0.1	0.1	0.1	0.6	1.4	2.2	2.3	3.7
0 ~ 20	0.0	0.2	0.3	0.3	0.3	0.8	1.9	2.5	2.6	3.9
20 ~ 40	0.0	0.3	0.6	0.7	0.8	1.1	1.9	2.6	2.7	4.4
40 ~ 60	0.2	0.5	0.9	1.0	1.1	1.4	2.1	2.9	3.0	4.7
60 ~ 80	0.3	0.8	1.3	1.4	1.5	1.8	2.5	3.3	3.4	5.2
80 ~ 100	0.4	1.0	1.6	1.7	1.9	2.1	2.8	3.8	3.9	5.7
100 ~ 120	0.5	1.2	1.9	2.1	2.2	2.2	3.1	4.2	4.3	6.1
120 ~ 140	0.8	1.4	2.2	2.4	2.5	2.6	3.3	4.4	4.5	6.4
140 ~ 160	1.0	1.5	2.3	2.5	2.6	2.8	3.5	4.7	4.8	6.7

Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	415/365
Coloration of Internal Transmittance	
$\lambda\tau_{80}/\lambda\tau_5$	389/362

Constants of dn/dt		
D <sub>0</sub>	D <sub>1</sub>	D <sub>2</sub>
-4.00E-06	1.95E-08	-2.24E-11
E <sub>0</sub>	E <sub>1</sub>	$\lambda_{TK}$
7.71E-07	5.88E-10	3.10E-01