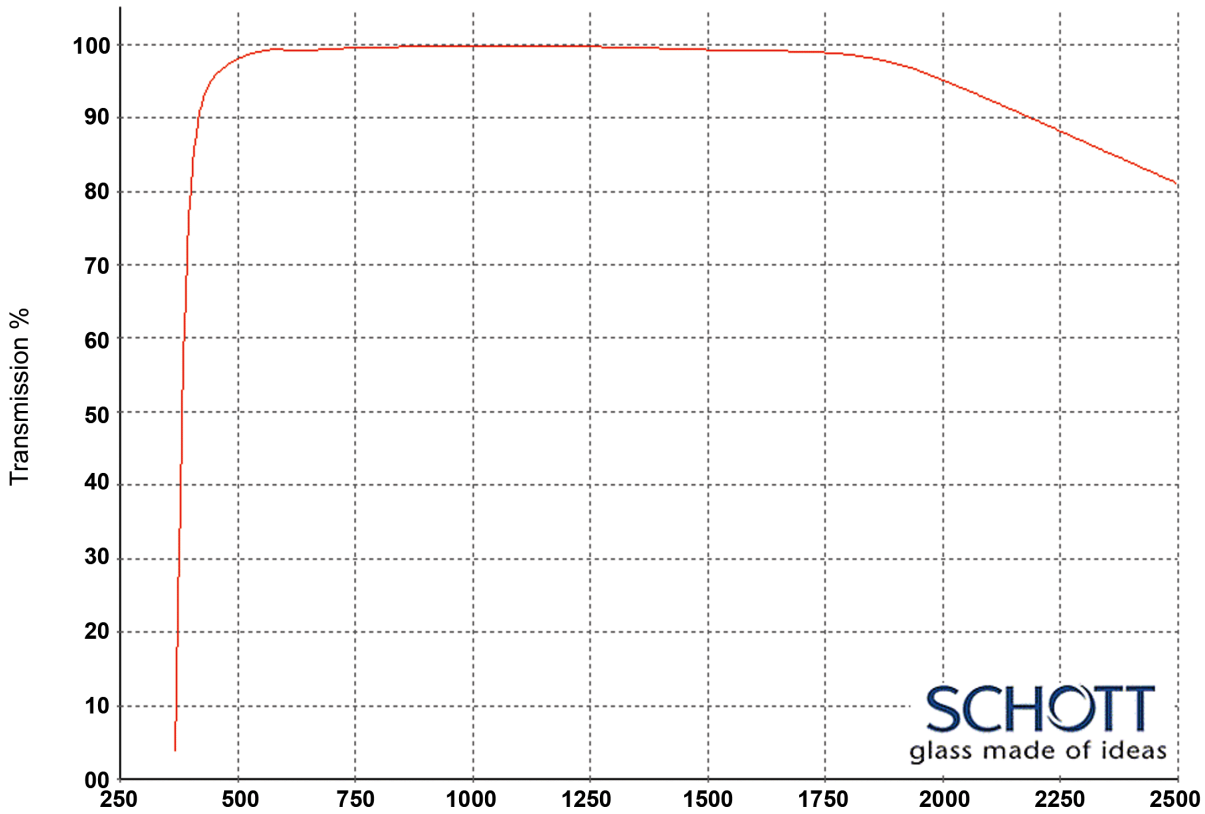
OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott N-SF56 for 250nm - 2500nm transmission

Range/Description: OPG-N-SF56



Internal transmittance for 10mm thickness

WAVELENGTH	BASF51 (T%)
2500 nm	0.810
2325 nm	0.860
1970 nm	0.959
1530 nm	0.992
1060 nm	0.998
700 nm	0.994
660 nm	0.992
620 nm	0.992
580 nm	0.993
546 nm	0.990
500 nm	0.980
460 nm	0.963
436 nm	0.940
420 nm	0.910
405 nm	0.840
400 nm	0.800
390 nm	0.670
380 nm	0.440
370 nm	0.110
365 nm	0.020
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

+44 (0)1622 859444
info@knightoptical.co.uk
www.knightoptical.com

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SCHOTT
glass made of ideas

Refractive Indices	λ [nm]	
$n_{2325.4}$	2325.4	1.73010
$n_{1970.1}$	1970.1	1.73664
$n_{1529.6}$	1529.6	1.74431
$n_{1060.0}$	1060.0	1.75442
n_t	1014.0	1.75581
n_s	852.1	1.76213
n_r	706.5	1.77137
n_C	656.3	1.77607
$n_{C'}$	643.8	1.77741
$n_{632.8}$	632.8	1.77868
n_D	589.3	1.78444
n_d	587.6	1.78470
n_e	546.1	1.79179
n_F	486.1	1.80614
$n_{F'}$	480.0	1.80800
n_g	435.8	1.82460
n_h	404.7	1.84126
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	$1.73562085 \cdot 10^{+00}$
B_2	$3.17487012 \cdot 10^{-01}$
B_3	$1.95398203 \cdot 10^{+00}$
C_1	$1.29624742 \cdot 10^{-02}$
C_2	$6.12884288 \cdot 10^{-02}$
C_3	$1.61559441 \cdot 10^{+02}$

Constants of Formula dn/dT	
D_0	$-4.13 \cdot 10^{-06}$
D_1	$7.65 \cdot 10^{-09}$
D_2	$-1.12 \cdot 10^{-11}$
E_0	$9.90 \cdot 10^{-07}$
E_1	$1.57 \cdot 10^{-09}$
λ_{TK}[µm]	0.287

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.81	0.59
2325	0.86	0.68
1970	0.959	0.900
1530	0.992	0.981
1060	0.998	0.996
700	0.994	0.986
660	0.992	0.981
620	0.992	0.981
580	0.993	0.983
546	0.990	0.976
500	0.980	0.950
460	0.963	0.910
436	0.940	0.86
420	0.910	0.78
405	0.84	0.64
400	0.80	0.57
390	0.67	0.37
380	0.44	0.13
370	0.11	
365	0.02	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	44/37

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2101
$P_{C,s}$	0.4635
$P_{d,C}$	0.2872
$P_{e,d}$	0.2356
$P_{g,F}$	0.6139
$P_{i,h}$	
$P'_{s,t}$	0.2065
$P'_{C',s}$	0.4996
$P'_{d,C'}$	0.2384
$P'_{e,d}$	0.2316
$P'_{g,F'}$	0.5427
$P'_{i,h}$	

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	0.0048
$\Delta P_{C,s}$	-0.0002
$\Delta P_{F,e}$	0.0026
$\Delta P_{g,F}$	0.0140
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70°C}$[10^{-6}/K]	8.7
$\alpha_{+20/+300°C}$[10^{-6}/K]	10.0
Tg[°C]	592
$T_{10^{13.0}}$[°C]	585
$T_{10^{7.6}}$[°C]	691
c_p[J/(g·K)]	0.700
λ[W/(m·K)]	0.940
ρ[g/cm³]	3.28
E[10^3N/mm²]	91
μ	0.255
K[10^{-6}mm²/N]	2.87
$HK_{0.1/20}$	560
HG	5
B	1
CR	1
FR	0
SR	1
AR	1.3
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	1.7	4.3	-2.5	-0.7	1.8
+20/+40	-0.3	2.0	5.1	-1.8	0.5	3.5
+60/+80	-0.2	2.4	5.9	-1.4	1.2	4.6

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