## **Data Sheet**

## **SCHOTT**

## SCHOTT N-BK 7® 517642.251

 $n_d = 1.51680$  $v_{d}$  = 64.17  $n_F - n_C = 0.008054$  $n_{F'}-n_{C'}=0.008110$  $n_e = 1.51872$  $v_e = 63.96$ 

Refractive Indices				
	λ [nm]			
n <sub>2325.4</sub>	2325.4	1.48921		
<b>n</b> <sub>1970.1</sub>	1970.1	1.49495		
n <sub>1529.6</sub>	1529.6	1.50091		
<b>n</b> <sub>1060.0</sub>	1060.0	1.50669		
n <sub>t</sub>	1014.0	1.50731		
n <sub>s</sub>	852.1	1.50980		
n <sub>r</sub>	706.5	1.51289		
n <sub>C</sub>	656.3	1.51432		
n <sub>C'</sub>	643.8	1.51472		
n <sub>632.8</sub>	632.8	1.51509		
<b>n</b> <sub>D</sub>	589.3	1.51673		
n <sub>d</sub>	587.6	1.51680		
n <sub>e</sub>	546.1	1.51872		
n <sub>F</sub>	486.1	1.52238		
n <sub>F'</sub>	480.0	1.52283		
n <sub>g</sub>	435.8	1.52668		
n <sub>h</sub>	404.7	1.53024		
n <sub>i</sub>	365.0	1.53627		
<b>n</b> <sub>334.1</sub>	334.1	1.54272		
<b>n</b> <sub>312.6</sub>	312.6	1.54862		
n <sub>296.7</sub>	296.7			
n <sub>280.4</sub>	280.4			
n <sub>248.3</sub>	248.3			

$\mathbf{n}_{C}$	656.3	1.51432	620	0.998	0.994
n <sub>C'</sub>	643.8	1.51472	580	0.998	0.995
n <sub>632.8</sub>	632.8	1.51509	546	0.998	0.996
$\mathbf{n}_{D}$	589.3	1.51673	500	0.998	0.994
$\mathbf{n}_{d}$	587.6	1.51680	460	0.997	0.993
n <sub>e</sub>	546.1	1.51872	436	0.997	0.992
n <sub>F</sub>	486.1	1.52238	420	0.997	0.993
n <sub>F'</sub>	480.0	1.52283	405	0.997	0.993
$\mathbf{n}_{g}$	435.8	1.52668	400	0.997	0.992
n <sub>h</sub>	404.7	1.53024	390	0.996	0.989
n <sub>i</sub>	365.0	1.53627	380	0.993	0.983
<b>n</b> <sub>334.1</sub>	334.1	1.54272	370	0.991	0.977
<b>n</b> <sub>312.6</sub>	312.6	1.54862	365	0.988	0.971
n <sub>296.7</sub>	296.7		350	0.967	0.920
<b>n</b> <sub>280.4</sub>	280.4		334	0.905	0.780
<b>n</b> <sub>248.3</sub>	248.3		320	0.770	0.520
			310	0.574	0.250
Constants of Dispersion		300	0.292	0.050	
Formula		290	0.063		
<b>B</b> <sub>1</sub>	1.03961212		280		
<b>B</b> <sub>2</sub>	0.231792344		270		
<b>B</b> <sub>3</sub>	1.01046945		260		
<b>C</b> <sub>1</sub>	0.00600069867		250		
<b>C</b> <sub>2</sub>	0.0200179144				
<b>C</b> <sub>3</sub>	103.560653				

Internal Transmittanceτ <sub>i</sub>				
λ [nm]	τ <sub>i</sub> (10mm)	τ <sub>i</sub> (25mm)		
2500	0.665	0.360		
2325	0.793	0.560		
1970	0.933	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	0.905	0.780		
320	0.770	0.520		
310	0.574	0.250		
300	0.292	0.050		
290	0.063			
280				
270				
260				
250				

Constants of Dispersion dn/dT		
$\mathbf{D}_0$	1.86 · 10 <sup>-6</sup>	
<b>D</b> <sub>1</sub>	1.31 · 10 <sup>-8</sup>	
$D_2$	-1.37 · 10 <sup>-11</sup>	
<b>E</b> <sub>0</sub>	4.34 · 10 <sup>-7</sup>	
<b>E</b> <sub>1</sub>	6.27 · 10 <sup>-10</sup>	
λ <sub>TK</sub> [μm]	0.17	

Color Code	
$\lambda_{80}/\lambda_{5}$	33/29
$(*=\lambda_{70}/\lambda_5)$	

Remarks	
step 0.5 available	

Temperature Coefficients of Refractive Index						
	Δn <sub>rel</sub>	/ΔT[10 <sup>-6</sup> /K]		Δn <sub>ab</sub>	<sub>s</sub> /ΔT[10 <sup>-6</sup> /K	]
[°C]	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

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

Deviation of Relative Partial Dispersions ΔP from the "Normal Line"			
$\Delta \mathbf{P}_{\mathrm{C,t}}$	0.0216		
$\Delta \mathbf{P}_{\mathrm{C,s}}$	0.0087		
$\Delta \mathbf{P}_{F,e}$	-0.0009		
$\Delta \mathbf{P}_{g,F}$	-0.0009		
Δ <b>P</b> <sub>i,g</sub> 0.0035			

Other Properties	
$\alpha_{-30/+70^{\circ}C}[10^{-6}/K]$ $\alpha_{+20/+300^{\circ}C}[10^{-6}/K]$	7.1
α <sub>+20/+300°C</sub> [10 <sup>-6</sup> /K]	8.3
T <sub>g</sub> [°C]	557
<b>T</b> <sub>10</sub> <sup>13.0</sup> [°C]	557
T <sub>g</sub> [°C] T <sub>10</sub> <sup>13.0</sup> [°C] T <sub>10</sub> <sup>7.6</sup> [°C]	719
<b>c</b> <sub>p</sub> [J/(g⋅K)]	0.858
λ [W/(m·K)]	1.114
ρ [g/cm <sup>3</sup> ]	2.51
<b>E</b> [10 <sup>3</sup> N/mm <sup>2</sup> ]	82
μ	0.206
<b>K</b> [10 <sup>-6</sup> 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