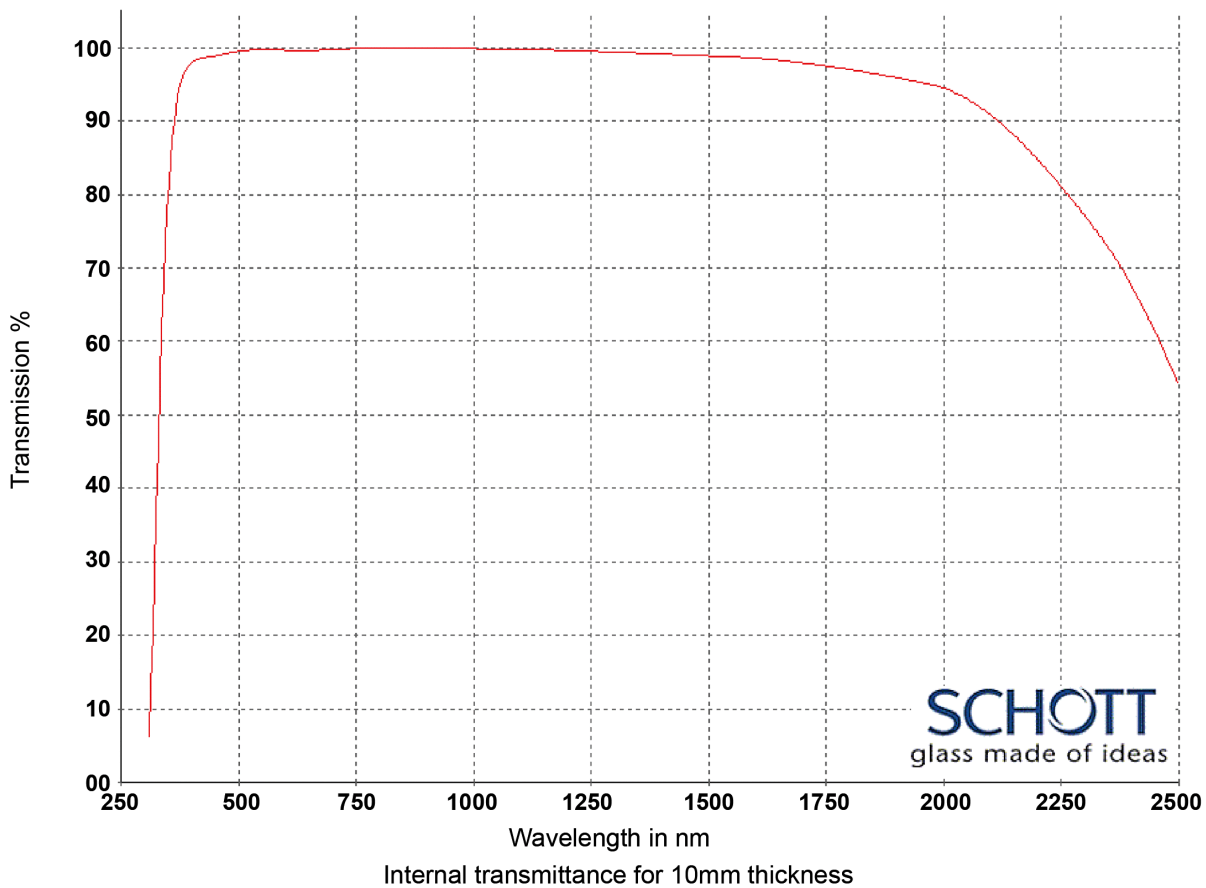


OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

Title: Optical Glasses - 250-2500nm

Material/Specification: Schott N-LAK21 for 250nm - 2500nm transmission

Range/Description: OPG-N-LAK21



WAVELENGTH	N-LAK21 (T%)
2500 nm	0.540
2325 nm	0.750
1970 nm	0.950
1530 nm	0.988
1060 nm	0.998
700 nm	0.998
660 nm	0.996
620 nm	0.996
580 nm	0.997
546 nm	0.997
500 nm	0.995
460 nm	0.990
436 nm	0.987
420 nm	0.985
405 nm	0.982
400 nm	0.979
390 nm	0.971
380 nm	0.959
370 nm	0.930
365 nm	0.910
350 nm	0.800
334 nm	0.570
320 nm	0.250
310 nm	0.060
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		
	λ [nm]	
$n_{2325.4}$	2325.4	1.60776
$n_{1970.1}$	1970.1	1.61416
$n_{1529.6}$	1529.6	1.62086
$n_{1060.0}$	1060.0	1.62759
n_t	1014.0	1.62834
n_s	852.1	1.63143
n_r	706.5	1.63538
n_C	656.3	1.63724
$n_{C'}$	643.8	1.63776
$n_{632.8}$	632.8	1.63825
n_D	589.3	1.64040
n_d	587.6	1.64049
n_e	546.1	1.64304
n_F	486.1	1.64790
$n_{F'}$	480.0	1.64850
n_g	435.8	1.65366
n_h	404.7	1.65844
n_i	365.0	1.66657
$n_{334.1}$	334.1	1.67532
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
B_1	$1.22718116 \cdot 10^{+00}$
B_2	$4.20783743 \cdot 10^{-01}$
B_3	$1.01284843 \cdot 10^{+00}$
C_1	$6.02075682 \cdot 10^{-03}$
C_2	$1.96862889 \cdot 10^{-02}$
C_3	$8.84370099 \cdot 10^{+01}$

Constants of Formula dn/dT	
D_0	$-2.36 \cdot 10^{-06}$
D_1	$1.15 \cdot 10^{-08}$
D_2	$1.11 \cdot 10^{-11}$
E_0	$3.10 \cdot 10^{-07}$
E_1	$2.78 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.234

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	0.6	1.1	1.6	-1.6	-1.2	-0.7
+20/+40	0.5	1.0	1.6	-0.9	-0.4	0.1
+60/+80	0.7	1.3	1.9	-0.4	0.1	0.7

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.54	0.21
2325	0.75	0.49
1970	0.950	0.87
1530	0.988	0.970
1060	0.998	0.994
700	0.998	0.994
660	0.996	0.991
620	0.996	0.990
580	0.997	0.992
546	0.997	0.992
500	0.995	0.988
460	0.990	0.976
436	0.987	0.969
420	0.985	0.963
405	0.982	0.955
400	0.979	0.950
390	0.971	0.930
380	0.959	0.900
370	0.930	0.83
365	0.910	0.78
350	0.80	0.57
334	0.57	0.24
320	0.25	0.04
310	0.06	
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	37/31
Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.2900
$P_{C,s}$	0.5453
$P_{d,C}$	0.3052
$P_{e,d}$	0.2385
$P_{g,F}$	0.5411
$P_{i,h}$	0.7630
$P'_{s,t}$	0.2877
$P'_{C,s}$	0.5892
$P'_{d,C'}$	0.2545
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4804
$P'_{i,h}$	0.7569

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	0.0052
$\Delta P_{C,s}$	0.0023
$\Delta P_{F,e}$	-0.0005
$\Delta P_{g,F}$	-0.0017
$\Delta P_{i,g}$	-0.0090

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.1
$T_g [^\circ C]$	639
$T_{10}^{13.0} [^\circ C]$	627
$T_{10}^{7.6} [^\circ C]$	716
$c_p [J/(g \cdot K)]$	0.590
$\lambda [W/(m \cdot K)]$	0.880
$\rho [g/cm^3]$	3.74
$E [10^3 N/mm^2]$	91
μ	0.272
$K [10^{-6} mm^2/N]$	1.74
$HK_{0,1/20}$	600
HG	5
B	0
CR	4
FR	2
SR	53.2
AR	4.3
PR	4.3

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