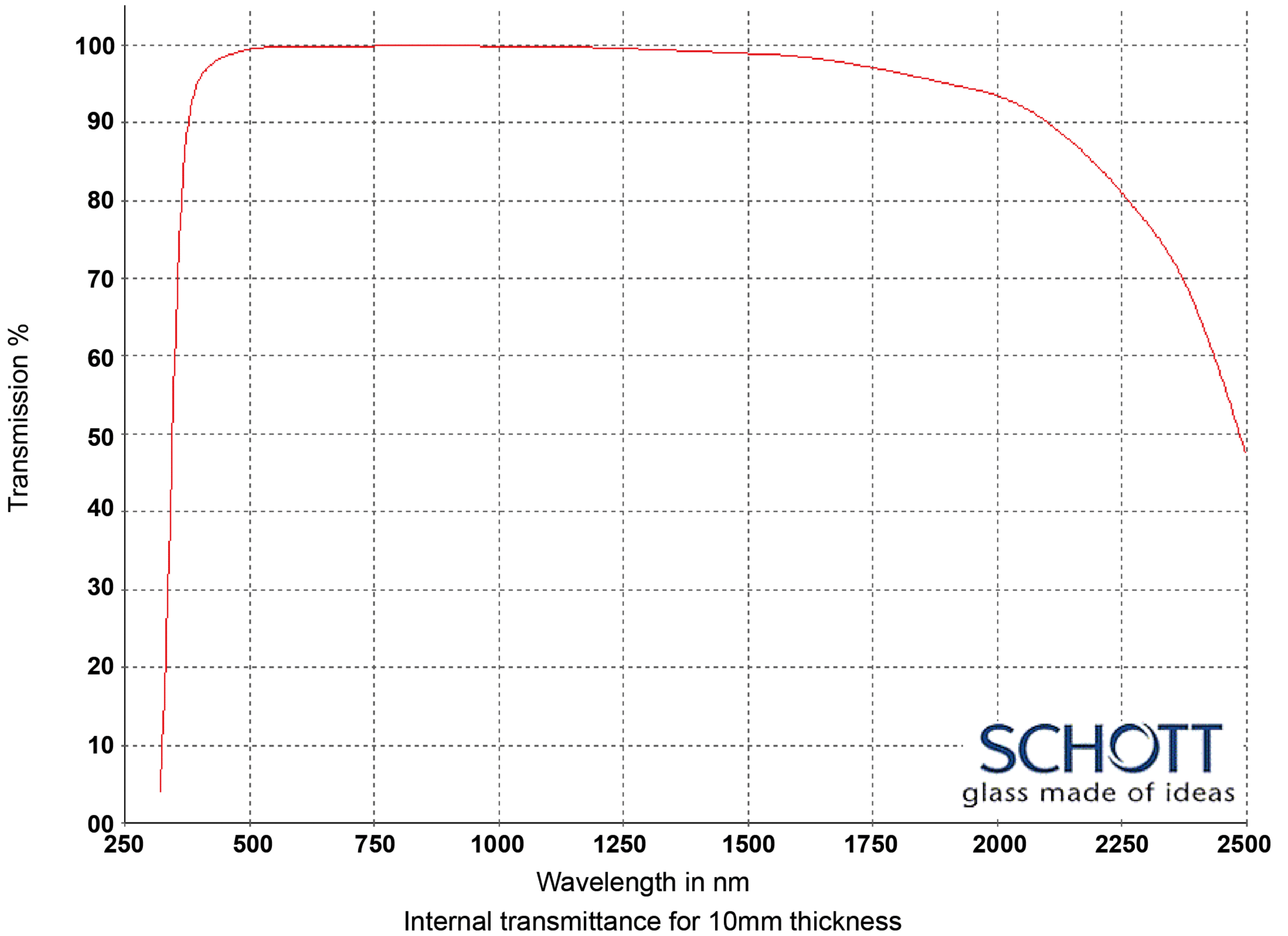




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: N-LAF33 for 250nm - 2500 transmission
Range: N-LAF33



SCHOTT
glass made of ideas

WAVELENGTH	N-LAF33 (T%)
2500 nm	0.470
2325 nm	0.750
1970 nm	0.940
1530 nm	0.988
1060 nm	0.998
700 nm	0.998
660 nm	0.997
620 nm	0.997
580 nm	0.997
546 nm	0.997
500 nm	0.994
460 nm	0.987
436 nm	0.980
420 nm	0.973
405 nm	0.962
400 nm	0.957
390 nm	0.940
380 nm	0.910
370 nm	0.860
365 nm	0.820
350 nm	0.600
334 nm	0.250
320 nm	0.020
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

	λ [nm]	
$n_{2325.4}$	2325.4	1.74262
$n_{1970.1}$	1970.1	1.74968
$n_{1529.6}$	1529.6	1.75732
$n_{1060.0}$	1060.0	1.76584
n_t	1014.0	1.76689
n_s	852.1	1.77138
n_r	706.5	1.77751
n_C	656.3	1.78049
$n_{C'}$	643.8	1.78134
$n_{632.8}$	632.8	1.78213
n_D	589.3	1.78567
n_d	587.6	1.78582
n_e	546.1	1.79007
n_F	486.1	1.79833
$n_{F'}$	480.0	1.79937
n_g	435.8	1.80837
n_h	404.7	1.81687
n_i	365.0	1.83175
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance τ_i

λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.47	0.15
2325	0.75	0.48
1970	0.940	0.86
1530	0.988	0.970
1060	0.998	0.994
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.997	0.992
546	0.997	0.992
500	0.994	0.985
460	0.987	0.967
436	0.980	0.950
420	0.973	0.930
405	0.962	0.910
400	0.957	0.900
390	0.940	0.86
380	0.910	0.79
370	0.86	0.68
365	0.82	0.60
350	0.60	0.28
334	0.25	0.03
320	0.02	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion

$P_{s,t}$	0.2520
$P_{C,s}$	0.5107
$P_{d,C}$	0.2988
$P_{e,d}$	0.2378
$P_{g,F}$	0.5626
$P_{i,h}$	0.8339
$P'_{s,t}$	0.2492
$P'_{C's}$	0.5518
$P'_{d,C'}$	0.2488
$P'_{e,d}$	0.2351
$P'_{g,F'}$	0.4987
$P'_{i,h}$	0.8247

Constants of Dispersion Formula

B_1	$1.79653417 \cdot 10^{+00}$
B_2	$3.11577903 \cdot 10^{-01}$
B_3	$1.15981863 \cdot 10^{+00}$
C_1	$9.27313493 \cdot 10^{-03}$
C_2	$3.58201181 \cdot 10^{-02}$
C_3	$8.73448712 \cdot 10^{+01}$

Constants of Formula dn/dT

D_0	$8.17 \cdot 10^{-06}$
D_1	$1.24 \cdot 10^{-08}$
D_2	$-1.65 \cdot 10^{-11}$
E_0	$7.11 \cdot 10^{-07}$
E_1	$8.59 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.210

Color Code

λ_{80}/λ_5	39/32
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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	6.8	8.1	9.4	4.4	5.7	7.0
+20/+40	7.0	8.5	10.0	5.5	6.9	8.4
+60/+80	7.2	8.9	10.5	6.0	7.6	9.3

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

$\Delta P_{C,t}$	0.0088
$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	-0.0018
$\Delta P_{g,F}$	-0.0071
$\Delta P_{i,g}$	-0.0443

Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.7
$T_g [^\circ C]$	600
$T_{10}^{13.0} [^\circ C]$	585
$T_{10}^{7.6} [^\circ C]$	673
$c_p [J/(g \cdot K)]$	0.570
$\lambda [W/(m \cdot K)]$	0.800
$\rho [g/cm^3]$	4.36
$E [10^3 N/mm^2]$	111
μ	0.301
$K [10^{-6} mm^2/N]$	2.21
$HK_{0.1/20}$	730
HG	1
B	0
CR	1
FR	2
SR	52.2
AR	1
PR	3