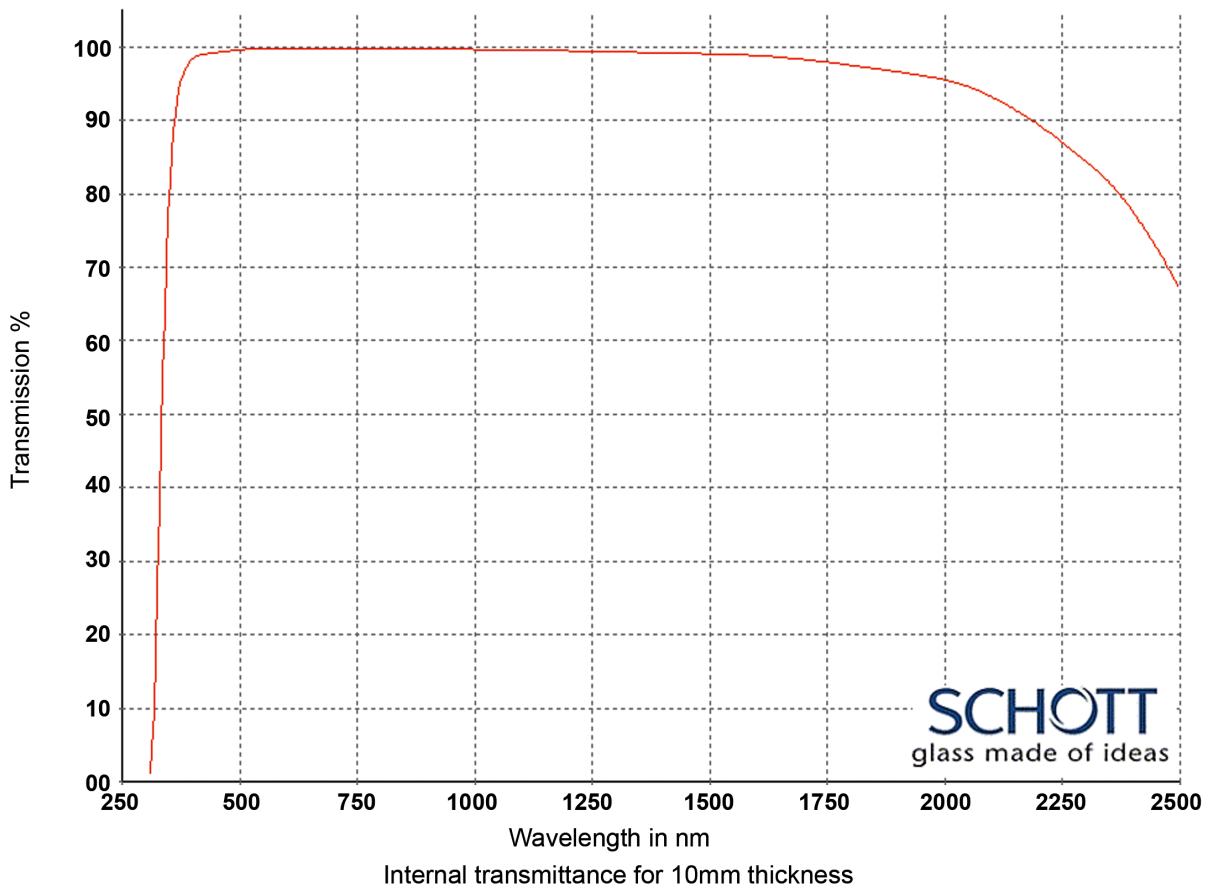


# OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

**Title:** Optical Glasses - 250-2500nm

**Material/Specification:** Schott N-SK15 for 250nm - 2500nm transmission

**Range/Description:** OPG-N-SK15



WAVELENGTH	BASF51 (T%)
2500 nm	0.670
2325 nm	0.830
1970 nm	0.959
1530 nm	0.990
1060 nm	0.996
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	0.986
400 nm	0.984
390 nm	0.976
380 nm	0.963
370 nm	0.940
365 nm	0.920
350 nm	0.800
334 nm	0.500
320 nm	0.140
310 nm	0.010
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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# OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

**SCHOTT**  
glass made of ideas

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59268
$n_{1970.1}$	1970.1	1.59822
$n_{1529.6}$	1529.6	1.60411
$n_{1060.0}$	1060.0	1.61027
$n_t$	1014.0	1.61098
$n_s$	852.1	1.61396
$n_r$	706.5	1.61785
$n_C$	656.3	1.61970
$n_{C'}$	643.8	1.62022
$n_{632.8}$	632.8	1.62070
$n_D$	589.3	1.62286
$n_d$	587.6	1.62296
$n_e$	546.1	1.62552
$n_F$	486.1	1.63044
$n_{F'}$	480.0	1.63105
$n_g$	435.8	1.63629
$n_h$	404.7	1.64116
$n_i$	365.0	1.64947
$n_{334.1}$	334.1	1.65846
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	$1.30417786 \cdot 10^{+00}$
$B_2$	$2.85841160 \cdot 10^{-01}$
$B_3$	$9.74781572 \cdot 10^{-01}$
$C_1$	$6.95051276 \cdot 10^{-03}$
$C_2$	$2.32023703 \cdot 10^{-02}$
$C_3$	$9.90168840 \cdot 10^{+01}$

Constants of Formula dn/dT	
$D_0$	$4.92 \cdot 10^{-07}$
$D_1$	$1.20 \cdot 10^{-08}$
$D_2$	$-2.96 \cdot 10^{-12}$
$E_0$	$4.66 \cdot 10^{-07}$
$E_1$	$5.16 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.179

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	2.0	2.6	3.2	-0.2	0.4	1.0
+20/+40	2.0	2.7	3.4	0.6	1.3	1.9
+60/+80	2.1	2.9	3.7	1.1	1.8	2.5

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ [10 mm]	$\tau_i$ [25 mm]
2500	0.67	0.37
2325	0.83	0.62
1970	0.959	0.900
1530	0.990	0.975
1060	0.996	0.991
700	0.998	0.994
660	0.997	0.992
620	0.997	0.992
580	0.997	0.993
546	0.997	0.993
500	0.996	0.990
460	0.993	0.982
436	0.991	0.978
420	0.990	0.974
405	0.986	0.966
400	0.984	0.960
390	0.976	0.940
380	0.963	0.910
370	0.940	0.85
365	0.920	0.80
350	0.80	0.56
334	0.50	0.18
320	0.14	
310	0.01	
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80}/\lambda_5$	36/31
Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.2770
$P_{C,s}$	0.5348
$P_{d,C}$	0.3036
$P_{e,d}$	0.2384
$P_{g,F}$	0.5453
$P_{i,h}$	0.7742
$P'_{s,t}$	0.2746
$P'_{C,s}$	0.5780
$P'_{d,C'}$	0.2531
$P'_{e,d}$	0.2363
$P'_{g,F'}$	0.4840
$P'_{i,h}$	0.7674

Deviation of Rel. Partial Dispersion $\Delta P$ from "Normal Line"	
$\Delta P_{C,t}$	-0.0084
$\Delta P_{C,s}$	-0.0033
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	-0.0102

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.6
$T_g [^\circ C]$	641
$T_{10}^{13.0} [^\circ C]$	634
$T_{10}^{7.6} [^\circ C]$	752
$c_p [J/(g \cdot K)]$	0.570
$\lambda [W/(m \cdot K)]$	0.770
$\rho [g/cm^3]$	3.62
$E [10^3 N/mm^2]$	84
$\mu$	0.265
$K [10^{-6} mm^2/N]$	1.93
$HK_{0.1/20}$	620
HG	3
B	1
CR	3
FR	3
SR	52.2
AR	2
PR	3.2

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