# Data Sheet

SCHOTT

## BG60HS

| Reflection factor | |
|---|---|
| $P_d$ | 0.914 |

| Reference thickness | |
|---|---|
| d [mm] | 1 |

| Spectral values guaranteed | | |
|---|---|---|
| $\tau_i$ (405nm) | ≥ | 0.76 |
| $\tau_i$ (514nm) | ≥ | 0.89 |
| $\tau_i$ (633nm) | ≥ | 0.1 |
| $\tau_i$ (694nm) | ≤ | 0.008 |
| $\tau_i$ (1060nm) | ≤ | 0.0015 |
| | | |
| | | |
| | | |

| Refractive Index n |
|---|
| $n_h$ (404.7 nm) = 1.552 |
| $n_g$ (435.8 nm) = 1.548 |
| $n_{F'}$ (480.0 nm) = 1.544 |
| $n_F$ (486.1 nm) = 1.543 |
| Sellmeier coefficients on request |

| Density | |
|---|---|
| ρ [g/cm$^3$] | 2.85 |

| Bubble content | |
|---|---|
| Bubble class | 2 |

| Chemical Resistance | |
|---|---|
| FR class | 1.0 |
| SR class | 52.3 |
| AR class | 3.3 |

| Transformation temperature | |
|---|---|
| Tg [°C] | 421 |

| Thermal expansion | |
|---|---|
| $\alpha_{-30/+70°C}$ [$10^{-6}$/K] | 11.6 |
| $\alpha_{20/300°C}$ [$10^{-6}$/K] | 13.5 |
| $\alpha_{20/200°C}$ [$10^{-6}$/K] | |

| Temperature coefficient | |
|---|---|
| $T_K$ [nm/°C] | |
| | |
| | |
| | |
| | |

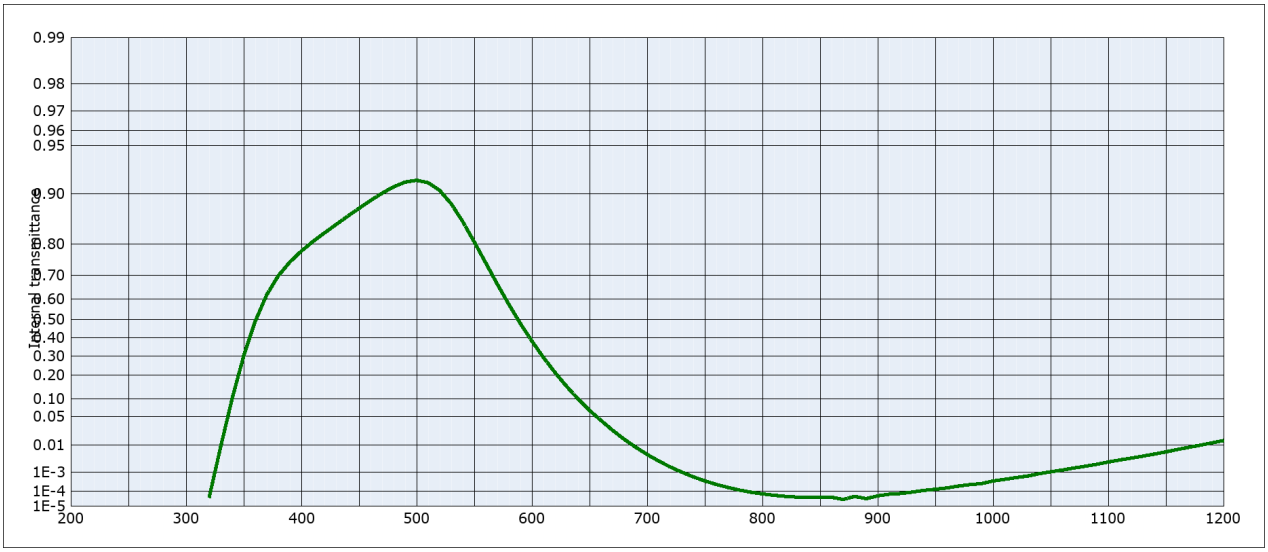
| Notes |
|---|
| Ionically colored glass |
| Bandpass filter / shortpass filter |
| Color compensating filter / IR cut filter |
| lambda_50%(thickness=0.3mm) = 633 nm |
| |
| |
| |
| |
| |
| Long-term changes of the polished |
| surface are possible under some |
| circumstances. |
| |
| |
| |
| Knoop hardness HK (0.1/20) = 391 |
| |
| |
| |
| **All data wihout tolerances are to be** |
| **understood to be reference values.** |
| **Guaranteed values are only those** |
| **values listed in the section** |
| **"Spectral values guaranteed".** |

**Colorimetric evaluation**

| Illuminant | A (Planck T = 2856 K) | | |
|---|---|---|---|
| d [mm] | 1 | 2 | 3 |
| x | 0.331 | 0.267 | 0.229 |
| y | 0.437 | 0.442 | 0.439 |
| Y | 54 | 39 | 30 |
| $\lambda_d$ [nm] | 499 | 498 | 497 |
| $P_e$ | 0.27 | 0.41 | 0.51 |

| Illuminant | Planck T = 3200 K | | |
|---|---|---|---|
| d [mm] | 1 | 2 | 3 |
| x | 0.311 | 0.252 | 0.218 |
| y | 0.419 | 0.419 | 0.413 |
| Y | 56 | 40 | 31 |
| $\lambda_d$ [nm] | 497 | 496 | 496 |
| $P_e$ | 0.27 | 0.42 | 0.51 |

| Illuminant | D65 ($T_C$ = 6504 K) | | |
|---|---|---|---|
| d [mm] | 1 | 2 | 3 |
| x | 0.235 | 0.199 | 0.179 |
| y | 0.319 | 0.307 | 0.299 |
| Y | 62 | 48 | 39 |
| $\lambda_d$ [nm] | 490 | 489 | 489 |
| $P_e$ | 0.29 | 0.43 | 0.51 |




**STATUS: vorläufig**



Further explanations see 'Optical Filters 2013' catalogue

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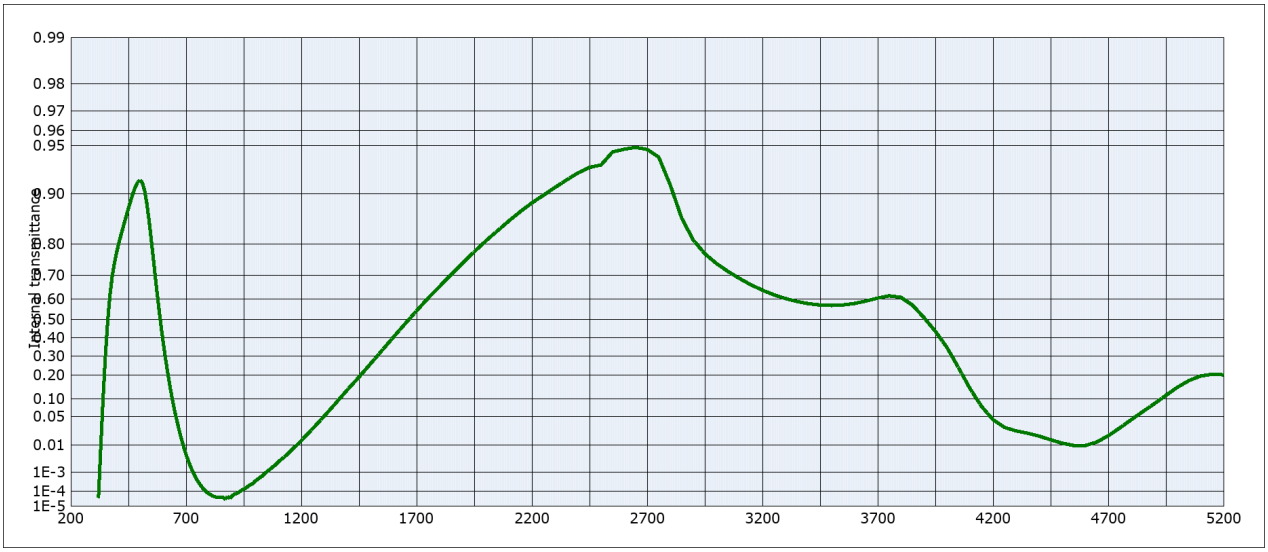


**Internal transmittance $\tau_i$ at reference thickness d = 1 mm**
**The internal transmittance values, tabulated and graphically represented, are reference values only**

| λ [nm] | $\tau_i$ | λ [nm] | $\tau_i$ | λ [nm] | $\tau_i$ | λ [nm] | $\tau_i$ | λ [nm] | $\tau_i$ | λ [nm] | $\tau_i$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | $< 10^{-5}$ | 500 | 0.918 | 800 | $7.1 \cdot 10^{-5}$ | 1100 | $2.7 \cdot 10^{-3}$ | 2200 | 0.886 | 3700 | 0.604 |
| 210 | $< 10^{-5}$ | 510 | 0.915 | 810 | $5.8 \cdot 10^{-5}$ | 1110 | $3.2 \cdot 10^{-3}$ | 2250 | 0.898 | 3750 | 0.614 |
| 220 | $< 10^{-5}$ | 520 | 0.905 | 820 | $4.9 \cdot 10^{-5}$ | 1120 | $3.8 \cdot 10^{-3}$ | 2300 | 0.909 | 3800 | 0.607 |
| 230 | $< 10^{-5}$ | 530 | 0.885 | 830 | $4.4 \cdot 10^{-5}$ | 1130 | $4.4 \cdot 10^{-3}$ | 2350 | 0.918 | 3850 | 0.571 |
| 240 | $< 10^{-5}$ | 540 | 0.852 | 840 | $4.2 \cdot 10^{-5}$ | 1140 | $5.2 \cdot 10^{-3}$ | 2400 | 0.926 | 3900 | 0.509 |
| 250 | $< 10^{-5}$ | 550 | 0.805 | 850 | $4.1 \cdot 10^{-5}$ | 1150 | $6.2 \cdot 10^{-3}$ | 2450 | 0.932 | 3950 | 0.436 |
| 260 | $< 10^{-5}$ | 560 | 0.742 | 860 | $4.3 \cdot 10^{-5}$ | 1160 | $7.4 \cdot 10^{-3}$ | 2500 | 0.934 | 4000 | 0.347 |
| 270 | $< 10^{-5}$ | 570 | 0.664 | 870 | $3.1 \cdot 10^{-5}$ | 1170 | $8.7 \cdot 10^{-3}$ | 2550 | 0.945 | 4050 | 0.238 |
| 280 | $< 10^{-5}$ | 580 | 0.574 | 880 | $4.9 \cdot 10^{-5}$ | 1180 | $1.0 \cdot 10^{-2}$ | 2600 | 0.947 | 4100 | 0.141 |
| 290 | $< 10^{-5}$ | 590 | 0.477 | 890 | $3.5 \cdot 10^{-5}$ | 1190 | $1.2 \cdot 10^{-2}$ | 2650 | 0.949 | 4150 | $7.7 \cdot 10^{-2}$ |
| 300 | $< 10^{-5}$ | 600 | 0.382 | 900 | $5.3 \cdot 10^{-5}$ | 1200 | $1.4 \cdot 10^{-2}$ | 2700 | 0.947 | 4200 | $4.4 \cdot 10^{-2}$ |
| 310 | $< 10^{-5}$ | 610 | 0.292 | 910 | $6.8 \cdot 10^{-5}$ | 1250 | $2.8 \cdot 10^{-2}$ | 2750 | 0.941 | 4250 | $3.0 \cdot 10^{-2}$ |
| 320 | $4.1 \cdot 10^{-5}$ | 620 | 0.214 | 920 | $7.5 \cdot 10^{-5}$ | 1300 | $5.1 \cdot 10^{-2}$ | 2800 | 0.912 | 4300 | $2.5 \cdot 10^{-2}$ |
| 330 | $9.0 \cdot 10^{-3}$ | 630 | 0.150 | 930 | $9.2 \cdot 10^{-5}$ | 1350 | $8.7 \cdot 10^{-2}$ | 2850 | 0.859 | 4350 | $2.2 \cdot 10^{-2}$ |
| 340 | 0.102 | 640 | 0.101 | 940 | $1.2 \cdot 10^{-4}$ | 1400 | 0.136 | 2900 | 0.809 | 4400 | $1.8 \cdot 10^{-2}$ |
| 350 | 0.301 | 650 | $6.5 \cdot 10^{-2}$ | 950 | $1.3 \cdot 10^{-4}$ | 1450 | 0.191 | 2950 | 0.772 | 4450 | $1.4 \cdot 10^{-2}$ |
| 360 | 0.489 | 660 | $4.2 \cdot 10^{-2}$ | 960 | $1.6 \cdot 10^{-4}$ | 1500 | 0.258 | 3000 | 0.741 | 4500 | $1.2 \cdot 10^{-2}$ |
| 370 | 0.619 | 670 | $2.5 \cdot 10^{-2}$ | 970 | $2.0 \cdot 10^{-4}$ | 1550 | 0.331 | 3050 | 0.713 | 4550 | $9.9 \cdot 10^{-3}$ |
| 380 | 0.697 | 680 | $1.5 \cdot 10^{-2}$ | 980 | $2.5 \cdot 10^{-4}$ | 1600 | 0.404 | 3100 | 0.687 | 4600 | $9.8 \cdot 10^{-3}$ |
| 390 | 0.745 | 690 | $8.7 \cdot 10^{-3}$ | 990 | $2.8 \cdot 10^{-4}$ | 1650 | 0.476 | 3150 | 0.661 | 4650 | $1.2 \cdot 10^{-2}$ |
| 400 | 0.779 | 700 | $5.1 \cdot 10^{-3}$ | 1000 | $3.8 \cdot 10^{-4}$ | 1700 | 0.543 | 3200 | 0.638 | 4700 | $1.9 \cdot 10^{-2}$ |
| 410 | 0.806 | 710 | $2.9 \cdot 10^{-3}$ | 1010 | $4.6 \cdot 10^{-4}$ | 1750 | 0.603 | 3250 | 0.618 | 4750 | $2.9 \cdot 10^{-2}$ |
| 420 | 0.827 | 720 | $1.7 \cdot 10^{-3}$ | 1020 | $5.6 \cdot 10^{-4}$ | 1800 | 0.655 | 3300 | 0.602 | 4800 | $4.4 \cdot 10^{-2}$ |
| 430 | 0.846 | 730 | $1.0 \cdot 10^{-3}$ | 1030 | $6.7 \cdot 10^{-4}$ | 1850 | 0.702 | 3350 | 0.588 | 4850 | $6.2 \cdot 10^{-2}$ |
| 440 | 0.862 | 740 | $6.1 \cdot 10^{-4}$ | 1040 | $8.6 \cdot 10^{-4}$ | 1900 | 0.742 | 3400 | 0.577 | 4900 | $8.5 \cdot 10^{-2}$ |
| 450 | 0.877 | 750 | $3.8 \cdot 10^{-4}$ | 1050 | $1.0 \cdot 10^{-3}$ | 1950 | 0.777 | 3450 | 0.571 | 4950 | 0.113 |
| 460 | 0.890 | 760 | $2.5 \cdot 10^{-4}$ | 1060 | $1.3 \cdot 10^{-3}$ | 2000 | 0.807 | 3500 | 0.569 | 5000 | 0.146 |
| 470 | 0.901 | 770 | $1.7 \cdot 10^{-4}$ | 1070 | $1.5 \cdot 10^{-3}$ | 2050 | 0.832 | 3550 | 0.571 | 5050 | 0.175 |
| 480 | 0.909 | 780 | $1.2 \cdot 10^{-4}$ | 1080 | $1.8 \cdot 10^{-3}$ | 2100 | 0.853 | 3600 | 0.579 | 5100 | 0.196 |
| 490 | 0.915 | 790 | $9.0 \cdot 10^{-5}$ | 1090 | $2.2 \cdot 10^{-3}$ | 2150 | 0.871 | 3650 | 0.590 | 5150 | 0.205 |

**STATUS: vorläufig**



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