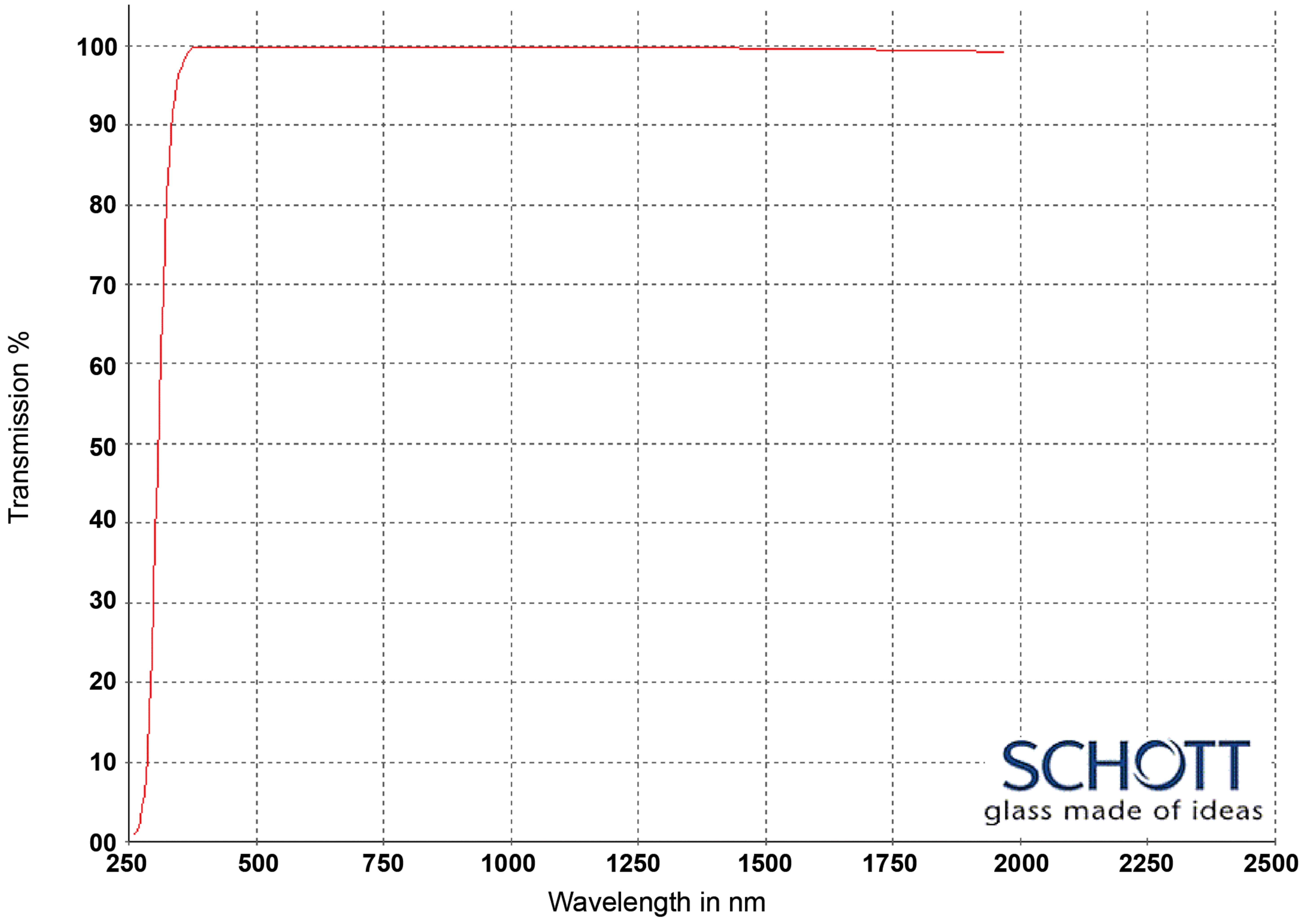




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: Schott N-FK56 for 250nm - 2500 transmission
Range: OPG - N-FK56



Internal transmittance for 10mm thickness

WAVELENGTH	N-FK56 (T%)
2500 nm	0.000
2325 nm	0.000
1970 nm	0.992
1530 nm	0.996
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	0.998
460 nm	0.998
436 nm	0.998
420 nm	0.998
405 nm	0.998
400 nm	0.998
390 nm	0.998
380 nm	0.997
370 nm	0.994
365 nm	0.990
350 nm	0.967
334 nm	0.900
320 nm	0.730
310 nm	0.540
300 nm	0.330
290 nm	0.140
280 nm	0.060
270 nm	0.020
260 nm	0.010
250 nm	0.000

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Refractive Indices

	λ [nm]	
$n_{2325.4}$	2325.4	1.42033
$n_{1970.1}$	1970.1	1.42294
$n_{1529.6}$	1529.6	1.42575
$n_{1060.0}$	1060.0	1.42865
n_t	1014.0	1.42898
n_s	852.1	1.43032
n_r	706.5	1.43204
n_C	656.3	1.43285
$n_{C'}$	643.8	1.43307
$n_{632.8}$	632.8	1.43328
n_D	589.3	1.43421
n_d	587.6	1.43425
n_e	546.1	1.43534
n_F	486.1	1.43742
$n_{F'}$	480.0	1.43768
n_g	435.8	1.43986
n_h	404.7	1.44185
n_i	365.0	1.44521
$n_{334.1}$	334.1	1.44877
$n_{312.6}$	312.6	1.45197
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance τ_i

λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500		
2325		
1970	0.992	0.979
1530	0.996	0.991
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.996
620	0.998	0.996
580	0.998	0.996
546	0.998	0.996
500	0.998	0.996
460	0.998	0.996
436	0.998	0.995
420	0.998	0.994
405	0.998	0.996
400	0.998	0.996
390	0.998	0.995
380	0.997	0.992
370	0.994	0.985
365	0.990	0.975
350	0.967	0.920
334	0.900	0.76
320	0.73	0.46
310	0.54	0.21
300	0.33	0.06
290	0.14	0.01
280	0.06	
270	0.02	
260	0.01	
250		

Relative Partial Dispersion

$P_{s,t}$	0.2942
$P_{C,s}$	0.5521
$P_{d,C}$	0.3072
$P_{e,d}$	0.2389
$P_{g,F}$	0.5329
$P_{i,h}$	0.7345
$P'_{s,t}$	0.2921
$P'_{C's}$	0.5970
$P'_{d,C'}$	0.2563
$P'_{e,d}$	0.2372
$P'_{g,F'}$	0.4734
$P'_{i,h}$	0.7294

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

$\Delta P_{C,t}$	-0.1491
$\Delta P_{C,s}$	-0.0722
$\Delta P_{F,e}$	0.0155
$\Delta P_{g,F}$	0.0488
$\Delta P_{i,g}$	0.2434

Constants of Dispersion Formula

B_1	$9.11957171 \cdot 10^{-01}$
B_2	$1.28580417 \cdot 10^{-01}$
B_3	$9.83146162 \cdot 10^{-01}$
C_1	$4.50933489 \cdot 10^{-03}$
C_2	$1.53515963 \cdot 10^{-02}$
C_3	$2.23961126 \cdot 10^{+02}$

Constants of Formula dn/dT

D_0	$-2.04 \cdot 10^{-05}$
D_1	$-1.03 \cdot 10^{-08}$
D_2	$2.43 \cdot 10^{-12}$
E_0	$3.41 \cdot 10^{-07}$
E_1	$4.37 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.138

Color Code

λ_{80}/λ_5	33/28
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Remarks

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	-5.0	-4.8	-4.6	-7.0	-6.8	-6.6
+20/+40	-6.2	-5.9	-5.6	-7.4	-7.1	-6.9
+60/+80	-6.7	-6.4	-6.2	-7.7	-7.4	-7.1

Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	16.2
$T_g [^\circ C]$	422
$T_{10}^{13.0} [^\circ C]$	416
$T_{10}^{7.6} [^\circ C]$	
$c_p [J/(g \cdot K)]$	0.750
$\lambda [W/(m \cdot K)]$	0.840
$\rho [g/cm^3]$	3.54
$E [10^3 N/mm^2]$	70
μ	0.293
$K [10^{-6} mm^2/N]$	0.68
$HK_{0.1/20}$	350
HG	
B	1
CR	1
FR	0
SR	52-53.3
AR	4.3
PR	4.3