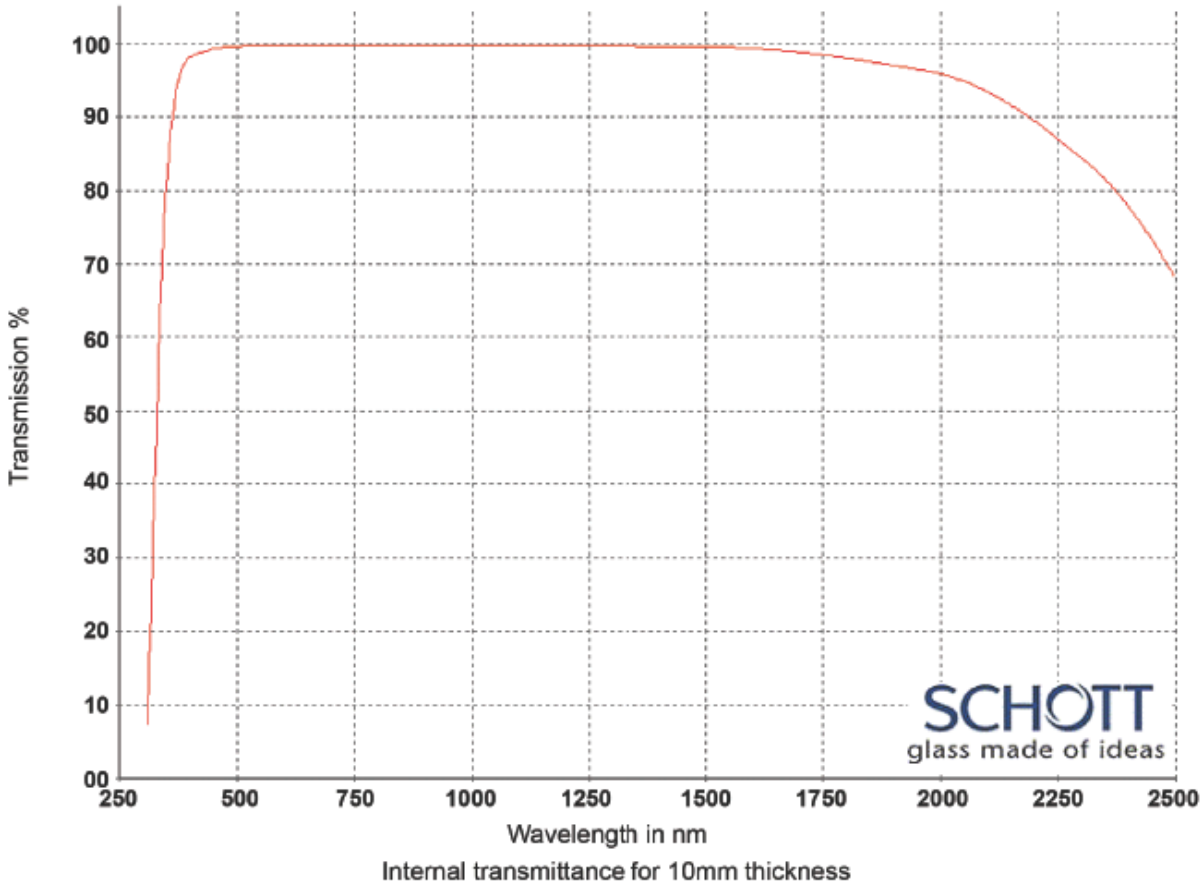
OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott LAKN13 for 250nm - 2500nm transmission

Range/Description: OPG-LAKN13



Internal transmittance for 10mm thickness

WAVELENGTH	LAKN13 (T%)
2500 nm	0.680
2325 nm	0.830
1970 nm	0.963
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	0.994
436 nm	0.990
420 nm	0.987
405 nm	0.983
400 nm	0.981
390 nm	0.974
380 nm	0.960
370 nm	0.930
365 nm	0.910
350 nm	0.810
334 nm	0.580
320 nm	0.280
310 nm	0.070
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	1.66041
$n_{1970.1}$	1970.1	1.66596
$n_{1529.6}$	1529.6	1.67197
$n_{1060.0}$	1060.0	1.67859
n_t	1014.0	1.67938
n_s	852.1	1.68279
n_r	706.5	1.68737
n_C	656.3	1.68958
$n_{C'}$	643.8	1.69020
$n_{632.8}$	632.8	1.69078
n_D	589.3	1.69339
n_d	587.6	1.69350
n_e	546.1	1.69660
n_F	486.1	1.70258
$n_{F'}$	480.0	1.70333
n_g	435.8	1.70975
n_h	404.7	1.71573
n_i	365.0	1.72600
$n_{334.1}$	334.1	1.73715
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
B_1	$1.25792373 \cdot 10^{+00}$
B_2	$5.53402861 \cdot 10^{-01}$
B_3	$1.06335742 \cdot 10^{+00}$
C_1	$6.21494710 \cdot 10^{-03}$
C_2	$2.16809853 \cdot 10^{-02}$
C_3	$1.04494099 \cdot 10^{+02}$

Constants of Formula dn/dT	
D_0	$-4.73 \cdot 10^{-06}$
D_1	$1.17 \cdot 10^{-08}$
D_2	$-2.39 \cdot 10^{-11}$
E_0	$3.95 \cdot 10^{-07}$
E_1	$4.43 \cdot 10^{-10}$
λ_{TK}[µm]	0.250

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.68	0.38
2325	0.83	0.63
1970	0.963	0.910
1530	0.995	0.988
1060	0.998	0.994
700	0.998	0.995
660	0.998	0.994
620	0.998	0.994
580	0.998	0.995
546	0.998	0.995
500	0.996	0.991
460	0.994	0.984
436	0.990	0.976
420	0.987	0.969
405	0.983	0.959
400	0.981	0.954
390	0.974	0.940
380	0.960	0.900
370	0.930	0.84
365	0.910	0.80
350	0.81	0.59
334	0.58	0.26
320	0.28	0.04
310	0.07	0.01
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	37/31

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2618
$P_{C,s}$	0.5222
$P_{d,C}$	0.3016
$P_{e,d}$	0.2383
$P_{g,F}$	0.5511
$P_{i,h}$	0.7894
$P'_{s,t}$	0.2593
$P'_{C',s}$	0.5645
$P'_{d,C'}$	0.2513
$P'_{e,d}$	0.2360
$P'_{g,F'}$	0.4888
$P'_{i,h}$	0.7818

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	-0.0139
$\Delta P_{C,s}$	-0.0051
$\Delta P_{F,e}$	-0.0002
$\Delta P_{g,F}$	-0.0030
$\Delta P_{i,g}$	-0.0275

Other Properties	
$\alpha_{-30/+70°C}$[10^{-6}/K]	8.4
$\alpha_{+20/+300°C}$[10^{-6}/K]	9.5
Tg[°C]	614
$T_{10^{13.0}}$[°C]	631
$T_{10^{7.6}}$[°C]	718
c_p[J/(g·K)]	
λ[W/(m·K)]	
ρ[g/cm³]	4.24
E[10^3N/mm²]	87
µ	0.289
K[10^{-6}mm²/N]	1.40
$HK_{0.1/20}$	560
HG	6
B	1
CR	2
FR	2
SR	53.1
AR	2.3
PR	4

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	-0.9	-0.2	0.5	-3.1	-2.5	-1.9
+20/+40	-0.8	-0.1	0.8	-2.2	-1.5	-0.8
+60/+80	-0.7	0.1	1.0	-1.8	-1.0	-0.2

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