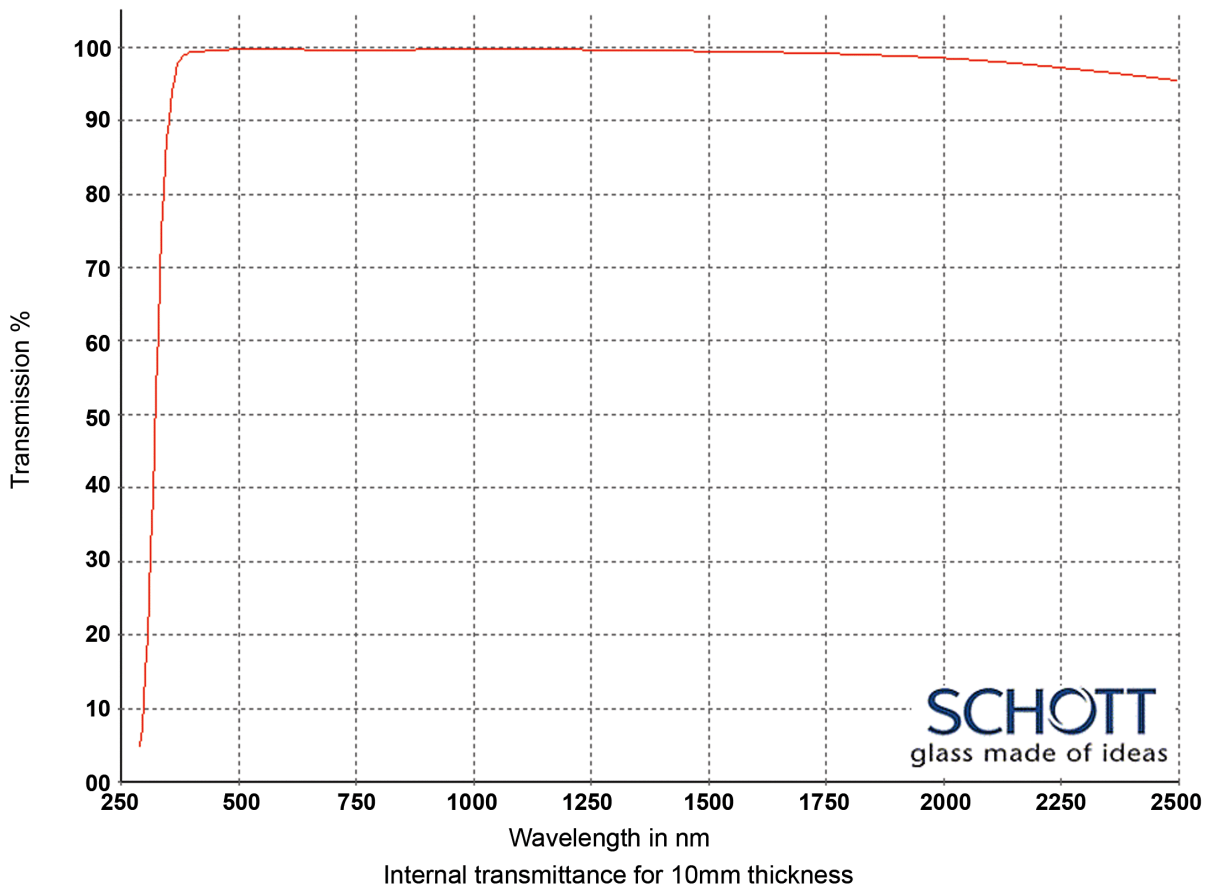


OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott N-PK51 for 250nm - 2500nm transmission

Range/Description: OPG-N-PK51



WAVELENGTH	N-PK51 (T%)
2500 nm	0.954
2325 nm	0.967
1970 nm	0.986
1530 nm	0.994
1060 nm	0.997
700 nm	0.996
660 nm	0.996
620 nm	0.997
580 nm	0.998
546 nm	0.998
500 nm	0.997
460 nm	0.996
436 nm	0.995
420 nm	0.994
405 nm	0.994
400 nm	0.994
390 nm	0.991
380 nm	0.986
370 nm	0.976
365 nm	0.963
350 nm	0.890
334 nm	0.710
320 nm	0.430
310 nm	0.250
300 nm	0.120
290 nm	0.040
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		
	λ [nm]	
$n_{2325.4}$	2325.4	1.50987
$n_{1970.1}$	1970.1	1.51312
$n_{1529.6}$	1529.6	1.51665
$n_{1060.0}$	1060.0	1.52045
n_t	1014.0	1.52089
n_s	852.1	1.52278
n_r	706.5	1.52527
n_C	656.3	1.52646
$n_{C'}$	643.8	1.52680
$n_{632.8}$	632.8	1.52711
n_D	589.3	1.52849
n_d	587.6	1.52855
n_e	546.1	1.53019
n_F	486.1	1.53333
$n_{F'}$	480.0	1.53372
n_g	435.8	1.53704
n_h	404.7	1.54010
n_i	365.0	1.54527
$n_{334.1}$	334.1	1.55079
$n_{312.6}$	312.6	1.55579
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
B_1	$1.15610775 \cdot 10^{+00}$
B_2	$1.53229344 \cdot 10^{-01}$
B_3	$7.85618966 \cdot 10^{-01}$
C_1	$5.85597402 \cdot 10^{-03}$
C_2	$1.94072416 \cdot 10^{-02}$
C_3	$1.40537046 \cdot 10^{+02}$

Constants of Formula dn/dT	
D_0	$-1.98 \cdot 10^{-05}$
D_1	$-6.06 \cdot 10^{-09}$
D_2	$1.60 \cdot 10^{-11}$
E_0	$4.16 \cdot 10^{-07}$
E_1	$5.01 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.134

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	-6.0	-5.7	-5.4	-8.1	-7.8	-7.5
+20/+40	-7.1	-6.7	-6.4	-8.4	-8.1	-7.7
+60/+80	-7.5	-7.1	-6.7	-8.6	-8.2	-7.8

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.954	0.89
2325	0.967	0.920
1970	0.986	0.965
1530	0.994	0.985
1060	0.997	0.992
700	0.996	0.991
660	0.996	0.991
620	0.997	0.992
580	0.998	0.994
546	0.998	0.995
500	0.997	0.993
460	0.996	0.989
436	0.995	0.987
420	0.994	0.986
405	0.994	0.985
400	0.994	0.984
390	0.991	0.977
380	0.986	0.965
370	0.976	0.940
365	0.963	0.910
350	0.89	0.75
334	0.71	0.43
320	0.43	0.12
310	0.25	0.03
300	0.12	
290	0.04	
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	35/29
Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.2750
$P_{C,s}$	0.5360
$P_{d,C}$	0.3046
$P_{e,d}$	0.2387
$P_{g,F}$	0.5401
$P_{i,h}$	0.7535
$P'_{s,t}$	0.2727
$P'_{C,s}$	0.5797
$P'_{d,C'}$	0.2540
$P'_{e,d}$	0.2367
$P'_{g,F'}$	0.4794
$P'_{i,h}$	0.7473

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	-0.0991
$\Delta P_{C,s}$	-0.0463
$\Delta P_{F,e}$	0.0088
$\Delta P_{g,F}$	0.0258
$\Delta P_{i,g}$	0.1203

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	12.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	14.4
$T_g [^\circ C]$	496
$T_{10}^{13.0^\circ C}$	486
$T_{10}^{7.6^\circ C}$	
$c_p [J/(g \cdot K)]$	0.618
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.96
$E [10^3 N/mm^2]$	74
μ	0.295
$K [10^{-6} mm^2/N]$	0.54
$HK_{0.1/20}$	400
HG	6
B	1
CR	2
FR	0
SR	51.2
AR	3.3
PR	4.3

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