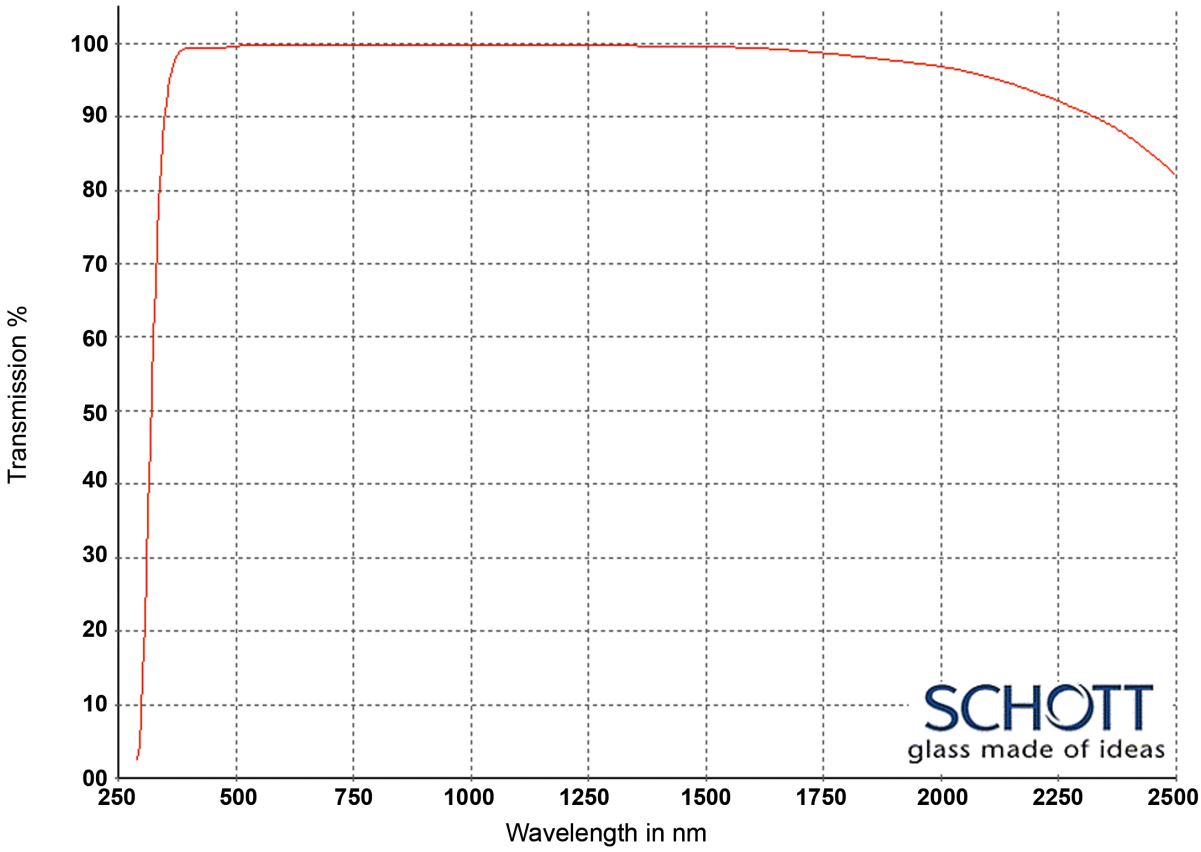
OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott N-SK2 for 250nm - 2500nm transmission

Range/Description: OPG-N-SK2



Internal transmittance for 10mm thickness

WAVELENGTH	BASF51 (T%)
2500 nm	0.820
2325 nm	0.900
1970 nm	0.971
1530 nm	0.995
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	0.996
460 nm	0.993
436 nm	0.993
420 nm	0.994
405 nm	0.994
400 nm	0.994
390 nm	0.992
380 nm	0.988
370 nm	0.976
365 nm	0.967
350 nm	0.910
334 nm	0.750
320 nm	0.500
310 nm	0.280
300 nm	0.100
290 nm	0.020
280 nm	0.000
270 nm	0.000
260 nm	0.000
250 nm	0.000

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SCHOTT
glass made of ideas

Refractive Indices		
	λ [nm]	
$n_{2325.4}$	2325.4	1.59149
$n_{1970.1}$	1970.1	1.59685
$n_{1529.6}$	1529.6	1.60260
$n_{1060.0}$	1060.0	1.60880
n_t	1014.0	1.60953
n_s	852.1	1.61264
n_r	706.5	1.61678
n_C	656.3	1.61877
$n_{C'}$	643.8	1.61933
$n_{632.8}$	632.8	1.61985
n_D	589.3	1.62219
n_d	587.6	1.62229
n_e	546.1	1.62508
n_F	486.1	1.63045
$n_{F'}$	480.0	1.63112
n_g	435.8	1.63691
n_h	404.7	1.64232
n_i	365.0	1.65166
$n_{334.1}$	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	$1.43060270 \cdot 10^{+00}$
B_2	$1.53150554 \cdot 10^{-01}$
B_3	$1.01390904 \cdot 10^{+00}$
C_1	$8.23982975 \cdot 10^{-03}$
C_2	$3.33736841 \cdot 10^{-02}$
C_3	$1.06870822 \cdot 10^{+02}$

Constants of Formula dn/dT	
D_0	$5.21 \cdot 10^{-06}$
D_1	$1.34 \cdot 10^{-08}$
D_2	$-1.01 \cdot 10^{-11}$
E_0	$5.21 \cdot 10^{-07}$
E_1	$5.87 \cdot 10^{-10}$
λ_{TK}[µm]	0.199

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.76	0.50
2325	0.88	0.72
1970	0.971	0.930
1530	0.992	0.981
1060	0.997	0.992
700	0.998	0.996
660	0.998	0.994
620	0.997	0.993
580	0.998	0.995
546	0.998	0.995
500	0.997	0.992
460	0.994	0.985
436	0.992	0.980
420	0.990	0.975
405	0.985	0.963
400	0.981	0.954
390	0.967	0.920
380	0.940	0.86
370	0.89	0.75
365	0.85	0.67
350	0.57	0.25
334	0.08	
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	37/33

Remarks	

Relative Partial Dispersion	
$P_{s.t}$	0.2661
$P_{C.s}$	0.5246
$P_{d.C}$	0.3016
$P_{e.d}$	0.2381
$P_{g.F}$	0.5526
$P_{i.h}$	0.7997
$P'_{s.t}$	0.2636
$P'_{C'.s}$	0.5669
$P'_{d.C'}$	0.2513
$P'_{e.d}$	0.2358
$P'_{g.F'}$	0.4902
$P'_{i.h}$	0.7920

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C.t}$	-0.0069
$\Delta P_{C.s}$	-0.0025
$\Delta P_{F.e}$	-0.0001
$\Delta P_{g.F}$	-0.0016
$\Delta P_{i.g}$	-0.0146

Other Properties	
$\alpha_{-30/+70°C}$[10^{-6}/K]	5.8
$\alpha_{+20/+300°C}$[10^{-6}/K]	6.7
Tg[°C]	653
$T_{10^{13.0}}$[°C]	655
$T_{10^{7.6}}$[°C]	801
c_p[J/(g·K)]	0.580
λ[W/(m·K)]	0.810
ρ[g/cm^3]	3.53
E[10^3N/mm^2]	82
μ	0.261
K[10^{-6}mm^2/N]	2.51
$HK_{0.1/20}$	570
HG	3
B	1
CR	1
FR	0
SR	1.2
AR	1
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	4.2	5.0	5.8	2.1	2.8	3.5
+20/+40	4.3	5.2	6.1	2.9	3.8	4.6
+60/+80	4.5	5.5	6.4	3.5	4.4	5.3

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