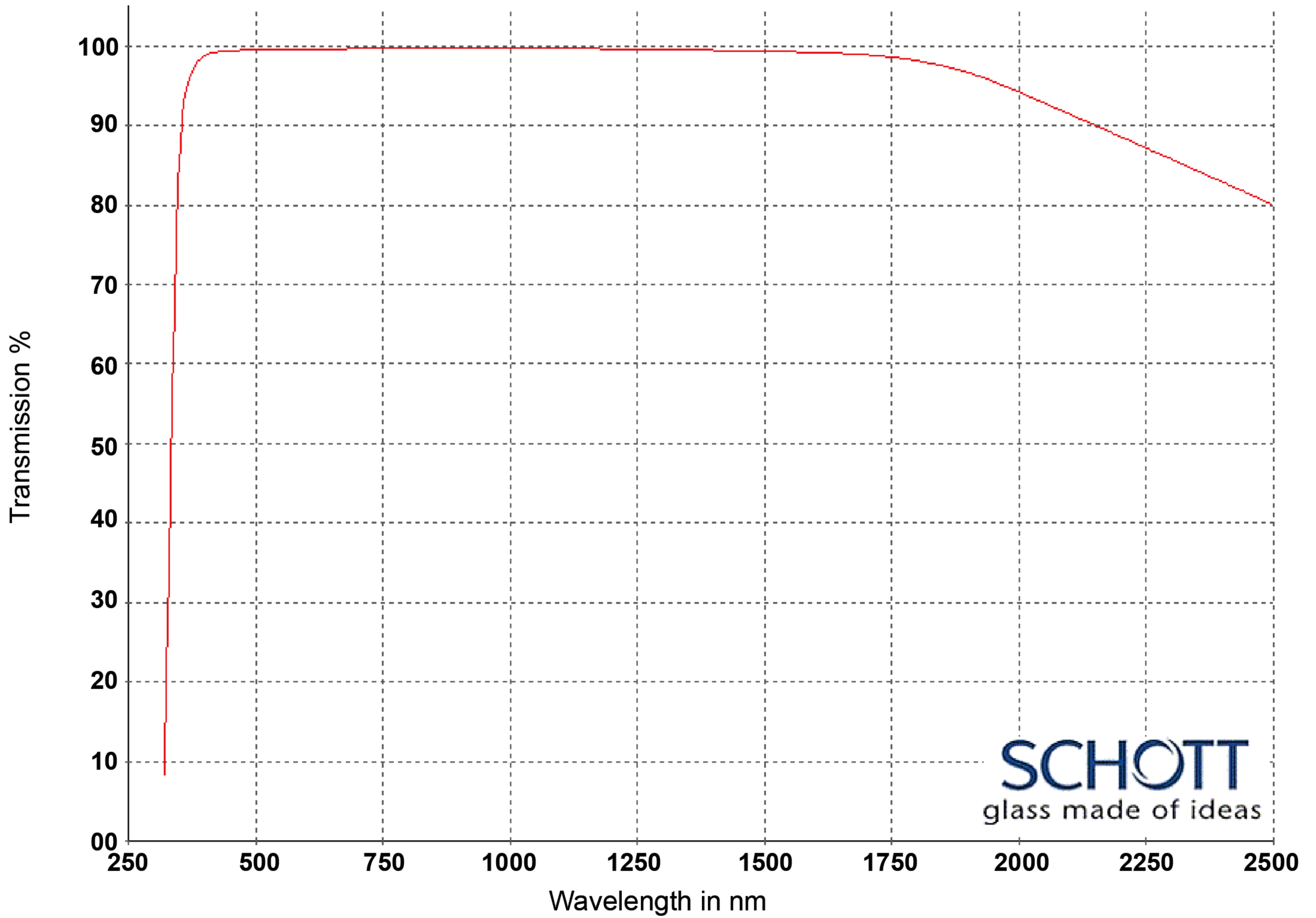




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: Schott F4 for 250nm - 2500 transmission
Range: OPG - F4



SCHOTT
glass made of ideas

Internal transmittance for 10mm thickness

WAVELENGTH	BASF51 (T%)
2500 nm	0.800
2325 nm	0.850
1970 nm	0.950
1530 nm	0.993
1060 nm	0.997
700 nm	0.997
660 nm	0.996
620 nm	0.996
580 nm	0.996
546 nm	0.996
500 nm	0.996
460 nm	0.994
436 nm	0.994
420 nm	0.992
405 nm	0.990
400 nm	0.988
390 nm	0.983
380 nm	0.973
370 nm	0.959
365 nm	0.950
350 nm	0.860
334 nm	0.490
320 nm	0.030
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

Refractive Indices

	λ [nm]	
$n_{2325.4}$	2325.4	1.58151
$n_{1970.1}$	1970.1	1.58642
$n_{1529.6}$	1529.6	1.59195
$n_{1060.0}$	1060.0	1.59866
n_t	1014.0	1.59954
n_s	852.1	1.60342
n_r	706.5	1.60891
n_C	656.3	1.61165
$n_{C'}$	643.8	1.61242
$n_{632.8}$	632.8	1.61315
n_D	589.3	1.61644
n_d	587.6	1.61659
n_e	546.1	1.62058
n_F	486.1	1.62848
$n_{F'}$	480.0	1.62949
n_g	435.8	1.63828
n_h	404.7	1.64679
n_i	365.0	1.66216
$n_{334.1}$	334.1	1.68022
$n_{312.6}$	312.6	
$n_{296.7}$	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	0.80	0.57
2325	0.85	0.67
1970	0.950	0.87
1530	0.993	0.983
1060	0.997	0.993
700	0.997	0.992
660	0.996	0.990
620	0.996	0.990
580	0.996	0.991
546	0.996	0.991
500	0.996	0.989
460	0.994	0.986
436	0.994	0.984
420	0.992	0.980
405	0.990	0.974
400	0.988	0.971
390	0.983	0.957
380	0.973	0.940
370	0.959	0.900
365	0.950	0.88
350	0.86	0.69
334	0.49	0.17
320	0.03	0.00
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion

$P_{s,t}$	0.2305
$P_{C,s}$	0.4886
$P_{d,C}$	0.2938
$P_{e,d}$	0.2370
$P_{g,F}$	0.5825
$P_{i,h}$	0.9130
$P'_{s,t}$	0.2274
$P'_{C's}$	0.5275
$P'_{d,C'}$	0.2444
$P'_{e,d}$	0.2338
$P'_{g,F'}$	0.5157
$P'_{i,h}$	0.9007

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

$\Delta P_{C,t}$	0.0004
$\Delta P_{C,s}$	0.0003
$\Delta P_{F,e}$	0.0000
$\Delta P_{g,F}$	0.0003
$\Delta P_{i,g}$	0.0011

Other Properties

$\alpha_{-30/+70^\circ\text{C}}$ [$10^{-6}/\text{K}$]	8.3
$\alpha_{+20/+300^\circ\text{C}}$ [$10^{-6}/\text{K}$]	9.1
Tg [$^\circ\text{C}$]	436
$T_{10}^{13.0}$ [$^\circ\text{C}$]	431
$T_{10}^{7.6}$ [$^\circ\text{C}$]	614
c_p [J/(g·K)]	0.553
λ [W/(m·K)]	0.768
ρ [g/cm ³]	3.58
E [10 ³ N/mm ²]	56
μ [10 ⁻⁶ mm ² /N]	0.222
HK _{0.1/20}	420
HG	
B	1
CR	1
FR	0
SR	1
AR	2.3
PR	2

Constants of Dispersion Formula

B_1	$1.33905825 \cdot 10^{+00}$
B_2	$2.05224318 \cdot 10^{-01}$
B_3	$8.97859758 \cdot 10^{-01}$
C_1	$9.92220114 \cdot 10^{-03}$
C_2	$4.70000918 \cdot 10^{-02}$
C_3	$1.07936750 \cdot 10^{+02}$

Constants of Formula dn/dT

D_0	$2.02 \cdot 10^{-06}$
D_1	$1.97 \cdot 10^{-08}$
D_2	$-3.87 \cdot 10^{-11}$
E_0	$7.05 \cdot 10^{-07}$
E_1	$4.36 \cdot 10^{-10}$
λ_{TK} [μm]	0.289

Color Code

λ_{80}/λ_5	35/33
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Remarks

Temperature Coefficients of Refractive Index

[$^\circ\text{C}$]	$\Delta n_{rel}/\Delta T$ [$10^{-6}/\text{K}$]			$\Delta n_{abs}/\Delta T$ [$10^{-6}/\text{K}$]		
	1060.0	e	g	1060.0	e	g
-40/-20	2.3	3.6	5.3	0.2	1.4	3.1
+20/+40	2.9	4.3	6.1	1.5	2.9	4.7
+60/+80	3.2	4.7	6.6	2.1	3.6	5.5