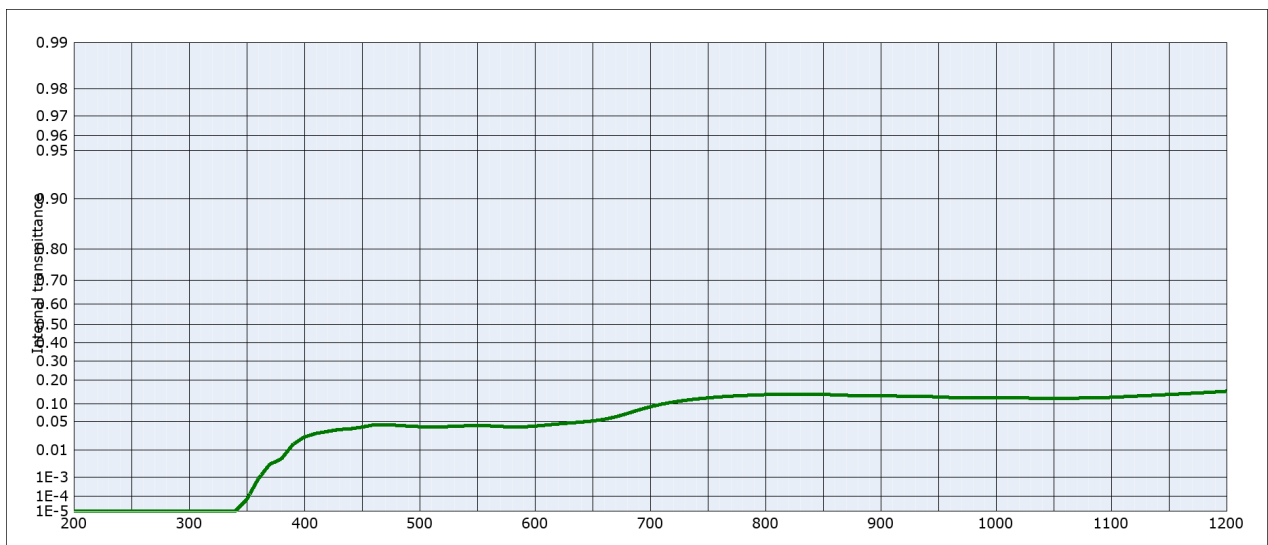
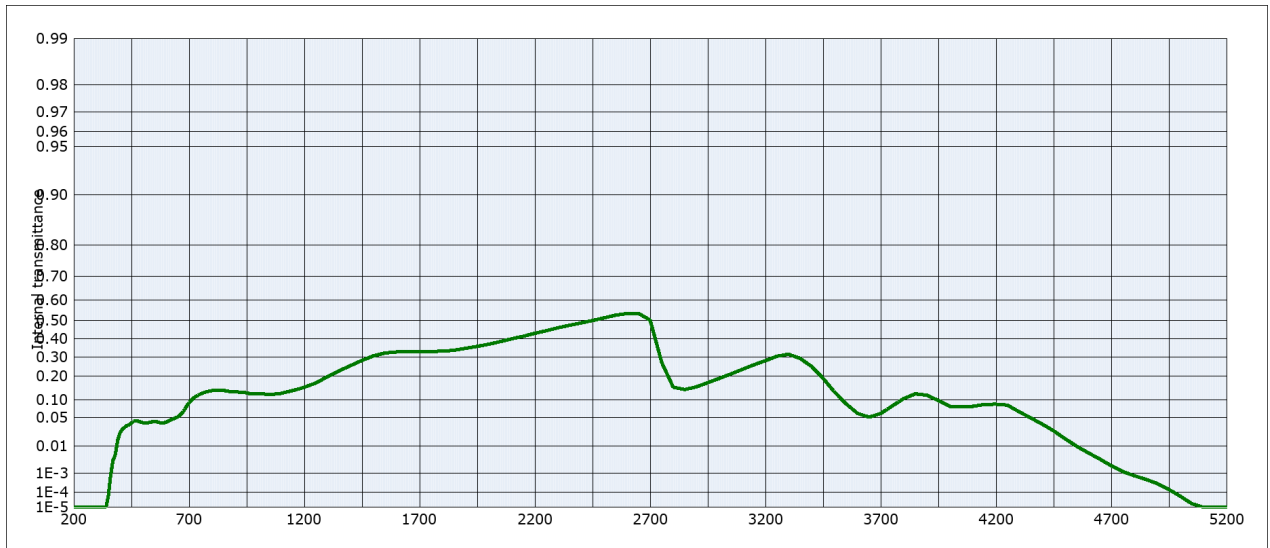


NG9		Density		Notes	
		ρ [g/cm ³]	2.45	Ionically colored glass	
		Bubble content		Neutral density filter	
Reflection factor					
P_d	0.921	Bubble class			
Reference thickness		Chemical Resistance			
d [mm]	1	FR class	1.0		
		SR class	3.2		
		AR class	2.0		
Spectral values guaranteed		Transformation temperature			
τ_i (405nm)	= 0.025 ± 0.01	T_g [°C]	470		
τ_i (546nm)	= 0.04 ± 0.02	Thermal expansion			
τ_i (694nm)	= 0.08 ± 0.02	$\alpha_{30/+70^\circ\text{C}}$ [10 ⁻⁶ /K]	6.4		
		$\alpha_{20/300^\circ\text{C}}$ [10 ⁻⁶ /K]	7.2		
		$\alpha_{20/200^\circ\text{C}}$ [10 ⁻⁶ /K]			
Refractive Index n		Temperature coefficient			
n_d (587.6 nm)	= 1.510	T_K [nm/°C]		All data without 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)			Illuminant	Planck T = 3200 K			Illuminant	D65 (T _C = 6504 K)					
	d [mm]	1	2		3	d [mm]	1		2	3	d [mm]	1	2	3
x														
y														
Y														
λ_d [nm]														
P_e														





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	$4.0 \cdot 10^{-2}$	800	0.136	1100	0.125	2200	0.430	3700	$6.0 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$3.9 \cdot 10^{-2}$	810	0.137	1110	0.127	2250	0.444	3750	$8.1 \cdot 10^{-2}$
220	$< 10^{-5}$	520	$3.9 \cdot 10^{-2}$	820	0.138	1120	0.130	2300	0.460	3800	0.106
230	$< 10^{-5}$	530	$4.0 \cdot 10^{-2}$	830	0.138	1130	0.132	2350	0.473	3850	0.123
240	$< 10^{-5}$	540	$4.1 \cdot 10^{-2}$	840	0.138	1140	0.134	2400	0.486	3900	0.118
250	$< 10^{-5}$	550	$4.2 \cdot 10^{-2}$	850	0.137	1150	0.136	2450	0.498	3950	$9.9 \cdot 10^{-2}$
260	$< 10^{-5}$	560	$4.1 \cdot 10^{-2}$	860	0.135	1160	0.139	2500	0.512	4000	$8.0 \cdot 10^{-2}$
270	$< 10^{-5}$	570	$4.0 \cdot 10^{-2}$	870	0.133	1170	0.141	2550	0.526	4050	$7.8 \cdot 10^{-2}$
280	$< 10^{-5}$	580	$3.9 \cdot 10^{-2}$	880	0.133	1180	0.144	2600	0.534	4100	$8.0 \cdot 10^{-2}$
290	$< 10^{-5}$	590	$3.9 \cdot 10^{-2}$	890	0.132	1190	0.147	2650	0.535	4150	$8.6 \cdot 10^{-2}$
300	$< 10^{-5}$	600	$4.1 \cdot 10^{-2}$	900	0.132	1200	0.150	2700	0.500	4200	$8.6 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$4.3 \cdot 10^{-2}$	910	0.131	1250	0.169	2750	0.271	4250	$8.4 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$4.5 \cdot 10^{-2}$	920	0.129	1300	0.198	2800	0.150	4300	$6.5 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$4.7 \cdot 10^{-2}$	930	0.128	1350	0.227	2850	0.140	4350	$5.0 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$4.9 \cdot 10^{-2}$	940	0.128	1400	0.254	2900	0.151	4400	$3.7 \cdot 10^{-2}$
350	$6.4 \cdot 10^{-5}$	650	$5.2 \cdot 10^{-2}$	950	0.127	1450	0.281	2950	0.170	4450	$2.6 \cdot 10^{-2}$
360	$8.5 \cdot 10^{-4}$	660	$5.5 \cdot 10^{-2}$	960	0.125	1500	0.306	3000	0.190	4500	$1.6 \cdot 10^{-2}$
370	$3.4 \cdot 10^{-3}$	670	$6.2 \cdot 10^{-2}$	970	0.123	1550	0.322	3050	0.211	4550	$1.0 \cdot 10^{-2}$
380	$5.3 \cdot 10^{-3}$	680	$7.0 \cdot 10^{-2}$	980	0.123	1600	0.327	3100	0.235	4600	$6.2 \cdot 10^{-3}$
390	$1.5 \cdot 10^{-2}$	690	$8.1 \cdot 10^{-2}$	990	0.123	1650	0.329	3150	0.258	4650	$3.8 \cdot 10^{-3}$
400	$2.3 \cdot 10^{-2}$	700	$9.1 \cdot 10^{-2}$	1000	0.123	1700	0.330	3200	0.280	4700	$2.1 \cdot 10^{-3}$
410	$2.8 \cdot 10^{-2}$	710	0.100	1010	0.123	1750	0.330	3250	0.304	4750	$1.2 \cdot 10^{-3}$
420	$3.1 \cdot 10^{-2}$	720	0.107	1020	0.123	1800	0.332	3300	0.315	4800	$7.7 \cdot 10^{-4}$
430	$3.4 \cdot 10^{-2}$	730	0.113	1030	0.122	1850	0.337	3350	0.292	4850	$5.2 \cdot 10^{-4}$
440	$3.6 \cdot 10^{-2}$	740	0.119	1040	0.121	1900	0.347	3400	0.250	4900	$3.1 \cdot 10^{-4}$
450	$3.9 \cdot 10^{-2}$	750	0.123	1050	0.121	1950	0.358	3450	0.190	4950	$1.5 \cdot 10^{-4}$
460	$4.3 \cdot 10^{-2}$	760	0.127	1060	0.121	2000	0.370	3500	0.130	5000	$5.8 \cdot 10^{-5}$
470	$4.4 \cdot 10^{-2}$	770	0.130	1070	0.122	2050	0.385	3550	$8.8 \cdot 10^{-2}$	5050	$1.8 \cdot 10^{-5}$
480	$4.2 \cdot 10^{-2}$	780	0.132	1080	0.123	2100	0.400	3600	$6.0 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$4.1 \cdot 10^{-2}$	790	0.134	1090	0.124	2150	0.414	3650	$5.1 \cdot 10^{-2}$	5150	$< 10^{-5}$