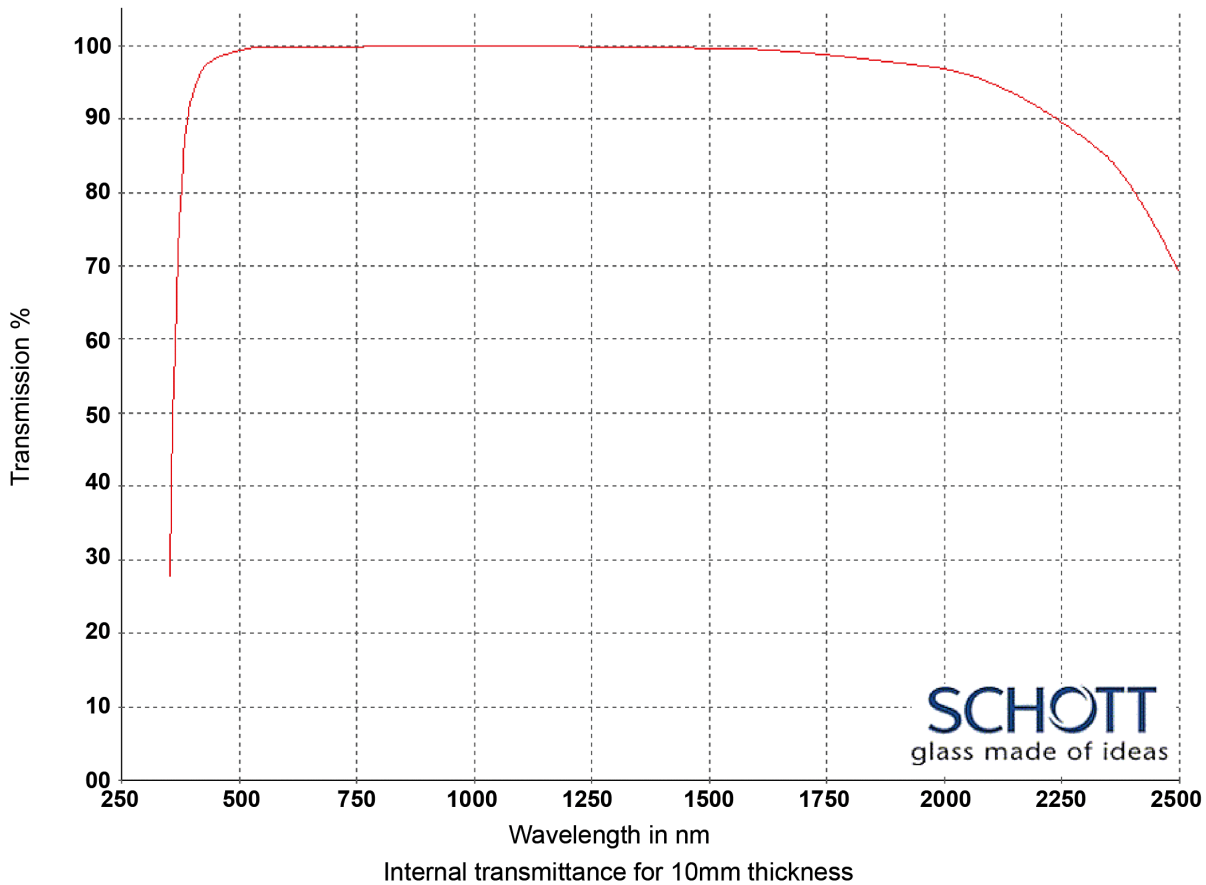


# OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

**Title:** Optical Glasses - 250-2500nm

**Material/Specification:** Schott N-LAF2 for 250nm - 2500nm transmission

**Range/Description:** OPG-N-LAF2



WAVELENGTH	N-LAF2 (T%)
2500 nm	0.690
2325 nm	0.860
1970 nm	0.971
1530 nm	0.996
1060 nm	0.999
700 nm	0.998
660 nm	0.997
620 nm	0.997
580 nm	0.997
546 nm	0.998
500 nm	0.993
460 nm	0.985
436 nm	0.976
420 nm	0.965
405 nm	0.940
400 nm	0.930
390 nm	0.900
380 nm	0.830
370 nm	0.710
365 nm	0.630
350 nm	0.230
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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# OPTICAL GLASSES: VISIBLE – NEAR INFRA-RED

**SCHOTT**  
glass made of ideas

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70582
$n_{1970.1}$	1970.1	1.71169
$n_{1529.6}$	1529.6	1.71816
$n_{1060.0}$	1060.0	1.72563
$n_t$	1014.0	1.72656
$n_s$	852.1	1.73064
$n_r$	706.5	1.73627
$n_C$	656.3	1.73903
$n_{C'}$	643.8	1.73981
$n_{632.8}$	632.8	1.74054
$n_D$	589.3	1.74383
$n_d$	587.6	1.74397
$n_e$	546.1	1.74791
$n_F$	486.1	1.75562
$n_{F'}$	480.0	1.75659
$n_g$	435.8	1.76500
$n_h$	404.7	1.77298
$n_i$	365.0	1.78703
$n_{334.1}$	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	
$B_1$	$1.80984227 \cdot 10^{+00}$
$B_2$	$1.57295550 \cdot 10^{-01}$
$B_3$	$1.09300370 \cdot 10^{+00}$
$C_1$	$1.01711622 \cdot 10^{-02}$
$C_2$	$4.42431765 \cdot 10^{-02}$
$C_3$	$1.00687748 \cdot 10^{+02}$

Constants of Formula dn/dT	
$D_0$	$-3.64 \cdot 10^{-06}$
$D_1$	$9.20 \cdot 10^{-09}$
$D_2$	$-6.00 \cdot 10^{-12}$
$E_0$	$6.43 \cdot 10^{-07}$
$E_1$	$6.11 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.220

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	0.0	1.0	2.1	-2.3	-1.3	-0.3
+20/+40	-0.1	1.0	2.3	-1.6	-0.5	0.7
+60/+80	-0.1	1.2	2.5	-1.2	0.0	1.3

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ [10 mm]	$\tau_i$ [25 mm]
2500	0.69	0.40
2325	0.86	0.69
1970	0.971	0.930
1530	0.996	0.990
1060	0.999	0.997
700	0.998	0.996
660	0.997	0.993
620	0.997	0.992
580	0.997	0.993
546	0.998	0.994
500	0.993	0.983
460	0.985	0.962
436	0.976	0.940
420	0.965	0.920
405	0.940	0.87
400	0.930	0.84
390	0.900	0.76
380	0.83	0.63
370	0.71	0.43
365	0.63	0.31
350	0.23	0.03
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80}/\lambda_5$	40/34
Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.2459
$P_{C,s}$	0.5057
$P_{d,C}$	0.2979
$P_{e,d}$	0.2377
$P_{g,F}$	0.5656
$P_{i,h}$	0.8470
$P'_{s,t}$	0.2431
$P'_{C,s}$	0.5464
$P'_{d,C'}$	0.2481
$P'_{e,d}$	0.2350
$P'_{g,F'}$	0.5012
$P'_{i,h}$	0.8373

Deviation of Rel. Partial Dispersion $\Delta P$ from "Normal Line"	
$\Delta P_{C,t}$	-0.0061
$\Delta P_{C,s}$	-0.0017
$\Delta P_{F,e}$	-0.0004
$\Delta P_{g,F}$	-0.0027
$\Delta P_{i,g}$	-0.0202

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.1
$T_g [^\circ C]$	653
$T_{10}^{13.0^\circ C}$	645
$T_{10}^{7.6^\circ C}$	742
$c_p [J/(g \cdot K)]$	0.510
$\lambda [W/(m \cdot K)]$	0.670
$\rho [g/cm^3]$	4.30
$E [10^3 N/mm^2]$	94
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.42
$HK_{0.1/20}$	530
HG	6
B	1
CR	2
FR	3
SR	52.2
AR	1
PR	2.2

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