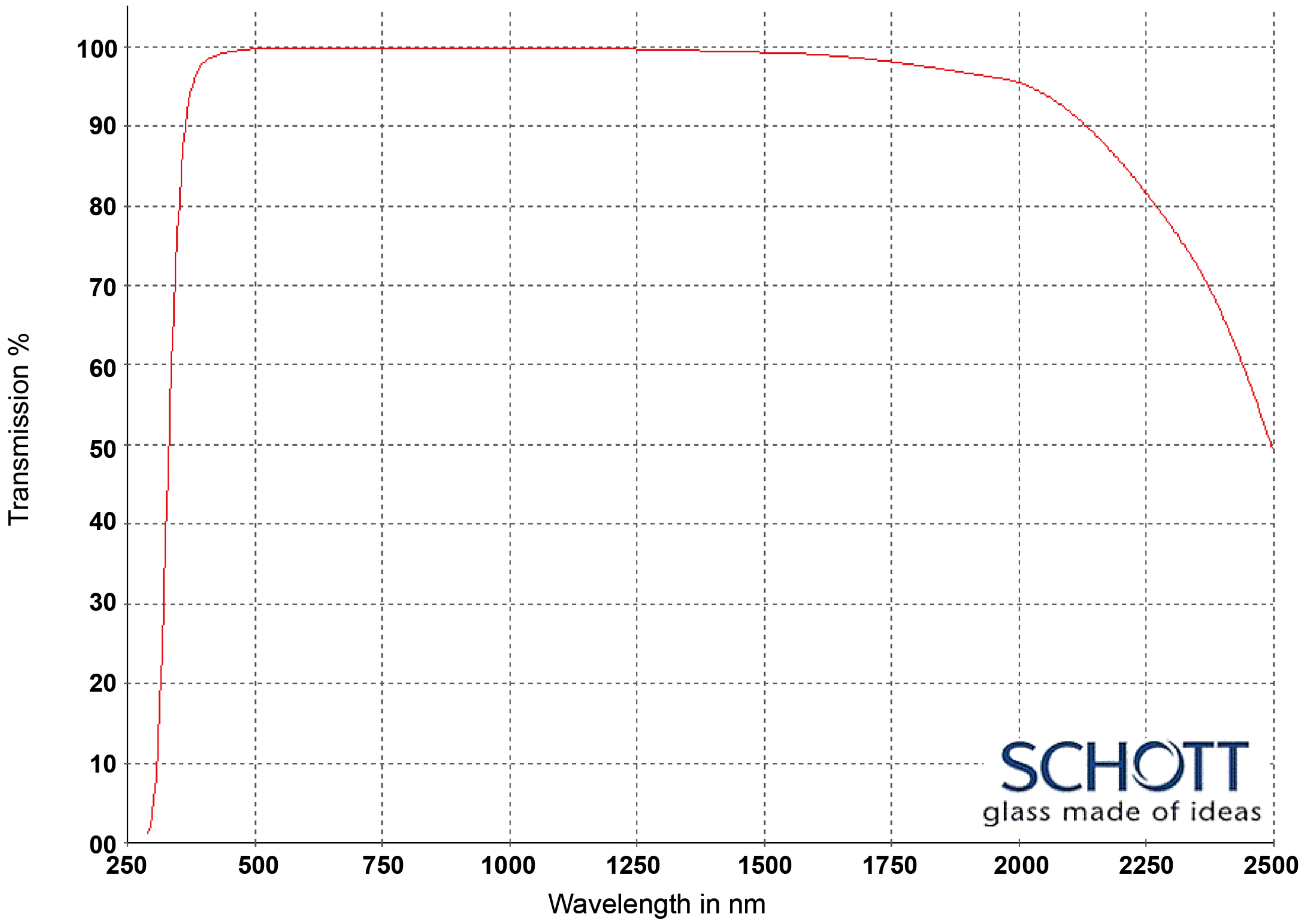




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: SCHOTT N-LAK9 for 250nm - 2500 transmission
Range: OPG - N-LAK9



Internal transmittance for 10mm thickness

WAVELENGTH	N-LAK9 (T%)
2500 nm	0.490
2325 nm	0.750
1970 nm	0.959
1530 nm	0.992
1060 nm	0.998
700 nm	0.998
660 nm	0.998
620 nm	0.998
580 nm	0.998
546 nm	0.998
500 nm	0.997
460 nm	0.994
436 nm	0.991
420 nm	0.988
405 nm	0.983
400 nm	0.980
390 nm	0.971
380 nm	0.954
370 nm	0.930
365 nm	0.910
350 nm	0.790
334 nm	0.560
320 nm	0.280
310 nm	0.120
300 nm	0.040
290 nm	0.010
280 nm	0.000
270 nm	0.000
260 nm	0.000
250 nm	0.000

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Refractive Indices

	λ [nm]	
$n_{2325.4}$	2325.4	1.65294
$n_{1970.1}$	1970.1	1.66032
$n_{1529.6}$	1529.6	1.66804
$n_{1060.0}$	1060.0	1.67584
n_t	1014.0	1.67672
n_s	852.1	1.68033
n_r	706.5	1.68497
n_C	656.3	1.68716
$n_{C'}$	643.8	1.68777
$n_{632.8}$	632.8	1.68834
n_D	589.3	1.69089
n_d	587.6	1.69100
n_e	546.1	1.69401
n_F	486.1	1.69979
$n_{F'}$	480.0	1.70051
n_g	435.8	1.70667
n_h	404.7	1.71239
n_i	365.0	1.72219
$n_{334.1}$	334.1	1.73281
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance τ_i

λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.49	0.17
2325	0.75	0.49
1970	0.959	0.900
1530	0.992	0.980
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.994
546	0.998	0.994
500	0.997	0.992
460	0.994	0.985
436	0.991	0.977
420	0.988	0.971
405	0.983	0.958
400	0.980	0.950
390	0.971	0.930
380	0.954	0.89
370	0.930	0.83
365	0.910	0.78
350	0.79	0.55
334	0.56	0.23
320	0.28	0.04
310	0.12	
300	0.04	
290	0.01	
280		
270		
260		
250		

Relative Partial Dispersion

$P_{s,t}$	0.2859
$P_{C,s}$	0.5409
$P_{d,C}$	0.3043
$P_{e,d}$	0.2384
$P_{g,F}$	0.5447
$P_{i,h}$	0.7756
$P'_{s,t}$	0.2834
$P'_{C's}$	0.5844
$P'_{d,C'}$	0.2536
$P'_{e,d}$	0.2363
$P'_{g,F'}$	0.4835
$P'_{i,h}$	0.7690

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

$\Delta P_{C,t}$	0.0223
$\Delta P_{C,s}$	0.0105
$\Delta P_{F,e}$	-0.0023
$\Delta P_{g,F}$	-0.0071
$\Delta P_{i,g}$	-0.0367

Constants of Dispersion Formula

B_1	$1.46231905 \cdot 10^{+00}$
B_2	$3.44399589 \cdot 10^{-01}$
B_3	$1.15508372 \cdot 10^{+00}$
C_1	$7.24270156 \cdot 10^{-03}$
C_2	$2.43353131 \cdot 10^{-02}$
C_3	$8.54686868 \cdot 10^{+01}$

Constants of Formula dn/dT

D_0	$2.11 \cdot 10^{-06}$
D_1	$1.11 \cdot 10^{-08}$
D_2	$1.82 \cdot 10^{-12}$
E_0	$4.74 \cdot 10^{-07}$
E_1	$-3.47 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.146

Color Code

λ_{80}/λ_5	37/30
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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	3.9	4.6	0.8	1.6	2.3
+20/+40	2.9	3.7	4.4	1.5	2.2	2.9
+60/+80	3.1	3.8	4.4	2.0	2.7	3.3

Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.5
Tg[°C]	656
$T_{10}^{13.0} [^\circ C]$	645
$T_{10}^{7.6} [^\circ C]$	722
$c_p [J/(g \cdot K)]$	0.649
$\lambda [W/(m \cdot K)]$	0.908
$\rho [g/cm^3]$	3.51
$E [10^3 N/mm^2]$	110
μ	0.285
$K [10^{-6} mm^2/N]$	1.83
HK _{0.1/20}	700
HG	
B	0
CR	3
FR	3
SR	52
AR	1.2
PR	4.3