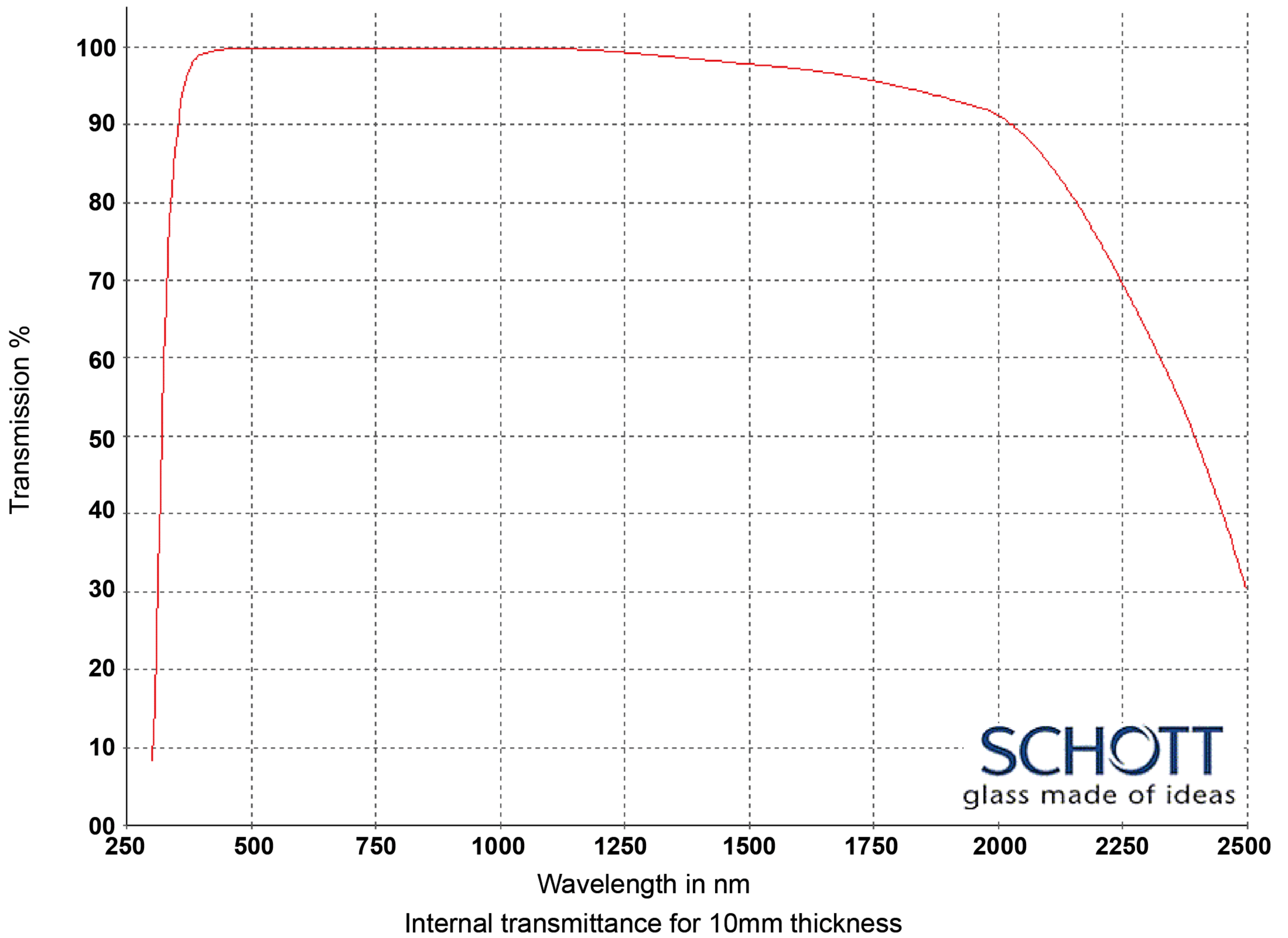




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: Schott KZFSN4 for 250nm - 2500 transmission
Range: OPG - KZFSN4



SCHOTT
glass made of ideas

WAVELENGTH	KZFSN4 (T%)
2500 nm	0.300
2325 nm	0.600
1970 nm	0.920
1530 nm	0.976
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	0.998
460 nm	0.997
436 nm	0.996
420 nm	0.994
405 nm	0.991
400 nm	0.990
390 nm	0.985
380 nm	0.975
370 nm	0.959
365 nm	0.950
350 nm	0.880
334 nm	0.750
320 nm	0.480
310 nm	0.230
300 nm	0.040
290 nm	0.000
280 nm	0.000
270 nm	0.000
260 nm	0.000
250 nm	0.000

Refractive Indices

	λ [nm]	
$n_{2325.4}$	2325.4	1.57428
$n_{1970.1}$	1970.1	1.58170
$n_{1529.6}$	1529.6	1.58943
$n_{1060.0}$	1060.0	1.59732
n_t	1014.0	1.59822
n_s	852.1	1.60198
n_r	706.5	1.60689
n_C	656.3	1.60924
$n_{C'}$	643.8	1.60990
$n_{632.8}$	632.8	1.61052
n_D	589.3	1.61328
n_d	587.6	1.61340
n_e	546.1	1.61669
n_F	486.1	1.62309
$n_{F'}$	480.0	1.62389
n_g	435.8	1.63085
n_h	404.7	1.63745
n_i	365.0	1.64905
$n_{334.1}$	334.1	1.66215
$n_{312.6}$	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	0.30	0.05
2325	0.60	0.28
1970	0.920	0.81
1530	0.976	0.940
1060	0.998	0.995
700	0.998	0.995
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.998	0.995
460	0.997	0.992
436	0.996	0.989
420	0.994	0.986
405	0.991	0.978
400	0.990	0.974
390	0.985	0.962
380	0.975	0.940
370	0.959	0.900
365	0.950	0.87
350	0.88	0.72
334	0.75	0.49
320	0.48	0.16
310	0.23	0.03
300	0.04	
290		
280		
270		
260		
250		

Relative Partial Dispersion

$P_{s,t}$	0.2712
$P_{C,s}$	0.5245
$P_{d,C}$	0.3004
$P_{e,d}$	0.2377
$P_{g,F}$	0.5607
$P_{i,h}$	0.8376
$P'_{s,t}$	0.2684
$P'_{C's}$	0.5662
$P'_{d,C'}$	0.2501
$P'_{e,d}$	0.2352
$P'_{g,F'}$	0.4973
$P'_{i,h}$	0.8289

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

$\Delta P_{C,t}$	0.0406
$\Delta P_{C,s}$	0.0183
$\Delta P_{F,e}$	-0.0032
$\Delta P_{g,F}$	-0.0086
$\Delta P_{i,g}$	-0.0391

Constants of Dispersion Formula

B_1	$1.37994218 \cdot 10^{+00}$
B_2	$1.68496708 \cdot 10^{-01}$
B_3	$8.74885726 \cdot 10^{-01}$
C_1	$8.91159699 \cdot 10^{-03}$
C_2	$4.05334070 \cdot 10^{-02}$
C_3	$6.96628237 \cdot 10^{+01}$

Constants of Formula dn/dT

D_0	$6.01 \cdot 10^{-06}$
D_1	$1.30 \cdot 10^{-08}$
D_2	$-7.94 \cdot 10^{-11}$
E_0	$4.05 \cdot 10^{-07}$
E_1	$7.23 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.272

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	4.3	5.0	5.8	2.1	2.8	3.5
+20/+40	4.6	5.5	6.5	3.2	4.0	5.0
+60/+80	4.6	5.5	6.6	3.5	4.4	5.5

Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	4.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	5.5
Tg[°C]	492
$T_{10}^{13.0} [^\circ C]$	494
$T_{10}^{7.6} [^\circ C]$	594
$c_p [J/(g \cdot K)]$	0.636
$\lambda [W/(m \cdot K)]$	0.766
$\rho [g/cm^3]$	3.20
$E [10^3 N/mm^2]$	60
μ	0.275
$K [10^{-6} mm^2/N]$	3.13
HK _{0.1/20}	450
HG	
B	1
CR	3
FR	2
SR	52.3
AR	4.3
PR	4.3