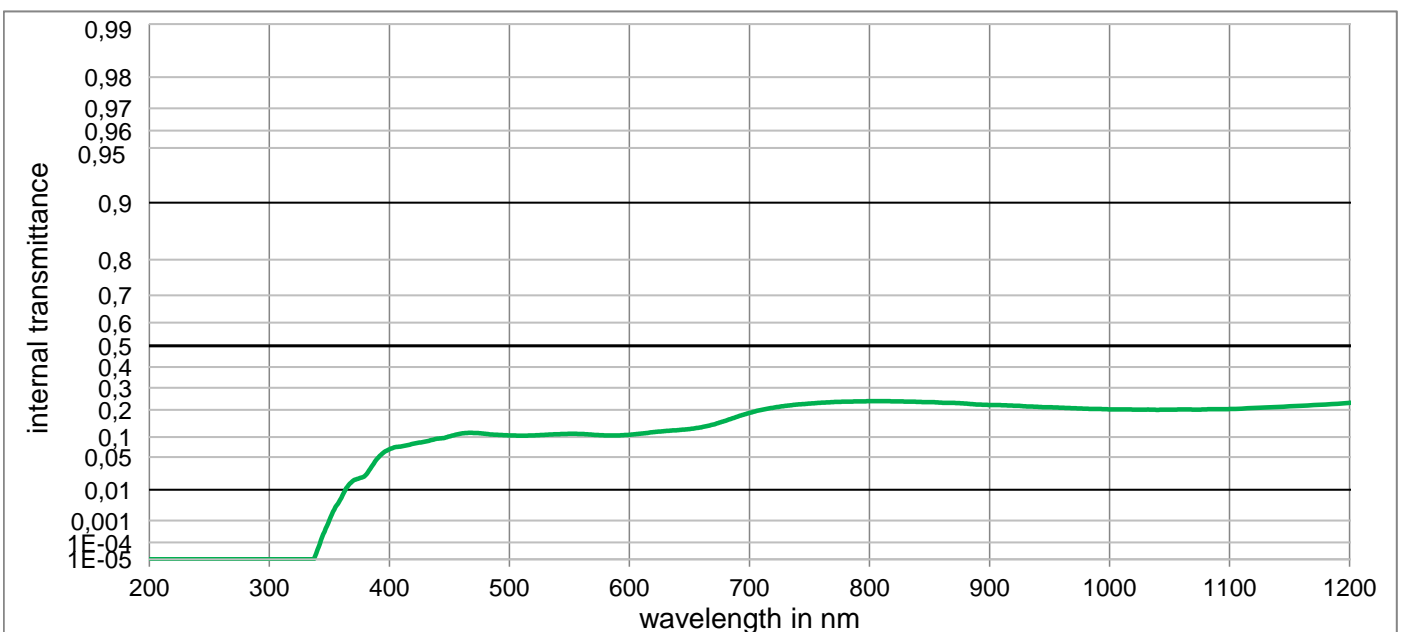
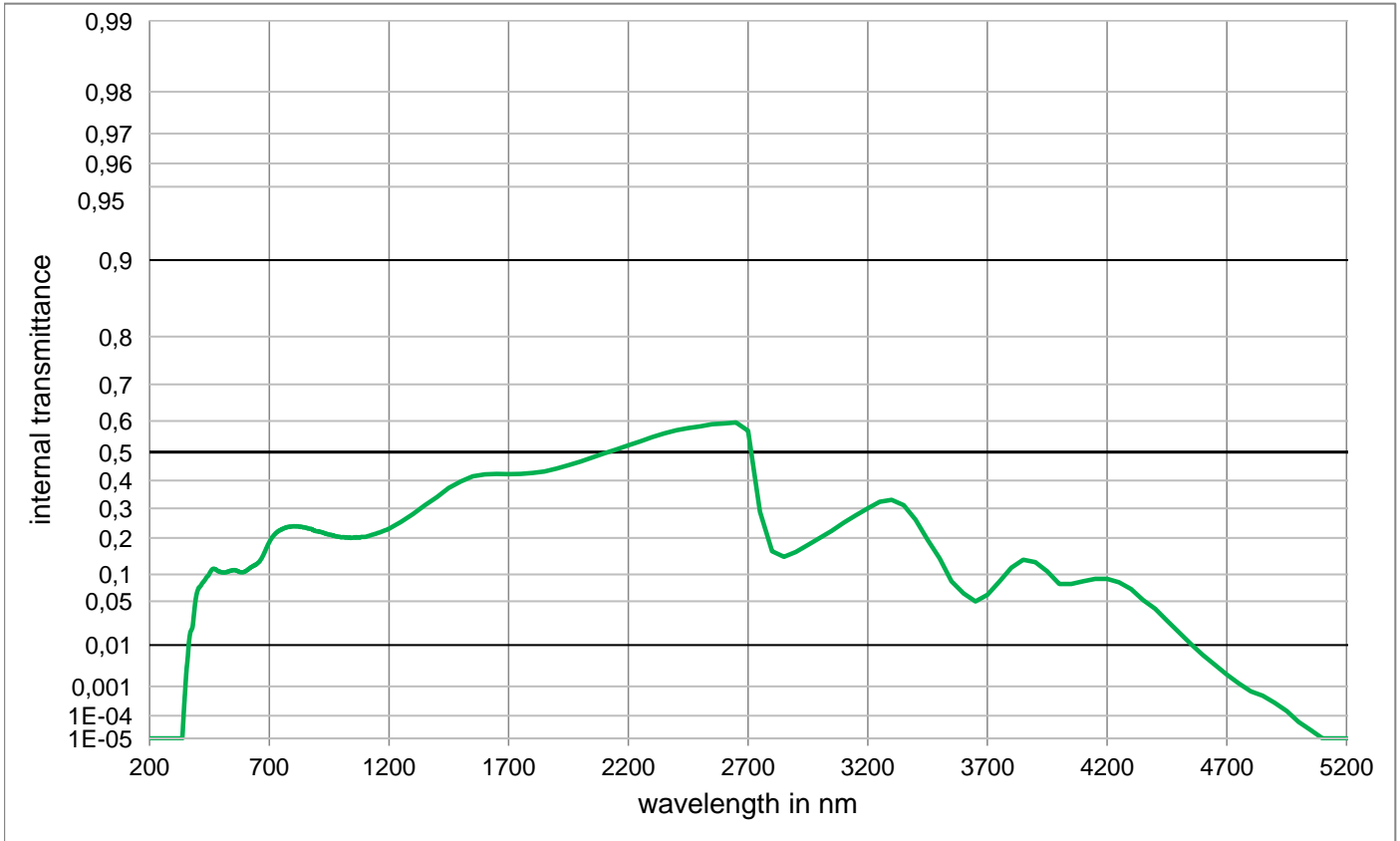


## NG3

Optical properties	Mechanical properties	Colorimetric properties	
<b>Reflection factor</b>	<b>Reference thickness</b>	1 mm    2 mm    3 mm	
$P_d = 0,921$	$d = 1,00 \text{ mm}$	Illuminant D65 x y Y $\lambda_d$ $P_e$	
<b>Spectral values guaranteed</b>	<b>Density</b>		Illuminant A x y Y $\lambda_d$ $P_e$
$\tau_i (405 \text{ nm}) = 0,06 \pm 0,02$	$\rho = 2,44 \text{ g/cm}^3$		
$\tau_i (546 \text{ nm}) = 0,1 \pm 0,02$	<b>Knoop hardness</b>		
$\tau_i (694 \text{ nm}) = 0,17 \pm 0,03$	HK[0.1/20] = 443		
	<b>Thermal properties</b>		
	<b>Transformation temperature</b>		
	$T_g = 462 \text{ }^\circ\text{C}$		
	<b>Thermal expansion in <math>10^{-6}/\text{K}</math></b>		
	$\alpha_{(-30^\circ\text{C}/+70^\circ\text{C})} = 6,5$		
	$\alpha_{(20^\circ\text{C}/300^\circ\text{C})} = 7,3$		
<b>Refractive indices</b>	<b>Chemical properties</b>	<b>Notes</b>	
$n_h (404,7 \text{ nm}) = 1,523$	<b>Chemical resistance</b>		
$n_e (546 \text{ nm}) = 1,509$	FR class = 1	Ionically colored glass	
$n_d (587,6 \text{ nm}) = 1,507$	SR class = 2.2	Neutral density filter	
	AR class = 1		
	<b>Resistance against humidity</b>		
<b>Sellmeier coefficients</b>	Resistant glass	ISO 23364:2021	
valid from 440 nm to 1550 nm	see pocket catalogue "Optical Filter Glass 2024", chapter 5.5		
$B_1 = 0,8995$		<b>Disclaimer</b>	
$B_2 = 0,3364$		All data without tolerances are to be understood to be reference values.	
$B_3 = 32,4433$			
$C_1 = 9,703\text{E-}03 \text{ } \mu\text{m}^2$			
$C_2 = 1,2385\text{E-}02 \text{ } \mu\text{m}^2$			
$C_3 = 4153,754 \text{ } \mu\text{m}^2$			
<b>Internal quality</b>			
Bubble class 2			



## NG3



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

$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$
200	< 1,0E-05	500	1,050E-01	800	2,380E-01	1100	2,034E-01	2200	5,225E-01	3700	6,000E-02
210	< 1,0E-05	510	1,043E-01	810	2,375E-01	1110	2,054E-01	2250	5,360E-01	3750	8,480E-02
220	< 1,0E-05	520	1,050E-01	820	2,370E-01	1120	2,077E-01	2300	5,500E-01	3800	1,156E-01
230	< 1,0E-05	530	1,070E-01	830	2,360E-01	1130	2,100E-01	2350	5,617E-01	3850	1,363E-01
240	< 1,0E-05	540	1,090E-01	840	2,350E-01	1140	2,124E-01	2400	5,711E-01	3900	1,300E-01
250	< 1,0E-05	550	1,100E-01	850	2,340E-01	1150	2,149E-01	2450	5,786E-01	3950	1,068E-01
260	< 1,0E-05	560	1,095E-01	860	2,310E-01	1160	2,175E-01	2500	5,837E-01	4000	8,000E-02
270	< 1,0E-05	570	1,071E-01	870	2,300E-01	1170	2,202E-01	2550	5,900E-01	4050	8,000E-02
280	< 1,0E-05	580	1,050E-01	880	2,270E-01	1180	2,232E-01	2600	5,925E-01	4100	8,511E-02
290	< 1,0E-05	590	1,049E-01	890	2,230E-01	1190	2,263E-01	2650	5,956E-01	4150	9,016E-02
300	< 1,0E-05	600	1,070E-01	900	2,210E-01	1200	2,300E-01	2700	5,700E-01	4200	9,000E-02
310	< 1,0E-05	610	1,110E-01	910	2,200E-01	1250	2,532E-01	2750	2,880E-01	4250	8,318E-02
320	< 1,000E-05	620	1,157E-01	920	2,180E-01	1300	2,800E-01	2800	1,600E-01	4300	7,000E-02
330	< 1,000E-05	630	1,192E-01	930	2,150E-01	1350	3,110E-01	2850	1,439E-01	4350	5,176E-02
340	3,855E-05	640	1,222E-01	940	2,130E-01	1400	3,400E-01	2900	1,574E-01	4400	4,000E-02
350	1,040E-03	650	1,260E-01	950	2,110E-01	1450	3,732E-01	2950	1,784E-01	4450	2,679E-02
360	5,900E-03	660	1,319E-01	960	2,090E-01	1500	3,970E-01	3000	2,000E-01	4500	1,726E-02
370	1,704E-02	670	1,420E-01	970	2,070E-01	1550	4,147E-01	3050	2,224E-01	4550	1,050E-02
380	2,199E-02	680	1,560E-01	980	2,050E-01	1600	4,216E-01	3100	2,500E-01	4600	6,237E-03
390	4,696E-02	690	1,720E-01	990	2,040E-01	1650	4,241E-01	3150	2,752E-01	4650	3,750E-03
400	6,691E-02	700	1,871E-01	1000	2,020E-01	1700	4,230E-01	3200	3,000E-01	4700	2,128E-03
410	7,402E-02	710	2,000E-01	1010	2,022E-01	1750	4,241E-01	3250	3,236E-01	4750	1,222E-03
420	8,105E-02	720	2,094E-01	1020	2,010E-01	1800	4,273E-01	3300	3,300E-01	4800	7,096E-04
430	8,703E-02	730	2,170E-01	1030	2,012E-01	1850	4,325E-01	3350	3,116E-01	4850	5,200E-04
440	9,500E-02	740	2,230E-01	1040	2,000E-01	1900	4,425E-01	3400	2,600E-01	4900	2,985E-04
450	1,019E-01	750	2,270E-01	1050	2,010E-01	1950	4,546E-01	3450	1,948E-01	4950	1,528E-04
460	1,110E-01	760	2,310E-01	1060	2,020E-01	2000	4,674E-01	3500	1,400E-01	5000	5,649E-05
470	1,130E-01	770	2,340E-01	1070	2,010E-01	2050	4,813E-01	3550	8,540E-02	5050	2,518E-05
480	1,100E-01	780	2,360E-01	1080	2,020E-01	2100	4,957E-01	3600	6,220E-02	5100	< 1,000E-05
490	1,070E-01	790	2,370E-01	1090	2,029E-01	2150	5,090E-01	3650	4,960E-02	5150	< 1,000E-05