

# Data Sheet

# SCHOTT

**SCHOTT N-BK7®**  
**517642.251**

$n_d = 1.51680$	$v_d = 64.17$	$n_F - n_C = 0.008054$
$n_e = 1.51872$	$v_e = 63.96$	$n_F' - n_C' = 0.008110$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48921
$n_{1970.1}$	1970.1	1.49495
$n_{1529.6}$	1529.6	1.50091
$n_{1060.0}$	1060.0	1.50669
$n_t$	1014.0	1.50731
$n_s$	852.1	1.50980
$n_r$	706.5	1.51289
$n_C$	656.3	1.51432
$n_{C'}$	643.8	1.51472
$n_{632.8}$	632.8	1.51509
$n_D$	589.3	1.51673
$n_d$	587.6	1.51680
$n_e$	546.1	1.51872
$n_F$	486.1	1.52238
$n_{F'}$	480.0	1.52283
$n_g$	435.8	1.52668
$n_h$	404.7	1.53024
$n_i$	365.0	1.53627
$n_{334.1}$	334.1	1.54272
$n_{312.6}$	312.6	1.54862
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.03961212
$B_2$	0.231792344
$B_3$	1.010469450
$C_1$	0.00600069867
$C_2$	0.0200179144
$C_3$	103.5606530

Constants of Formula for dn/dT	
$D_0$	1.86E-06
$D_1$	1.31E-08
$D_2$	-1.37E-11
$E_0$	4.34E-07
$E_1$	6.27E-10
$\lambda_{TK}$ [ $\mu\text{m}$ ]	0.170

Temperature Coefficients of the Refractive Index						
[°C]	$\Delta n_{re}/\Delta T$ [ $10^{-6}/\text{K}$ ]			$\Delta n_{ab}/\Delta T$ [ $10^{-6}/\text{K}$ ]		
	1060.0	e	g	1060.0	e	g
-40/-20	2.4	2.9	3.3	0.3	0.8	1.2
+20/+40	2.4	3.0	3.5	1.1	1.6	2.1
+60/+80	2.5	3.1	3.7	1.5	2.1	2.7

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ [10mm]	$\tau_i$ [25mm]
2500	0.670	0.360
2325	0.790	0.560
1970	0.930	0.840
1530	0.992	0.980
1060	0.999	0.997
700	0.998	0.996
660	0.998	0.994
620	0.998	0.994
580	0.998	0.995
546	0.998	0.996
500	0.998	0.994
460	0.997	0.993
436	0.997	0.992
420	0.997	0.993
405	0.997	0.993
400	0.997	0.992
390	0.996	0.989
380	0.993	0.983
370	0.991	0.977
365	0.988	0.971
350	0.967	0.920
334	0.910	0.780
320	0.770	0.520
310	0.570	0.250
300	0.290	0.050
290	0.060	
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	33/29
(* = $\lambda_{70}/\lambda_5$ )	
Remarks	
suitable for precision molding, step 0.5 available	

Relative Partial Dispersion	
$P_{s,t}$	0.3098
$P_{C,s}$	0.5612
$P_{d,C}$	0.3076
$P_{e,d}$	0.2386
$P_{g,F}$	0.5349
$P_{i,h}$	0.7483
$P'_{s,t}$	0.3076
$P'_{C,s}$	0.6062
$P'_{d,C'}$	0.2566
$P'_{e,d}$	0.2370
$P'_{g,F'}$	0.4754
$P'_{i,h}$	0.7432

Deviation of Relative Partial Dispersion $\Delta P$ from the normal line	
$\Delta P_{C,t}$	0.0216
$\Delta P_{C,s}$	0.0087
$\Delta P_{F,e}$	-0.0009
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	0.0035

Other Properties	
$\alpha_{-30/+70^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	7.1
$\alpha_{+20/+300^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	8.3
$T_g$ [°C]	557
$T_{10}^{13}$ [°C]	557
$T_{10}^{7.6}$ [°C]	719
$c_p$ [J/(g·K)]	0.858
$\lambda$ [W/(m·K)]	1.114
AT [°C]	609
$\rho$ [g/cm <sup>3</sup> ]	2.51
E [ $10^3$ N/mm <sup>2</sup> ]	82
$\mu$	0.206
K [ $10^{-6}$ mm <sup>2</sup> /N]	2.77
HK <sub>0.1/20</sub>	610
HG	3
CR	1
FR	0
SR	1
AR	2.3
PR	2.3