

**SCHOTT**  
glass made of ideas

## Optical Glass

Data Sheets Inquiry Glass



# Table of Content

Glass type	Page
BAFN6	5
BK7G18	6
F2G12	7
FK3	8
K5G20	9
KZFS12	10
LAK9G15	11
LF5G15	12
LF5G19	13
N-BAF3	14
N-LAF3	15
N-LAF36	16
N-LAK33A	17
N-PSK53	18
N-SF19	19
N-SF56	20
N-SF64	21
N-SK10	22
N-SK15	23
P-PK53	24
P-SF67	25
SF6G05	26
SF57HT	27
SFL6	28
SFL57	29

## Explanations

### Refractive indices

The refractive indices  $n$  are listed for a maximum of 23 wavelengths in the range between 248.2 nm and 2325.4 nm.

### Constants of the dispersion formula

From the Sellmeier dispersion formula

$$n^2(\lambda) - 1 = \frac{B_1 \lambda^2}{\lambda^2 - C_1} + \frac{B_2 \lambda^2}{\lambda^2 - C_2} + \frac{B_3 \lambda^2}{\lambda^2 - C_3}$$

the refractive indices for any wavelength within the range from the near UV to 2.3  $\mu\text{m}$  can be calculated with the help of the constants  $B_1, B_2, B_3,$  and  $C_1, C_2, C_3$ .

### Constants of the formula $dn/dT$

The temperature dependence of the refractive index can be calculated using the following formula:

$$\frac{dn_{\text{abs}}(\lambda, T)}{dT} = \frac{n^2(\lambda, T_0) - 1}{2 n(\lambda, T_0)} \left( D_0 + 2 D_1 \Delta T + 3 D_2 \Delta T^2 + \frac{E_0 + 2 E_1 \Delta T}{\lambda^2 - \lambda_{\text{TK}}^2} \right)$$

The constants are valid for a temperature range from  $-100^\circ\text{C}$  to  $+140^\circ\text{C}$  and a wavelength range from 0.365  $\mu\text{m}$  to 1.014  $\mu\text{m}$ . The temperature coefficients in the data sheets are guideline values.

### Temperature coefficient of refraction

$\Delta n_{\text{rel}} / \Delta T$  referring to air at normal pressure 1013.3 mbar

$\Delta n_{\text{abs}} / \Delta T$  referring to vacuum

### Internal transmittance $\tau_i$

The internal transmittance in the wavelength range between 250 nm and 2500 nm is listed for thickness of 10 and 25 mm. The internal transmittance and color code listed in the data sheet represent median values from several melts of one glass type. For HT and HTultra grade, the internal transmittance in the visible spectrum includes guaranteed minimum values.

### Color code

The color code lists the wavelength  $\lambda_{80}$  and  $\lambda_5$  at which the transmittance is 0.80 and 0.05 at 10 mm thickness. The values are rounded off to 10 nm and denoted by eliminating the first digit. For high index glass types with  $nd > 1.83$ , the data of the color codes (marked by \*) refers to the transmittance values 0.70 and 0.05 ( $\lambda_{70}$  and  $\lambda_5$ ).

### Relative partial dispersion

The relative partial dispersions  $P_{xy}$  and  $P'_{xy}$  for the wavelengths  $x$  and  $y$  are derived from the equations.

$$P_{xy} = \frac{n_x - n_y}{n_F - n_C} \quad \text{und} \quad P'_{xy} = \frac{n_x - n_y}{n_{F'} - n_{C'}}$$

### Deviation of the relative partial dispersion from the "normal line" $\Delta P$

The term  $\Delta P_{xy}$  quantitatively describes a deviation relation of the dispersion from the "normal glasses".

## Other characteristics

$\alpha_{-30/+70}$	= The coefficient of thermal expansion in the temperature range between $-30^{\circ}\text{C}$ und $+70^{\circ}\text{C}$ in $10^{-6}/\text{K}$
$\alpha_{20/300}$	= The coefficient of linear thermal expansion in the temperature range between $+20^{\circ}\text{C}$ und $+300^{\circ}\text{C}$ in $10^{-6}/\text{K}$
Tg	= Transformation temperature in $^{\circ}\text{C}$
$T_{10^{13.0}}$	= Temperature of the glass in $^{\circ}\text{C}$ at a viscosity of $10^{13}$ dPa·s
$T_{10^{7.6}}$	= Temperature of the glass in $^{\circ}\text{C}$ at a viscosity of $10^{7.6}$ dPa·s
$c_p$	= average specific heat capacity in $\text{J}/(\text{g}\cdot\text{K})$
$\lambda$	= Thermal conductivity in $\text{W}/(\text{m}\cdot\text{K})$
AT*	= Yield point/sag temperature in $^{\circ}\text{C}$
$\rho$	= Density in $\text{g}/\text{cm}^3$
E	= Elasticity modulus in $10^3$ N/mm <sup>2</sup>
$\mu$	= Poisson's ratio
K	= Stress optical coefficient in $10^{-6}$ mm <sup>2</sup> /N
HK	= Knoop hardness
HG	= Grindability class (ISO 12844)
Abrasion Aa*	= Grindability according to JOGIS**
CR	= Climatic resistance Resistance to moisture in the air expressed in CR classes 1 (high) to 4 (low).
FR	= Stain resistance Resistance to stain formation expressed in FR classes 0 (high) to 5 (low).
SR	= Acid resistance Resistance to acid solutions expressed in SR classes 1 (high) to 4 (low) and 51 to 53 (very low).
AR	= Alkali resistance Resistance to alkaline solutions expressed in AR classes 1 (high) to 4 (low).
PR	= Phosphate resistance Resistance to alkaline phosphate containing solutions expressed in PR classes 1 (high) to 4 (low).
SR-J*	= Acid resistance class according to JOGIS**
WR-J*	= Water resistance class according to JOGIS**

\* only precision molding glasses

\*\* JOGIS = Japanese Optical Glass Industrial Standards

**BAFN6**  
**589485.317**

$n_d = 1.58900$	$v_d = 48.45$	$n_F - n_C = 0.012158$
$n_e = 1.59189$	$v_e = 48.16$	$n_{F'} - n_{C'} = 0.012291$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55832
$n_{1970.1}$	1970.1	1.56349
$n_{1529.6}$	1529.6	1.56910
$n_{1060.0}$	1060.0	1.57522
$n_t$	1014.0	1.57596
$n_s$	852.1	1.57910
$n_r$	706.5	1.58332
$n_C$	656.3	1.58536
$n_{C'}$	643.8	1.58594
$n_{632.8}$	632.8	1.58647
$n_D$	589.3	1.58889
$n_d$	587.6	1.58900
$n_e$	546.1	1.59189
$n_F$	486.1	1.59752
$n_{F'}$	480.0	1.59823
$n_g$	435.8	1.60436
$n_h$	404.7	1.61017
$n_i$	365.0	1.62038
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
<b>2500</b>		
<b>2325</b>	0.910	0.780
<b>1970</b>	0.976	0.940
<b>1530</b>	0.998	0.995
<b>1060</b>	0.998	0.995
<b>700</b>	0.999	0.997
<b>660</b>	0.998	0.995
<b>620</b>	0.998	0.994
<b>580</b>	0.998	0.994
<b>546</b>	0.996	0.991
<b>500</b>	0.994	0.986
<b>460</b>	0.990	0.975
<b>436</b>	0.985	0.963
<b>420</b>	0.981	0.954
<b>405</b>	0.976	0.940
<b>400</b>	0.971	0.930
<b>390</b>	0.954	0.890
<b>380</b>	0.920	0.810
<b>370</b>	0.850	0.670
<b>365</b>	0.790	0.560
<b>350</b>	0.430	0.120
<b>334</b>		
<b>320</b>		
<b>310</b>		
<b>300</b>		
<b>290</b>		
<b>280</b>		
<b>270</b>		
<b>260</b>		
<b>250</b>		

Relative Partial Dispersion	
$P_{s,t}$	0.2580
$P_{C,s}$	0.5152
$P_{d,C}$	0.2993
$P_{e,d}$	0.2377
$P_{g,F}$	0.5625
$P_{i,h}$	0.8405
$P'_{s,t}$	0.2552
$P'_{C',s}$	0.5565
$P'_{d,C'}$	0.2492
$P'_{e,d}$	0.2351
$P'_{g,F'}$	0.4987
$P'_{i,h}$	0.8314

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0015
$\Delta P_{C,s}$	-0.0006
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0002
$\Delta P_{i,g}$	0.0002

Constants of Dispersion Formula	
$B_1$	1.36719201
$B_2$	0.10907994
$B_3$	1.02108011
$C_1$	0.00882820704
$C_2$	0.0438731646
$C_3$	113.58602

Color Code	
$\lambda_{80}/\lambda_5$	38/33
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
inquiry glass, lead containing

Constants of Dispersion $dn/dT$	
$D_0$	$1.34 \cdot 10^{-6}$
$D_1$	$1.34 \cdot 10^{-8}$
$D_2$	$-5.50 \cdot 10^{-11}$
$E_0$	$4.95 \cdot 10^{-7}$
$E_1$	$3.62 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.265

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.5
$T_g [^\circ C]$	549
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	0
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.17
$E [10^3 N/mm^2]$	77
$\mu$	0.234
$K [10^{-6} mm^2/N]$	2.50
$HK_{0.1/20}$	540
<b>HG</b>	
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	2
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
<b>-40/ -20</b>	2.1	2.9	3.9	0.0	0.8	1.7
<b>+20/ +40</b>	2.3	3.2	4.3	1.0	1.8	2.8
<b>+60/ +80</b>	2.4	3.3	4.4	1.3	2.2	3.3

## BK7G18 520636.252

$n_d = 1.51975$	$v_d = 63.58$	$n_F - n_C = 0.008174$
$n_e = 1.52170$	$v_e = 63.36$	$n_{F'} - n_{C'} = 0.008233$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.49203
$n_{1970.1}$	1970.1	1.49777
$n_{1529.6}$	1529.6	1.50373
$n_{1060.0}$	1060.0	1.50953
$n_t$	1014.0	1.51015
$n_s$	852.1	1.51267
$n_r$	706.5	1.51579
$n_C$	656.3	1.51724
$n_{C'}$	643.8	1.51764
$n_{632.8}$	632.8	1.51802
$n_D$	589.3	1.51968
$n_d$	587.6	1.51975
$n_e$	546.1	1.52170
$n_F$	486.1	1.52541
$n_{F'}$	480.0	1.52587
$n_g$	435.8	1.52981
$n_h$	404.7	1.53345
$n_i$	365.0	1.53970
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.634	0.320
2325	0.782	0.540
1970	0.933	0.841
1530	0.992	0.979
1060	0.999	0.998
700	0.997	0.993
660	0.995	0.988
620	0.994	0.984
580	0.992	0.979
546	0.989	0.973
500	0.982	0.957
460	0.970	0.927
436	0.947	0.873
420	0.905	0.780
405	0.815	0.600
400	0.764	0.510
390	0.601	0.280
380	0.360	0.080
370	0.080	
365	0.020	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3077
$P_{C,s}$	0.5591
$P_{d,C}$	0.3071
$P_{e,d}$	0.2385
$P_{g,F}$	0.5376
$P_{i,h}$	0.7640
$P'_{s,t}$	0.3055
$P'_{C',s}$	0.6040
$P'_{d,C'}$	0.2561
$P'_{e,d}$	0.2368
$P'_{g,F'}$	0.4777
$P'_{i,h}$	0.7585

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0203
$\Delta P_{C,s}$	0.0080
$\Delta P_{F,e}$	-0.0006
$\Delta P_{g,F}$	0.0007
$\Delta P_{i,g}$	0.0189

Constants of Dispersion Formula	
$B_1$	1.26538542
$B_2$	0.0144191073
$B_3$	1.00323028
$C_1$	0.00813104078
$C_2$	0.0543303226
$C_3$	102.821166

Color Code	
$\lambda_{80}/\lambda_5$	41/37
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
radiation resistant glass	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	7.0
$\alpha_{+20/+300^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	8.2
$T_g$ [ $^\circ\text{C}$ ]	585
$T_{10}^{13.0}$ [ $^\circ\text{C}$ ]	570
$T_{10}^{7.6}$ [ $^\circ\text{C}$ ]	722
$c_p$ [J/(g·K)]	0.820
$\lambda$ [W/(m·K)]	1.190
$\rho$ [g/cm <sup>3</sup> ]	2.52
$E$ [ $10^3$ N/mm <sup>2</sup> ]	82
$\mu$	0.205
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.77
$HK_{0.1/20}$	580
<b>HG</b>	
<b>CR</b>	
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2
<b>PR</b>	0

Constants of Dispersion dn/dT	
$D_0$	$1.52 \cdot 10^{-6}$
$D_1$	$1.37 \cdot 10^{-8}$
$D_2$	$-1.26 \cdot 10^{-11}$
$E_0$	$4.36 \cdot 10^{-7}$
$E_1$	$4.17 \cdot 10^{-10}$
$\lambda_{TK}$ [ $\mu\text{m}$ ]	0.194

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/\text{K}$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/\text{K}$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.2	2.7	3.3	0.2	0.7	1.2
+20/ +40	2.2	2.8	3.4	0.9	1.5	2.1
+60/ +80	2.4	3.0	3.7	1.4	2.0	2.6

## F2G12 621366.360

$n_d = 1.62072$	$v_d = 36.56$	$n_F - n_C = 0.016979$
$n_e = 1.62474$	$v_e = 36.30$	$n_{F'} - n_{C'} = 0.017212$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58584
$n_{1970.1}$	1970.1	1.59051
$n_{1529.6}$	1529.6	1.59593
$n_{1060.0}$	1060.0	1.60265
$n_t$	1014.0	1.60353
$n_s$	852.1	1.60744
$n_r$	706.5	1.61298
$n_C$	656.3	1.61573
$n_{C'}$	643.8	1.61652
$n_{632.8}$	632.8	1.61725
$n_D$	589.3	1.62057
$n_d$	587.6	1.62072
$n_e$	546.1	1.62474
$n_F$	486.1	1.63271
$n_{F'}$	480.0	1.63373
$n_g$	435.8	1.64261
$n_h$	404.7	1.65121
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.34702224
$B_2$	0.210037763
$B_3$	19.5350768
$C_1$	0.00980850553
$C_2$	0.0471788018
$C_3$	2279.1547

Constants of Dispersion $dn/dT$	
$D_0$	
$D_1$	
$D_2$	
$E_0$	
$E_1$	
$\lambda_{TK}$ [ $\mu$ m]	

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20						
+20/ +40						
+60/ +80						

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.891	0.750
2325	0.924	0.820
1970	0.971	0.930
1530	0.996	0.989
1060	0.999	0.997
700	0.995	0.988
660	0.994	0.984
620	0.992	0.979
580	0.989	0.972
546	0.985	0.963
500	0.974	0.937
460	0.937	0.850
436	0.842	0.650
420	0.693	0.400
405	0.428	0.120
400	0.325	0.060
390	0.124	
380	0.019	
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80}/\lambda_5$	45/39
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
radiation resistant glass

Relative Partial Dispersion	
$P_{s,t}$	0.2303
$P_{C,s}$	0.4883
$P_{d,C}$	0.2937
$P_{e,d}$	0.2369
$P_{g,F}$	0.5831
$P_{i,h}$	
$P'_{s,t}$	0.2272
$P'_{C',s}$	0.5271
$P'_{d,C'}$	0.2443
$P'_{e,d}$	0.2337
$P'_{g,F'}$	0.5163
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0002
$\Delta P_{C,s}$	0.0002
$\Delta P_{F,e}$	0.0002
$\Delta P_{g,F}$	0.0008
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.0
$T_g$ [°C]	435
$T_{10}^{13.0}$ [°C]	438
$T_{10}^{7.6}$ [°C]	604
$c_p$ [J/(g·K)]	0.530
$\lambda$ [W/(m·K)]	0.820
$\rho$ [g/cm <sup>3</sup> ]	3.60
$E$ [ $10^3$ N/mm <sup>2</sup> ]	58
$\mu$	0.222
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.79
$HK_{0.1/20}$	428
HG	
CR	1
FR	0
SR	1
AR	1.3
PR	2.3

**FK3**  
**464658.227**

$n_d = 1.46450$	$v_d = 65.77$	$n_F - n_C = 0.007063$
$n_e = 1.46619$	$v_e = 65.57$	$n_{F'} - n_{C'} = 0.007110$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.43972
$n_{1970.1}$	1970.1	1.44498
$n_{1529.6}$	1529.6	1.45039
$n_{1060.0}$	1060.0	1.45557
$n_t$	1014.0	1.45612
$n_s$	852.1	1.45834
$n_r$	706.5	1.46106
$n_C$	656.3	1.46232
$n_{C'}$	643.8	1.46267
$n_{632.8}$	632.8	1.46300
$n_D$	589.3	1.46444
$n_d$	587.6	1.46450
$n_e$	546.1	1.46619
$n_F$	486.1	1.46939
$n_{F'}$	480.0	1.46978
$n_g$	435.8	1.47315
$n_h$	404.7	1.47625
$n_i$	365.0	1.48149
$n_{334.1}$	334.1	1.48708
$n_{312.6}$	312.6	1.49217
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.650	0.340
2325	0.810	0.590
1970	0.971	0.930
1530	0.988	0.970
1060	0.998	0.995
700	0.997	0.993
660	0.997	0.993
620	0.997	0.993
580	0.997	0.993
546	0.997	0.993
500	0.997	0.993
460	0.996	0.990
436	0.996	0.989
420	0.995	0.987
405	0.994	0.986
400	0.994	0.985
390	0.994	0.984
380	0.992	0.980
370	0.988	0.971
365	0.985	0.964
350	0.954	0.890
334	0.890	0.740
320	0.700	0.410
310	0.510	0.190
300	0.300	0.050
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3133
$P_{C,s}$	0.5644
$P_{d,C}$	0.3083
$P_{e,d}$	0.2387
$P_{g,F}$	0.5329
$P_{i,h}$	0.7419
$P'_{s,t}$	0.3112
$P'_{C',s}$	0.6097
$P'_{d,C'}$	0.2571
$P'_{e,d}$	0.2371
$P'_{g,F'}$	0.4736
$P'_{i,h}$	0.7370

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0207
$\Delta P_{C,s}$	0.0082
$\Delta P_{F,e}$	-0.0008
$\Delta P_{g,F}$	-0.0003
$\Delta P_{i,g}$	0.0079

Constants of Dispersion Formula	
$B_1$	0.973346627
$B_2$	0.146642231
$B_3$	0.679304225
$C_1$	0.00640795469
$C_2$	0.020565293
$C_3$	80.4965389

Color Code	
$\lambda_{80}/\lambda_5$	33/30
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
inquiry glass

Constants of Dispersion $dn/dT$	
$D_0$	$-4.90 \cdot 10^{-6}$
$D_1$	$1.23 \cdot 10^{-8}$
$D_2$	$-1.19 \cdot 10^{-10}$
$E_0$	$3.45 \cdot 10^{-7}$
$E_1$	$7.72 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.18

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.4
$T_g [^\circ C]$	362
$T_{10}^{13.0} [^\circ C]$	369
$T_{10}^{7.6} [^\circ C]$	622
$c_p [J/(g \cdot K)]$	0.840
$\lambda [W/(m \cdot K)]$	0.900
$\rho [g/cm^3]$	2.27
$E [10^3 N/mm^2]$	46
$\mu$	0.243
$K [10^{-6} mm^2/N]$	3.71
$HK_{0.1/20}$	380
HG	0
CR	2
FR	3
SR	52.4
AR	2
PR	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.7	-0.4	-0.1	-2.6	-2.4	-2.1
+20/ +40	-0.4	0.0	0.3	-1.7	-1.3	-1.0
+60/ +80	-0.6	-0.2	0.3	-1.6	-1.2	-0.8







## LAK9G15 691548.353

$n_d = 1.69064$	$v_d = 54.76$	$n_F - n_C = 0.012612$
$n_e = 1.69364$	$v_e = 54.53$	$n_{F'} - n_{C'} = 0.012721$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.65362
$n_{1970.1}$	1970.1	1.66043
$n_{1529.6}$	1529.6	1.66783
$n_{1060.0}$	1060.0	1.67552
$n_t$	1014.0	1.67639
$n_s$	852.1	1.67999
$n_r$	706.5	1.68462
$n_C$	656.3	1.68680
$n_{C'}$	643.8	1.68741
$n_{632.8}$	632.8	1.68798
$n_D$	589.3	1.69052
$n_d$	587.6	1.69064
$n_e$	546.1	1.69364
$n_F$	486.1	1.69941
$n_{F'}$	480.0	1.70013
$n_g$	435.8	1.70630
$n_h$	404.7	1.71205
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.480	0.160
2325	0.752	0.490
1970	0.963	0.910
1530	0.995	0.987
1060	0.998	0.996
700	0.994	0.986
660	0.993	0.982
620	0.991	0.978
580	0.989	0.973
546	0.985	0.964
500	0.971	0.930
460	0.919	0.810
436	0.799	0.570
420	0.634	0.320
405	0.382	0.090
400	0.292	0.040
390	0.122	0.010
380	0.026	
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2852
$P_{C,s}$	0.5400
$P_{d,C}$	0.3040
$P_{e,d}$	0.2383
$P_{g,F}$	0.5462
$P_{i,h}$	
$P'_{s,t}$	0.2828
$P'_{C',s}$	0.5834
$P'_{d,C'}$	0.2533
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4849
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0205
$\Delta P_{C,s}$	0.0095
$\Delta P_{F,e}$	-0.0018
$\Delta P_{g,F}$	-0.0055
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.28773667
$B_2$	0.518244853
$B_3$	26.1756109
$C_1$	0.0055754192
$C_2$	0.0223679524
$C_3$	1892.2533

Constants of Dispersion $dn/dT$	
$D_0$	
$D_1$	
$D_2$	
$E_0$	
$E_1$	
$\lambda_{TK}$ [ $\mu m$ ]	

Color Code	
$\lambda_{80}/\lambda_5$	46/38
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
radiation resistant glass	

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	6.3
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	7.6
$T_g$ [ $^\circ C$ ]	634
$T_{10}^{13.0}$ [ $^\circ C$ ]	635
$T_{10}^{7.6}$ [ $^\circ C$ ]	710
$c_p$ [J/(g·K)]	0.660
$\lambda$ [W/(m·K)]	0.880
$\rho$ [g/cm <sup>3</sup> ]	3.53
$E$ [ $10^3$ N/mm <sup>2</sup> ]	108
$\mu$	0.288
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	1.86
$HK_{0.1/20}$	721
<b>HG</b>	
<b>CR</b>	2
<b>FR</b>	2
<b>SR</b>	53
<b>AR</b>	1.3
<b>PR</b>	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20						
+20/ +40						
+60/ +80						

## LF5G15 584408.322

$n_d = 1.58397$	$v_d = 40.83$	$n_F - n_C = 0.014301$
$n_e = 1.58736$	$v_e = 40.55$	$n_{F'} - n_{C'} = 0.014484$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55252
$n_{1970.1}$	1970.1	1.55707
$n_{1529.6}$	1529.6	1.56225
$n_{1060.0}$	1060.0	1.56842
$n_t$	1014.0	1.56920
$n_s$	852.1	1.57263
$n_r$	706.5	1.57739
$n_C$	656.3	1.57974
$n_{C'}$	643.8	1.58041
$n_{632.8}$	632.8	1.58103
$n_D$	589.3	1.58384
$n_d$	587.6	1.58397
$n_e$	546.1	1.58736
$n_F$	486.1	1.59404
$n_{F'}$	480.0	1.59489
$n_g$	435.8	1.60228
$n_h$	404.7	
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.693	0.400
2325	0.770	0.520
1970	0.912	0.795
1530	0.994	0.985
1060	0.999	0.998
700	0.997	0.992
660	0.996	0.989
620	0.995	0.987
580	0.993	0.984
546	0.991	0.979
500	0.985	0.963
460	0.966	0.918
436	0.917	0.805
420	0.833	0.632
405	0.657	0.350
400	0.569	0.244
390	0.350	0.070
380	0.134	
370	0.020	
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2397
$P_{C,s}$	0.4975
$P_{d,C}$	0.2957
$P_{e,d}$	0.2372
$P_{g,F}$	0.5759
$P_{i,h}$	
$P'_{s,t}$	0.2367
$P'_{C',s}$	0.5372
$P'_{d,C'}$	0.2460
$P'_{e,d}$	0.2342
$P'_{g,F'}$	0.5101
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0015
$\Delta P_{C,s}$	-0.0006
$\Delta P_{F,e}$	0.0002
$\Delta P_{g,F}$	0.0008
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.28887331
$B_2$	0.162818811
$B_3$	10.5579792
$C_1$	0.0092001566
$C_2$	0.0456954308
$C_3$	1275.44015

Constants of Dispersion $dn/dT$	
$D_0$	
$D_1$	
$D_2$	
$E_0$	
$E_1$	
$\lambda_{TK}$ [ $\mu m$ ]	

Color Code	
$\lambda_{80}/\lambda_5$	43/37
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
radiation resistant glass	

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	9.3
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	10.7
$T_g$ [ $^\circ C$ ]	407
$T_{10}^{13.0}$ [ $^\circ C$ ]	412
$T_{10}^{7.6}$ [ $^\circ C$ ]	578
$c_p$ [J/(g·K)]	0.600
$\lambda$ [W/(m·K)]	0.860
$\rho$ [g/cm <sup>3</sup> ]	3.22
$E$ [ $10^3$ N/mm <sup>2</sup> ]	60
$\mu$	0.228
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.77
$HK_{0.1/20}$	446
<b>HG</b>	
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1.3
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20						
+20/ +40						
+60/ +80						

## LF5G19 597399.330

$n_d = 1.59655$	$v_d = 39.89$	$n_F - n_C = 0.014954$
$n_e = 1.60010$	$v_e = 39.60$	$n_{F'} - n_{C'} = 0.015153$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.56416
$n_{1970.1}$	1970.1	1.56890
$n_{1529.6}$	1529.6	1.57419
$n_{1060.0}$	1060.0	1.58045
$n_t$	1014.0	1.58125
$n_s$	852.1	1.58477
$n_r$	706.5	1.58970
$n_C$	656.3	1.59214
$n_{C'}$	643.8	1.59284
$n_{632.8}$	632.8	1.59349
$n_D$	589.3	1.59642
$n_d$	587.6	1.59655
$n_e$	546.1	1.60010
$n_F$	486.1	1.60710
$n_{F'}$	480.0	1.60799
$n_g$	435.8	1.61578
$n_h$	404.7	1.62330
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.525	0.200
2325	0.631	0.316
1970	0.870	0.707
1530	0.992	0.979
1060	0.999	0.998
700	0.997	0.993
660	0.995	0.987
620	0.993	0.983
580	0.991	0.977
546	0.986	0.966
500	0.973	0.934
460	0.929	0.832
436	0.822	0.612
420	0.657	0.350
405	0.382	0.090
400	0.276	0.040
390	0.090	
380		
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2355
$P_{C,s}$	0.4930
$P_{d,C}$	0.2946
$P_{e,d}$	0.2370
$P_{g,F}$	0.5803
$P_{i,h}$	
$P'_{s,t}$	0.2324
$P'_{C',s}$	0.5322
$P'_{d,C'}$	0.2451
$P'_{e,d}$	0.2339
$P'_{g,F'}$	0.5139
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0056
$\Delta P_{C,s}$	-0.0028
$\Delta P_{F,e}$	0.0009
$\Delta P_{g,F}$	0.0036
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.34611327
$B_2$	0.142428018
$B_3$	0.900477176
$C_1$	0.0097174385
$C_2$	0.0501911619
$C_3$	111.959703

Color Code	
$\lambda_{80}/\lambda_5$	45/39
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
radiation resistant glass	

Constants of Dispersion $dn/dT$	
$D_0$	$-8.15 \cdot 10^{-6}$
$D_1$	$1.34 \cdot 10^{-8}$
$D_2$	$-9.22 \cdot 10^{-12}$
$E_0$	$8.57 \cdot 10^{-7}$
$E_1$	$8.26 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.243

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	10.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	11.4
$T_g [^\circ C]$	474
$T_{10}^{13.0} [^\circ C]$	462
$T_{10}^{7.6} [^\circ C]$	606
$c_p [J/(g \cdot K)]$	0.580
$\lambda [W/(m \cdot K)]$	0.750
$\rho [g/cm^3]$	3.30
$E [10^3 N/mm^2]$	56
$\mu$	0.242
$K [10^{-6} mm^2/N]$	2.80
$HK_{0.1/20}$	410
HG	2
CR	3
FR	2
SR	3.4
AR	2.2
PR	3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-2.1	-0.9	0.4	-4.2	-3.1	-1.8
+20/ +40	-2.0	-0.7	0.8	-3.3	-2.1	-0.6
+60/ +80	-1.8	-0.3	1.3	-2.8	-1.4	0.1

## N-BAF3 583466.279

$n_d = 1.58272$	$v_d = 46.64$	$n_F - n_C = 0.012495$
$n_e = 1.58569$	$v_e = 46.35$	$n_{F'} - n_{C'} = 0.012637$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54998
$n_{1970.1}$	1970.1	1.55574
$n_{1529.6}$	1529.6	1.56192
$n_{1060.0}$	1060.0	1.56850
$n_t$	1014.0	1.56927
$n_s$	852.1	1.57254
$n_r$	706.5	1.57689
$n_C$	656.3	1.57899
$n_{C'}$	643.8	1.57958
$n_{632.8}$	632.8	1.58013
$n_D$	589.3	1.58261
$n_d$	587.6	1.58272
$n_e$	546.1	1.58569
$n_F$	486.1	1.59149
$n_{F'}$	480.0	1.59222
$n_g$	435.8	1.59857
$n_h$	404.7	1.60463
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.733	0.460
2325	0.847	0.660
1970	0.954	0.890
1530	0.992	0.980
1060	0.997	0.993
700	0.998	0.994
660	0.997	0.992
620	0.996	0.991
580	0.997	0.993
546	0.996	0.991
500	0.994	0.985
460	0.990	0.975
436	0.986	0.965
420	0.981	0.952
405	0.967	0.920
400	0.959	0.900
390	0.924	0.820
380	0.852	0.670
370	0.693	0.400
365	0.565	0.240
350	0.063	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2616
$P_{C,s}$	0.5160
$P_{d,C}$	0.2987
$P_{e,d}$	0.2375
$P_{g,F}$	0.5669
$P_{i,h}$	
$P'_{s,t}$	0.2587
$P'_{C',s}$	0.5569
$P'_{d,C'}$	0.2487
$P'_{e,d}$	0.2348
$P'_{g,F'}$	0.5026
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0114
$\Delta P_{C,s}$	0.0044
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	0.0015
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.34859634
$B_2$	0.10764424
$B_3$	1.13207084
$C_1$	0.00871492932
$C_2$	0.0478406436
$C_3$	112.936116

Constants of Dispersion $dn/dT$	
$D_0$	$1.40 \cdot 10^{-6}$
$D_1$	$1.24 \cdot 10^{-8}$
$D_2$	$-9.39 \cdot 10^{-12}$
$E_0$	$5.91 \cdot 10^{-7}$
$E_1$	$7.44 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.235

Color Code	
$\lambda_{80}/\lambda_5$	39/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.2
$T_g [^\circ C]$	583
$T_{10}^{13.0} [^\circ C]$	573
$T_{10}^{7.6} [^\circ C]$	714
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	1.040
$\rho [g/cm^3]$	2.79
$E [10^3 N/mm^2]$	82
$\mu$	0.226
$K [10^{-6} mm^2/N]$	2.73
$HK_{0.1/20}$	560
$HG$	2
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	3.2	4.1	0.3	1.1	1.9
+20/ +40	2.4	3.4	4.4	1.0	2.0	3.0
+60/ +80	2.5	3.6	4.8	1.5	2.5	3.7

## N-LAF3 717480.414

$n_d = 1.71700$	$v_d = 47.96$	$n_F - n_C = 0.014950$
$n_e = 1.72055$	$v_e = 47.68$	$n_{F'} - n_{C'} = 0.015112$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.68061
$n_{1970.1}$	1970.1	1.68653
$n_{1529.6}$	1529.6	1.69297
$n_{1060.0}$	1060.0	1.70017
$n_t$	1014.0	1.70105
$n_s$	852.1	1.70485
$n_r$	706.5	1.71001
$n_C$	656.3	1.71252
$n_{C'}$	643.8	1.71323
$n_{632.8}$	632.8	1.71389
$n_D$	589.3	1.71687
$n_d$	587.6	1.71700
$n_e$	546.1	1.72055
$n_F$	486.1	1.72747
$n_{F'}$	480.0	1.72834
$n_g$	435.8	1.73585
$n_h$	404.7	1.74293
$n_i$	365.0	1.75530
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.626	0.310
2325	0.804	0.580
1970	0.950	0.880
1530	0.992	0.980
1060	0.997	0.993
700	0.997	0.993
660	0.997	0.993
620	0.997	0.993
580	0.997	0.993
546	0.997	0.993
500	0.994	0.985
460	0.987	0.968
436	0.982	0.955
420	0.976	0.940
405	0.963	0.910
400	0.954	0.890
390	0.928	0.830
380	0.877	0.720
370	0.782	0.540
365	0.707	0.420
350	0.314	0.060
334	0.006	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2538
$P_{C,s}$	0.5132
$P_{d,C}$	0.2994
$P_{e,d}$	0.2379
$P_{g,F}$	0.5603
$P_{i,h}$	0.8274
$P'_{s,t}$	0.2511
$P'_{C',s}$	0.5545
$P'_{d,C'}$	0.2494
$P'_{e,d}$	0.2353
$P'_{g,F'}$	0.4967
$P'_{i,h}$	0.8185

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0054
$\Delta P_{C,s}$	-0.0015
$\Delta P_{F,e}$	-0.0005
$\Delta P_{g,F}$	-0.0028
$\Delta P_{i,g}$	-0.0210

Constants of Dispersion Formula	
$B_1$	1.73155854
$B_2$	0.150874455
$B_3$	1.06586596
$C_1$	0.00953833914
$C_2$	0.0407887211
$C_3$	98.0758545

Constants of Dispersion $dn/dT$	
$D_0$	$-2.35 \cdot 10^{-6}$
$D_1$	$1.07 \cdot 10^{-8}$
$D_2$	$-9.38 \cdot 10^{-12}$
$E_0$	$5.72 \cdot 10^{-7}$
$E_1$	$6.01 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.22

Color Code	
$\lambda_{80}/\lambda_5$	39/34
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.7
$T_g [^\circ C]$	646
$T_{10}^{13.0} [^\circ C]$	640
$T_{10}^{7.6} [^\circ C]$	740
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	4.14
$E [10^3 N/mm^2]$	95
$\mu$	0.286
$K [10^{-6} mm^2/N]$	1.53
$HK_{0.1/20}$	580
<b>HG</b>	5
<b>CR</b>	2
<b>FR</b>	3
<b>SR</b>	52.3
<b>AR</b>	1.2
<b>PR</b>	3.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.6	1.5	2.5	-1.7	-0.8	0.1
+20/ +40	0.6	1.6	2.7	-0.9	0.1	1.2
+60/ +80	0.7	1.8	3.0	-0.4	0.7	1.8

## N-LAF36 800424.443

$n_d = 1.79952$	$v_d = 42.37$	$n_F - n_C = 0.018871$
$n_e = 1.80400$	$v_e = 42.12$	$n_{F'} - n_{C'} = 0.019090$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75555
$n_{1970.1}$	1970.1	1.76246
$n_{1529.6}$	1529.6	1.77001
$n_{1060.0}$	1060.0	1.77862
$n_t$	1014.0	1.77969
$n_s$	852.1	1.78435
$n_r$	706.5	1.79076
$n_C$	656.3	1.79390
$n_{C'}$	643.8	1.79478
$n_{632.8}$	632.8	1.79561
$n_D$	589.3	1.79935
$n_d$	587.6	1.79952
$n_e$	546.1	1.80400
$n_F$	486.1	1.81277
$n_{F'}$	480.0	1.81387
$n_g$	435.8	1.82345
$n_h$	404.7	1.83252
$n_i$	365.0	1.84848
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.480	0.160
2325	0.770	0.520
1970	0.950	0.880
1530	0.992	0.980
1060	0.998	0.994
700	0.998	0.994
660	0.998	0.994
620	0.997	0.992
580	0.997	0.992
546	0.996	0.990
500	0.992	0.980
460	0.985	0.962
436	0.976	0.940
420	0.967	0.920
405	0.954	0.890
400	0.946	0.870
390	0.919	0.810
380	0.872	0.710
370	0.793	0.560
365	0.733	0.460
350	0.455	0.140
334	0.068	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2467
$P_{C,s}$	0.5059
$P_{d,C}$	0.2979
$P_{e,d}$	0.2377
$P_{g,F}$	0.5659
$P_{i,h}$	0.8455
$P'_{s,t}$	0.2439
$P'_{C',s}$	0.5465
$P'_{d,C'}$	0.2480
$P'_{e,d}$	0.2349
$P'_{g,F'}$	0.5014
$P'_{i,h}$	0.8358

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0067
$\Delta P_{C,s}$	0.0043
$\Delta P_{F,e}$	-0.0016
$\Delta P_{g,F}$	-0.0067
$\Delta P_{i,g}$	-0.0424

Constants of Dispersion Formula	
$B_1$	1.85744228
$B_2$	0.294098729
$B_3$	1.16615417
$C_1$	0.00982397191
$C_2$	0.0384309138
$C_3$	89.3984634

Constants of Dispersion $dn/dT$	
$D_0$	$8.72 \cdot 10^{-6}$
$D_1$	$1.12 \cdot 10^{-8}$
$D_2$	$-1.38 \cdot 10^{-11}$
$E_0$	$7.81 \cdot 10^{-7}$
$E_1$	$9.48 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.212

Color Code	
$\lambda_{80}/\lambda_5$	40/33
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.8
$T_g [^\circ C]$	579
$T_{10}^{13.0} [^\circ C]$	582
$T_{10}^{7.6} [^\circ C]$	670
$c_p [J/(g \cdot K)]$	0.540
$\lambda [W/(m \cdot K)]$	0.790
$\rho [g/cm^3]$	4.43
$E [10^3 N/mm^2]$	110
$\mu$	0.305
$K [10^{-6} mm^2/N]$	2.25
$HK_{0.1/20}$	680
<b>HG</b>	1
<b>CR</b>	1
<b>FR</b>	2
<b>SR</b>	52.3
<b>AR</b>	1
<b>PR</b>	3.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	7.3	8.8	10.3	4.9	6.4	7.8
+20/ +40	7.4	9.1	10.8	5.9	7.6	9.2
+60/ +80	7.6	9.5	11.3	6.4	8.2	10.1



## N-LAK33A 754523.422

$n_d = 1.75393$	$v_d = 52.27$	$n_F - n_C = 0.014424$
$n_e = 1.75737$	$v_e = 52.04$	$n_{F'} - n_{C'} = 0.014554$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.71278
$n_{1970.1}$	1970.1	1.72047
$n_{1529.6}$	1529.6	1.72855
$n_{1060.0}$	1060.0	1.73690
$n_t$	1014.0	1.73786
$n_s$	852.1	1.74186
$n_r$	706.5	1.74707
$n_C$	656.3	1.74956
$n_{C'}$	643.8	1.75025
$n_{632.8}$	632.8	1.75090
$n_D$	589.3	1.75380
$n_d$	587.6	1.75393
$n_e$	546.1	1.75737
$n_F$	486.1	1.76398
$n_{F'}$	480.0	1.76481
$n_g$	435.8	1.77187
$n_h$	404.7	1.77845
$n_i$	365.0	1.78972
$n_{334.1}$	334.1	1.80195
$n_{312.6}$	312.6	1.81325
$n_{296.7}$	296.7	1.82361
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.398	0.100
2325	0.686	0.390
1970	0.937	0.850
1530	0.990	0.975
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.995
620	0.998	0.994
580	0.998	0.995
546	0.998	0.996
500	0.998	0.994
460	0.994	0.986
436	0.991	0.978
420	0.988	0.970
405	0.981	0.953
400	0.976	0.940
390	0.967	0.920
380	0.950	0.880
370	0.924	0.820
365	0.905	0.780
350	0.804	0.580
334	0.601	0.280
320	0.336	0.060
310	0.160	
300	0.053	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2770
$P_{C,s}$	0.5338
$P_{d,C}$	0.3032
$P_{e,d}$	0.2383
$P_{g,F}$	0.5473
$P_{i,h}$	0.7814
$P'_{s,t}$	0.2746
$P'_{C',s}$	0.5769
$P'_{d,C'}$	0.2527
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4857
$P'_{i,h}$	0.7744

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0180
$\Delta P_{C,s}$	0.0091
$\Delta P_{F,e}$	-0.0024
$\Delta P_{g,F}$	-0.0086
$\Delta P_{i,g}$	-0.0484

Constants of Dispersion Formula	
$B_1$	1.44116999
$B_2$	0.571749501
$B_3$	1.16605226
$C_1$	0.00680933877
$C_2$	0.0222291824
$C_3$	80.9379555

Constants of Dispersion $dn/dT$	
$D_0$	$2.63 \cdot 10^{-6}$
$D_1$	$1.11 \cdot 10^{-8}$
$D_2$	$-3.92 \cdot 10^{-12}$
$E_0$	$5.02 \cdot 10^{-7}$
$E_1$	$5.08 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.188

Color Code	
$\lambda_{80}/\lambda_5$	38/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks
will become inquiry glass as of Jan 2015, not recommended for new design

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.0
$T_g [^\circ C]$	669
$T_{10}^{13.0} [^\circ C]$	667
$T_{10}^{7.6} [^\circ C]$	744
$c_p [J/(g \cdot K)]$	0.550
$\lambda [W/(m \cdot K)]$	0.810
$\rho [g/cm^3]$	4.22
$E [10^3 N/mm^2]$	121
$\mu$	0.292
$K [10^{-6} mm^2/N]$	1.49
$HK_{0.1/20}$	740
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	51
<b>AR</b>	1
<b>PR</b>	2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.4	4.3	5.1	1.1	1.9	2.7
+20/ +40	3.4	4.4	5.3	1.9	2.9	3.7
+60/ +80	3.6	4.7	5.6	2.4	3.5	4.4

## N-PSK53 620635.360

$n_d = 1.62014$	$v_d = 63.48$	$n_F - n_C = 0.009769$
$n_e = 1.62247$	$v_e = 63.19$	$n_{F'} - n_{C'} = 0.009851$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59216
$n_{1970.1}$	1970.1	1.59732
$n_{1529.6}$	1529.6	1.60280
$n_{1060.0}$	1060.0	1.60851
$n_t$	1014.0	1.60917
$n_s$	852.1	1.61191
$n_r$	706.5	1.61547
$n_C$	656.3	1.61717
$n_{C'}$	643.8	1.61764
$n_{632.8}$	632.8	1.61808
$n_D$	589.3	1.62005
$n_d$	587.6	1.62014
$n_e$	546.1	1.62247
$n_F$	486.1	1.62694
$n_{F'}$	480.0	1.62749
$n_g$	435.8	1.63223
$n_h$	404.7	1.63662
$n_i$	365.0	1.64409
$n_{334.1}$	334.1	1.65211
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.609	0.290
2325	0.764	0.510
1970	0.915	0.800
1530	0.982	0.956
1060	0.998	0.994
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.998	0.994
546	0.998	0.995
500	0.997	0.992
460	0.994	0.986
436	0.993	0.982
420	0.992	0.979
405	0.988	0.970
400	0.985	0.964
390	0.976	0.940
380	0.959	0.900
370	0.928	0.830
365	0.905	0.780
350	0.776	0.530
334	0.525	0.200
320	0.230	0.030
310	0.061	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2803
$P_{C,s}$	0.5384
$P_{d,C}$	0.3045
$P_{e,d}$	0.2385
$P_{g,F}$	0.5423
$P_{i,h}$	0.7641
$P'_{s,t}$	0.2779
$P'_{C',s}$	0.5820
$P'_{d,C'}$	0.2538
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4814
$P'_{i,h}$	0.7577

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0274
$\Delta P_{C,s}$	-0.0125
$\Delta P_{F,e}$	0.0020
$\Delta P_{g,F}$	0.0053
$\Delta P_{i,g}$	0.0214

Constants of Dispersion Formula	
$B_1$	1.3434087
$B_2$	0.241417935
$B_3$	0.952896897
$C_1$	0.00675074317
$C_2$	0.0219910513
$C_3$	103.551457

Constants of Dispersion $dn/dT$	
$D_0$	$-9.29 \cdot 10^{-6}$
$D_1$	$5.78 \cdot 10^{-9}$
$D_2$	$8.87 \cdot 10^{-13}$
$E_0$	$4.59 \cdot 10^{-7}$
$E_1$	$5.86 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.155

Color Code	
$\lambda_{80}/\lambda_5$	36/31
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.9
$T_g [^\circ C]$	618
$T_{10}^{13.0} [^\circ C]$	606
$T_{10}^{7.6} [^\circ C]$	709
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.60
$E [10^3 N/mm^2]$	78
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.16
$HK_{0.1/20}$	440
$HG$	6
$CR$	2
$FR$	1
$SR$	52.3
$AR$	1.2
$PR$	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-2.5	-2.0	-1.5	-4.7	-4.2	-3.8
+20/ +40	-2.9	-2.3	-1.8	-4.3	-3.8	-3.2
+60/ +80	-3.0	-2.3	-1.7	-4.1	-3.4	-2.8

## N-SF19 667331.290

$n_d = 1.66679$	$v_d = 33.12$	$n_F - n_C = 0.020131$
$n_e = 1.67154$	$v_e = 32.86$	$n_{F'} - n_{C'} = 0.020435$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.62384
$n_{1970.1}$	1970.1	1.63018
$n_{1529.6}$	1529.6	1.63723
$n_{1060.0}$	1060.0	1.64552
$n_t$	1014.0	1.64657
$n_s$	852.1	1.65120
$n_r$	706.5	1.65769
$n_C$	656.3	1.66092
$n_{C'}$	643.8	1.66184
$n_{632.8}$	632.8	1.66271
$n_D$	589.3	1.66661
$n_d$	587.6	1.66679
$n_e$	546.1	1.67154
$n_F$	486.1	1.68106
$n_{F'}$	480.0	1.68228
$n_g$	435.8	1.69309
$n_h$	404.7	1.70377
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.720	0.440
2325	0.826	0.620
1970	0.954	0.890
1530	0.988	0.970
1060	0.996	0.989
700	0.994	0.985
660	0.992	0.980
620	0.991	0.978
580	0.992	0.980
546	0.991	0.977
500	0.984	0.960
460	0.974	0.937
436	0.965	0.915
420	0.950	0.880
405	0.919	0.810
400	0.901	0.770
390	0.826	0.620
380	0.642	0.330
370	0.302	0.050
365	0.130	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2299
$P_{C,s}$	0.4831
$P_{d,C}$	0.2913
$P_{e,d}$	0.2362
$P_{g,F}$	0.5976
$P_{i,h}$	
$P'_{s,t}$	0.2265
$P'_{C',s}$	0.5208
$P'_{d,C'}$	0.2421
$P'_{e,d}$	0.2327
$P'_{g,F'}$	0.5289
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0109
$\Delta P_{C,s}$	0.0030
$\Delta P_{F,e}$	0.0015
$\Delta P_{g,F}$	0.0095
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.52005444
$B_2$	0.17573947
$B_3$	1.43623424
$C_1$	0.01096144
$C_2$	0.0593248486
$C_3$	126.795151

Constants of Dispersion $dn/dT$	
$D_0$	$1.32 \cdot 10^{-6}$
$D_1$	$1.22 \cdot 10^{-8}$
$D_2$	$-1.36 \cdot 10^{-11}$
$E_0$	$7.64 \cdot 10^{-7}$
$E_1$	$1.09 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.279

Color Code	
$\lambda_{80}/\lambda_5$	40/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.3
$T_g [^\circ C]$	598
$T_{10}^{13.0} [^\circ C]$	585
$T_{10}^{7.6} [^\circ C]$	707
$c_p [J/(g \cdot K)]$	0.750
$\lambda [W/(m \cdot K)]$	1.020
$\rho [g/cm^3]$	2.90
$E [10^3 N/mm^2]$	88
$\mu$	0.231
$K [10^{-6} mm^2/N]$	2.93
$HK_{0.1/20}$	630
HG	3
CR	1
FR	0
SR	1
AR	1.2
PR	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.5	3.9	5.5	0.3	1.6	3.2
+20/ +40	2.6	4.2	6.2	1.2	2.7	4.7
+60/ +80	2.8	4.6	6.8	1.7	3.4	5.6

## N-SF56 785261.328

$n_d = 1.78470$	$v_d = 26.10$	$n_F - n_C = 0.030071$
$n_e = 1.79179$	$v_e = 25.89$	$n_{F'} - n_{C'} = 0.030587$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.73010
$n_{1970.1}$	1970.1	1.73664
$n_{1529.6}$	1529.6	1.74431
$n_{1060.0}$	1060.0	1.75442
$n_t$	1014.0	1.75581
$n_s$	852.1	1.76213
$n_r$	706.5	1.77137
$n_C$	656.3	1.77607
$n_{C'}$	643.8	1.77741
$n_{632.8}$	632.8	1.77868
$n_D$	589.3	1.78444
$n_d$	587.6	1.78470
$n_e$	546.1	1.79179
$n_F$	486.1	1.80614
$n_{F'}$	480.0	1.80800
$n_g$	435.8	1.82460
$n_h$	404.7	1.84126
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.810	0.590
2325	0.857	0.680
1970	0.959	0.900
1530	0.992	0.981
1060	0.998	0.996
700	0.994	0.986
660	0.992	0.981
620	0.992	0.981
580	0.993	0.983
546	0.990	0.976
500	0.980	0.950
460	0.963	0.910
436	0.941	0.860
420	0.905	0.780
405	0.837	0.640
400	0.799	0.570
390	0.672	0.370
380	0.442	0.130
370	0.109	
365	0.020	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2101
$P_{C,s}$	0.4635
$P_{d,C}$	0.2872
$P_{e,d}$	0.2356
$P_{g,F}$	0.6139
$P_{i,h}$	
$P'_{s,t}$	0.2065
$P'_{C',s}$	0.4996
$P'_{d,C'}$	0.2384
$P'_{e,d}$	0.2316
$P'_{g,F'}$	0.5427
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0048
$\Delta P_{C,s}$	-0.0002
$\Delta P_{F,e}$	0.0026
$\Delta P_{g,F}$	0.0140
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.73562085
$B_2$	0.317487012
$B_3$	1.95398203
$C_1$	0.0129624742
$C_2$	0.0612884288
$C_3$	161.559441

Constants of Dispersion $dn/dT$	
$D_0$	$-4.13 \cdot 10^{-6}$
$D_1$	$7.65 \cdot 10^{-9}$
$D_2$	$-1.12 \cdot 10^{-11}$
$E_0$	$9.90 \cdot 10^{-7}$
$E_1$	$1.57 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.287

Color Code	
$\lambda_{80}/\lambda_5$	44/37
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.0
$T_g [^\circ C]$	592
$T_{10}^{13.0} [^\circ C]$	585
$T_{10}^{7.6} [^\circ C]$	691
$c_p [J/(g \cdot K)]$	0.700
$\lambda [W/(m \cdot K)]$	0.940
$\rho [g/cm^3]$	3.28
$E [10^3 N/mm^2]$	91
$\mu$	0.255
$K [10^{-6} mm^2/N]$	2.87
$HK_{0.1/20}$	560
$HG$	5
$CR$	1
$FR$	0
$SR$	1
$AR$	1.3
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.1	1.7	4.3	-2.5	-0.7	1.8
+20/ +40	-0.3	2.0	5.1	-1.8	0.5	3.5
+60/ +80	-0.2	2.4	5.9	-1.4	1.2	4.6

## N-SF64 706302.299

$n_d = 1.70591$	$v_d = 30.23$	$n_F - n_C = 0.023350$
$n_e = 1.71142$	$v_e = 29.99$	$n_{F'} - n_{C'} = 0.023720$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.65993
$n_{1970.1}$	1970.1	1.66607
$n_{1529.6}$	1529.6	1.67306
$n_{1060.0}$	1060.0	1.68176
$n_t$	1014.0	1.68291
$n_s$	852.1	1.68806
$n_r$	706.5	1.69544
$n_C$	656.3	1.69914
$n_{C'}$	643.8	1.70020
$n_{632.8}$	632.8	1.70119
$n_D$	589.3	1.70571
$n_d$	587.6	1.70591
$n_e$	546.1	1.71142
$n_F$	486.1	1.72249
$n_{F'}$	480.0	1.72392
$n_g$	435.8	1.73657
$n_h$	404.7	1.74912
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.770	0.520
2325	0.837	0.640
1970	0.950	0.880
1530	0.992	0.979
1060	0.998	0.996
700	0.994	0.985
660	0.992	0.980
620	0.992	0.981
580	0.994	0.984
546	0.993	0.982
500	0.984	0.961
460	0.971	0.930
436	0.957	0.895
420	0.934	0.843
405	0.882	0.730
400	0.852	0.670
390	0.746	0.480
380	0.546	0.220
370	0.209	0.020
365	0.078	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2204
$P_{C,s}$	0.4746
$P_{d,C}$	0.2898
$P_{e,d}$	0.2361
$P_{g,F}$	0.6028
$P_{i,h}$	
$P'_{s,t}$	0.2169
$P'_{C',s}$	0.5117
$P'_{d,C'}$	0.2407
$P'_{e,d}$	0.2324
$P'_{g,F'}$	0.5333
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0066
$\Delta P_{C,s}$	0.0012
$\Delta P_{F,e}$	0.0017
$\Delta P_{g,F}$	0.0099
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.59163762
$B_2$	0.219908428
$B_3$	1.46929315
$C_1$	0.0118623434
$C_2$	0.0594585499
$C_3$	133.310762

Constants of Dispersion $dn/dT$	
$D_0$	$-2.06 \cdot 10^{-6}$
$D_1$	$9.78 \cdot 10^{-9}$
$D_2$	$-1.67 \cdot 10^{-11}$
$E_0$	$8.67 \cdot 10^{-7}$
$E_1$	$1.23 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.279

Color Code	
$\lambda_{80}/\lambda_5$	42/37
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.8
$T_g [^\circ C]$	572
$T_{10}^{13.0} [^\circ C]$	576
$T_{10}^{7.6} [^\circ C]$	688
$c_p [J/(g \cdot K)]$	0.750
$\lambda [W/(m \cdot K)]$	0.980
$\rho [g/cm^3]$	2.99
$E [10^3 N/mm^2]$	88
$\mu$	0.245
$K [10^{-6} mm^2/N]$	2.95
$HK_{0.1/20}$	620
HG	4
CR	1
FR	0
SR	1
AR	1.2
PR	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.9	2.4	4.4	-1.3	0.1	2.0
+20/ +40	0.9	2.7	5.1	-0.6	1.2	3.5
+60/ +80	1.0	3.0	5.6	-0.1	1.9	4.4

## N-SK10 623570.364

$n_d = 1.62278$	$v_d = 56.98$	$n_F - n_C = 0.010929$
$n_e = 1.62539$	$v_e = 56.70$	$n_{F'} - n_{C'} = 0.011029$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59310
$n_{1970.1}$	1970.1	1.59837
$n_{1529.6}$	1529.6	1.60400
$n_{1060.0}$	1060.0	1.61000
$n_t$	1014.0	1.61071
$n_s$	852.1	1.61367
$n_r$	706.5	1.61759
$n_C$	656.3	1.61947
$n_{C'}$	643.8	1.62000
$n_{632.8}$	632.8	1.62049
$n_D$	589.3	1.62268
$n_d$	587.6	1.62278
$n_e$	546.1	1.62539
$n_F$	486.1	1.63040
$n_{F'}$	480.0	1.63102
$n_g$	435.8	1.63638
$n_h$	404.7	1.64137
$n_i$	365.0	1.64989
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.733	0.460
2325	0.852	0.670
1970	0.967	0.920
1530	0.992	0.980
1060	0.998	0.994
700	0.998	0.995
660	0.997	0.993
620	0.998	0.994
580	0.998	0.996
546	0.998	0.996
500	0.998	0.995
460	0.996	0.990
436	0.995	0.987
420	0.994	0.985
405	0.990	0.975
400	0.988	0.970
390	0.980	0.950
380	0.963	0.910
370	0.933	0.840
365	0.910	0.790
350	0.770	0.520
334	0.414	0.110
320	0.068	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2714
$P_{C,s}$	0.5302
$P_{d,C}$	0.3029
$P_{e,d}$	0.2384
$P_{g,F}$	0.5474
$P_{i,h}$	0.7803
$P'_{s,t}$	0.2689
$P'_{C',s}$	0.5731
$P'_{d,C'}$	0.2525
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4857
$P'_{i,h}$	0.7732

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0137
$\Delta P_{C,s}$	-0.0055
$\Delta P_{F,e}$	0.0003
$\Delta P_{g,F}$	-0.0005
$\Delta P_{i,g}$	-0.0103

Constants of Dispersion Formula	
$B_1$	1.34972093
$B_2$	0.238587973
$B_3$	0.9667336
$C_1$	0.00736272269
$C_2$	0.0253765327
$C_3$	103.502909

Constants of Dispersion $dn/dT$	
$D_0$	$5.05 \cdot 10^{-7}$
$D_1$	$1.16 \cdot 10^{-8}$
$D_2$	$-1.53 \cdot 10^{-11}$
$E_0$	$4.90 \cdot 10^{-7}$
$E_1$	$5.10 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.183

Color Code	
$\lambda_{80}/\lambda_5$	36/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.8
$T_g [^\circ C]$	633
$T_{10}^{13.0} [^\circ C]$	635
$T_{10}^{7.6} [^\circ C]$	758
$c_p [J/(g \cdot K)]$	0.540
$\lambda [W/(m \cdot K)]$	0.770
$\rho [g/cm^3]$	3.64
$E [10^3 N/mm^2]$	81
$\mu$	0.266
$K [10^{-6} mm^2/N]$	2.25
$HK_{0.1/20}$	550
<b>HG</b>	3
<b>CR</b>	3
<b>FR</b>	3
<b>SR</b>	52.2
<b>AR</b>	2
<b>PR</b>	2.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.0	2.7	3.3	-0.2	0.4	1.0
+20/ +40	2.0	2.7	3.5	0.6	1.3	2.0
+60/ +80	2.1	2.9	3.7	1.0	1.8	2.6

## N-SK15 623580.362

$n_d = 1.62296$	$v_d = 58.02$	$n_F - n_C = 0.010737$
$n_e = 1.62552$	$v_e = 57.75$	$n_{F'} - n_{C'} = 0.010832$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59268
$n_{1970.1}$	1970.1	1.59822
$n_{1529.6}$	1529.6	1.60411
$n_{1060.0}$	1060.0	1.61027
$n_t$	1014.0	1.61098
$n_s$	852.1	1.61396
$n_r$	706.5	1.61785
$n_C$	656.3	1.61970
$n_{C'}$	643.8	1.62022
$n_{632.8}$	632.8	1.62070
$n_D$	589.3	1.62286
$n_d$	587.6	1.62296
$n_e$	546.1	1.62552
$n_F$	486.1	1.63044
$n_{F'}$	480.0	1.63105
$n_g$	435.8	1.63629
$n_h$	404.7	1.64116
$n_i$	365.0	1.64947
$n_{334.1}$	334.1	1.65846
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.672	0.370
2325	0.826	0.620
1970	0.959	0.900
1530	0.990	0.975
1060	0.996	0.991
700	0.998	0.994
660	0.997	0.992
620	0.997	0.992
580	0.997	0.993
546	0.997	0.993
500	0.996	0.990
460	0.993	0.982
436	0.991	0.978
420	0.990	0.974
405	0.986	0.966
400	0.984	0.960
390	0.976	0.941
380	0.963	0.910
370	0.937	0.850
365	0.915	0.800
350	0.795	0.563
334	0.504	0.180
320	0.144	
310	0.010	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2770
$P_{C,s}$	0.5348
$P_{d,C}$	0.3036
$P_{e,d}$	0.2384
$P_{g,F}$	0.5453
$P_{i,h}$	0.7742
$P'_{s,t}$	0.2746
$P'_{C',s}$	0.5780
$P'_{d,C'}$	0.2531
$P'_{e,d}$	0.2363
$P'_{g,F'}$	0.4840
$P'_{i,h}$	0.7674

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0084
$\Delta P_{C,s}$	-0.0033
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	-0.0102

Constants of Dispersion Formula	
$B_1$	1.30417786
$B_2$	0.28584116
$B_3$	0.974781572
$C_1$	0.00695051276
$C_2$	0.0232023703
$C_3$	99.016884

Constants of Dispersion $dn/dT$	
$D_0$	$4.92 \cdot 10^{-7}$
$D_1$	$1.20 \cdot 10^{-8}$
$D_2$	$-2.96 \cdot 10^{-12}$
$E_0$	$4.66 \cdot 10^{-7}$
$E_1$	$5.16 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.179

Color Code	
$\lambda_{80}/\lambda_5$	36/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
inquiry glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.6
$T_g [^\circ C]$	641
$T_{10}^{13.0} [^\circ C]$	634
$T_{10}^{7.6} [^\circ C]$	752
$c_p [J/(g \cdot K)]$	0.570
$\lambda [W/(m \cdot K)]$	0.770
$\rho [g/cm^3]$	3.62
$E [10^3 N/mm^2]$	84
$\mu$	0.265
$K [10^{-6} mm^2/N]$	1.93
$HK_{0.1/20}$	620
<b>HG</b>	3
<b>CR</b>	3
<b>FR</b>	3
<b>SR</b>	52.2
<b>AR</b>	2
<b>PR</b>	3.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.0	2.6	3.2	-0.2	0.4	1.0
+20/ +40	2.0	2.7	3.4	0.6	1.3	1.9
+60/ +80	2.1	2.9	3.7	1.1	1.8	2.5

## P-PK53 527662.283

$n_d = 1.52690$	$v_d = 66.22$	$n_F - n_C = 0.007957$
$n_e = 1.52880$	$v_e = 65.92$	$n_{F'} - n_{C'} = 0.008022$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	
$n_{1970.1}$	1970.1	1.50808
$n_{1529.6}$	1529.6	1.51265
$n_{1060.0}$	1060.0	1.51738
$n_t$	1014.0	1.51792
$n_s$	852.1	1.52017
$n_r$	706.5	1.52309
$n_C$	656.3	1.52447
$n_{C'}$	643.8	1.52486
$n_{632.8}$	632.8	1.52522
$n_D$	589.3	1.52683
$n_d$	587.6	1.52690
$n_e$	546.1	1.52880
$n_F$	486.1	1.53243
$n_{F'}$	480.0	1.53288
$n_g$	435.8	1.53673
$n_h$	404.7	1.54029
$n_i$	365.0	1.54633
$n_{334.1}$	334.1	1.55280
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.468	0.150
2325	0.574	0.250
1970	0.787	0.550
1530	0.981	0.954
1060	0.998	0.994
700	0.997	0.992
660	0.997	0.992
620	0.998	0.994
580	0.998	0.996
546	0.999	0.997
500	0.998	0.995
460	0.996	0.990
436	0.995	0.987
420	0.994	0.985
405	0.994	0.985
400	0.994	0.985
390	0.990	0.976
380	0.980	0.950
370	0.959	0.900
365	0.941	0.860
350	0.815	0.600
334	0.515	0.190
320	0.181	0.010
310	0.039	
300	0.003	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2829
$P_{C,s}$	0.5408
$P_{d,C}$	0.3049
$P_{e,d}$	0.2386
$P_{g,F}$	0.5408
$P_{i,h}$	0.7592
$P'_{s,t}$	0.2806
$P'_{C',s}$	0.5846
$P'_{d,C'}$	0.2542
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4802
$P'_{i,h}$	0.7530

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0354
$\Delta P_{C,s}$	-0.0165
$\Delta P_{F,e}$	0.0030
$\Delta P_{g,F}$	0.0084
$\Delta P_{i,g}$	0.0375

Constants of Dispersion Formula	
$B_1$	0.960316767
$B_2$	0.340437227
$B_3$	0.777865595
$C_1$	0.00531032986
$C_2$	0.0175073434
$C_3$	106.87533

Constants of Dispersion $dn/dT$	
$D_0$	$-1.65 \cdot 10^{-5}$
$D_1$	$-5.14 \cdot 10^{-10}$
$D_2$	$-2.02 \cdot 10^{-11}$
$E_0$	$4.11 \cdot 10^{-7}$
$E_1$	$4.17 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.208

Color Code	
$\lambda_{80}/\lambda_5$	36/31
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
inquiry glass, suitable for precision molding

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	13.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	16.0
$T_g [^\circ C]$	383
$T_{10}^{13.0} [^\circ C]$	390
$T_{10}^{7.6} [^\circ C]$	453
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	0.640
$\rho [g/cm^3]$	2.83
$E [10^3 N/mm^2]$	59
$\mu$	0.271
$K [10^{-6} mm^2/N]$	2.06
$HK_{0.1/20}$	335
<b>HG</b>	6
<b>CR</b>	2
<b>FR</b>	1
<b>SR</b>	51
<b>AR</b>	4.3
<b>PR</b>	4.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-4.9	-4.5	-4.1	-7.0	-6.6	-6.2
+20/ +40	-5.6	-5.2	-4.7	-6.9	-6.5	-6.1
+60/ +80	-6.0	-5.5	-5.0	-7.0	-6.5	-6.0



## P-SF67 907214.424

$n_d = 1.90680$	$v_d = 21.40$	$n_F - n_C = 0.042374$
$n_e = 1.91675$	$v_e = 21.23$	$n_{F'} - n_{C'} = 0.043191$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.83479
$n_{1970.1}$	1970.1	1.84280
$n_{1529.6}$	1529.6	1.85235
$n_{1060.0}$	1060.0	1.86543
$n_t$	1014.0	1.86727
$n_s$	852.1	1.87574
$n_r$	706.5	1.88833
$n_C$	656.3	1.89480
$n_{C'}$	643.8	1.89666
$n_{632.8}$	632.8	1.89841
$n_D$	589.3	1.90644
$n_d$	587.6	1.90680
$n_e$	546.1	1.91675
$n_F$	486.1	1.93717
$n_{F'}$	480.0	1.93985
$n_g$	435.8	1.96401
$n_h$	404.7	
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.933	0.840
2325	0.946	0.870
1970	0.984	0.960
1530	0.994	0.985
1060	0.994	0.985
700	0.983	0.958
660	0.981	0.952
620	0.978	0.946
580	0.971	0.930
546	0.954	0.890
500	0.901	0.770
460	0.810	0.590
436	0.707	0.420
420	0.574	0.250
405	0.364	0.080
400	0.276	0.040
390	0.090	
380	0.011	
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.1998
$P_{C,s}$	0.4498
$P_{d,C}$	0.2832
$P_{e,d}$	0.2348
$P_{g,F}$	0.6334
$P_{i,h}$	
$P'_{s,t}$	0.1960
$P'_{C',s}$	0.4843
$P'_{d,C'}$	0.2349
$P'_{e,d}$	0.2303
$P'_{g,F'}$	0.5595
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0031
$\Delta P_{C,s}$	-0.0030
$\Delta P_{F,e}$	0.0049
$\Delta P_{g,F}$	0.0256
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.97464225
$B_2$	0.467095921
$B_3$	2.43154209
$C_1$	0.0145772324
$C_2$	0.0669790359
$C_3$	157.444895

Constants of Dispersion $dn/dT$	
$D_0$	$4.82 \cdot 10^{-7}$
$D_1$	$1.15 \cdot 10^{-8}$
$D_2$	$-9.95 \cdot 10^{-12}$
$E_0$	$1.15 \cdot 10^{-6}$
$E_1$	$1.65 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.315

Color Code	
$\lambda_{80}/\lambda_5$	48/39*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	539
$T_{10}^{13.0} [^\circ C]$	546
$T_{10}^{7.6} [^\circ C]$	663
$c_p [J/(g \cdot K)]$	0.530
$\lambda [W/(m \cdot K)]$	0.790
$\rho [g/cm^3]$	4.24
$E [10^3 N/mm^2]$	90
$\mu$	0.248
$K [10^{-6} mm^2/N]$	2.96
$HK_{0.1/20}$	440
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1.3
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.6	5.5	10.1	0.1	2.9	7.4
+20/ +40	2.8	6.3	11.7	1.2	4.6	10.0
+60/ +80	3.1	7.0	13.0	1.9	5.7	11.7

## SF6G05 809253.520

$n_d = 1.80906$	$v_d = 25.28$	$n_F - n_C = 0.032015$
$n_e = 1.81661$	$v_e = 25.08$	$n_{F'} - n_{C'} = 0.032570$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75661
$n_{1970.1}$	1970.1	1.76163
$n_{1529.6}$	1529.6	1.76797
$n_{1060.0}$	1060.0	1.77741
$n_t$	1014.0	1.77879
$n_s$	852.1	1.78524
$n_r$	706.5	1.79491
$n_C$	656.3	1.79988
$n_{C'}$	643.8	1.80131
$n_{632.8}$	632.8	1.80265
$n_D$	589.3	1.80878
$n_d$	587.6	1.80906
$n_e$	546.1	1.81661
$n_F$	486.1	1.83190
$n_{F'}$	480.0	1.83387
$n_g$	435.8	
$n_h$	404.7	
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.847	0.660
2325	0.877	0.721
1970	0.965	0.915
1530	0.995	0.987
1060	0.998	0.994
700	0.985	0.962
660	0.980	0.950
620	0.972	0.931
580	0.958	0.898
546	0.917	0.805
500	0.642	0.330
460	0.090	0.080
436		
420		
405		
400		
390		
380		
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2013
$P_{C,s}$	0.4574
$P_{d,C}$	0.2866
$P_{e,d}$	0.2358
$P_{g,F}$	
$P_{i,h}$	
$P'_{s,t}$	0.1979
$P'_{C',s}$	0.4933
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2318
$P'_{g,F'}$	
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0062
$\Delta P_{C,s}$	-0.0044
$\Delta P_{F,e}$	0.0025
$\Delta P_{g,F}$	
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.62113942
$B_2$	0.506586092
$B_3$	10.4032298
$C_1$	0.0113478992
$C_2$	0.0535840223
$C_3$	1118.83658

Constants of Dispersion $dn/dT$	
$D_0$	$6.90 \cdot 10^{-6}$
$D_1$	$1.76 \cdot 10^{-8}$
$D_2$	$-3.17 \cdot 10^{-11}$
$E_0$	$1.89 \cdot 10^{-6}$
$E_1$	$1.50 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.256

Color Code	
$\lambda_{80}/\lambda_5$	52/46*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
radiation resistant glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	
$T_g [^\circ C]$	427
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	529
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	5.20
$E [10^3 N/mm^2]$	
$\mu$	
$K [10^{-6} mm^2/N]$	
$HK_{0.1/20}$	360
$HG$	
$CR$	4
$FR$	3
$SR$	51.3
$AR$	2.3
$PR$	3.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.4	10.3		4.0	7.8	
+20/ +40	7.0	11.4		5.5	9.8	
+60/ +80	7.5	12.1		6.3	10.9	

## SF57HT 847238.551

$n_d = 1.84666$	$v_d = 23.83$	$n_F - n_C = 0.035536$
$n_e = 1.85504$	$v_e = 23.64$	$n_{F'} - n_{C'} = 0.036166$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.79026
$n_{1970.1}$	1970.1	1.79539
$n_{1529.6}$	1529.6	1.80187
$n_{1060.0}$	1060.0	1.81185
$n_t$	1014.0	1.81335
$n_s$	852.1	1.82038
$n_r$	706.5	1.83102
$n_C$	656.3	1.83650
$n_{C'}$	643.8	1.83808
$n_{632.8}$	632.8	1.83957
$n_D$	589.3	1.84636
$n_d$	587.6	1.84666
$n_e$	546.1	1.85504
$n_F$	486.1	1.87204
$n_{F'}$	480.0	1.87425
$n_g$	435.8	1.89393
$n_h$	404.7	1.91366
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.911	0.792
2325	0.927	0.826
1970	0.979	0.948
1530	0.998	0.994
1060	0.999	0.999
700	0.999	0.997
660	0.999	0.997
620	0.999	0.997
580	0.999	0.997
546	0.998	0.996
500	0.996	0.990
460	0.990	0.976
436	0.981	0.954
420	0.964	0.912
405	0.919	0.810
400	0.896	0.760
390	0.787	0.550
380	0.577	0.252
370	0.230	0.026
365	0.080	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.1976
$P_{C,s}$	0.4539
$P_{d,C}$	0.2859
$P_{e,d}$	0.2356
$P_{g,F}$	0.6160
$P_{i,h}$	
$P'_{s,t}$	0.1942
$P'_{C',s}$	0.4895
$P'_{d,C'}$	0.2373
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5443
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0065
$\Delta P_{C,s}$	-0.0046
$\Delta P_{F,e}$	0.0026
$\Delta P_{g,F}$	0.0123
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.81651371
$B_2$	0.428893641
$B_3$	1.07186278
$C_1$	0.0143704198
$C_2$	0.0592801172
$C_3$	121.419942

Constants of Dispersion $dn/dT$	
$D_0$	$7.26 \cdot 10^{-6}$
$D_1$	$1.88 \cdot 10^{-8}$
$D_2$	$-5.14 \cdot 10^{-11}$
$E_0$	$1.96 \cdot 10^{-6}$
$E_1$	$1.79 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.276

Color Code	
$\lambda_{80}/\lambda_5$	40/36*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
inquiry glass, lead containing

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	414
$T_{10}^{13.0} [^\circ C]$	391
$T_{10}^{7.6} [^\circ C]$	519
$c_p [J/(g \cdot K)]$	0.360
$\lambda [W/(m \cdot K)]$	0.620
$\rho [g/cm^3]$	5.51
$E [10^3 N/mm^2]$	54
$\mu$	0.248
$K [10^{-6} mm^2/N]$	0.02
$HK_{0.1/20}$	350
HG	1
CR	2
FR	5
SR	52.3
AR	2.3
PR	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.6	11.1	16.7	4.2	8.6	14.1
+20/ +40	7.6	12.5	18.9	6.0	10.9	17.2
+60/ +80	8.0	13.4	20.1	6.8	12.1	18.8

**SFL6**  
**805254.337**

$n_d = 1.80518$	$v_d = 25.39$	$n_F - n_C = 0.031708$
$n_e = 1.81265$	$v_e = 25.19$	$n_{F'} - n_{C'} = 0.032260$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.74897
$n_{1970.1}$	1970.1	1.75544
$n_{1529.6}$	1529.6	1.76311
$n_{1060.0}$	1060.0	1.77345
$n_t$	1014.0	1.77489
$n_s$	852.1	1.78147
$n_r$	706.5	1.79116
$n_C$	656.3	1.79609
$n_{C'}$	643.8	1.79751
$n_{632.8}$	632.8	1.79884
$n_D$	589.3	1.80491
$n_d$	587.6	1.80518
$n_e$	546.1	1.81265
$n_F$	486.1	1.82780
$n_{F'}$	480.0	1.82977
$n_g$	435.8	1.84733
$n_h$	404.7	1.86500
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.78922056
$B_2$	0.328427448
$B_3$	2.01639441
$C_1$	0.0135163537
$C_2$	0.0622729599
$C_3$	168.014713

Constants of Dispersion $dn/dT$	
$D_0$	$-5.26 \cdot 10^{-6}$
$D_1$	$7.41 \cdot 10^{-9}$
$D_2$	$-1.89 \cdot 10^{-11}$
$E_0$	$1.02 \cdot 10^{-6}$
$E_1$	$1.62 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.288

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.8	1.1	3.8	-3.2	-1.4	1.2
+20/ +40	-1.0	1.4	4.7	-2.5	-0.1	3.1
+60/ +80	-0.9	1.8	5.4	-2.1	0.5	4.2

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500		
2325	0.930	0.840
1970	0.980	0.950
1530	0.998	0.995
1060	0.995	0.988
700	0.996	0.989
660	0.995	0.988
620	0.993	0.983
580	0.992	0.980
546	0.988	0.970
500	0.976	0.940
460	0.959	0.900
436	0.940	0.860
420	0.920	0.810
405	0.880	0.720
400	0.850	0.670
390	0.770	0.520
380	0.570	0.250
370	0.210	0.020
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	45/37
(* = $\lambda_{70} / \lambda_5$ )	

Remarks
inquiry glass

Relative Partial Dispersion	
$P_{s,t}$	0.2075
$P_{C,s}$	0.4611
$P_{d,C}$	0.2867
$P_{e,d}$	0.2355
$P_{g,F}$	0.6159
$P_{i,h}$	
$P'_{s,t}$	0.2040
$P'_{C',s}$	0.4970
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5444
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0032
$\Delta P_{C,s}$	-0.0010
$\Delta P_{F,e}$	0.0027
$\Delta P_{g,F}$	0.0148
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6} / K]$	9.0
$\alpha_{+20/+300^\circ C} [10^{-6} / K]$	10.3
$T_g [^\circ C]$	585
$T_{10}^{13.0} [^\circ C]$	592
$T_{10}^{7.6} [^\circ C]$	0
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.37
$E [10^3 N/mm^2]$	93
$\mu$	0.260
$K [10^{-6} mm^2/N]$	2.79
$HK_{0.1/20}$	570
HG	
CR	1
FR	0
SR	2
AR	1
PR	1

## SFL57 847236.355

$n_d = 1.84666$	$v_d = 23.62$	$n_F - n_C = 0.035841$
$n_e = 1.85510$	$v_e = 23.43$	$n_{F'} - n_{C'} = 0.036489$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.78487
$n_{1970.1}$	1970.1	1.79171
$n_{1529.6}$	1529.6	1.79989
$n_{1060.0}$	1060.0	1.81117
$n_t$	1014.0	1.81276
$n_s$	852.1	1.82007
$n_r$	706.5	1.83089
$n_C$	656.3	1.83643
$n_{C'}$	643.8	1.83802
$n_{632.8}$	632.8	1.83952
$n_D$	589.3	1.84635
$n_d$	587.6	1.84666
$n_e$	546.1	1.85510
$n_F$	486.1	1.87227
$n_{F'}$	480.0	1.87451
$n_g$	435.8	1.89456
$n_h$	404.7	1.91488
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.882	0.730
2325	0.910	0.790
1970	0.984	0.960
1530	0.996	0.990
1060	0.996	0.991
700	0.990	0.976
660	0.987	0.969
620	0.988	0.971
580	0.988	0.971
546	0.982	0.955
500	0.954	0.890
460	0.915	0.800
436	0.852	0.670
420	0.770	0.520
405	0.609	0.290
400	0.525	0.200
390	0.260	0.030
380	0.050	
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2038
$P_{C,s}$	0.4566
$P_{d,C}$	0.2855
$P_{e,d}$	0.2353
$P_{g,F}$	0.6218
$P_{i,h}$	
$P'_{s,t}$	0.2002
$P'_{C',s}$	0.4920
$P'_{d,C'}$	0.2369
$P'_{e,d}$	0.2311
$P'_{g,F'}$	0.5495
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0034
$\Delta P_{C,s}$	-0.0014
$\Delta P_{F,e}$	0.0033
$\Delta P_{g,F}$	0.0177
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.88742326
$B_2$	0.360534025
$B_3$	2.26189313
$C_1$	0.0145939341
$C_2$	0.0648198946
$C_3$	176.062211

Constants of Dispersion $dn/dT$	
$D_0$	$-3.63 \cdot 10^{-6}$
$D_1$	$8.61 \cdot 10^{-9}$
$D_2$	$-9.98 \cdot 10^{-12}$
$E_0$	$1.10 \cdot 10^{-6}$
$E_1$	$1.69 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.293

Color Code	
$\lambda_{80}/\lambda_5$	44/38*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
inquiry glass, lead containing

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.0
$T_g [^\circ C]$	598
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	700
$c_p [J/(g \cdot K)]$	0.670
$\lambda [W/(m \cdot K)]$	0.997
$\rho [g/cm^3]$	3.55
$E [10^3 N/mm^2]$	97
$\mu$	0.261
$K [10^{-6} mm^2/N]$	2.73
$HK_{0.1/20}$	580
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1.3
<b>AR</b>	1
<b>PR</b>	1.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.1	2.4	5.6	-2.3	-0.1	3.0
+20/ +40	0.1	2.9	6.8	-1.5	1.2	5.1
+60/ +80	0.2	3.3	7.7	-1.0	2.1	6.4

# Your Global Contacts

## Germany

### **SCHOTT AG**

Advanced Optics  
Hattenbergstrasse 10  
55122 Mainz  
Germany  
Phone +49 (0)6131/66-1812  
Fax +49 (0)6131/2888-9047  
info.optics@schott.com  
www.schott.com/advanced\_optics

## North America

### **SCHOTT North America, Inc.**

Advanced Optics  
400 York Avenue  
Duryea, PA 18642, USA  
Phone 1-570-457-7485  
Fax 1-570-457-7330  
info.optics@us.schott.com  
www.us.schott.com/advanced\_optics

## Singapore

### **SCHOTT Singapore Pte. Ltd.**

8 Admiralty Street  
#05-01 Admirax  
Singapore 757438.  
Phone +65-64882366 (Main line)  
Fax +65-62860838 (General Fax)  
sales.singapore@schott.com

## Malaysia

### **SCHOTT Glass (Malaysia) SDN. BHD.**

2024 Tingkat Perusahaan 6  
Zon Perindustrian Bebas 2  
13600 Perai/Penang  
Malaysia  
Phone +60 4-3898100  
Fax +60 4-3993861  
schott.mypen@schott.com

## China

### **SCHOTT(Shanghai)**

Precision Materials & Equipment  
International Trading Co., Ltd  
Unit 301,RND Tower,No. 1801 Hongmei  
Road,Shanghai, PRC (200233)  
China  
Phone +86 (0) 21 33678000  
Fax +86 (0) 21 33678080/33678886  
info.china@schott.com  
www.schott.com/china

## Japan

### **SCHOTT Nippon K.K.**

Advanced Optics  
9F, 4-16-3, Yotsuya  
Shinjuku-ku  
160-0004 Tokyo  
Japan  
Phone +81-3-5366-2491  
Fax +81-3-5366-2481  
sn.info@schott.com/japan  
www.schott.com/japan

## Taiwan

### **SCHOTT Taiwan Ltd**

8F-3, No. 126, Sec. 4,  
Nanking E. Road,  
Taipei 105  
Taiwan  
Phone +886 (0)2 2570 9626 ext. 11  
Fax +886 (0)2 2570 9628  
info.taiwan@schott.com

## Korea

### **SCHOTT Korea Co., Ltd.**

5th Floor BK Tower, 434 Samseong-ro  
Gangnam-gu, Seoul, Korea 135-845  
Phone +82-2-3456-0325  
Fax +82-2-3456-0301  
info.kr@schott.com  
www.schott.com/korea

**SCHOTT AG**

Advanced Optics

Hattenbergstrasse 10

55122 Mainz

Germany

Phone +49 (0)6131/66-1812

Fax +49 (0)6131/2888-9047

[info.optics@schott.com](mailto:info.optics@schott.com)

[www.schott.com/advanced\\_optics](http://www.schott.com/advanced_optics)