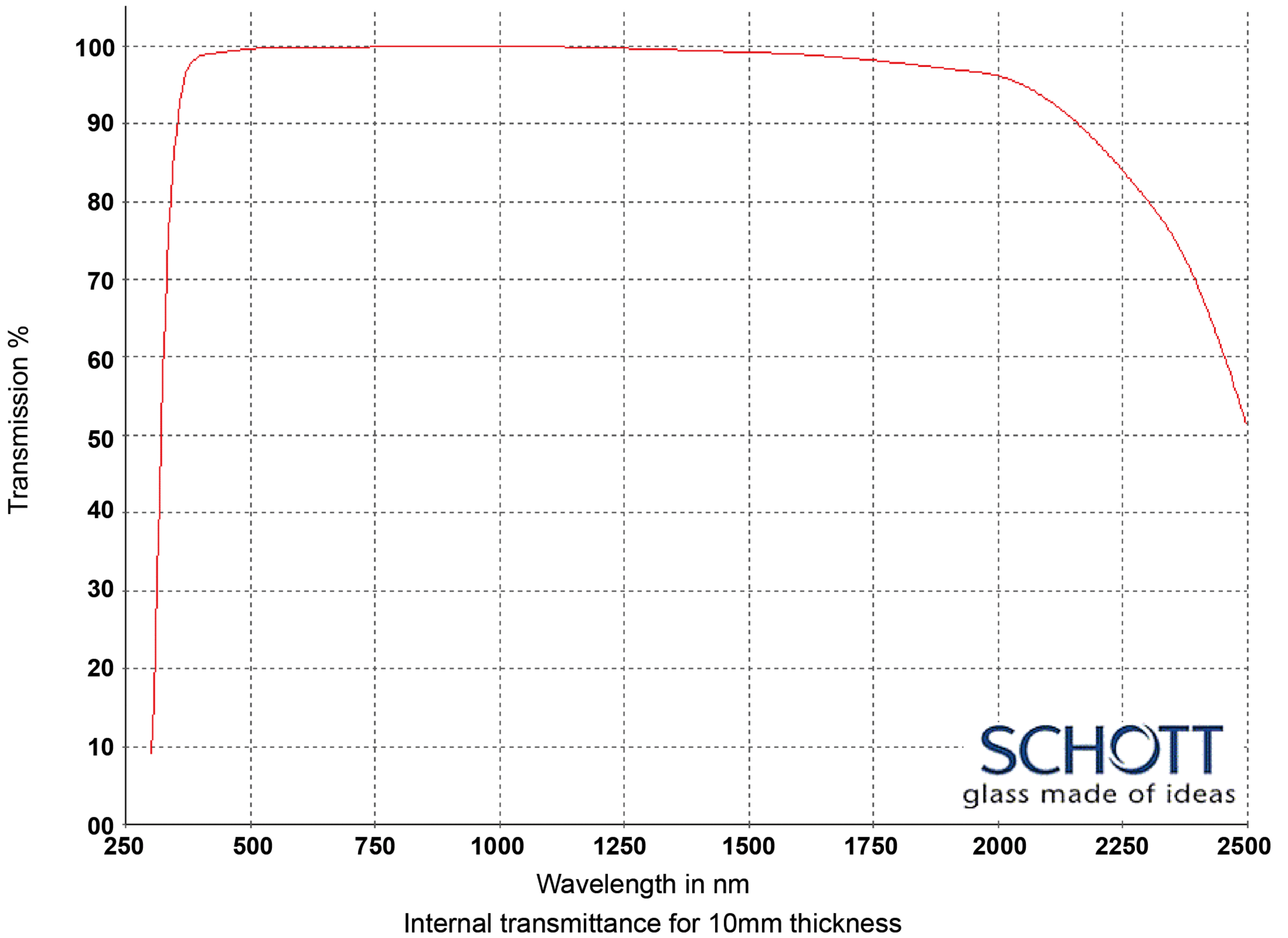




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: Schott N-KZFS11 for 250nm - 2500 transmission
Range: OPG - N-KZFS11



WAVELENGTH	N-KZFS11 (T%)
2500 nm	0.510
2325 nm	0.780
1970 nm	0.965
1530 nm	0.991
1060 nm	0.999
700 nm	0.998
660 nm	0.997
620 nm	0.997
580 nm	0.997
546 nm	0.997
500 nm	0.996
460 nm	0.993
436 nm	0.991
420 nm	0.990
405 nm	0.988
400 nm	0.987
390 nm	0.983
380 nm	0.976
370 nm	0.963
365 nm	0.950
350 nm	0.880
334 nm	0.730
320 nm	0.470
310 nm	0.230
300 nm	0.050
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	1.59699
$n_{1970.1}$	1970.1	1.60439
$n_{1529.6}$	1529.6	1.61223
$n_{1060.0}$	1060.0	1.62044
n_t	1014.0	1.62139
n_s	852.1	1.62540
n_r	706.5	1.63069
n_C	656.3	1.63324
$n_{C'}$	643.8	1.63395
$n_{632.8}$	632.8	1.63462
n_D	589.3	1.63762
n_d	587.6	1.63775
n_e	546.1	1.64132
n_F	486.1	1.64828
$n_{F'}$	480.0	1.64915
n_g	435.8	1.65670
n_h	404.7	1.66385
n_i	365.0	1.67636
$n_{334.1}$	334.1	1.69037
$n_{312.6}$	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	0.51	0.18
2325	0.78	0.54
1970	0.965	0.910
1530	0.991	0.977
1060	0.999	0.999
700	0.998	0.994
660	0.997	0.992
620	0.997	0.992
580	0.997	0.992
546	0.997	0.993
500	0.996	0.989
460	0.993	0.982
436	0.991	0.978
420	0.990	0.975
405	0.988	0.971
400	0.987	0.968
390	0.983	0.957
380	0.976	0.940
370	0.963	0.910
365	0.950	0.88
350	0.88	0.73
334	0.73	0.45
320	0.47	0.15
310	0.23	0.02
300	0.05	
290		
280		
270		
260		
250		

Relative Partial Dispersion

$P_{s,t}$	0.2664
$P_{C,s}$	0.5212
$P_{d,C}$	0.3000
$P_{e,d}$	0.2377
$P_{g,F}$	0.5605
$P_{i,h}$	0.8319
$P'_{s,t}$	0.2636
$P'_{C's}$	0.5627
$P'_{d,C'}$	0.2499
$P'_{e,d}$	0.2352
$P'_{g,F'}$	0.4971
$P'_{i,h}$	0.8232

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"	
$\Delta P_{C,t}$	0.0415
$\Delta P_{C,s}$	0.0194
$\Delta P_{F,e}$	-0.0039
$\Delta P_{g,F}$	-0.0120
$\Delta P_{i,g}$	-0.0617

Constants of Dispersion Formula

B_1	$1.33222450 \cdot 10^{+00}$
B_2	$2.89241610 \cdot 10^{-01}$
B_3	$1.15161734 \cdot 10^{+00}$
C_1	$8.40298480 \cdot 10^{-03}$
C_2	$3.44239720 \cdot 10^{-02}$
C_3	$8.84310532 \cdot 10^{+01}$

Constants of Formula dn/dT

D_0	$3.36 \cdot 10^{-06}$
D_1	$1.17 \cdot 10^{-08}$
D_2	$-1.81 \cdot 10^{-11}$
E_0	$6.35 \cdot 10^{-07}$
E_1	$7.23 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.207

Color Code

λ_{80}/λ_5	36/30
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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	3.5	4.4	5.4	1.3	2.2	3.1
+20/+40	3.5	4.6	5.7	2.1	3.1	4.2
+60/+80	3.6	4.8	6.0	2.5	3.7	4.8

Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.6
$T_g [^\circ C]$	551
$T_{10}^{13.0} [^\circ C]$	554
$T_{10}^{7.6} [^\circ C]$	
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.810
$\rho [g/cm^3]$	3.20
$E [10^3 N/mm^2]$	79
μ	0.251
$K [10^{-6} mm^2/N]$	4.21
$HK_{0.1/20}$	530
HG	
B	1
CR	1
FR	1
SR	3.4
AR	1
PR	1