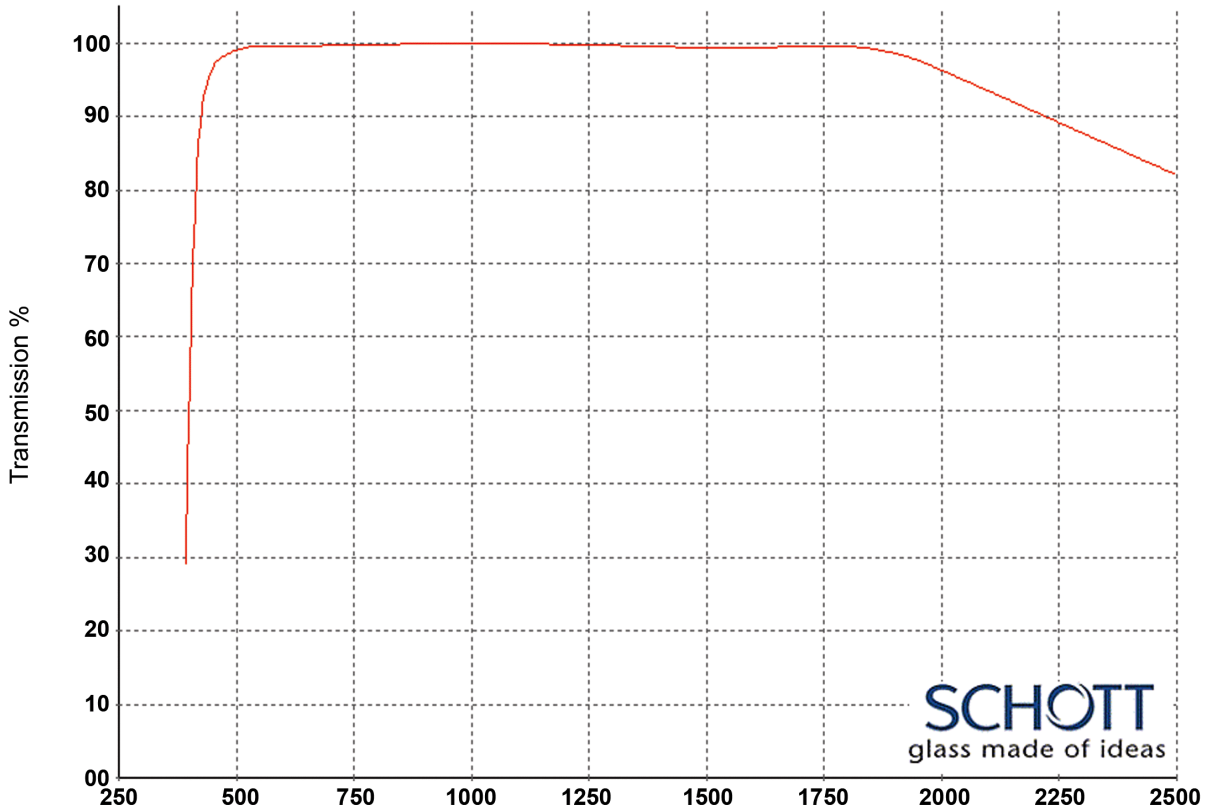
OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott SF11 for 250nm - 2500nm transmission

Range/Description: OPG-SF11



Internal transmittance for 10mm thickness

WAVELENGTH	SF11 (T%)
2500 nm	0.820
2325 nm	0.870
1970 nm	0.971
1530 nm	0.993
1060 nm	0.999
700 nm	0.997
660 nm	0.996
620 nm	0.996
580 nm	0.996
546 nm	0.996
500 nm	0.990
460 nm	0.976
436 nm	0.940
420 nm	0.870
405 nm	0.650
400 nm	0.530
390 nm	0.180
380 nm	0.000
370 nm	0.000
365 nm	0.000
350 nm	0.000
334 nm	0.000
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

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KNIGHT OPTICAL™

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SCHOTT
glass made of ideas

Refractive Indices	λ [nm]	
$n_{2325.4}$	2325.4	1.73294
$n_{1970.1}$	1970.1	1.73843
$n_{1529.6}$	1529.6	1.74506
$n_{1060.0}$	1060.0	1.75445
n_t	1014.0	1.75579
n_s	852.1	1.76200
n_r	706.5	1.77125
n_C	656.3	1.77599
$n_{C'}$	643.8	1.77734
$n_{632.8}$	632.8	1.77862
n_D	589.3	1.78446
n_d	587.6	1.78472
n_e	546.1	1.79190
n_F	486.1	1.80645
$n_{F'}$	480.0	1.80834
n_g	435.8	1.82518
n_h	404.7	1.84208
n_i	365.0	
$n_{334.1}$	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	$1.73848403 \cdot 10^{+00}$
B_2	$3.11168974 \cdot 10^{-01}$
B_3	$1.17490871 \cdot 10^{+00}$
C_1	$1.36068604 \cdot 10^{-02}$
C_2	$6.15960463 \cdot 10^{-02}$
C_3	$1.21922711 \cdot 10^{+02}$

Constants of Formula dn/dT	
D_0	$1.12 \cdot 10^{-05}$
D_1	$1.81 \cdot 10^{-08}$
D_2	$-5.03 \cdot 10^{-11}$
E_0	$1.46 \cdot 10^{-06}$
E_1	$1.58 \cdot 10^{-09}$
λ_{TK}[µm]	0.282

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.82	0.61
2325	0.87	0.70
1970	0.971	0.930
1530	0.993	0.982
1060	0.999	0.997
700	0.997	0.993
660	0.996	0.991
620	0.996	0.991
580	0.996	0.991
546	0.996	0.989
500	0.990	0.976
460	0.976	0.940
436	0.940	0.86
420	0.87	0.70
405	0.65	0.34
400	0.53	0.20
390	0.18	0.01
380		
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	44/39

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2039
$P_{C,s}$	0.4590
$P_{d,C}$	0.2866
$P_{e,d}$	0.2356
$P_{g,F}$	0.6147
$P_{i,h}$	
$P'_{s,t}$	0.2004
$P'_{C',s}$	0.4949
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2316
$P'_{g,F'}$	0.5433
$P'_{i,h}$	

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	-0.0043
$\Delta P_{C,s}$	-0.0040
$\Delta P_{F,e}$	0.0029
$\Delta P_{g,F}$	0.0142
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70°C}$[10^{-6}/K]	6.1
$\alpha_{+20/+300°C}$[10^{-6}/K]	6.8
Tg[°C]	503
$T_{10}^{13.0}$[°C]	500
$T_{10}^{7.6}$[°C]	635
c_p[J/(g·K)]	0.431
λ[W/(m·K)]	0.737
ρ[g/cm³]	4.74
E[10^3N/mm²]	66
µ	0.235
K[10^{-6}mm²/N]	1.33
$HK_{0.1/20}$	450
HG	1
B	1
CR	1
FR	0
SR	1
AR	1.2
PR	1

Temperature Coefficients of Refractive Index	$\Delta n_{rel}/\Delta T$[10^{-6}/K]			$\Delta n_{abs}/\Delta T$[10^{-6}/K]		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	8.4	11.7	15.8	6.1	9.2	13.3
+20/+40	9.2	12.9	17.6	7.7	11.3	16.0
+60/+80	9.6	13.6	18.7	8.4	12.4	17.4

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