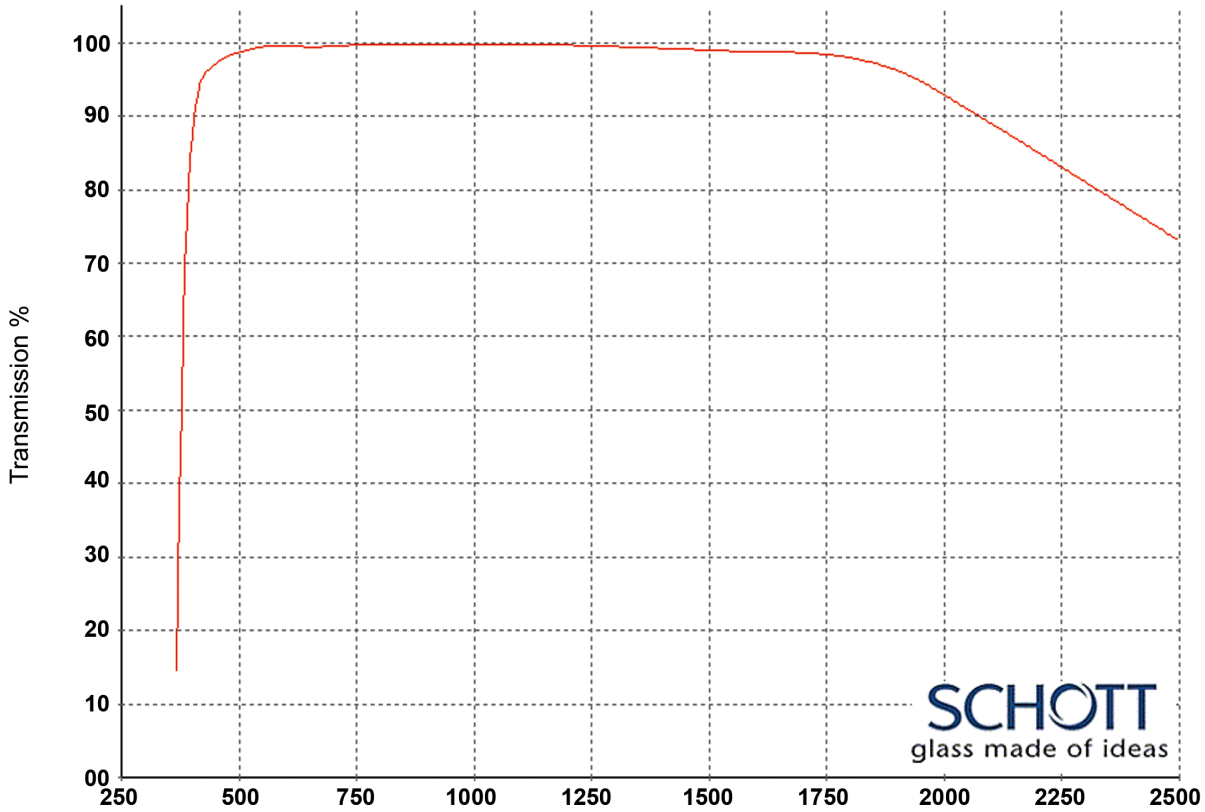
OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott SF1 for 250nm - 2500nm transmission

Range/Description: OPG-SF1



Internal transmittance for 10mm thickness

WAVELENGTH	BASF51 (T%)
2500 nm	0.730
2325 nm	0.800
1970 nm	0.940
1530 nm	0.989
1060 nm	0.998
700 nm	0.996
660 nm	0.994
620 nm	0.995
580 nm	0.996
546 nm	0.994
500 nm	0.987
460 nm	0.976
436 nm	0.963
420 nm	0.950
405 nm	0.900
400 nm	0.870
390 nm	0.770
380 nm	0.570
370 nm	0.250
365 nm	0.100
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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SCHOTT
glass made of ideas

Refractive Indices	λ [nm]	
$n_{2325.4}$	2325.4	1.67021
$n_{1970.1}$	1970.1	1.67641
$n_{1529.6}$	1529.6	1.68350
$n_{1060.0}$	1060.0	1.69240
n_t	1014.0	1.69358
n_s	852.1	1.69889
n_r	706.5	1.70651
n_C	656.3	1.71035
$n_{C'}$	643.8	1.71144
$n_{632.8}$	632.8	1.71247
n_D	589.3	1.71715
n_d	587.6	1.71736
n_e	546.1	1.72308
n_F	486.1	1.73457
$n_{F'}$	480.0	1.73605
n_g	435.8	1.74919
n_h	404.7	1.76224
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	$1.60865158 \cdot 10^{+00}$
B_2	$2.37725916 \cdot 10^{-01}$
B_3	$1.51530653 \cdot 10^{+00}$
C_1	$1.19654879 \cdot 10^{-02}$
C_2	$5.90589722 \cdot 10^{-02}$
C_3	$1.35521676 \cdot 10^{+02}$

Constants of Formula dn/dT	
D_0	$-3.72 \cdot 10^{-06}$
D_1	$8.05 \cdot 10^{-09}$
D_2	$-1.71 \cdot 10^{-11}$
E_0	$8.98 \cdot 10^{-07}$
E_1	$1.34 \cdot 10^{-09}$
λ_{TK}[µm]	0.276

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.73	0.46
2325	0.80	0.58
1970	0.940	0.85
1530	0.989	0.973
1060	0.998	0.995
700	0.996	0.990
660	0.994	0.986
620	0.995	0.987
580	0.996	0.990
546	0.994	0.986
500	0.987	0.968
460	0.976	0.940
436	0.963	0.910
420	0.950	0.87
405	0.900	0.76
400	0.87	0.70
390	0.77	0.52
380	0.57	0.25
370	0.25	0.03
365	0.10	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	41/36

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2190
$P_{C,s}$	0.4733
$P_{d,C}$	0.2895
$P_{e,d}$	0.2360
$P_{g,F}$	0.6037
$P_{i,h}$	
$P'_{s,t}$	0.2156
$P'_{C',s}$	0.5103
$P'_{d,C'}$	0.2405
$P'_{e,d}$	0.2323
$P'_{g,F'}$	0.5340
$P'_{i,h}$	

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	0.0068
$\Delta P_{C,s}$	0.0013
$\Delta P_{F,e}$	0.0016
$\Delta P_{g,F}$	0.0097
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70°C}$[10^{-6}/K]	9.1
$\alpha_{+20/+300°C}$[10^{-6}/K]	10.5
Tg[°C]	553
$T_{10}^{13.0}$[°C]	554
$T_{10}^{7.6}$[°C]	660
c_p[J/(g·K)]	0.750
λ[W/(m·K)]	1.000
ρ[g/cm³]	3.03
E[10^3N/mm²]	90
µ	0.250
K[10^{-6}mm²/N]	2.72
$HK_{0.1/20}$	540
HG	5
B	1
CR	1
FR	0
SR	1
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	0.1	1.6	3.6	-2.2	-0.7	1.2
+20/+40	0.0	1.8	4.2	-1.5	0.3	2.7
+60/+80	0.0	2.1	4.8	-1.1	0.9	3.5

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