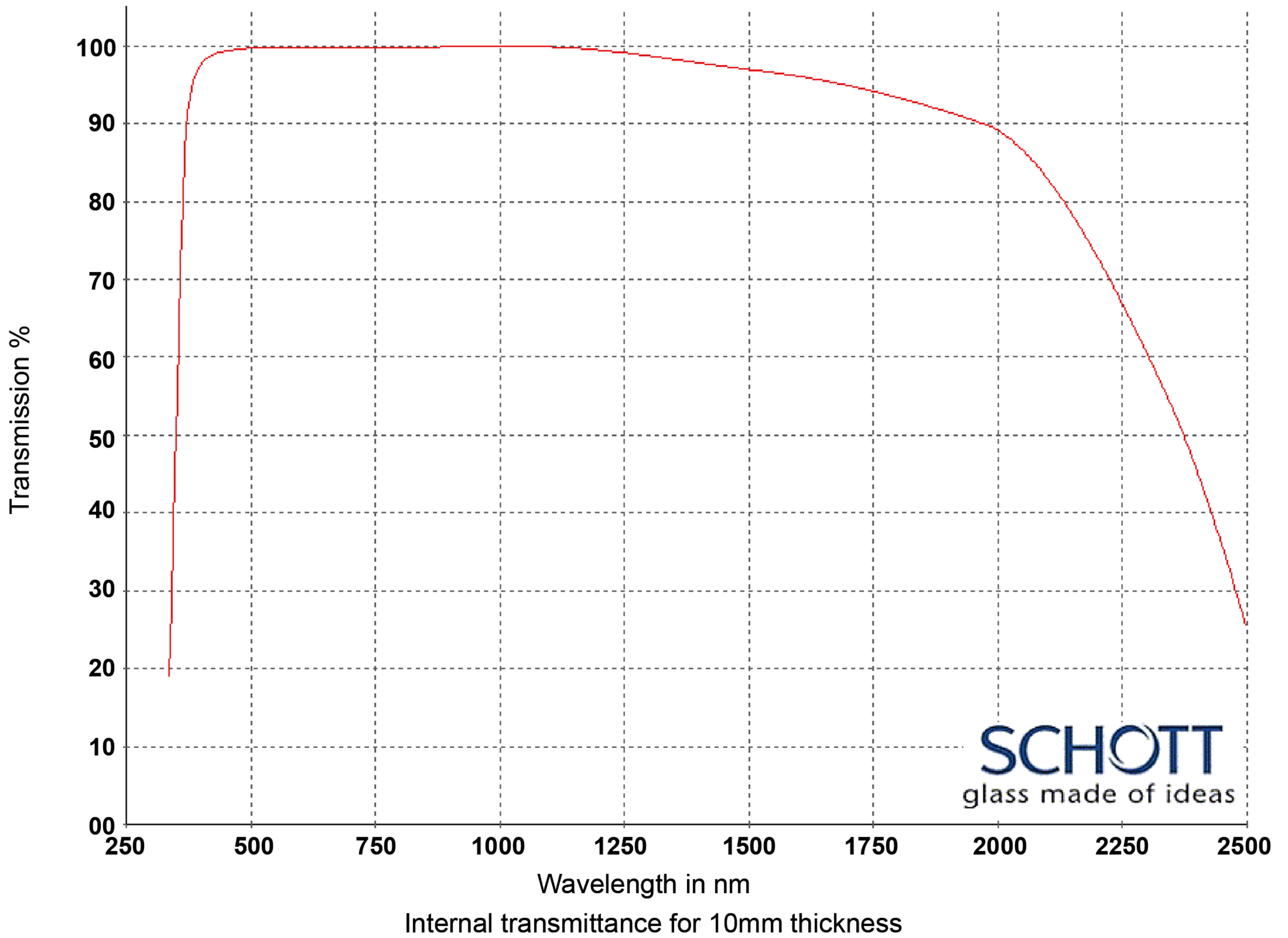




KNIGHT OPTICAL

Tel: +44 (0)1622 859444
Fax: +44 (0)1622 859555
info@knightoptical.co.uk
www.knightoptical.co.uk

Title: Optical Glasses - 250-2500nm
Material: Schott KZFSN5 for 250nm - 2500 transmission
Range: OPG - KZFSN5



SCHOTT
glass made of ideas

WAVELENGTH	BASF51 (T%)
2500 nm	0.250
2325 nm	0.570
1970 nm	0.900
1530 nm	0.967
1060 nm	0.999
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	0.987
405 nm	0.980
400 nm	0.976
390 nm	0.963
380 nm	0.940
370 nm	0.890
365 nm	0.840
350 nm	0.510
334 nm	0.130
320 nm	0.000
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

Refractive Indices

	λ [nm]	
$n_{2325.4}$	2325.4	1.61108
$n_{1970.1}$	1970.1	1.61880
$n_{1529.6}$	1529.6	1.62692
$n_{1060.0}$	1060.0	1.63548
n_t	1014.0	1.63649
n_s	852.1	1.64075
n_r	706.5	1.64644
n_C	656.3	1.64920
$n_{C'}$	643.8	1.64998
$n_{632.8}$	632.8	1.65070
n_D	589.3	1.65397
n_d	587.6	1.65412
n_e	546.1	1.65803
n_F	486.1	1.66571
$n_{F'}$	480.0	1.66668
n_g	435.8	1.67512
n_h	404.7	1.68319
n_i	365.0	1.69759
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula

B_1	$1.47727858 \cdot 10^{+00}$
B_2	$1.91686941 \cdot 10^{-01}$
B_3	$8.97333608 \cdot 10^{-01}$
C_1	$9.75488335 \cdot 10^{-03}$
C_2	$4.50495404 \cdot 10^{-02}$
C_3	$6.78786495 \cdot 10^{+01}$

Constants of Formula dn/dT

D_0	$5.51 \cdot 10^{-06}$
D_1	$1.48 \cdot 10^{-08}$
D_2	$-2.21 \cdot 10^{-11}$
E_0	$6.22 \cdot 10^{-07}$
E_1	$7.05 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.230

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	4.4	5.5	6.6	2.2	3.2	4.3
+20/+40	4.7	5.9	7.1	3.3	4.4	5.6
+60/+80	4.9	6.2	7.6	3.8	5.1	6.4

Internal Transmittance τ_i

λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.25	0.03
2325	0.57	0.24
1970	0.900	0.77
1530	0.967	0.920
1060	0.999	0.997
700	0.998	0.996
660	0.998	0.996
620	0.998	0.996
580	0.998	0.996
546	0.998	0.995
500	0.997	0.992
460	0.994	0.985
436	0.991	0.978
420	0.987	0.968
405	0.980	0.950
400	0.976	0.940
390	0.963	0.910
380	0.940	0.85
370	0.89	0.74
365	0.84	0.65
350	0.51	0.19
334	0.13	
320		
310		
300		
290		
280		
270		
260		
250		

Color Code

λ_{80}/λ_5	37/34
--------------------------	-------

Remarks

Relative Partial Dispersion

$P_{s,t}$	0.2581
$P_{C,s}$	0.5120
$P_{d,C}$	0.2978
$P_{e,d}$	0.2374
$P_{g,F}$	0.5700
$P_{i,h}$	0.8727
$P'_{s,t}$	0.2551
$P'_{C's}$	0.5525
$P'_{d,C'}$	0.2479
$P'_{e,d}$	0.2346
$P'_{g,F'}$	0.5053
$P'_{i,h}$	0.8625

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

$\Delta P_{C,t}$	0.0371
$\Delta P_{C,s}$	0.0167
$\Delta P_{F,e}$	-0.0027
$\Delta P_{g,F}$	-0.0071
$\Delta P_{i,g}$	-0.0302

Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	4.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	5.7
$T_g [^\circ C]$	501
$T_{10}^{13.0} [^\circ C]$	479
$T_{10}^{7.6} [^\circ C]$	
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.46
$E [10^3 N/mm^2]$	65
μ	0.275
$K [10^{-6} mm^2/N]$	2.89
$HK_{0.1/20}$	460
HG	5
B	1
CR	3
FR	2
SR	52.3
AR	4.3
PR	4.3