Data Sheet

SCHOTT

BG40

Reflection factor	
P_d	0.916

Reference thickness	
d [mm]	1

Spectral values guaranteed		
τ_i (350nm)	≥	0.8
τ_i (405nm)	≥	0.93
τ_i (514nm)	≥	0.97
τ_i (633nm)	≤	0.57
τ_i (694nm)	≤	0.16
τ_i (1060nm)	≤	0.02

Refractive Index n
n_g (435.8 nm) = 1.540
$n_{F'}$ (480.0 nm) = 1.536
n_F (486.1 nm) = 1.536
n_e (546.1 nm) = 1.532
Sellmeier coefficients on request

Density	
ρ [g/cm^3]	2.74

Bubble content	
Bubble class	2

Chemical Resistance	
FR class	0
SR class	5.1
AR class	3.0

Transformation temperature	
Tg [°C]	313

Thermal expansion	
$\alpha_{-30/+70°C}$ [10^{-6}/K]	11.9
$\alpha_{20/300°C}$ [10^{-6}/K]	
$\alpha_{20/200°C}$ [10^{-6}/K]	13.7

Temperature coefficient	
T_K [nm/°C]	

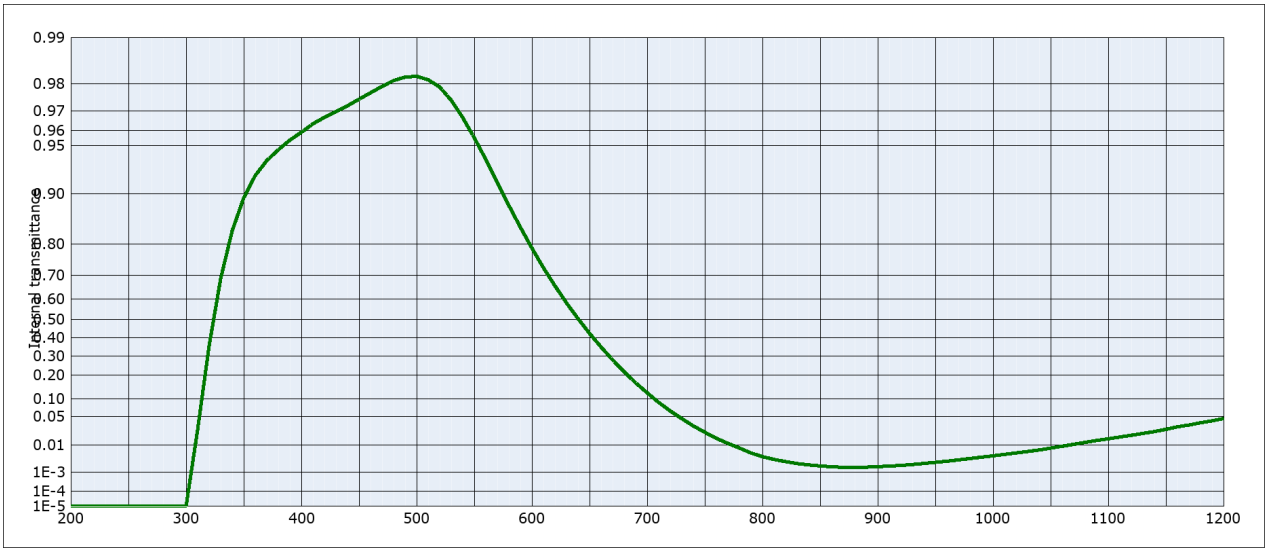
Notes
Ionically colored glass
Bandpass filter / shortpass filter
Long-term changes of the polished
surface are possible under some
circumstances.
All data wihout tolerances are to be
understood to be reference values.
Guaranteed values are only those
values listed in the section
"Spectral values guaranteed".

Colorimetric evaluation

Illuminant	A (Planck T = 2856 K)		
d [mm]	1	2	3
x	0.406	0.374	0.348
y	0.421	0.430	0.436
Y	78	68	61
λ_d [nm]	501	500	500
P_e	0.09	0.17	0.23

Illuminant	Planck T = 3200 K		
d [mm]	1	2	3
x	0.383	0.352	0.327
y	0.409	0.415	0.419
Y	79	70	63
λ_d [nm]	499	498	498
P_e	0.10	0.17	0.23

Illuminant	D65 (T_C = 6504 K)		
d [mm]	1	2	3
x	0.283	0.262	0.246
y	0.327	0.324	0.321
Y	82	75	69
λ_d [nm]	491	490	490
P_e	0.11	0.19	0.25



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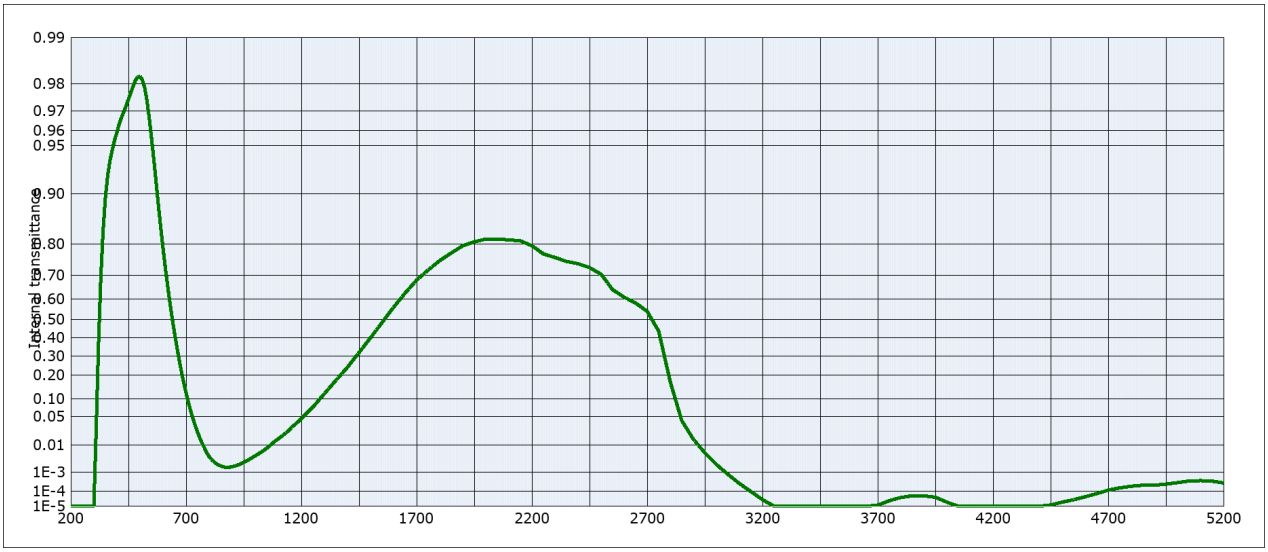

Internal transmittance τ_i at reference thickness d = 1 mm
The internal transmittance values, tabulated and graphically represented, are reference values only

λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i
200	$< 10^{-5}$	500	0.982	800	$4.3 \cdot 10^{-3}$	1100	$1.5 \cdot 10^{-2}$	2200	0.795	3700	$1.2 \cdot 10^{-5}$
210	$< 10^{-5}$	510	0.981	810	$3.4 \cdot 10^{-3}$	1110	$1.7 \cdot 10^{-2}$	2250	0.771	3750	$2.5 \cdot 10^{-5}$
220	$< 10^{-5}$	520	0.979	820	$2.8 \cdot 10^{-3}$	1120	$1.9 \cdot 10^{-2}$	2300	0.760	3800	$4.2 \cdot 10^{-5}$
230	$< 10^{-5}$	530	0.974	830	$2.3 \cdot 10^{-3}$	1130	$2.1 \cdot 10^{-2}$	2350	0.747	3850	$5.4 \cdot 10^{-5}$
240	$< 10^{-5}$	540	0.967	840	$2.1 \cdot 10^{-3}$	1140	$2.4 \cdot 10^{-2}$	2400	0.740	3900	$5.3 \cdot 10^{-5}$
250	$< 10^{-5}$	550	0.956	850	$1.9 \cdot 10^{-3}$	1150	$2.7 \cdot 10^{-2}$	2450	0.727	3950	$4.3 \cdot 10^{-5}$
260	$< 10^{-5}$	560	0.939	860	$1.7 \cdot 10^{-3}$	1160	$3.1 \cdot 10^{-2}$	2500	0.703	4000	$2.0 \cdot 10^{-5}$
270	$< 10^{-5}$	570	0.915	870	$1.6 \cdot 10^{-3}$	1170	$3.3 \cdot 10^{-2}$	2550	0.641	4050	$< 10^{-5}$
280	$< 10^{-5}$	580	0.882	880	$1.6 \cdot 10^{-3}$	1180	$3.7 \cdot 10^{-2}$	2600	0.608	4100	$< 10^{-5}$
290	$< 10^{-5}$	590	0.840	890	$1.7 \cdot 10^{-3}$	1190	$4.1 \cdot 10^{-2}$	2650	0.581	4150	$< 10^{-5}$
300	$< 10^{-5}$	600	0.788	900	$1.8 \cdot 10^{-3}$	1200	$4.6 \cdot 10^{-2}$	2700	0.540	4200	$< 10^{-5}$
310	$2.6 \cdot 10^{-2}$	610	0.726	910	$1.8 \cdot 10^{-3}$	1250	$7.4 \cdot 10^{-2}$	2750	0.436	4250	$< 10^{-5}$
320	0.356	620	0.657	920	$2.0 \cdot 10^{-3}$	1300	0.120	2800	0.170	4300	$< 10^{-5}$
330	0.686	630	0.581	930	$2.1 \cdot 10^{-3}$	1350	0.176	2850	$4.2 \cdot 10^{-2}$	4350	$< 10^{-5}$
340	0.832	640	0.503	940	$2.4 \cdot 10^{-3}$	1400	0.240	2900	$1.5 \cdot 10^{-2}$	4400	$< 10^{-5}$
350	0.894	650	0.424	950	$2.6 \cdot 10^{-3}$	1450	0.319	2950	$5.8 \cdot 10^{-3}$	4450	$1.3 \cdot 10^{-5}$
360	0.923	660	0.349	960	$2.9 \cdot 10^{-3}$	1500	0.400	3000	$2.2 \cdot 10^{-3}$	4500	$2.0 \cdot 10^{-5}$
370	0.938	670	0.279	970	$3.2 \cdot 10^{-3}$	1550	0.483	3050	$8.1 \cdot 10^{-4}$	4550	$3.0 \cdot 10^{-5}$
380	0.947	680	0.217	980	$3.6 \cdot 10^{-3}$	1600	0.560	3100	$2.8 \cdot 10^{-4}$	4600	$4.6 \cdot 10^{-5}$
390	0.954	690	0.165	990	$4.1 \cdot 10^{-3}$	1650	0.626	3150	$9.8 \cdot 10^{-5}$	4650	$7.4 \cdot 10^{-5}$
400	0.959	700	0.123	1000	$4.5 \cdot 10^{-3}$	1700	0.680	3200	$3.0 \cdot 10^{-5}$	4700	$1.2 \cdot 10^{-4}$
410	0.964	710	$8.9 \cdot 10^{-2}$	1010	$5.1 \cdot 10^{-3}$	1750	0.718	3250	$1.0 \cdot 10^{-5}$	4750	$1.6 \cdot 10^{-4}$
420	0.967	720	$6.4 \cdot 10^{-2}$	1020	$5.7 \cdot 10^{-3}$	1800	0.750	3300	$< 10^{-5}$	4800	$2.0 \cdot 10^{-4}$
430	0.970	730	$4.6 \cdot 10^{-2}$	1030	$6.4 \cdot 10^{-3}$	1850	0.774	3350	$< 10^{-5}$	4850	$2.3 \cdot 10^{-4}$
440	0.972	740	$3.2 \cdot 10^{-2}$	1040	$7.1 \cdot 10^{-3}$	1900	0.795	3400	$< 10^{-5}$	4900	$2.3 \cdot 10^{-4}$
450	0.975	750	$2.3 \cdot 10^{-2}$	1050	$8.2 \cdot 10^{-3}$	1950	0.805	3450	$< 10^{-5}$	4950	$2.6 \cdot 10^{-4}$
460	0.977	760	$1.6 \cdot 10^{-2}$	1060	$9.4 \cdot 10^{-3}$	2000	0.812	3500	$< 10^{-5}$	5000	$3.1 \cdot 10^{-4}$
470	0.979	770	$1.1 \cdot 10^{-2}$	1070	$1.1 \cdot 10^{-2}$	2050	0.812	3550	$< 10^{-5}$	5050	$3.8 \cdot 10^{-4}$
480	0.981	780	$8.3 \cdot 10^{-3}$	1080	$1.2 \cdot 10^{-2}$	2100	0.810	3600	$< 10^{-5}$	5100	$4.0 \cdot 10^{-4}$
490	0.982	790	$5.7 \cdot 10^{-3}$	1090	$1.4 \cdot 10^{-2}$	2150	0.808	3650	$< 10^{-5}$	5150	$3.8 \cdot 10^{-4}$

Further explanations see 'Optical Filters 2013' catalogue