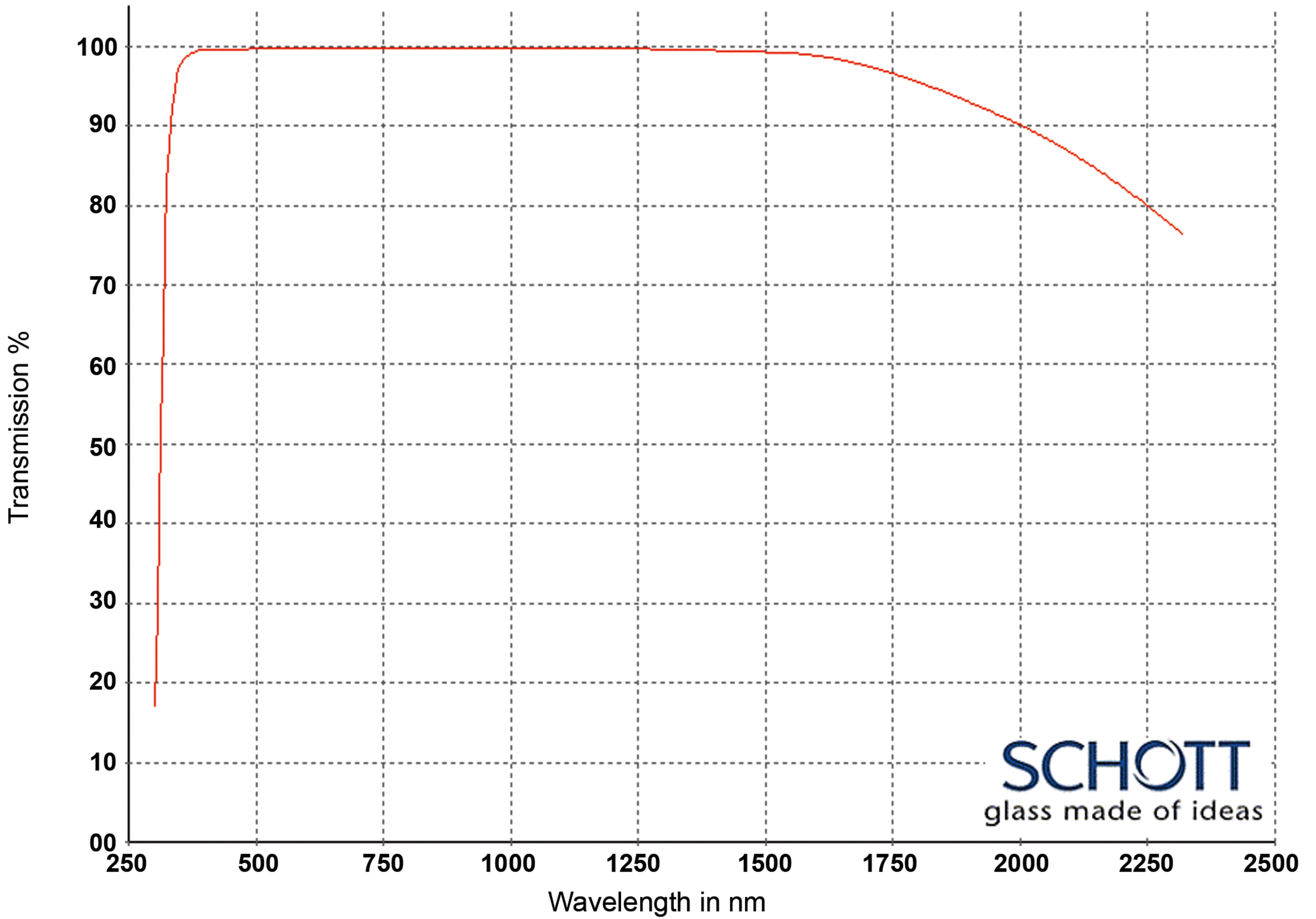




KNIGHT OPTICAL

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Title: Optical Glasses - 250-2500nm
Material: Schott K7 for 250nm - 2500 transmission
Range: OPG - K7



SCHOTT
glass made of ideas

Internal transmittance for 10mm thickness

| WAVELENGTH | K7 (T%) |
|------------|---------|
| 2500 nm | 0.000 |
| 2325 nm | 0.760 |
| 1970 nm | 0.910 |
| 1530 nm | 0.992 |
| 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 | 0.996 |
| 436 nm | 0.996 |
| 420 nm | 0.996 |
| 405 nm | 0.996 |
| 400 nm | 0.996 |
| 390 nm | 0.995 |
| 380 nm | 0.993 |
| 370 nm | 0.990 |
| 365 nm | 0.988 |
| 350 nm | 0.976 |
| 334 nm | 0.910 |
| 320 nm | 0.710 |
| 310 nm | 0.400 |
| 300 nm | 0.090 |
| 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 | 1.48553 |
| $n_{1970.1}$ | 1970.1 | 1.49046 |
| $n_{1529.6}$ | 1529.6 | 1.49565 |
| $n_{1060.0}$ | 1060.0 | 1.50091 |
| n_t | 1014.0 | 1.50150 |
| n_s | 852.1 | 1.50394 |
| n_r | 706.5 | 1.50707 |
| n_C | 656.3 | 1.50854 |
| $n_{C'}$ | 643.8 | 1.50895 |
| $n_{632.8}$ | 632.8 | 1.50934 |
| n_D | 589.3 | 1.51105 |
| n_d | 587.6 | 1.51112 |
| n_e | 546.1 | 1.51314 |
| n_F | 486.1 | 1.51700 |
| $n_{F'}$ | 480.0 | 1.51748 |
| n_g | 435.8 | 1.52159 |
| n_h | 404.7 | 1.52540 |
| n_i | 365.0 | 1.53189 |
| $n_{334.1}$ | 334.1 | 1.53891 |
| $n_{312.6}$ | 312.6 | 1.54537 |
| $n_{296.7}$ | 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 | 0.76 | 0.50 |
| 1970 | 0.910 | 0.79 |
| 1530 | 0.992 | 0.980 |
| 1060 | 0.998 | 0.994 |
| 700 | 0.998 | 0.996 |
| 660 | 0.998 | 0.995 |
| 620 | 0.998 | 0.995 |
| 580 | 0.998 | 0.994 |
| 546 | 0.998 | 0.994 |
| 500 | 0.997 | 0.993 |
| 460 | 0.996 | 0.990 |
| 436 | 0.996 | 0.990 |
| 420 | 0.996 | 0.990 |
| 405 | 0.996 | 0.990 |
| 400 | 0.996 | 0.990 |
| 390 | 0.995 | 0.988 |
| 380 | 0.993 | 0.983 |
| 370 | 0.990 | 0.976 |
| 365 | 0.988 | 0.971 |
| 350 | 0.976 | 0.940 |
| 334 | 0.910 | 0.78 |
| 320 | 0.71 | 0.42 |
| 310 | 0.40 | 0.10 |
| 300 | 0.09 | |
| 290 | | |
| 280 | | |
| 270 | | |
| 260 | | |
| 250 | | |

Relative Partial Dispersion

| | |
|-------------|--------|
| $P_{s,t}$ | 0.2880 |
| $P_{C,s}$ | 0.5436 |
| $P_{d,C}$ | 0.3049 |
| $P_{e,d}$ | 0.2385 |
| $P_{g,F}$ | 0.5422 |
| $P_{i,h}$ | 0.7677 |
| | |
| $P'_{s,t}$ | 0.2857 |
| $P'_{C's}$ | 0.5874 |
| $P'_{d,C'}$ | 0.2542 |
| $P'_{e,d}$ | 0.2365 |
| $P'_{g,F'}$ | 0.4814 |
| $P'_{i,h}$ | 0.7614 |

Constants of Dispersion Formula

| | |
|-------|-----------------------------|
| B_1 | $1.12735550 \cdot 10^{+00}$ |
| B_2 | $1.24412303 \cdot 10^{-01}$ |
| B_3 | $8.27100531 \cdot 10^{-01}$ |
| C_1 | $7.20341707 \cdot 10^{-03}$ |
| C_2 | $2.69835916 \cdot 10^{-02}$ |
| C_3 | $1.00384588 \cdot 10^{+02}$ |

Constants of Formula dn/dT

| | |
|-----------------------|------------------------|
| D_0 | $-1.67 \cdot 10^{-06}$ |
| D_1 | $8.80 \cdot 10^{-09}$ |
| D_2 | $-2.86 \cdot 10^{-11}$ |
| E_0 | $5.42 \cdot 10^{-07}$ |
| E_1 | $7.81 \cdot 10^{-10}$ |
| $\lambda_{TK}[\mu m]$ | 0.172 |

Color Code

| | |
|--------------------------|-------|
| λ_{80}/λ_5 | 33/30 |
|--------------------------|-------|

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 | 1.0 | 1.6 | 2.1 | -1.0 | -0.4 | 0.1 |
| +20/+40 | 0.9 | 1.6 | 2.2 | -0.4 | 0.2 | 0.9 |
| +60/+80 | 0.8 | 1.6 | 2.3 | -0.2 | 0.6 | 1.2 |

Deviation of Rel. Partial Dispersion

ΔP from "Normal Line"

| | |
|------------------|---------|
| $\Delta P_{C,t}$ | 0.0001 |
| $\Delta P_{C,s}$ | -0.0001 |
| $\Delta P_{F,e}$ | 0.0000 |
| $\Delta P_{g,F}$ | 0.0000 |
| $\Delta P_{i,g}$ | -0.0001 |

Other Properties

| | |
|---|-------|
| $\alpha_{-30/+70^\circ C} [10^{-6}/K]$ | 8.4 |
| $\alpha_{+20/+300^\circ C} [10^{-6}/K]$ | 9.7 |
| Tg[°C] | 513 |
| $T_{10}^{13.0} [^\circ C]$ | |
| $T_{10}^{7.6} [^\circ C]$ | 712 |
| $c_p [J/(g \cdot K)]$ | |
| $\lambda [W/(m \cdot K)]$ | |
| | |
| $\rho [g/cm^3]$ | 2.53 |
| $E [10^3 N/mm^2]$ | 69 |
| μ | 0.214 |
| $K [10^{-6} mm^2/N]$ | 2.95 |
| HK _{0.1/20} | 520 |
| HG | |
| | |
| B | 1 |
| | |
| CR | 3 |
| FR | 0 |
| SR | 2 |
| AR | 1 |
| PR | 2.3 |