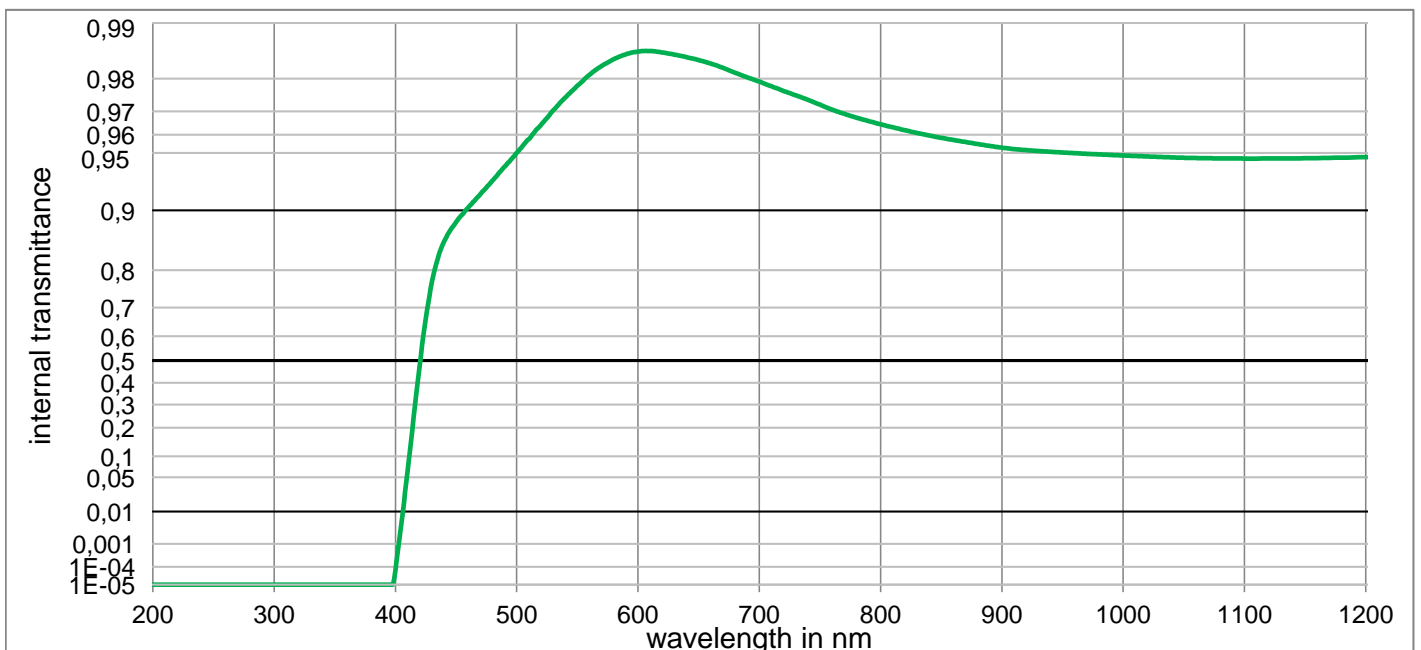
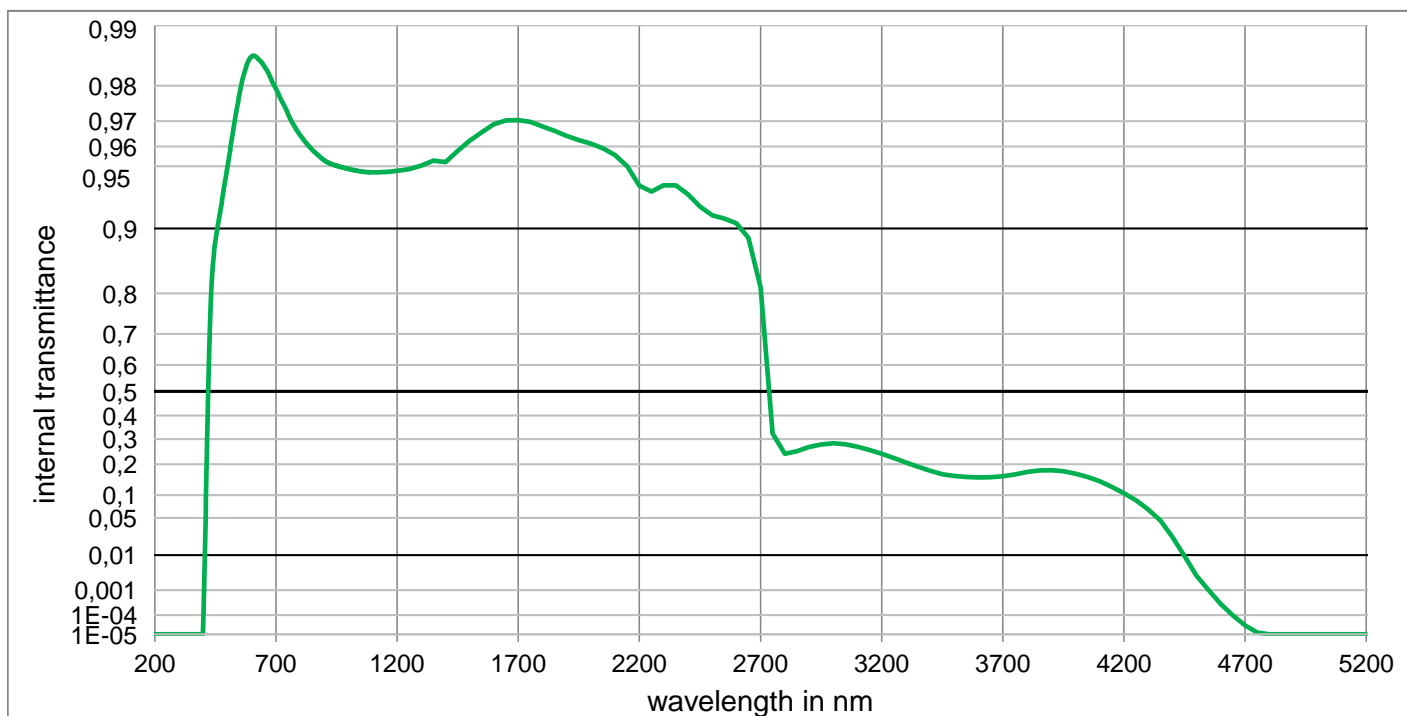


## GG420

Optical properties	Mechanical properties	Colormetric properties																					
<b>Reflection factor</b>	<b>Reference thickness</b>	1 mm      2 mm      3 mm																					
$P_d = 0,918$	$d = 3,00 \text{ mm}$	<table border="1"> <tr> <td rowspan="5">Illuminant D65</td> <td>x</td> <td>0,317</td> <td>0,320</td> <td>0,324</td> </tr> <tr> <td>y</td> <td>0,337</td> <td>0,342</td> <td>0,348</td> </tr> <tr> <td>Y</td> <td>90,9</td> <td>90,1</td> <td>89,2</td> </tr> <tr> <td><math>\lambda_d</math></td> <td>569 nm</td> <td>570 nm</td> <td>570 nm</td> </tr> <tr> <td><math>P_e</math></td> <td>0,033</td> <td>0,059</td> <td>0,082</td> </tr> </table>	Illuminant D65	x	0,317	0,320	0,324	y	0,337	0,342	0,348	Y	90,9	90,1	89,2	$\lambda_d$	569 nm	570 nm	570 nm	$P_e$	0,033	0,059	0,082
Illuminant D65	x			0,317	0,320	0,324																	
	y			0,337	0,342	0,348																	
	Y			90,9	90,1	89,2																	
	$\lambda_d$			569 nm	570 nm	570 nm																	
	$P_e$	0,033	0,059	0,082																			
<b>Spectral values guaranteed (d = 3 mm)</b>	<b>Density</b>	<table border="1"> <tr> <td rowspan="5">Illuminant A</td> <td>x</td> <td>0,450</td> <td>0,453</td> <td>0,455</td> </tr> <tr> <td>y</td> <td>0,410</td> <td>0,412</td> <td>0,414</td> </tr> <tr> <td>Y</td> <td>91,0</td> <td>90,4</td> <td>89,7</td> </tr> <tr> <td><math>\lambda_d</math></td> <td>581 nm</td> <td>581 nm</td> <td>581 nm</td> </tr> <tr> <td><math>P_e</math></td> <td>0,038</td> <td>0,068</td> <td>0,096</td> </tr> </table>	Illuminant A	x	0,450	0,453	0,455	y	0,410	0,412	0,414	Y	91,0	90,4	89,7	$\lambda_d$	581 nm	581 nm	581 nm	$P_e$	0,038	0,068	0,096
Illuminant A	x			0,450	0,453	0,455																	
	y			0,410	0,412	0,414																	
	Y			91,0	90,4	89,7																	
	$\lambda_d$			581 nm	581 nm	581 nm																	
	$P_e$	0,038	0,068	0,096																			
$\lambda_c (\tau_i = 0,5) = 420 \text{ nm} \pm 6 \text{ nm}$	<b>Knoop hardness</b>																						
$\lambda_s (\tau_{i,U} = 1E-05) = 360 \text{ nm}$	$HK_{[0.1/20]} = 503$																						
$\lambda_p (\tau_{i,L} = 0,93) = 530 \text{ nm}$	<b>Thermal properties</b>																						
	<b>Transformation temperature</b>																						
	$T_g = 535 \text{ }^\circ\text{C}$																						
	<b>Thermal expansion in <math>10^{-6}/\text{K}</math></b>																						
	$\alpha_{(-30^\circ\text{C}/+70^\circ\text{C})} = 7,8$																						
	$\alpha_{(20^\circ\text{C}/300^\circ\text{C})} = 9,0$																						
	<b>Temperature coefficient</b>																						
	$Tk = 0,07 \text{ nm/K}$																						
<b>Refractive indices</b>	<b>Chemical properties</b>	<b>Notes</b>																					
$n_d (587,6 \text{ nm}) = 1,52$	<b>Chemical resistance</b>	Stricking glass																					
$n_s (852 \text{ nm}) = 1,52$	FR class = 0	Longpass filter																					
$n_t (1014 \text{ nm}) = 1,51$	SR class = 1																						
	AR class = 1																						
	<b>Resistance against humidity</b>	DIN 58131																					
<b>Sellmeier coefficients</b>	Robust glass																						
on request	see pocket catalogue "Optical Filter Glass 2020", chapter 5.5	<b>Disclaimer</b>																					
		All data without tolerances are to be understood to be reference values.																					
<b>Internal quality</b>																							
Bubble class      3																							



## GG420



**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	9,500E-01	800	9,649E-01	1100	9,465E-01	2200	9,379E-01	3700	1,571E-01
210	< 1,0E-05	510	9,578E-01	810	9,635E-01	1110	9,465E-01	2250	9,336E-01	3750	1,636E-01
220	< 1,0E-05	520	9,645E-01	820	9,622E-01	1120	9,465E-01	2300	9,381E-01	3800	1,720E-01
230	< 1,0E-05	530	9,703E-01	830	9,609E-01	1130	9,465E-01	2350	9,380E-01	3850	1,772E-01
240	< 1,0E-05	540	9,747E-01	840	9,596E-01	1140	9,466E-01	2400	9,317E-01	3900	1,785E-01
250	< 1,0E-05	550	9,781E-01	850	9,585E-01	1150	9,467E-01	2450	9,215E-01	3950	1,744E-01
260	< 1,0E-05	560	9,809E-01	860	9,574E-01	1160	9,468E-01	2500	9,136E-01	4000	1,660E-01
270	< 1,0E-05	570	9,829E-01	870	9,563E-01	1170	9,469E-01	2550	9,104E-01	4050	1,550E-01
280	< 1,0E-05	580	9,843E-01	880	9,552E-01	1180	9,470E-01	2600	9,056E-01	4100	1,410E-01
290	< 1,0E-05	590	9,852E-01	890	9,541E-01	1190	9,472E-01	2650	8,892E-01	4150	1,232E-01
300	< 1,0E-05	600	9,857E-01	900	9,531E-01	1200	9,474E-01	2700	8,120E-01	4200	1,053E-01
310	< 1,0E-05	610	9,858E-01	910	9,523E-01	1250	9,484E-01	2750	3,239E-01	4250	8,629E-02
320	< 1,000E-05	620	9,856E-01	920	9,517E-01	1300	9,504E-01	2800	2,398E-01	4300	6,632E-02
330	< 1,000E-05	630	9,852E-01	930	9,512E-01	1350	9,531E-01	2850	2,500E-01	4350	4,599E-02
340	< 1,000E-05	640	9,847E-01	940	9,507E-01	1400	9,522E-01	2900	2,672E-01	4400	2,394E-02
350	< 1,000E-05	650	9,841E-01	950	9,503E-01	1450	9,580E-01	2950	2,777E-01	4450	9,460E-03
360	< 1,000E-05	660	9,834E-01	960	9,499E-01	1500	9,626E-01	3000	2,832E-01	4500	2,866E-03
370	< 1,000E-05	670	9,825E-01	970	9,495E-01	1550	9,660E-01	3050	2,786E-01	4550	9,830E-04
380	< 1,000E-05	680	9,814E-01	980	9,491E-01	1600	9,690E-01	3100	2,687E-01	4600	3,006E-04
390	< 1,000E-05	690	9,803E-01	990	9,488E-01	1650	9,703E-01	3150	2,553E-01	4650	9,550E-05
400	7,048E-05	700	9,792E-01	1000	9,484E-01	1700	9,704E-01	3200	2,405E-01	4700	3,112E-05
410	6,112E-02	710	9,780E-01	1010	9,481E-01	1750	9,697E-01	3250	2,235E-01	4750	1,250E-05
420	4,792E-01	720	9,767E-01	1020	9,478E-01	1800	9,682E-01	3300	2,064E-01	4800	< 1,000E-05
430	7,703E-01	730	9,754E-01	1030	9,475E-01	1850	9,665E-01	3350	1,911E-01	4850	< 1,000E-05
440	8,551E-01	740	9,740E-01	1040	9,472E-01	1900	9,646E-01	3400	1,760E-01	4900	< 1,000E-05
450	8,849E-01	750	9,724E-01	1050	9,470E-01	1950	9,628E-01	3450	1,639E-01	4950	< 1,000E-05
460	9,032E-01	760	9,706E-01	1060	9,468E-01	2000	9,612E-01	3500	1,578E-01	5000	< 1,000E-05
470	9,176E-01	770	9,691E-01	1070	9,467E-01	2050	9,591E-01	3550	1,551E-01	5050	< 1,000E-05
480	9,300E-01	780	9,676E-01	1080	9,466E-01	2100	9,559E-01	3600	1,535E-01	5100	< 1,000E-05
490	9,409E-01	790	9,662E-01	1090	9,465E-01	2150	9,500E-01	3650	1,540E-01	5150	< 1,000E-05