

# Data Sheet



## NG4

Reflection factor	
$P_d$	0.921

Reference thickness	
d [mm]	1

Spectral values guaranteed		
$\tau_i$ (405nm)	=	0.27 ± 0.03
$\tau_i$ (546nm)	=	0.31 ± 0.03
$\tau_i$ (694nm)	=	0.39 ± 0.04

Refractive Index n
$n_d$ (587.6 nm) = 1.510

Density	
$\rho$ [g/cm <sup>3</sup> ]	2.43

Bubble content	
Bubble class	2

Chemical Resistance	
FR class	1.0
SR class	2.2
AR class	1.0

Transformation temperature	
T <sub>g</sub> [°C]	483

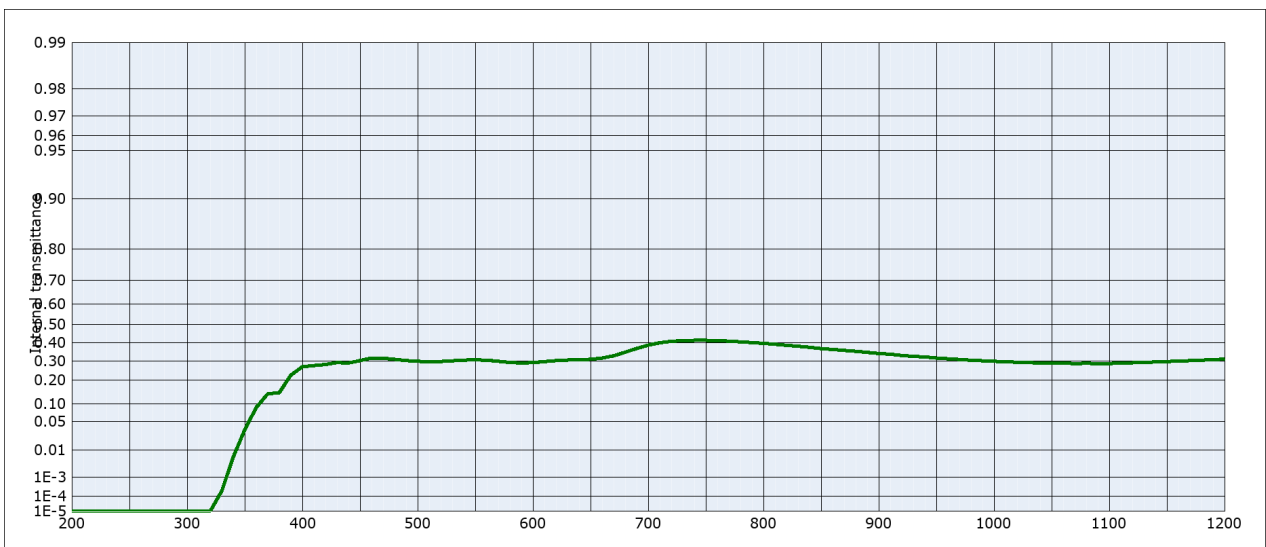
Thermal expansion	
$\alpha_{30/+70^\circ\text{C}}$ [10 <sup>-6</sup> /K]	6.7
$\alpha_{20/300^\circ\text{C}}$ [10 <sup>-6</sup> /K]	7.2
$\alpha_{20/200^\circ\text{C}}$ [10 <sup>-6</sup> /K]	

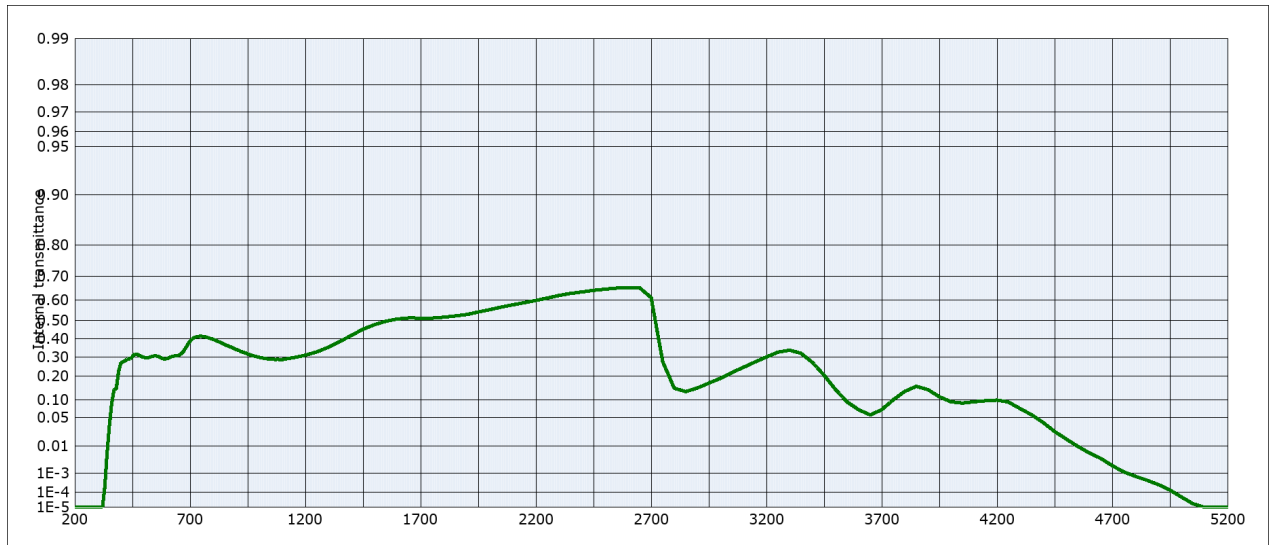
Temperature coefficient	
T <sub>K</sub> [nm/°C]	

Notes
Ionically colored glass
Neutral density filter

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 <sub>C</sub> = 6504 K)			
	d [mm]	1	2		3	d [mm]	1		2	3	d [mm]	1
x				x				x				
y				y				y				
Y				Y				Y				
$\lambda_d$ [nm]				$\lambda_d$ [nm]				$\lambda_d$ [nm]				
P <sub>e</sub>				P <sub>e</sub>				P <sub>e</sub>				





**Internal transmittance  $\tau_i$  at reference thickness  $d = 1$  mm**  
**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	$< 10^{-5}$	500	0.298	800	0.397	1100	0.286	2200	0.597	3700	$7.0 \cdot 10^{-2}$
210	$< 10^{-5}$	510	0.296	810	0.392	1110	0.288	2250	0.608	3750	0.101
220	$< 10^{-5}$	520	0.297	820	0.386	1120	0.290	2300	0.620	3800	0.133
230	$< 10^{-5}$	530	0.301	830	0.381	1130	0.292	2350	0.629	3850	0.154
240	$< 10^{-5}$	540	0.305	840	0.375	1140	0.295	2400	0.636	3900	0.140
250	$< 10^{-5}$	550	0.306	850	0.368	1150	0.297	2450	0.642	3950	0.112
260	$< 10^{-5}$	560	0.304	860	0.363	1160	0.299	2500	0.647	4000	$9.4 \cdot 10^{-2}$
270	$< 10^{-5}$	570	0.298	870	0.358	1170	0.302	2550	0.652	4050	$9.0 \cdot 10^{-2}$
280	$< 10^{-5}$	580	0.292	880	0.353	1180	0.304	2600	0.654	4100	$9.4 \cdot 10^{-2}$
290	$< 10^{-5}$	590	0.289	890	0.347	1190	0.307	2650	0.653	4150	$9.8 \cdot 10^{-2}$
300	$< 10^{-5}$	600	0.291	900	0.341	1200	0.310	2700	0.610	4200	0.100
310	$< 10^{-5}$	610	0.297	910	0.337	1250	0.328	2750	0.275	4250	$9.3 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.302	920	0.330	1300	0.353	2800	0.146	4300	$7.3 \cdot 10^{-2}$
330	$2.0 \cdot 10^{-4}$	630	0.305	930	0.325	1350	0.386	2850	0.132	4350	$5.7 \cdot 10^{-2}$
340	$6.0 \cdot 10^{-3}$	640	0.307	940	0.322	1400	0.419	2900	0.147	4400	$4.0 \cdot 10^{-2}$
350	$3.4 \cdot 10^{-2}$	650	0.309	950	0.316	1450	0.452	2950	0.168	4450	$2.5 \cdot 10^{-2}$
360	$8.9 \cdot 10^{-2}$	660	0.316	960	0.312	1500	0.476	3000	0.190	4500	$1.6 \cdot 10^{-2}$
370	0.139	670	0.328	970	0.308	1550	0.495	3050	0.218	4550	$1.0 \cdot 10^{-2}$
380	0.144	680	0.348	980	0.304	1600	0.507	3100	0.245	4600	$6.2 \cdot 10^{-3}$
390	0.225	690	0.369	990	0.301	1650	0.512	3150	0.273	4650	$4.0 \cdot 10^{-3}$
400	0.269	700	0.387	1000	0.298	1700	0.511	3200	0.300	4700	$2.1 \cdot 10^{-3}$
410	0.275	710	0.400	1010	0.296	1750	0.511	3250	0.326	4750	$1.2 \cdot 10^{-3}$
420	0.281	720	0.408	1020	0.293	1800	0.515	3300	0.337	4800	$7.3 \cdot 10^{-4}$
430	0.291	730	0.412	1030	0.291	1850	0.522	3350	0.320	4850	$4.7 \cdot 10^{-4}$
440	0.289	740	0.413	1040	0.289	1900	0.529	3400	0.270	4900	$2.8 \cdot 10^{-4}$
450	0.302	750	0.414	1050	0.288	1950	0.542	3450	0.205	4950	$1.4 \cdot 10^{-4}$
460	0.316	760	0.412	1060	0.288	2000	0.553	3500	0.140	5000	$5.2 \cdot 10^{-5}$
470	0.315	770	0.409	1070	0.286	2050	0.566	3550	$9.4 \cdot 10^{-2}$	5050	$1.8 \cdot 10^{-5}$
480	0.309	780	0.405	1080	0.287	2100	0.577	3600	$7.0 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	0.302	790	0.401	1090	0.286	2150	0.587	3650	$5.6 \cdot 10^{-2}$	5150	$< 10^{-5}$