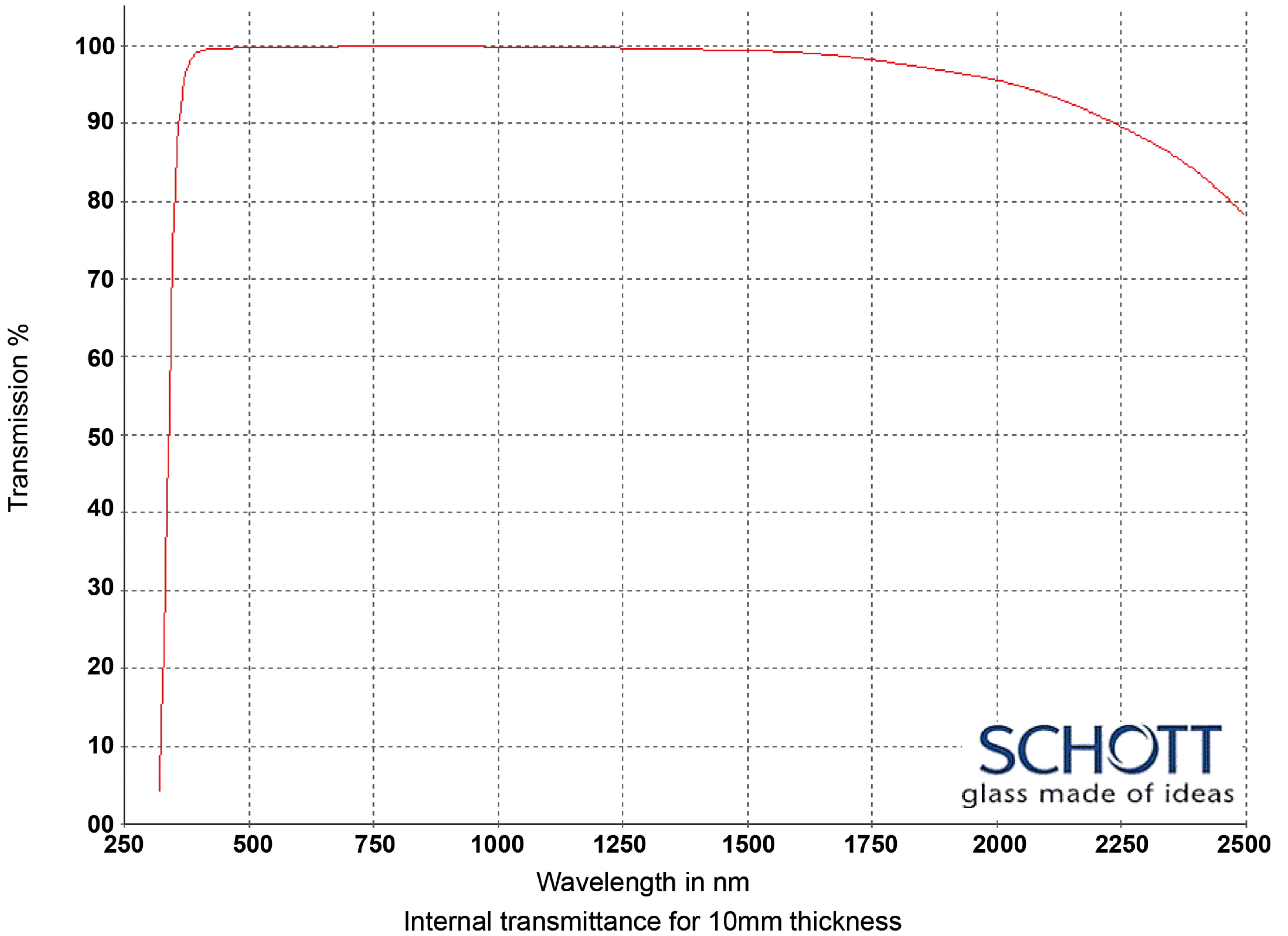




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm  
Material: Schott N-BAK4 for 250nm - 2500 transmission  
Range: OPG - N-BAK4



**SCHOTT**  
glass made of ideas

WAVELENGTH	N-BAK4 (T%)
2500 nm	0.780
2325 nm	0.870
1970 nm	0.959
1530 nm	0.993
1060 nm	0.998
700 nm	0.999
660 nm	0.998
620 nm	0.998
580 nm	0.998
546 nm	0.998
500 nm	0.998
460 nm	0.996
436 nm	0.995
420 nm	0.995
405 nm	0.993
400 nm	0.992
390 nm	0.987
380 nm	0.976
370 nm	0.954
365 nm	0.930
350 nm	0.790
334 nm	0.350
320 nm	0.010
310 nm	0.000
300 nm	0.000
290 nm	0.000
280 nm	0.000
270 nm	0.000
260 nm	0.000
250 nm	0.000

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Whilst every effort has been made to verify the data, Knight Optical (UK) Ltd can take no responsibility for its accuracy.

### Refractive Indices

	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54044
$n_{1970.1}$	1970.1	1.54561
$n_{1529.6}$	1529.6	1.55111
$n_{1060.0}$	1060.0	1.55688
$n_t$	1014.0	1.55755
$n_s$	852.1	1.56034
$n_r$	706.5	1.56400
$n_C$	656.3	1.56575
$n_{C'}$	643.8	1.56624
$n_{632.8}$	632.8	1.56670
$n_D$	589.3	1.56874
$n_d$	587.6	1.56883
$n_e$	546.1	1.57125
$n_F$	486.1	1.57591
$n_{F'}$	480.0	1.57649
$n_g$	435.8	1.58149
$n_h$	404.7	1.58614
$n_i$	365.0	1.59415
$n_{334.1}$	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]	$\tau_i$ [10 mm]	$\tau_i$ [25 mm]
2500	0.78	0.54
2325	0.87	0.71
1970	0.959	0.900
1530	0.993	0.982
1060	0.998	0.995
700	0.999	0.997
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.998	0.996
500	0.998	0.994
460	0.996	0.989
436	0.995	0.988
420	0.995	0.987
405	0.993	0.983
400	0.992	0.980
390	0.987	0.967
380	0.976	0.940
370	0.954	0.89
365	0.930	0.84
350	0.79	0.55
334	0.35	0.07
320	0.01	
310		
300		
290		
280		
270		
260		
250		

### Relative Partial Dispersion

$P_{s,t}$	0.2749
$P_{C,s}$	0.5321
$P_{d,C}$	0.3029
$P_{e,d}$	0.2383
$P_{g,F}$	0.5487
$P_{i,h}$	0.7879
$P'_{s,t}$	0.2724
$P'_{C's}$	0.5750
$P'_{d,C'}$	0.2524
$P'_{e,d}$	0.2361
$P'_{g,F'}$	0.4869
$P'_{i,h}$	0.7807

### Deviation of Rel. Partial Dispersion

#### $\Delta P$ from "Normal Line"

$\Delta P_{C,t}$	-0.0034
$\Delta P_{C,s}$	-0.0013
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0010
$\Delta P_{i,g}$	-0.0087

### Constants of Dispersion Formula

$B_1$	$1.28834642 \cdot 10^{+00}$
$B_2$	$1.32817724 \cdot 10^{-01}$
$B_3$	$9.45395373 \cdot 10^{-01}$
$C_1$	$7.79980626 \cdot 10^{-03}$
$C_2$	$3.15631177 \cdot 10^{-02}$
$C_3$	$1.05965875 \cdot 10^{+02}$

### Constants of Formula $dn/dT$

$D_0$	$3.06 \cdot 10^{-06}$
$D_1$	$1.44 \cdot 10^{-08}$
$D_2$	$-2.23 \cdot 10^{-11}$
$E_0$	$5.46 \cdot 10^{-07}$
$E_1$	$6.05 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.189

### Color Code

$\lambda_{80}/\lambda_5$	36/33
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### Remarks


### 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	3.0	3.7	4.4	0.9	1.5	2.2
+20/+40	3.1	3.9	4.7	1.8	2.6	3.3
+60/+80	3.3	4.2	5.0	2.2	3.1	3.9

### Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.9
$T_g [^\circ C]$	581
$T_{10}^{13.0} [^\circ C]$	569
$T_{10}^{7.6} [^\circ C]$	725
$c_p [J/(g \cdot K)]$	0.680
$\lambda [W/(m \cdot K)]$	0.880
$\rho [g/cm^3]$	3.05
$E [10^3 N/mm^2]$	77
$\mu$	0.240
$K [10^{-6} mm^2/N]$	2.90
$HK_{0.1/20}$	550
HG	2
B	0
CR	1
FR	0
SR	1.2
AR	1
PR	1