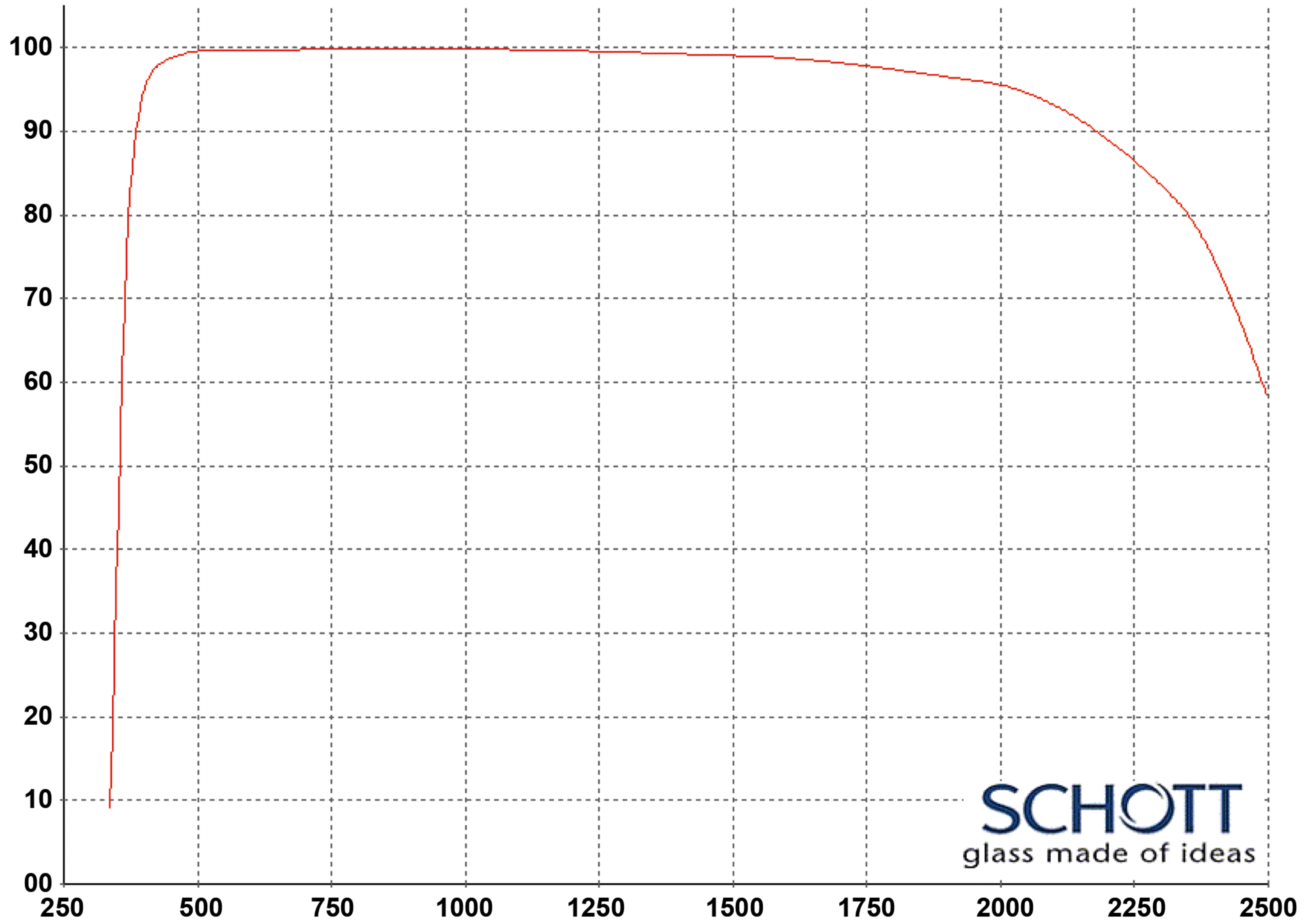




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: Schott BASF51 for 250nm - 2500nm transmission
Range: OPG-BASF51



SCHOTT
glass made of ideas

Wavelength **BASF51**

2500 nm	0.580
2325 nm	0.820
1970 nm	0.959
1530 nm	0.990
1060 nm	0.998
700 nm	0.998
660 nm	0.997
620 nm	0.997
580 nm	0.997
546 nm	0.997
500 nm	0.996
460 nm	0.990
436 nm	0.983
420 nm	0.976
405 nm	0.959
400 nm	0.950
390 nm	0.920
380 nm	0.870
370 nm	0.790
365 nm	0.730
350 nm	0.410
334 nm	0.030
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

**Calculation of Internal Transmittance
for Thickness 10.0 mm :**

Refractive Indices		
	λ [nm]	
$n_{2325.4}$	2325.4	1.68307
$n_{1970.1}$	1970.1	1.68895
$n_{1529.6}$	1529.6	1.69550
$n_{1060.0}$	1060.0	1.70332
n_t	1014.0	1.70432
n_s	852.1	1.70877
n_r	706.5	1.71503
n_C	656.3	1.71813
$n_{C'}$	643.8	1.71901
$n_{632.8}$	632.8	1.71983
n_D	589.3	1.72356
n_d	587.6	1.72373
n_e	546.1	1.72823
n_F	486.1	1.73712
$n_{F'}$	480.0	1.73825
n_g	435.8	1.74810
n_h	404.7	1.75759
n_i	365.0	1.77464
$n_{334.1}$	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	$1.67507496 \cdot 10^{+00}$
B_2	$2.12822109 \cdot 10^{-01}$
B_3	$9.66557263 \cdot 10^{-01}$
C_1	$1.05667060 \cdot 10^{-02}$
C_2	$4.76664644 \cdot 10^{-02}$
C_3	$9.20388572 \cdot 10^{+01}$

Constants of Formula dn/dT	
D_0	$1.09 \cdot 10^{-05}$
D_1	$1.34 \cdot 10^{-08}$
D_2	$-3.68 \cdot 10^{-11}$
E_0	$9.17 \cdot 10^{-07}$
E_1	$9.32 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.238

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	7.9	9.6	11.5	5.6	7.3	9.1
+20/+40	8.2	10.1	12.2	6.7	8.6	10.7
+60/+80	8.3	10.5	12.7	7.2	9.3	11.5

Internal Transmittance τ_i		
λ [nm]	τ_i [10 mm]	τ_i [25 mm]
2500	0.58	0.26
2325	0.82	0.60
1970	0.959	0.900
1530	0.990	0.975
1060	0.998	0.994
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.997	0.992
546	0.997	0.993
500	0.996	0.989
460	0.990	0.975
436	0.983	0.957
420	0.976	0.940
405	0.959	0.900
400	0.950	0.88
390	0.920	0.81
380	0.87	0.71
370	0.79	0.55
365	0.73	0.45
350	0.41	0.11
334	0.03	
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
λ_{80}/λ_5	39/34
Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.2343
$P_{C,s}$	0.4928
$P_{d,C}$	0.2948
$P_{e,d}$	0.2371
$P_{g,F}$	0.5784
$P_{i,h}$	0.8978
$P'_{s,t}$	0.2312
$P'_{C's}$	0.5320
$P'_{d,C'}$	0.2453
$P'_{e,d}$	0.2341
$P'_{g,F'}$	0.5122
$P'_{i,h}$	0.8861

Deviation of Rel. Partial Dispersion ΔP from "Normal Line"	
$\Delta P_{C,t}$	0.0012
$\Delta P_{C,s}$	0.0010
$\Delta P_{F,e}$	-0.0003
$\Delta P_{g,F}$	-0.0013
$\Delta P_{i,g}$	-0.0074

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.4
$T_g [^\circ C]$	522
$T_{10}^{13.0} [^\circ C]$	
$T_{10}^{7.6} [^\circ C]$	630
$c_p [J/(g \cdot K)]$	0.536
$\lambda [W/(m \cdot K)]$	0.722
$\rho [g/cm^3]$	4.31
$E [10^3 N/mm^2]$	80
μ	0.289
$K [10^{-6} mm^2/N]$	2.15
$HK_{0.1/20}$	540
HG	1
B	1
CR	2
FR	4
SR	52.3
AR	1.2
PR	3.3