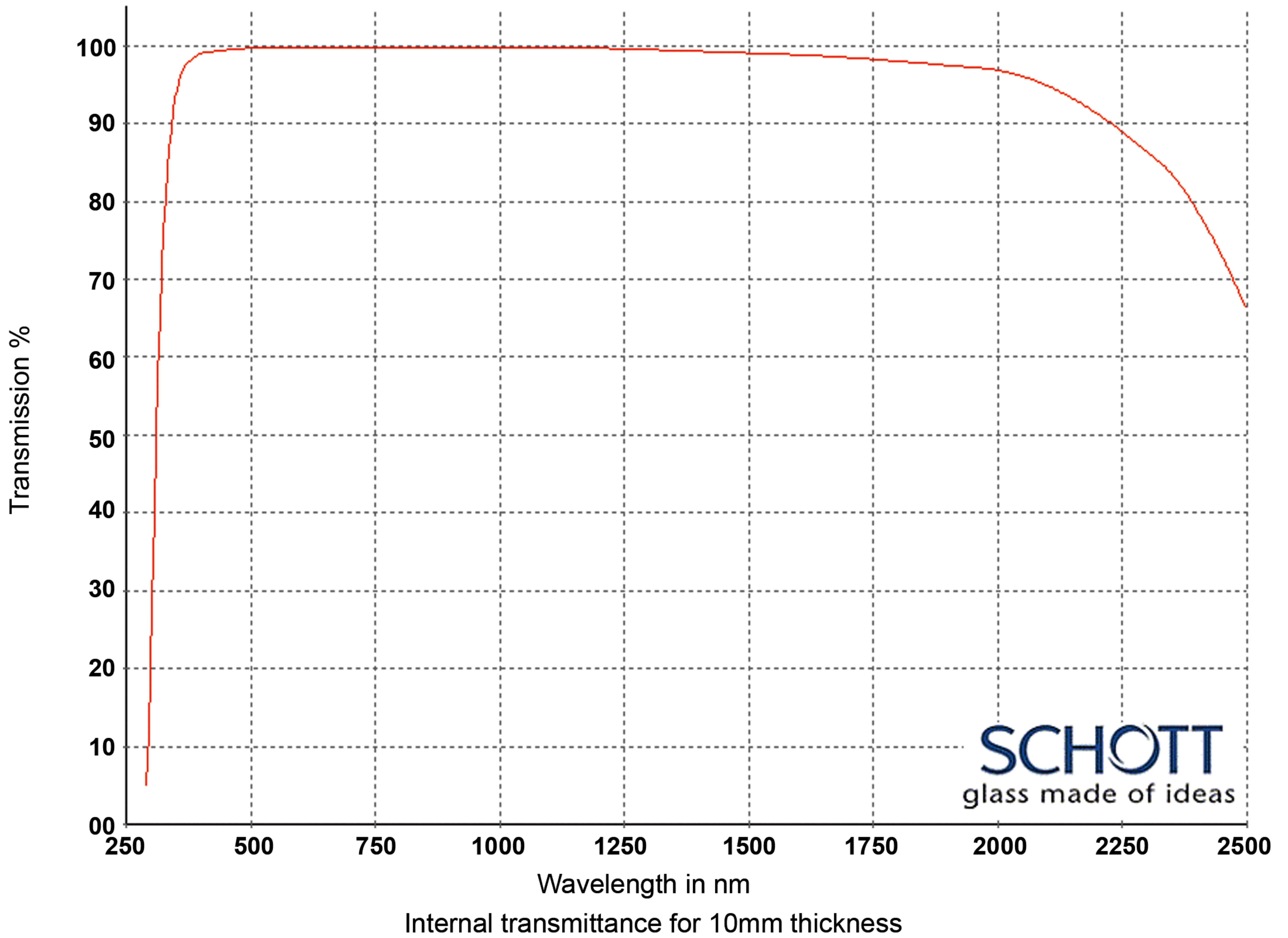




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm  
Material: SCHOTT N-ZK7 for 250nm - 2500 transmission  
Range: OPG - N-ZK7



**SCHOTT**  
glass made of ideas

WAVELENGTH	N-ZK7 (T%)
2500 nm	0.660
2325 nm	0.850
1970 nm	0.971
1530 nm	0.990
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	0.997
460 nm	0.995
436 nm	0.994
420 nm	0.992
405 nm	0.991
400 nm	0.990
390 nm	0.987
380 nm	0.982
370 nm	0.976
365 nm	0.971
350 nm	0.940
334 nm	0.850
320 nm	0.690
310 nm	0.490
300 nm	0.220
290 nm	0.030
280 nm	0.000
270 nm	0.000
260 nm	0.000
250 nm	0.000

### Refractive Indices

	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48062
$n_{1970.1}$	1970.1	1.48637
$n_{1529.6}$	1529.6	1.49233
$n_{1060.0}$	1060.0	1.49813
$n_t$	1014.0	1.49876
$n_s$	852.1	1.50129
$n_r$	706.5	1.50445
$n_C$	656.3	1.50592
$n_{C'}$	643.8	1.50633
$n_{632.8}$	632.8	1.50671
$n_D$	589.3	1.50840
$n_d$	587.6	1.50847
$n_e$	546.1	1.51045
$n_F$	486.1	1.51423
$n_{F'}$	480.0	1.51470
$n_g$	435.8	1.51869
$n_h$	404.7	1.52238
$n_i$	365.0	1.52865
$n_{334.1}$	334.1	1.53538
$n_{312.6}$	312.6	1.54155
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

### Internal Transmittance $\tau_i$

$\lambda$ [nm]	$\tau_i$ [10 mm]	$\tau_i$ [25 mm]
2500	0.66	0.35
2325	0.85	0.66
1970	0.971	0.930
1530	0.990	0.976
1060	0.998	0.994
700	0.998	0.996
660	0.998	0.994
620	0.998	0.994
580	0.998	0.995
546	0.998	0.995
500	0.997	0.993
460	0.995	0.988
436	0.994	0.984
420	0.992	0.981
405	0.991	0.977
400	0.990	0.975
390	0.987	0.969
380	0.982	0.956
370	0.976	0.940
365	0.971	0.930
350	0.940	0.86
334	0.85	0.67
320	0.69	0.39
310	0.49	0.17
300	0.22	0.03
290	0.03	
280		
270		
260		
250		

### Relative Partial Dispersion

$P_{s,t}$	0.3049
$P_{C,s}$	0.5570
$P_{d,C}$	0.3069
$P_{e,d}$	0.2386
$P_{g,F}$	0.5370
$P_{i,h}$	0.7543
$P'_{s,t}$	0.3027
$P'_{C's}$	0.6017
$P'_{d,C'}$	0.2560
$P'_{e,d}$	0.2369
$P'_{g,F'}$	0.4771
$P'_{i,h}$	0.7488

### Deviation of Rel. Partial Dispersion

$\Delta P$ from "Normal Line"	
$\Delta P_{C,t}$	0.0267
$\Delta P_{C,s}$	0.0115
$\Delta P_{F,e}$	-0.0017
$\Delta P_{g,F}$	-0.0039
$\Delta P_{i,g}$	-0.0129

### Constants of Dispersion Formula

$B_1$	$1.07715032 \cdot 10^{+00}$
$B_2$	$1.68079109 \cdot 10^{-01}$
$B_3$	$8.51889892 \cdot 10^{-01}$
$C_1$	$6.76601657 \cdot 10^{-03}$
$C_2$	$2.30642817 \cdot 10^{-02}$
$C_3$	$8.90498778 \cdot 10^{+01}$

### Constants of Formula $dn/dT$

$D_0$	$1.15 \cdot 10^{-05}$
$D_1$	$1.73 \cdot 10^{-08}$
$D_2$	$-8.06 \cdot 10^{-11}$
$E_0$	$4.32 \cdot 10^{-07}$
$E_1$	$7.05 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.179

### Color Code

$\lambda_{80}/\lambda_5$	34/29
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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	5.9	6.5	7.0	3.9	4.5	4.9
+20/+40	6.4	7.0	7.6	5.1	5.7	6.3
+60/+80	6.4	7.2	7.8	5.4	6.2	6.8

### Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	4.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	5.2
$T_g [^\circ C]$	539
$T_{10}^{13.0} [^\circ C]$	
$T_{10}^{7.6} [^\circ C]$	721
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	1.042
$\rho [g/cm^3]$	2.49
$E [10^3 N/mm^2]$	70
$\mu$	0.214
$K [10^{-6} mm^2/N]$	3.63
$HK_{0.1/20}$	530
HG	4
B	1
CR	1
FR	0
SR	2
AR	1.2
PR	2.2