

Фильтры длинных волн WG, GG, OG, RG

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
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Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
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Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
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Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
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Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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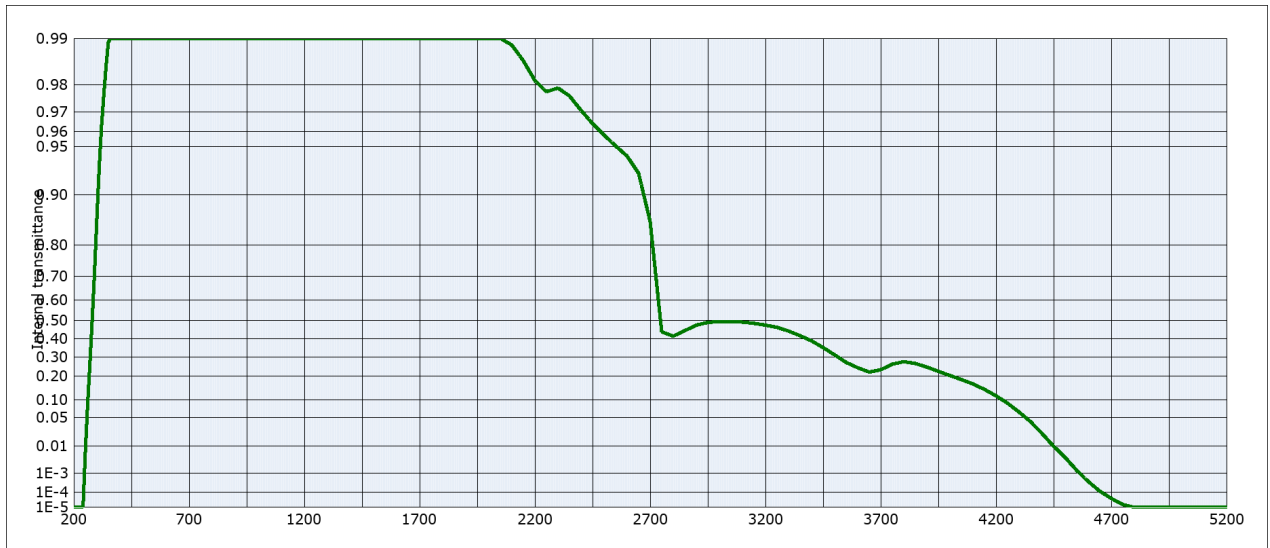
Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

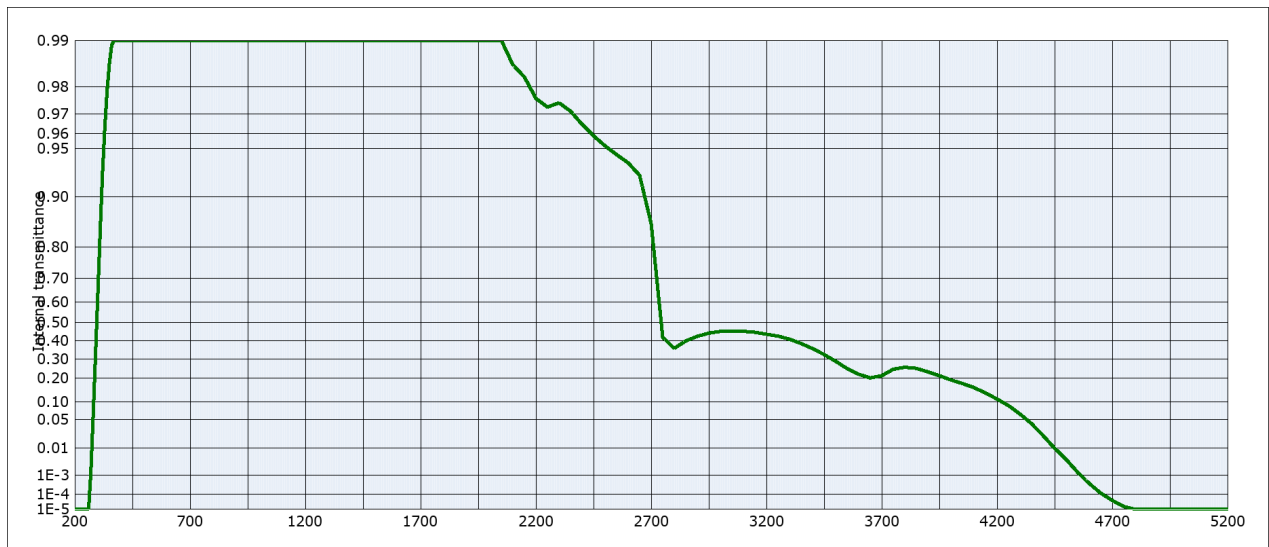
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эл.почта: sqh@nt-rt.ru || сайт: <https://schott.nt-rt.ru/>



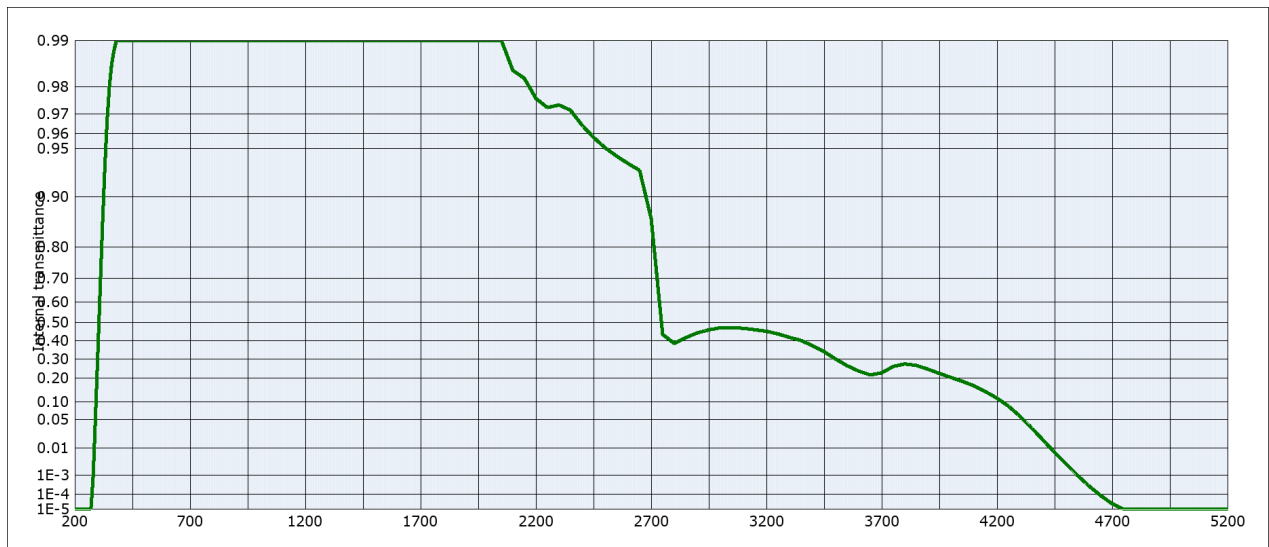
Internal transmittance τ_i at reference thickness $d = 2$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

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	0.997	800	1.000	1100	1.000	2200	0.981	3700	0.233
210	$< 10^{-5}$	510	0.998	810	1.000	1110	1.000	2250	0.978	3750	0.261
220	$< 10^{-5}$	520	0.998	820	1.000	1120	1.000	2300	0.979	3800	0.275
230	$< 10^{-5}$	530	0.998	830	1.000	1130	1.000	2350	0.976	3850	0.265
240	$< 10^{-5}$	540	0.998	840	1.000	1140	1.000	2400	0.971	3900	0.246
250	$6.6 \cdot 10^{-3}$	550	0.998	850	1.000	1150	1.000	2450	0.964	3950	0.225
260	$8.6 \cdot 10^{-2}$	560	0.998	860	1.000	1160	1.000	2500	0.958	4000	0.204
270	0.268	570	0.999	870	1.000	1170	1.000	2550	0.951	4050	0.184
280	0.505	580	0.999	880	1.000	1180	1.000	2600	0.943	4100	0.165
290	0.716	590	0.999	890	1.000	1190	1.000	2650	0.926	4150	0.141
300	0.861	600	0.999	900	1.000	1200	1.000	2700	0.854	4200	0.116
310	0.932	610	0.999	910	1.000	1250	1.000	2750	0.438	4250	$9.0 \cdot 10^{-2}$
320	0.963	620	0.999	920	1.000	1300	1.000	2800	0.415	4300	$6.4 \cdot 10^{-2}$
330	0.977	630	0.999	930	1.000	1350	1.000	2850	0.444	4350	$4.1 \cdot 10^{-2}$
340	0.985	640	1.000	940	1.000	1400	0.999	2900	0.474	4400	$2.2 \cdot 10^{-2}$
350	0.989	650	1.000	950	1.000	1450	1.000	2950	0.488	4450	$1.0 \cdot 10^{-2}$
360	0.992	660	1.000	960	1.000	1500	1.000	3000	0.493	4500	$4.3 \cdot 10^{-3}$
370	0.993	670	1.000	970	1.000	1550	1.000	3050	0.493	4550	$1.4 \cdot 10^{-3}$
380	0.994	680	1.000	980	1.000	1600	1.000	3100	0.490	4600	$4.1 \cdot 10^{-4}$
390	0.994	690	1.000	990	1.000	1650	1.000	3150	0.484	4650	$1.2 \cdot 10^{-4}$
400	0.995	700	1.000	1000	1.000	1700	1.000	3200	0.474	4700	$4.2 \cdot 10^{-5}$
410	0.995	710	1.000	1010	1.000	1750	1.000	3250	0.462	4750	$1.6 \cdot 10^{-5}$
420	0.995	720	1.000	1020	1.000	1800	1.000	3300	0.442	4800	$< 10^{-5}$
430	0.996	730	1.000	1030	1.000	1850	0.999	3350	0.417	4850	$< 10^{-5}$
440	0.996	740	1.000	1040	1.000	1900	0.998	3400	0.389	4900	$< 10^{-5}$
450	0.996	750	1.000	1050	1.000	1950	0.997	3450	0.352	4950	$< 10^{-5}$
460	0.996	760	1.000	1060	1.000	2000	0.996	3500	0.311	5000	$< 10^{-5}$
470	0.997	770	1.000	1070	1.000	2050	0.994	3550	0.271	5050	$< 10^{-5}$
480	0.997	780	1.000	1080	1.000	2100	0.989	3600	0.243	5100	$< 10^{-5}$
490	0.997	790	1.000	1090	1.000	2150	0.986	3650	0.221	5150	$< 10^{-5}$



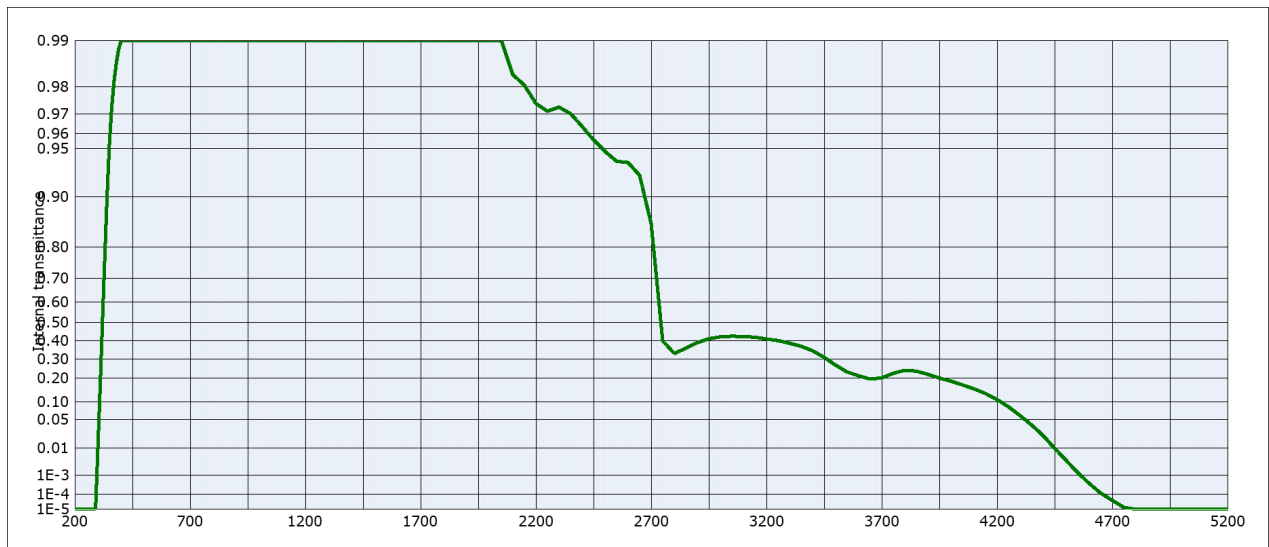
Internal transmittance τ_i at reference thickness $d = 2$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

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	0.997	800	1.000	1100	1.000	2200	0.976	3700	0.213
210	$< 10^{-5}$	510	0.997	810	1.000	1110	1.000	2250	0.973	3750	0.245
220	$< 10^{-5}$	520	0.997	820	1.000	1120	1.000	2300	0.975	3800	0.256
230	$< 10^{-5}$	530	0.997	830	1.000	1130	1.000	2350	0.971	3850	0.250
240	$< 10^{-5}$	540	0.997	840	1.000	1140	1.000	2400	0.965	3900	0.232
250	$< 10^{-5}$	550	0.998	850	1.000	1150	1.000	2450	0.959	3950	0.213
260	$< 10^{-5}$	560	0.998	860	1.000	1160	1.000	2500	0.952	4000	0.192
270	$1.6 \cdot 10^{-3}$	570	0.998	870	1.000	1170	1.000	2550	0.946	4050	0.175
280	$6.4 \cdot 10^{-2}$	580	0.998	880	1.000	1180	1.000	2600	0.939	4100	0.157
290	0.326	590	0.998	890	1.000	1190	1.000	2650	0.926	4150	0.134
300	0.639	600	0.998	900	1.000	1200	1.000	2700	0.854	4200	0.111
310	0.837	610	0.998	910	1.000	1250	1.000	2750	0.420	4250	$8.8 \cdot 10^{-2}$
320	0.928	620	0.999	920	1.000	1300	1.000	2800	0.358	4300	$6.4 \cdot 10^{-2}$
330	0.963	630	0.999	930	1.000	1350	1.000	2850	0.399	4350	$4.1 \cdot 10^{-2}$
340	0.979	640	0.999	940	1.000	1400	0.999	2900	0.424	4400	$2.2 \cdot 10^{-2}$
350	0.986	650	0.999	950	1.000	1450	1.000	2950	0.442	4450	$1.0 \cdot 10^{-2}$
360	0.989	660	0.999	960	1.000	1500	1.000	3000	0.451	4500	$4.3 \cdot 10^{-3}$
370	0.991	670	0.999	970	1.000	1550	1.000	3050	0.454	4550	$1.4 \cdot 10^{-3}$
380	0.992	680	0.999	980	1.000	1600	1.000	3100	0.452	4600	$4.1 \cdot 10^{-4}$
390	0.993	690	0.999	990	1.000	1650	1.000	3150	0.447	4650	$1.2 \cdot 10^{-4}$
400	0.993	700	1.000	1000	1.000	1700	1.000	3200	0.436	4700	$4.2 \cdot 10^{-5}$
410	0.994	710	1.000	1010	1.000	1750	1.000	3250	0.426	4750	$1.6 \cdot 10^{-5}$
420	0.994	720	1.000	1020	1.000	1800	0.999	3300	0.409	4800	$< 10^{-5}$
430	0.995	730	1.000	1030	1.000	1850	0.998	3350	0.385	4850	$< 10^{-5}$
440	0.995	740	1.000	1040	1.000	1900	0.996	3400	0.357	4900	$< 10^{-5}$
450	0.995	750	1.000	1050	1.000	1950	0.995	3450	0.324	4950	$< 10^{-5}$
460	0.995	760	1.000	1060	1.000	2000	0.993	3500	0.288	5000	$< 10^{-5}$
470	0.996	770	1.000	1070	1.000	2050	0.991	3550	0.249	5050	$< 10^{-5}$
480	0.996	780	1.000	1080	1.000	2100	0.986	3600	0.220	5100	$< 10^{-5}$
490	0.996	790	1.000	1090	1.000	2150	0.983	3650	0.202	5150	$< 10^{-5}$



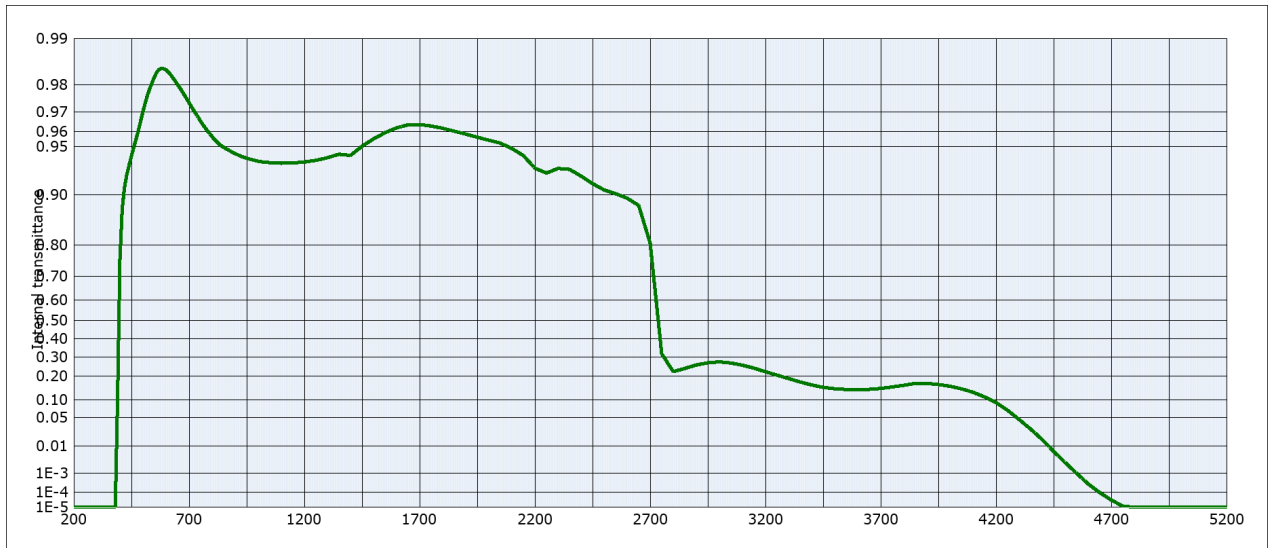
Internal transmittance τ_i at reference thickness $d = 2$ mm
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λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i
200	$< 10^{-5}$	500	0.995	800	0.999	1100	1.000	2200	0.976	3700	0.227
210	$< 10^{-5}$	510	0.995	810	0.999	1110	1.000	2250	0.973	3750	0.260
220	$< 10^{-5}$	520	0.995	820	0.999	1120	1.000	2300	0.974	3800	0.273
230	$< 10^{-5}$	530	0.996	830	0.999	1130	1.000	2350	0.972	3850	0.266
240	$< 10^{-5}$	540	0.996	840	0.999	1140	1.000	2400	0.965	3900	0.246
250	$< 10^{-5}$	550	0.996	850	0.999	1150	1.000	2450	0.958	3950	0.224
260	$< 10^{-5}$	560	0.996	860	0.999	1160	1.000	2500	0.951	4000	0.204
270	$< 10^{-5}$	570	0.996	870	0.999	1170	1.000	2550	0.944	4050	0.185
280	$1.0 \cdot 10^{-3}$	580	0.997	880	0.999	1180	1.000	2600	0.938	4100	0.165
290	$6.2 \cdot 10^{-2}$	590	0.997	890	0.999	1190	1.000	2650	0.932	4150	0.140
300	0.335	600	0.997	900	0.999	1200	1.000	2700	0.864	4200	0.114
310	0.660	610	0.997	910	0.999	1250	1.000	2750	0.434	4250	$8.7 \cdot 10^{-2}$
320	0.851	620	0.997	920	0.999	1300	1.000	2800	0.386	4300	$5.8 \cdot 10^{-2}$
330	0.933	630	0.997	930	0.999	1350	1.000	2850	0.417	4350	$3.4 \cdot 10^{-2}$
340	0.967	640	0.997	940	0.999	1400	0.997	2900	0.443	4400	$1.7 \cdot 10^{-2}$
350	0.980	650	0.997	950	1.000	1450	0.999	2950	0.459	4450	$7.4 \cdot 10^{-3}$
360	0.986	660	0.998	960	1.000	1500	1.000	3000	0.471	4500	$2.9 \cdot 10^{-3}$
370	0.988	670	0.998	970	1.000	1550	1.000	3050	0.471	4550	$9.6 \cdot 10^{-4}$
380	0.990	680	0.998	980	1.000	1600	1.000	3100	0.468	4600	$2.9 \cdot 10^{-4}$
390	0.991	690	0.998	990	1.000	1650	1.000	3150	0.460	4650	$8.5 \cdot 10^{-5}$
400	0.991	700	0.998	1000	1.000	1700	0.999	3200	0.452	4700	$2.5 \cdot 10^{-5}$
410	0.992	710	0.998	1010	1.000	1750	0.998	3250	0.438	4750	$< 10^{-5}$
420	0.992	720	0.998	1020	1.000	1800	0.997	3300	0.419	4800	$< 10^{-5}$
430	0.993	730	0.998	1030	1.000	1850	0.996	3350	0.402	4850	$< 10^{-5}$
440	0.993	740	0.998	1040	1.000	1900	0.994	3400	0.372	4900	$< 10^{-5}$
450	0.993	750	0.998	1050	1.000	1950	0.993	3450	0.340	4950	$< 10^{-5}$
460	0.994	760	0.998	1060	1.000	2000	0.992	3500	0.300	5000	$< 10^{-5}$
470	0.994	770	0.998	1070	1.000	2050	0.990	3550	0.264	5050	$< 10^{-5}$
480	0.994	780	0.999	1080	1.000	2100	0.984	3600	0.236	5100	$< 10^{-5}$
490	0.995	790	0.999	1090	1.000	2150	0.982	3650	0.216	5150	$< 10^{-5}$



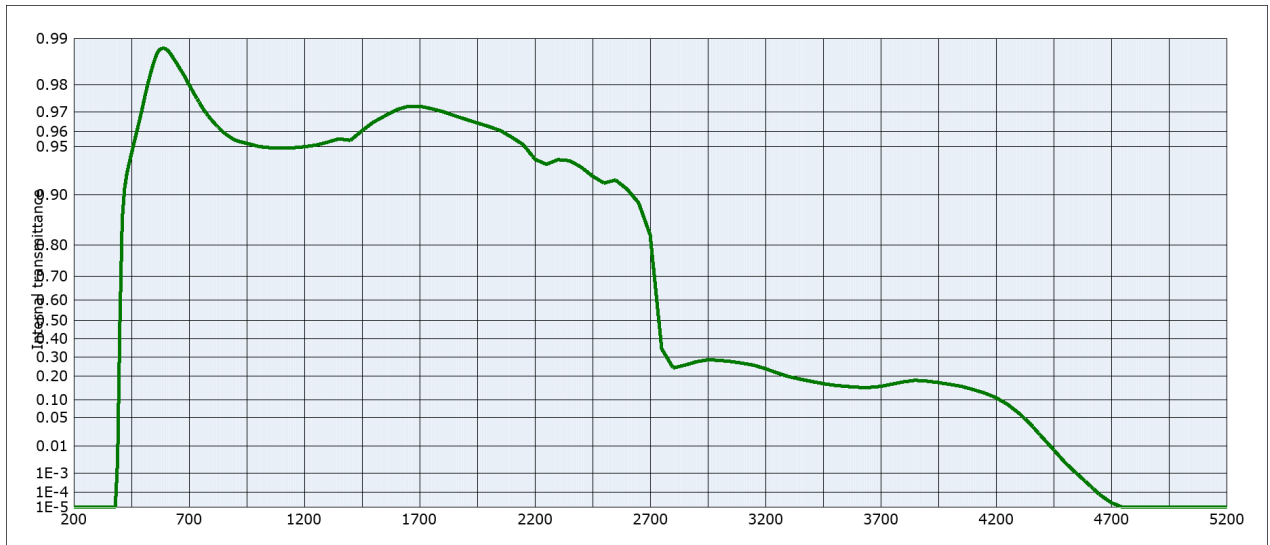
Internal transmittance τ_i at reference thickness $d = 2$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

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	0.994	800	0.998	1100	1.000	2200	0.974	3700	0.202
210	$< 10^{-5}$	510	0.994	810	0.998	1110	1.000	2250	0.971	3750	0.225
220	$< 10^{-5}$	520	0.995	820	0.998	1120	1.000	2300	0.973	3800	0.240
230	$< 10^{-5}$	530	0.995	830	0.999	1130	1.000	2350	0.970	3850	0.236
240	$< 10^{-5}$	540	0.995	840	0.999	1140	1.000	2400	0.964	3900	0.220
250	$< 10^{-5}$	550	0.995	850	0.999	1150	1.000	2450	0.956	3950	0.201
260	$< 10^{-5}$	560	0.996	860	0.999	1160	1.000	2500	0.948	4000	0.186
270	$< 10^{-5}$	570	0.996	870	0.999	1170	1.000	2550	0.940	4050	0.169
280	$< 10^{-5}$	580	0.996	880	0.999	1180	1.000	2600	0.939	4100	0.152
290	$< 10^{-5}$	590	0.996	890	0.999	1190	1.000	2650	0.926	4150	0.132
300	$9.6 \cdot 10^{-3}$	600	0.996	900	0.999	1200	1.000	2700	0.854	4200	0.109
310	0.161	610	0.996	910	0.999	1250	1.000	2750	0.400	4250	$8.4 \cdot 10^{-2}$
320	0.507	620	0.997	920	0.999	1300	1.000	2800	0.330	4300	$6.0 \cdot 10^{-2}$
330	0.770	630	0.997	930	0.999	1350	1.000	2850	0.359	4350	$3.9 \cdot 10^{-2}$
340	0.901	640	0.997	940	0.999	1400	0.998	2900	0.390	4400	$2.2 \cdot 10^{-2}$
350	0.953	650	0.997	950	0.999	1450	1.000	2950	0.411	4450	$1.0 \cdot 10^{-2}$
360	0.973	660	0.997	960	0.999	1500	1.000	3000	0.422	4500	$4.0 \cdot 10^{-3}$
370	0.981	670	0.997	970	0.999	1550	1.000	3050	0.425	4550	$1.3 \cdot 10^{-3}$
380	0.986	680	0.997	980	0.999	1600	1.000	3100	0.424	4600	$4.1 \cdot 10^{-4}$
390	0.989	690	0.997	990	0.999	1650	1.000	3150	0.419	4650	$1.2 \cdot 10^{-4}$
400	0.990	700	0.997	1000	0.999	1700	1.000	3200	0.410	4700	$4.2 \cdot 10^{-5}$
410	0.991	710	0.998	1010	0.999	1750	0.999	3250	0.401	4750	$1.4 \cdot 10^{-5}$
420	0.991	720	0.998	1020	0.999	1800	0.998	3300	0.386	4800	$< 10^{-5}$
430	0.992	730	0.998	1030	0.999	1850	0.997	3350	0.370	4850	$< 10^{-5}$
440	0.992	740	0.998	1040	1.000	1900	0.996	3400	0.345	4900	$< 10^{-5}$
450	0.992	750	0.998	1050	1.000	1950	0.994	3450	0.309	4950	$< 10^{-5}$
460	0.993	760	0.998	1060	1.000	2000	0.993	3500	0.267	5000	$< 10^{-5}$
470	0.993	770	0.998	1070	1.000	2050	0.990	3550	0.231	5050	$< 10^{-5}$
480	0.993	780	0.998	1080	1.000	2100	0.983	3600	0.212	5100	$< 10^{-5}$
490	0.994	790	0.998	1090	1.000	2150	0.980	3650	0.196	5150	$< 10^{-5}$



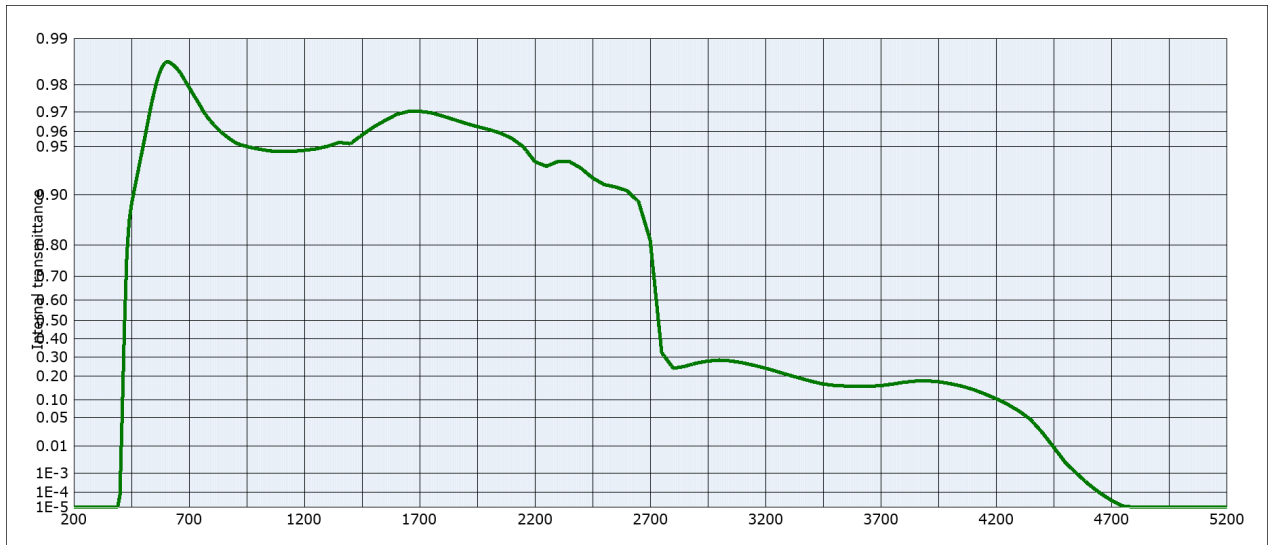
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	0.970	800	0.957	1100	0.937	2200	0.932	3700	0.145
210	$< 10^{-5}$	510	0.974	810	0.955	1110	0.937	2250	0.927	3750	0.151
220	$< 10^{-5}$	520	0.977	820	0.954	1120	0.937	2300	0.931	3800	0.158
230	$< 10^{-5}$	530	0.979	830	0.952	1130	0.937	2350	0.931	3850	0.167
240	$< 10^{-5}$	540	0.981	840	0.951	1140	0.937	2400	0.924	3900	0.167
250	$< 10^{-5}$	550	0.982	850	0.950	1150	0.937	2450	0.915	3950	0.162
260	$< 10^{-5}$	560	0.983	860	0.949	1160	0.937	2500	0.907	4000	0.154
270	$< 10^{-5}$	570	0.984	870	0.948	1170	0.937	2550	0.901	4050	0.143
280	$< 10^{-5}$	580	0.984	880	0.947	1180	0.937	2600	0.895	4100	0.130
290	$< 10^{-5}$	590	0.984	890	0.946	1190	0.937	2650	0.884	4150	0.112
300	$< 10^{-5}$	600	0.984	900	0.945	1200	0.938	2700	0.804	4200	$9.2 \cdot 10^{-2}$
310	$< 10^{-5}$	610	0.983	910	0.944	1250	0.939	2750	0.318	4250	$6.8 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.983	920	0.943	1300	0.941	2800	0.223	4300	$4.6 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.982	930	0.942	1350	0.944	2850	0.239	4350	$2.9 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.981	940	0.942	1400	0.943	2900	0.257	4400	$1.6 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.980	950	0.941	1450	0.950	2950	0.269	4450	$6.9 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.979	960	0.940	1500	0.955	3000	0.274	4500	$2.8 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.978	970	0.940	1550	0.959	3050	0.268	4550	$9.9 \cdot 10^{-4}$
380	$< 10^{-5}$	680	0.977	980	0.939	1600	0.962	3100	0.256	4600	$3.0 \cdot 10^{-4}$
390	0.113	690	0.975	990	0.939	1650	0.964	3150	0.241	4650	$9.9 \cdot 10^{-5}$
400	0.757	700	0.974	1000	0.938	1700	0.964	3200	0.222	4700	$3.3 \cdot 10^{-5}$
410	0.878	710	0.972	1010	0.938	1750	0.963	3250	0.205	4750	$1.2 \cdot 10^{-5}$
420	0.910	720	0.971	1020	0.938	1800	0.962	3300	0.189	4800	$< 10^{-5}$
430	0.925	730	0.969	1030	0.937	1850	0.960	3350	0.173	4850	$< 10^{-5}$
440	0.935	740	0.967	1040	0.937	1900	0.959	3400	0.160	4900	$< 10^{-5}$
450	0.943	750	0.966	1050	0.937	1950	0.957	3450	0.149	4950	$< 10^{-5}$
460	0.950	760	0.964	1060	0.937	2000	0.955	3500	0.144	5000	$< 10^{-5}$
470	0.955	770	0.962	1070	0.937	2050	0.953	3550	0.141	5050	$< 10^{-5}$
480	0.961	780	0.960	1080	0.937	2100	0.949	3600	0.140	5100	$< 10^{-5}$
490	0.966	790	0.959	1090	0.937	2150	0.943	3650	0.141	5150	$< 10^{-5}$



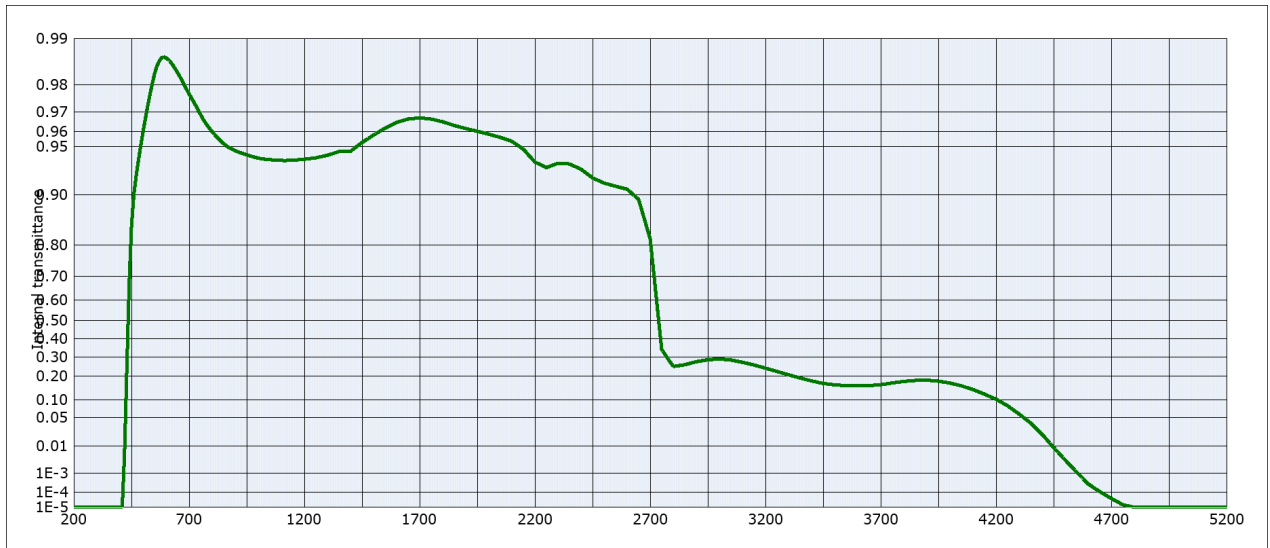
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	0.973	800	0.966	1100	0.949	2200	0.940	3700	0.154
210	$< 10^{-5}$	510	0.977	810	0.965	1110	0.949	2250	0.935	3750	0.164
220	$< 10^{-5}$	520	0.980	820	0.963	1120	0.949	2300	0.940	3800	0.174
230	$< 10^{-5}$	530	0.982	830	0.962	1130	0.949	2350	0.939	3850	0.181
240	$< 10^{-5}$	540	0.985	840	0.961	1140	0.949	2400	0.933	3900	0.177
250	$< 10^{-5}$	550	0.986	850	0.959	1150	0.949	2450	0.923	3950	0.170
260	$< 10^{-5}$	560	0.987	860	0.958	1160	0.949	2500	0.915	4000	0.163
270	$< 10^{-5}$	570	0.988	870	0.957	1170	0.950	2550	0.919	4050	0.154
280	$< 10^{-5}$	580	0.988	880	0.956	1180	0.950	2600	0.908	4100	0.140
290	$< 10^{-5}$	590	0.988	890	0.956	1190	0.950	2650	0.888	4150	0.127
300	$< 10^{-5}$	600	0.988	900	0.955	1200	0.950	2700	0.825	4200	0.109
310	$< 10^{-5}$	610	0.988	910	0.954	1250	0.951	2750	0.344	4250	$8.6 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.987	920	0.954	1300	0.953	2800	0.242	4300	$6.0 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.987	930	0.953	1350	0.956	2850	0.256	4350	$3.7 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.986	940	0.953	1400	0.955	2900	0.274	4400	$1.8 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.985	950	0.953	1450	0.961	2950	0.285	4450	$7.9 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.984	960	0.952	1500	0.965	3000	0.282	4500	$2.8 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.983	970	0.952	1550	0.968	3050	0.276	4550	$9.8 \cdot 10^{-4}$
380	$< 10^{-5}$	680	0.982	980	0.951	1600	0.971	3100	0.267	4600	$3.0 \cdot 10^{-4}$
390	$3.4 \cdot 10^{-3}$	690	0.981	990	0.951	1650	0.972	3150	0.256	4650	$7.3 \cdot 10^{-5}$
400	0.491	700	0.980	1000	0.950	1700	0.973	3200	0.238	4700	$2.2 \cdot 10^{-5}$
410	0.859	710	0.979	1010	0.950	1750	0.972	3250	0.217	4750	$< 10^{-5}$
420	0.908	720	0.977	1020	0.950	1800	0.970	3300	0.199	4800	$< 10^{-5}$
430	0.926	730	0.976	1030	0.950	1850	0.968	3350	0.186	4850	$< 10^{-5}$
440	0.936	740	0.975	1040	0.950	1900	0.967	3400	0.176	4900	$< 10^{-5}$
450	0.945	750	0.973	1050	0.949	1950	0.965	3450	0.166	4950	$< 10^{-5}$
460	0.952	760	0.972	1060	0.949	2000	0.963	3500	0.159	5000	$< 10^{-5}$
470	0.958	770	0.970	1070	0.949	2050	0.961	3550	0.154	5050	$< 10^{-5}$
480	0.964	780	0.969	1080	0.949	2100	0.957	3600	0.150	5100	$< 10^{-5}$
490	0.969	790	0.967	1090	0.949	2150	0.951	3650	0.149	5150	$< 10^{-5}$



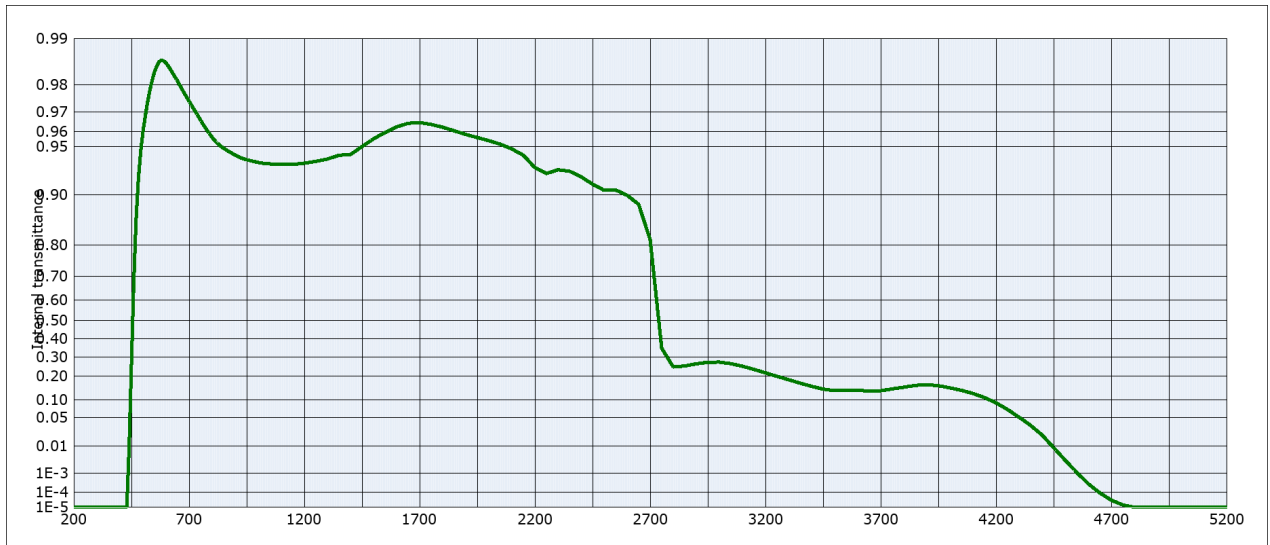
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	0.950	800	0.965	1100	0.946	2200	0.938	3700	0.157
210	$< 10^{-5}$	510	0.958	810	0.964	1110	0.946	2250	0.934	3750	0.164
220	$< 10^{-5}$	520	0.964	820	0.962	1120	0.946	2300	0.938	3800	0.172
230	$< 10^{-5}$	530	0.970	830	0.961	1130	0.947	2350	0.938	3850	0.177
240	$< 10^{-5}$	540	0.975	840	0.960	1140	0.947	2400	0.932	3900	0.179
250	$< 10^{-5}$	550	0.978	850	0.958	1150	0.947	2450	0.921	3950	0.174
260	$< 10^{-5}$	560	0.981	860	0.957	1160	0.947	2500	0.914	4000	0.166
270	$< 10^{-5}$	570	0.983	870	0.956	1170	0.947	2550	0.910	4050	0.155
280	$< 10^{-5}$	580	0.984	880	0.955	1180	0.947	2600	0.906	4100	0.141
290	$< 10^{-5}$	590	0.985	890	0.954	1190	0.947	2650	0.889	4150	0.123
300	$< 10^{-5}$	600	0.986	900	0.953	1200	0.947	2700	0.812	4200	0.105
310	$< 10^{-5}$	610	0.986	910	0.952	1250	0.948	2750	0.324	4250	$8.6 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.986	920	0.952	1300	0.950	2800	0.240	4300	$6.6 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.985	930	0.951	1350	0.953	2850	0.250	4350	$4.6 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.985	940	0.951	1400	0.952	2900	0.267	4400	$2.4 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.984	950	0.950	1450	0.958	2950	0.278	4450	$9.5 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.983	960	0.950	1500	0.963	3000	0.283	4500	$2.9 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.983	970	0.949	1550	0.966	3050	0.279	4550	$9.8 \cdot 10^{-4}$
380	$< 10^{-5}$	680	0.981	980	0.949	1600	0.969	3100	0.269	4600	$3.0 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.980	990	0.949	1650	0.970	3150	0.255	4650	$9.5 \cdot 10^{-5}$
400	$7.0 \cdot 10^{-5}$	700	0.979	1000	0.948	1700	0.970	3200	0.240	4700	$3.1 \cdot 10^{-5}$
410	$6.1 \cdot 10^{-2}$	710	0.978	1010	0.948	1750	0.970	3250	0.224	4750	$1.3 \cdot 10^{-5}$
420	0.479	720	0.977	1020	0.948	1800	0.968	3300	0.206	4800	$< 10^{-5}$
430	0.770	730	0.975	1030	0.948	1850	0.966	3350	0.191	4850	$< 10^{-5}$
440	0.855	740	0.974	1040	0.947	1900	0.965	3400	0.176	4900	$< 10^{-5}$
450	0.885	750	0.972	1050	0.947	1950	0.963	3450	0.164	4950	$< 10^{-5}$
460	0.903	760	0.971	1060	0.947	2000	0.961	3500	0.158	5000	$< 10^{-5}$
470	0.918	770	0.969	1070	0.947	2050	0.959	3550	0.155	5050	$< 10^{-5}$
480	0.930	780	0.968	1080	0.947	2100	0.956	3600	0.154	5100	$< 10^{-5}$
490	0.941	790	0.966	1090	0.946	2150	0.950	3650	0.154	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	0.960	800	0.960	1100	0.939	2200	0.938	3700	0.161
210	$< 10^{-5}$	510	0.967	810	0.958	1110	0.939	2250	0.932	3750	0.169
220	$< 10^{-5}$	520	0.972	820	0.957	1120	0.939	2300	0.936	3800	0.176
230	$< 10^{-5}$	530	0.977	830	0.955	1130	0.939	2350	0.936	3850	0.180
240	$< 10^{-5}$	540	0.980	840	0.954	1140	0.939	2400	0.931	3900	0.182
250	$< 10^{-5}$	550	0.983	850	0.952	1150	0.939	2450	0.921	3950	0.177
260	$< 10^{-5}$	560	0.985	860	0.951	1160	0.939	2500	0.915	4000	0.168
270	$< 10^{-5}$	570	0.986	870	0.950	1170	0.940	2550	0.911	4050	0.156
280	$< 10^{-5}$	580	0.987	880	0.949	1180	0.940	2600	0.908	4100	0.140
290	$< 10^{-5}$	590	0.987	890	0.948	1190	0.940	2650	0.893	4150	0.122
300	$< 10^{-5}$	600	0.987	900	0.947	1200	0.940	2700	0.815	4200	0.103
310	$< 10^{-5}$	610	0.986	910	0.946	1250	0.941	2750	0.341	4250	$8.2 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.986	920	0.946	1300	0.943	2800	0.249	4300	$5.9 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.985	930	0.945	1350	0.946	2850	0.258	4350	$3.9 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.984	940	0.944	1400	0.947	2900	0.274	4400	$2.1 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.983	950	0.944	1450	0.953	2950	0.285	4450	$9.2 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.982	960	0.943	1500	0.958	3000	0.289	4500	$3.5 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.981	970	0.943	1550	0.962	3050	0.284	4550	$1.1 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.980	980	0.942	1600	0.965	3100	0.271	4600	$3.0 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.978	990	0.942	1650	0.967	3150	0.257	4650	$1.1 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.977	1000	0.941	1700	0.967	3200	0.241	4700	$4.2 \cdot 10^{-5}$
410	$< 10^{-5}$	710	0.976	1010	0.941	1750	0.967	3250	0.224	4750	$1.6 \cdot 10^{-5}$
420	$5.7 \cdot 10^{-3}$	720	0.974	1020	0.940	1800	0.965	3300	0.207	4800	$< 10^{-5}$
430	0.240	730	0.973	1030	0.940	1850	0.963	3350	0.192	4850	$< 10^{-5}$
440	0.664	740	0.971	1040	0.940	1900	0.962	3400	0.178	4900	$< 10^{-5}$
450	0.842	750	0.969	1050	0.940	1950	0.960	3450	0.167	4950	$< 10^{-5}$
460	0.899	760	0.967	1060	0.940	2000	0.958	3500	0.161	5000	$< 10^{-5}$
470	0.923	770	0.965	1070	0.939	2050	0.956	3550	0.157	5050	$< 10^{-5}$
480	0.939	780	0.963	1080	0.939	2100	0.954	3600	0.156	5100	$< 10^{-5}$
490	0.951	790	0.962	1090	0.939	2150	0.948	3650	0.157	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	0.960	800	0.956	1100	0.935	2200	0.932	3700	0.135
210	$< 10^{-5}$	510	0.968	810	0.955	1110	0.935	2250	0.926	3750	0.143
220	$< 10^{-5}$	520	0.974	820	0.953	1120	0.935	2300	0.930	3800	0.150
230	$< 10^{-5}$	530	0.978	830	0.951	1130	0.935	2350	0.929	3850	0.158
240	$< 10^{-5}$	540	0.981	840	0.950	1140	0.935	2400	0.923	3900	0.161
250	$< 10^{-5}$	550	0.984	850	0.949	1150	0.936	2450	0.914	3950	0.157
260	$< 10^{-5}$	560	0.985	860	0.948	1160	0.936	2500	0.906	4000	0.147
270	$< 10^{-5}$	570	0.986	870	0.947	1170	0.936	2550	0.907	4050	0.137
280	$< 10^{-5}$	580	0.986	880	0.946	1180	0.936	2600	0.899	4100	0.124
290	$< 10^{-5}$	590	0.986	890	0.945	1190	0.936	2650	0.885	4150	0.109
300	$< 10^{-5}$	600	0.986	900	0.944	1200	0.937	2700	0.813	4200	$9.1 \cdot 10^{-2}$
310	$< 10^{-5}$	610	0.985	910	0.943	1250	0.938	2750	0.348	4250	$7.1 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.984	920	0.942	1300	0.940	2800	0.247	4300	$5.1 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.983	930	0.941	1350	0.943	2850	0.252	4350	$3.5 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.982	940	0.940	1400	0.944	2900	0.263	4400	$2.0 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.981	950	0.940	1450	0.950	2950	0.271	4450	$9.1 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.980	960	0.939	1500	0.956	3000	0.272	4500	$3.4 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.979	970	0.939	1550	0.959	3050	0.264	4550	$1.1 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.977	980	0.938	1600	0.963	3100	0.251	4600	$3.1 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.976	990	0.938	1650	0.965	3150	0.234	4650	$9.5 \cdot 10^{-5}$
400	$< 10^{-5}$	700	0.974	1000	0.937	1700	0.965	3200	0.217	4700	$3.2 \cdot 10^{-5}$
410	$< 10^{-5}$	710	0.973	1010	0.937	1750	0.964	3250	0.200	4750	$1.5 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.971	1020	0.937	1800	0.963	3300	0.184	4800	$< 10^{-5}$
430	$< 10^{-5}$	730	0.970	1030	0.936	1850	0.960	3350	0.168	4850	$< 10^{-5}$
440	$9.6 \cdot 10^{-3}$	740	0.968	1040	0.936	1900	0.958	3400	0.154	4900	$< 10^{-5}$
450	0.260	750	0.966	1050	0.936	1950	0.956	3450	0.142	4950	$< 10^{-5}$
460	0.673	760	0.964	1060	0.936	2000	0.954	3500	0.136	5000	$< 10^{-5}$
470	0.857	770	0.962	1070	0.936	2050	0.952	3550	0.136	5050	$< 10^{-5}$
480	0.920	780	0.960	1080	0.935	2100	0.948	3600	0.138	5100	$< 10^{-5}$
490	0.946	790	0.958	1090	0.935	2150	0.943	3650	0.133	5150	$< 10^{-5}$

Data Sheet



GG475

Density	
ρ [g/cm ³]	2.56

Notes
Colloidally colored glass
Longpass filter

Reflection factor	
P_d	0.918

Bubble content	
Bubble class	3

Reference thickness	
d [mm]	3

Chemical Resistance	
FR class	0
SR class	1.0
AR class	1.0

Spectral values guaranteed	
λ_c ($\tau_i = 0.5$) [nm]	= 475 ± 6
λ_s ($\tau_{i,U} = 0.00001$) [nm]	= 410
λ_p ($\tau_{i,L} = 0.92$) [nm]	= 550

Transformation temperature	
T_g [°C]	531

Thermal expansion	
$\alpha_{30/70^\circ\text{C}}$ [10 ⁻⁶ /K]	8.2
$\alpha_{20/300^\circ\text{C}}$ [10 ⁻⁶ /K]	9.4
$\alpha_{20/200^\circ\text{C}}$ [10 ⁻⁶ /K]	

Refractive Index n	
n_e (546.1 nm) =	1.530
n_d (587.6 nm) =	1.520
n_s (852.1 nm) =	1.520
n_i (1014.0 nm) =	1.510

Temperature coefficient	
T_K [nm/°C]	0.09

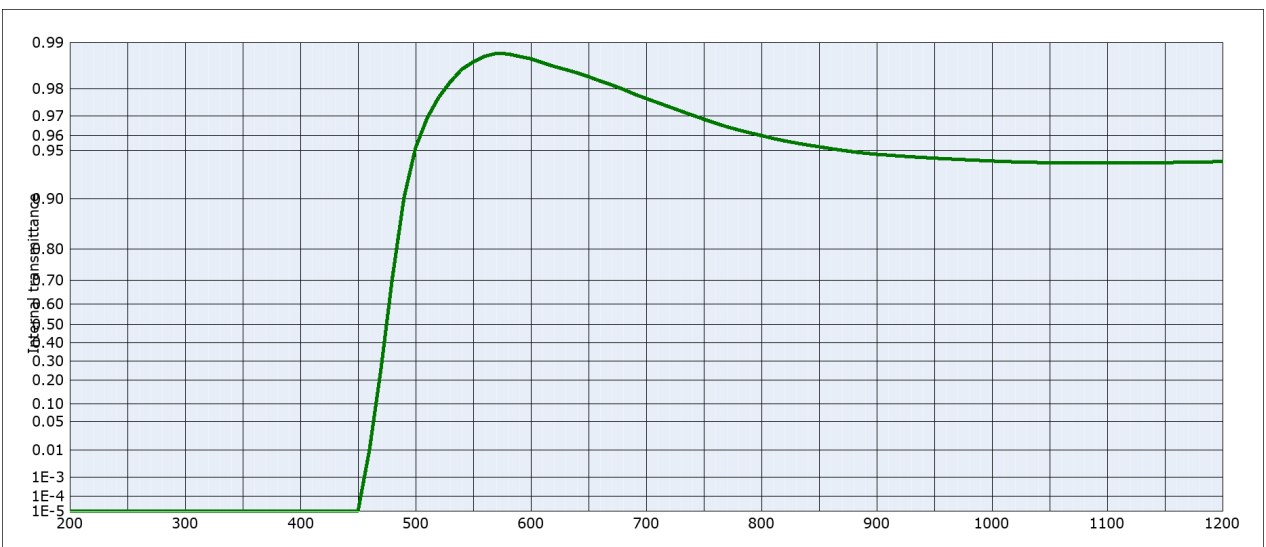
All data without tolerances are to be understood to be reference values. Guaranteed values are only those values listed in the section "Spectral values guaranteed".

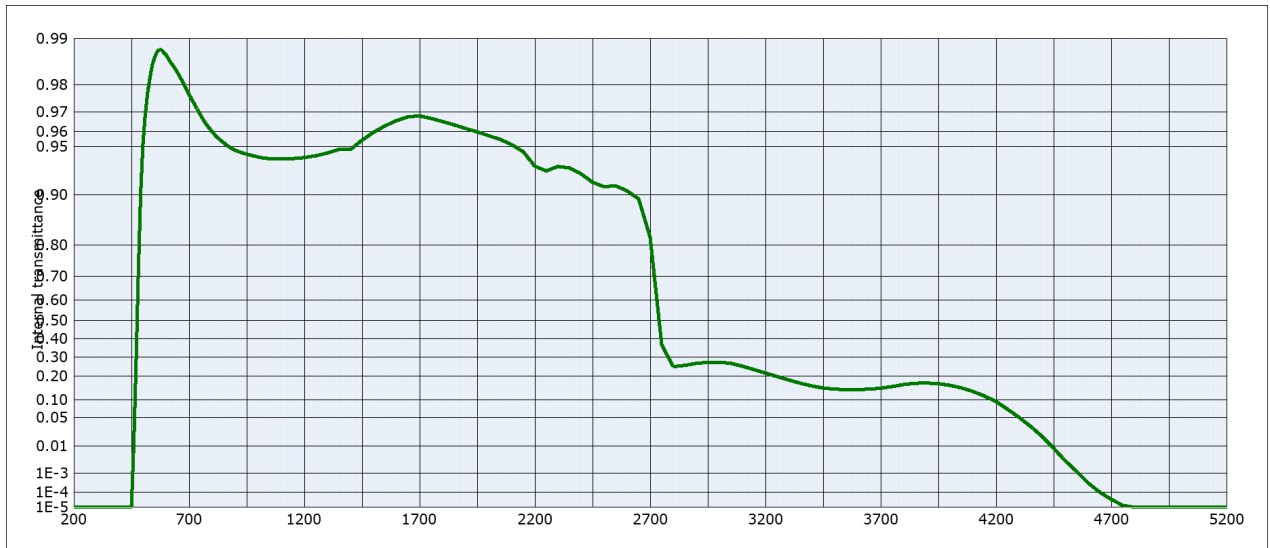
Colorimetric evaluation

Illuminant	A (Planck T = 2856 K)		
	1	2	3
d [mm]			
x	0.483	0.489	0.492
y	0.453	0.460	0.463
Y	91	90	89
λ_d [nm]	580	580	580
P_e	0.56	0.65	0.69

Illuminant	Planck T = 3200 K		
	1	2	3
d [mm]			
x	0.465	0.473	0.476
y	0.458	0.466	0.470
Y	91	90	89
λ_d [nm]	578	578	578
P_e	0.57	0.66	0.70

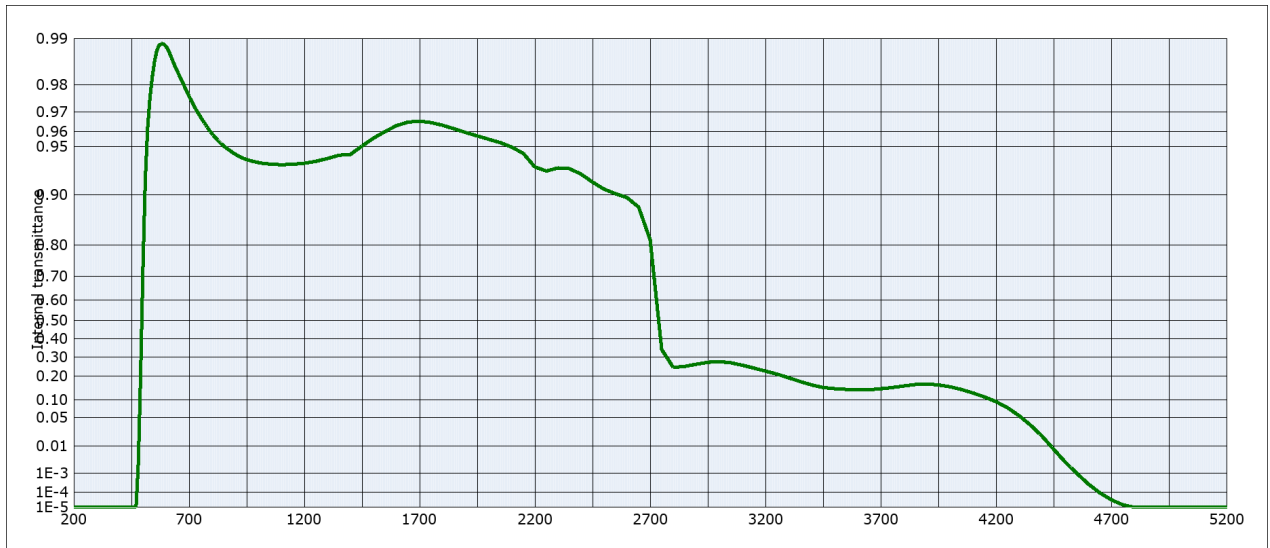
Illuminant	D65 (T _c = 6504 K)		
	1	2	3
d [mm]			
x	0.381	0.394	0.401
y	0.463	0.485	0.494
Y	89	88	88
λ_d [nm]	568	569	569
P_e	0.57	0.66	0.71





Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	0.952	800	0.960	1100	0.940	2200	0.934	3700	0.146
210	$< 10^{-5}$	510	0.969	810	0.958	1110	0.940	2250	0.929	3750	0.153
220	$< 10^{-5}$	520	0.977	820	0.957	1120	0.940	2300	0.933	3800	0.162
230	$< 10^{-5}$	530	0.982	830	0.955	1130	0.940	2350	0.932	3850	0.167
240	$< 10^{-5}$	540	0.985	840	0.954	1140	0.941	2400	0.926	3900	0.169
250	$< 10^{-5}$	550	0.987	850	0.953	1150	0.941	2450	0.916	3950	0.166
260	$< 10^{-5}$	560	0.988	860	0.952	1160	0.941	2500	0.911	4000	0.158
270	$< 10^{-5}$	570	0.988	870	0.950	1170	0.941	2550	0.912	4050	0.147
280	$< 10^{-5}$	580	0.988	880	0.949	1180	0.941	2600	0.905	4100	0.133
290	$< 10^{-5}$	590	0.988	890	0.948	1190	0.941	2650	0.894	4150	0.115
300	$< 10^{-5}$	600	0.987	900	0.947	1200	0.942	2700	0.819	4200	$9.5 \cdot 10^{-2}$
310	$< 10^{-5}$	610	0.986	910	0.947	1250	0.943	2750	0.367	4250	$7.1 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.986	920	0.946	1300	0.945	2800	0.249	4300	$5.1 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.985	930	0.945	1350	0.948	2850	0.255	4350	$3.3 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.984	940	0.945	1400	0.948	2900	0.266	4400	$1.9 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.983	950	0.944	1450	0.955	2950	0.271	4450	$8.8 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.982	960	0.944	1500	0.960	3000	0.272	4500	$3.3 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.981	970	0.943	1550	0.963	3050	0.266	4550	$1.2 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.980	980	0.943	1600	0.966	3100	0.251	4600	$3.4 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.978	990	0.942	1650	0.968	3150	0.233	4650	$1.0 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.977	1000	0.942	1700	0.968	3200	0.216	4700	$3.7 \cdot 10^{-5}$
410	$< 10^{-5}$	710	0.975	1010	0.942	1750	0.967	3250	0.199	4750	$1.4 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.974	1020	0.941	1800	0.965	3300	0.183	4800	$< 10^{-5}$
430	$< 10^{-5}$	730	0.972	1030	0.941	1850	0.964	3350	0.168	4850	$< 10^{-5}$
440	$< 10^{-5}$	740	0.970	1040	0.941	1900	0.962	3400	0.156	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.969	1050	0.941	1950	0.960	3450	0.147	4950	$< 10^{-5}$
460	$1.0 \cdot 10^{-2}$	760	0.967	1060	0.940	2000	0.958	3500	0.142	5000	$< 10^{-5}$
470	0.261	770	0.965	1070	0.940	2050	0.955	3550	0.140	5050	$< 10^{-5}$
480	0.713	780	0.963	1080	0.940	2100	0.952	3600	0.140	5100	$< 10^{-5}$
490	0.902	790	0.962	1090	0.940	2150	0.946	3650	0.142	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	0.732	800	0.959	1100	0.935	2200	0.933	3700	0.143
210	$< 10^{-5}$	510	0.918	810	0.957	1110	0.935	2250	0.929	3750	0.149
220	$< 10^{-5}$	520	0.962	820	0.955	1120	0.935	2300	0.932	3800	0.155
230	$< 10^{-5}$	530	0.976	830	0.954	1130	0.935	2350	0.931	3850	0.162
240	$< 10^{-5}$	540	0.982	840	0.952	1140	0.935	2400	0.926	3900	0.164
250	$< 10^{-5}$	550	0.986	850	0.951	1150	0.936	2450	0.917	3950	0.160
260	$< 10^{-5}$	560	0.988	860	0.949	1160	0.936	2500	0.908	4000	0.152
270	$< 10^{-5}$	570	0.989	870	0.948	1170	0.936	2550	0.901	4050	0.141
280	$< 10^{-5}$	580	0.989	880	0.947	1180	0.936	2600	0.896	4100	0.127
290	$< 10^{-5}$	590	0.989	890	0.946	1190	0.936	2650	0.881	4150	0.111
300	$< 10^{-5}$	600	0.989	900	0.944	1200	0.936	2700	0.813	4200	$9.5 \cdot 10^{-2}$
310	$< 10^{-5}$	610	0.988	910	0.943	1250	0.938	2750	0.341	4250	$7.6 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.987	920	0.942	1300	0.941	2800	0.244	4300	$5.5 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.986	930	0.941	1350	0.943	2850	0.250	4350	$3.5 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.985	940	0.941	1400	0.944	2900	0.261	4400	$1.9 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.984	950	0.940	1450	0.951	2950	0.271	4450	$8.1 \cdot 10^{-3}$
360	$< 10^{-5}$	660	0.982	960	0.939	1500	0.956	3000	0.275	4500	$2.9 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.981	970	0.939	1550	0.960	3050	0.269	4550	$1.0 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.980	980	0.938	1600	0.963	3100	0.256	4600	$3.0 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.978	990	0.938	1650	0.965	3150	0.241	4650	$9.6 \cdot 10^{-5}$
400	$< 10^{-5}$	700	0.976	1000	0.937	1700	0.966	3200	0.226	4700	$3.4 \cdot 10^{-5}$
410	$< 10^{-5}$	710	0.975	1010	0.937	1750	0.965	3250	0.211	4750	$1.5 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.973	1020	0.936	1800	0.964	3300	0.193	4800	$< 10^{-5}$
430	$< 10^{-5}$	730	0.971	1030	0.936	1850	0.962	3350	0.175	4850	$< 10^{-5}$
440	$< 10^{-5}$	740	0.969	1040	0.936	1900	0.959	3400	0.160	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.968	1050	0.936	1950	0.957	3450	0.149	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.966	1060	0.936	2000	0.955	3500	0.144	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.964	1070	0.935	2050	0.953	3550	0.141	5050	$< 10^{-5}$
480	$2.8 \cdot 10^{-3}$	780	0.962	1080	0.935	2100	0.950	3600	0.139	5100	$< 10^{-5}$
490	0.218	790	0.960	1090	0.935	2150	0.945	3650	0.140	5150	$< 10^{-5}$

Data Sheet



OG515

Density	
ρ [g/cm ³]	2.56

Notes	
Colloidally colored glass	
Longpass filter	

Reflection factor	
P_d	0.921

Bubble content	
Bubble class	3

Reference thickness	
d [mm]	3

Chemical Resistance	
FR class	0
SR class	1.0
AR class	1.0

Spectral values guaranteed		
λ_c ($\tau_i = 0.5$) [nm]	=	515 ± 6
λ_s ($\tau_{i,U} = 0.00001$) [nm]	=	440
λ_p ($\tau_{i,L} = 0.93$) [nm]	=	580

Transformation temperature	
Tg [°C]	509

Thermal expansion	
$\alpha_{30/70^\circ\text{C}}$ [10 ⁻⁶ /K]	7.9
$\alpha_{20/300^\circ\text{C}}$ [10 ⁻⁶ /K]	9.0
$\alpha_{20/200^\circ\text{C}}$ [10 ⁻⁶ /K]	

Refractive Index n	
n_e (546.1 nm) =	1.510
n_d (587.6 nm) =	1.510
n_s (852.1 nm) =	1.510
n_i (1014.0 nm) =	1.500

Temperature coefficient	
T _K [nm/°C]	0.11

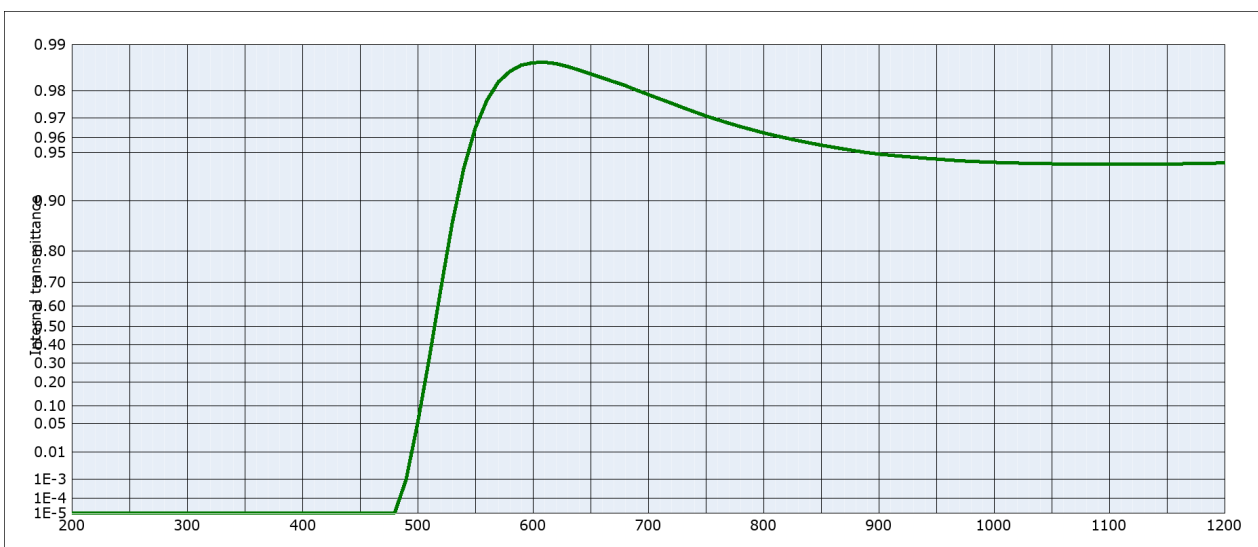
All data without tolerances are to be understood to be reference values.
Guaranteed values are only those values listed in the section "Spectral values guaranteed".

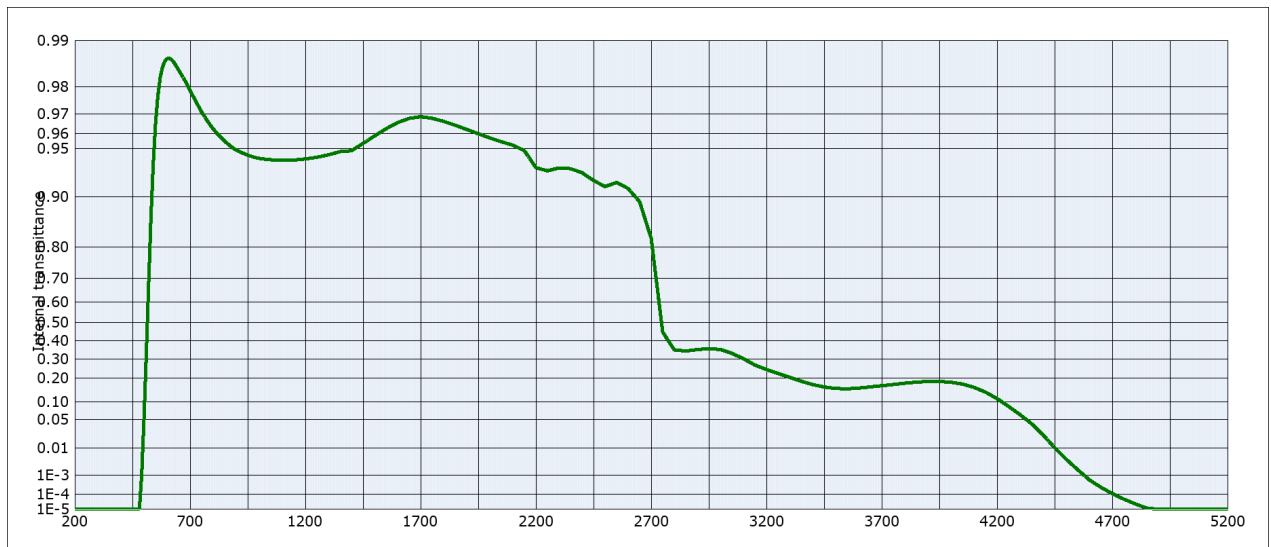
Colorimetric evaluation

Illuminant	A (Planck T = 2856 K)		
	1	2	3
d [mm]			
x	0.516	0.525	0.530
y	0.468	0.466	0.463
Y	87	84	82
λ_d [nm]	582	583	583
P_e	0.90	0.94	0.96

Illuminant	Planck T = 3200 K		
	1	2	3
d [mm]			
x	0.505	0.515	0.520
y	0.477	0.475	0.472
Y	86	83	81
λ_d [nm]	580	581	582
P_e	0.90	0.95	0.96

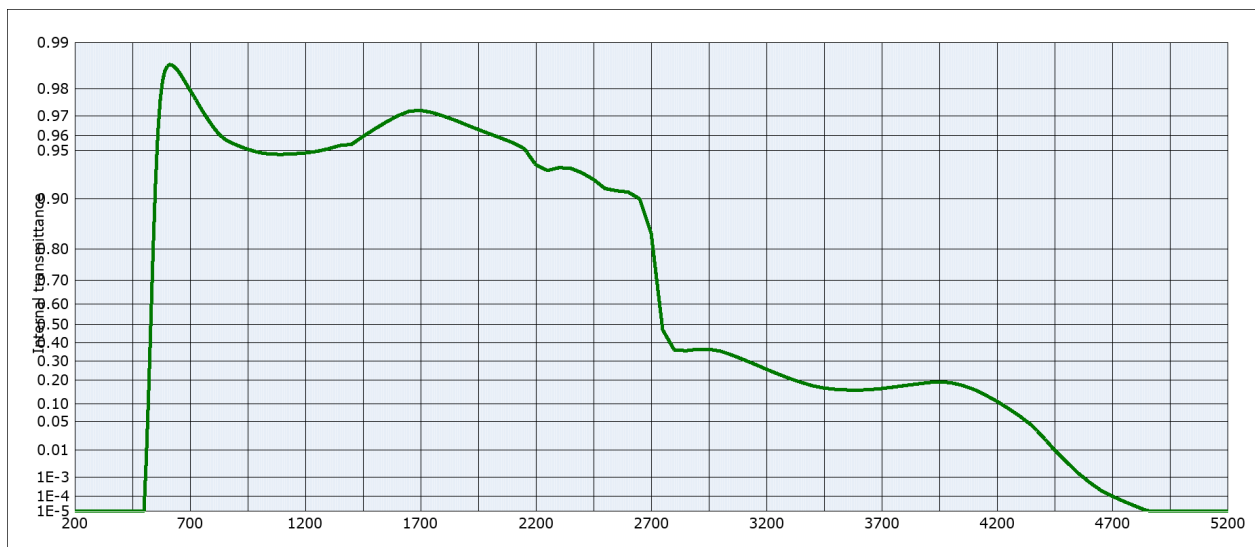
Illuminant	D65 (T _C = 6504 K)		
	1	2	3
d [mm]			
x	0.448	0.465	0.473
y	0.516	0.519	0.515
Y	81	78	75
λ_d [nm]	573	574	575
P_e	0.90	0.96	0.97





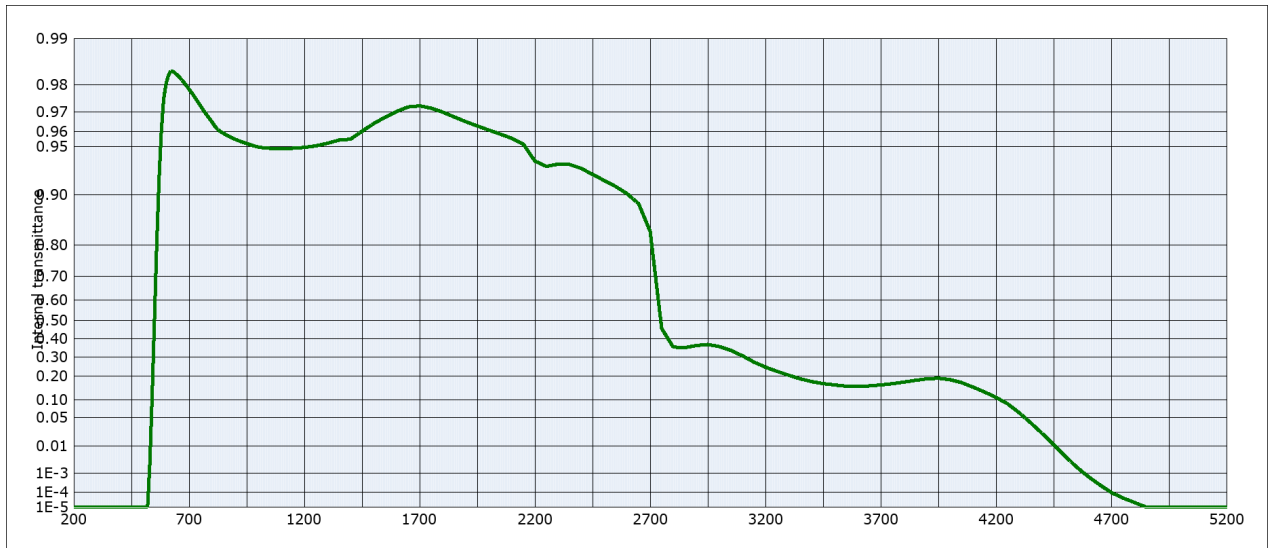
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$5.1 \cdot 10^{-2}$	800	0.963	1100	0.941	2200	0.934	3700	0.165
210	$< 10^{-5}$	510	0.322	810	0.961	1110	0.941	2250	0.931	3750	0.171
220	$< 10^{-5}$	520	0.669	820	0.960	1120	0.941	2300	0.934	3800	0.177
230	$< 10^{-5}$	530	0.863	830	0.958	1130	0.941	2350	0.933	3850	0.182
240	$< 10^{-5}$	540	0.937	840	0.957	1140	0.941	2400	0.929	3900	0.185
250	$< 10^{-5}$	550	0.965	850	0.955	1150	0.941	2450	0.921	3950	0.185
260	$< 10^{-5}$	560	0.977	860	0.954	1160	0.941	2500	0.914	4000	0.181
270	$< 10^{-5}$	570	0.982	870	0.953	1170	0.941	2550	0.918	4050	0.173
280	$< 10^{-5}$	580	0.985	880	0.951	1180	0.942	2600	0.911	4100	0.158
290	$< 10^{-5}$	590	0.986	890	0.950	1190	0.942	2650	0.893	4150	0.138
300	$< 10^{-5}$	600	0.987	900	0.949	1200	0.942	2700	0.822	4200	0.113
310	$< 10^{-5}$	610	0.987	910	0.948	1250	0.943	2750	0.447	4250	$8.6 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.987	920	0.947	1300	0.945	2800	0.350	4300	$6.2 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.986	930	0.947	1350	0.948	2850	0.343	4350	$4.1 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.985	940	0.946	1400	0.949	2900	0.351	4400	$2.3 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.984	950	0.945	1450	0.954	2950	0.357	4450	$1.0 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.984	960	0.945	1500	0.959	3000	0.352	4500	$4.4 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.983	970	0.944	1550	0.963	3050	0.331	4550	$1.7 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.982	980	0.943	1600	0.966	3100	0.301	4600	$6.2 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.980	990	0.943	1650	0.968	3150	0.267	4650	$2.6 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.979	1000	0.943	1700	0.969	3200	0.244	4700	$1.1 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.977	1010	0.942	1750	0.968	3250	0.224	4750	$5.1 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.976	1020	0.942	1800	0.967	3300	0.205	4800	$2.4 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.974	1030	0.942	1850	0.965	3350	0.186	4850	$1.2 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.973	1040	0.942	1900	0.962	3400	0.171	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.971	1050	0.941	1950	0.960	3450	0.160	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.969	1060	0.941	2000	0.957	3500	0.153	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.968	1070	0.941	2050	0.955	3550	0.152	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.966	1080	0.941	2100	0.953	3600	0.155	5100	$< 10^{-5}$
490	$9.7 \cdot 10^{-4}$	790	0.964	1090	0.941	2150	0.949	3650	0.160	5150	$< 10^{-5}$



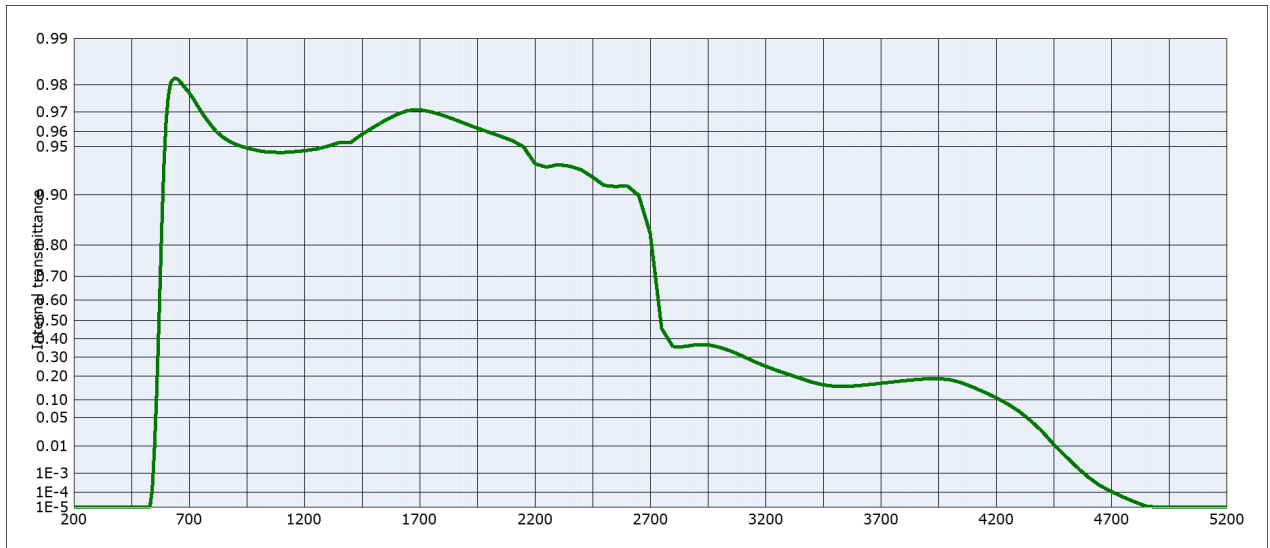
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.965	1100	0.947	2200	0.939	3700	0.162
210	$< 10^{-5}$	510	$5.2 \cdot 10^{-3}$	810	0.963	1110	0.947	2250	0.933	3750	0.168
220	$< 10^{-5}$	520	0.136	820	0.962	1120	0.947	2300	0.936	3800	0.175
230	$< 10^{-5}$	530	0.514	830	0.960	1130	0.948	2350	0.936	3850	0.182
240	$< 10^{-5}$	540	0.802	840	0.959	1140	0.948	2400	0.931	3900	0.189
250	$< 10^{-5}$	550	0.919	850	0.958	1150	0.948	2450	0.924	3950	0.193
260	$< 10^{-5}$	560	0.961	860	0.957	1160	0.948	2500	0.914	4000	0.188
270	$< 10^{-5}$	570	0.976	870	0.956	1170	0.948	2550	0.911	4050	0.176
280	$< 10^{-5}$	580	0.982	880	0.955	1180	0.948	2600	0.909	4100	0.158
290	$< 10^{-5}$	590	0.985	890	0.955	1190	0.948	2650	0.900	4150	0.134
300	$< 10^{-5}$	600	0.986	900	0.954	1200	0.948	2700	0.838	4200	0.110
310	$< 10^{-5}$	610	0.986	910	0.954	1250	0.950	2750	0.470	4250	$8.5 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.986	920	0.953	1300	0.951	2800	0.361	4300	$6.3 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.986	930	0.952	1350	0.954	2850	0.356	4350	$4.3 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.985	940	0.952	1400	0.955	2900	0.364	4400	$2.3 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.985	950	0.951	1450	0.959	2950	0.364	4450	$1.0 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.984	960	0.951	1500	0.964	3000	0.354	4500	$4.3 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.983	970	0.950	1550	0.967	3050	0.333	4550	$1.6 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.982	980	0.950	1600	0.970	3100	0.308	4600	$5.9 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.981	990	0.949	1650	0.972	3150	0.282	4650	$2.3 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.980	1000	0.949	1700	0.972	3200	0.256	4700	$1.0 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.978	1010	0.948	1750	0.972	3250	0.231	4750	$4.9 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.977	1020	0.948	1800	0.970	3300	0.209	4800	$2.4 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.976	1030	0.948	1850	0.968	3350	0.190	4850	$1.1 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.974	1040	0.948	1900	0.966	3400	0.174	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.973	1050	0.948	1950	0.963	3450	0.164	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.971	1060	0.947	2000	0.961	3500	0.158	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.970	1070	0.947	2050	0.958	3550	0.156	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.968	1080	0.947	2100	0.956	3600	0.155	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.966	1090	0.947	2150	0.952	3650	0.157	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	$< 10^{-5}$	800	0.965	1100	0.949	2200	0.938	3700	0.160
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.963	1110	0.949	2250	0.934	3750	0.165
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.962	1120	0.949	2300	0.936	3800	0.173
230	$< 10^{-5}$	530	$2.8 \cdot 10^{-3}$	830	0.961	1130	0.949	2350	0.935	3850	0.181
240	$< 10^{-5}$	540	0.119	840	0.960	1140	0.949	2400	0.932	3900	0.188
250	$< 10^{-5}$	550	0.508	850	0.959	1150	0.949	2450	0.925	3950	0.190
260	$< 10^{-5}$	560	0.806	860	0.958	1160	0.949	2500	0.919	4000	0.184
270	$< 10^{-5}$	570	0.922	870	0.957	1170	0.949	2550	0.911	4050	0.171
280	$< 10^{-5}$	580	0.961	880	0.957	1180	0.949	2600	0.901	4100	0.151
290	$< 10^{-5}$	590	0.975	890	0.956	1190	0.949	2650	0.886	4150	0.131
300	$< 10^{-5}$	600	0.980	900	0.955	1200	0.950	2700	0.833	4200	0.110
310	$< 10^{-5}$	610	0.983	910	0.955	1250	0.951	2750	0.456	4250	$8.8 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.984	920	0.954	1300	0.953	2800	0.354	4300	$6.2 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.984	930	0.953	1350	0.955	2850	0.351	4350	$3.9 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.983	940	0.953	1400	0.955	2900	0.363	4400	$2.3 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.983	950	0.952	1450	0.960	2950	0.368	4450	$1.1 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.982	960	0.952	1500	0.964	3000	0.357	4500	$4.7 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.981	970	0.951	1550	0.968	3050	0.336	4550	$1.8 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.980	980	0.951	1600	0.970	3100	0.307	4600	$7.0 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.980	990	0.950	1650	0.972	3150	0.273	4650	$2.7 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.979	1000	0.950	1700	0.973	3200	0.246	4700	$1.0 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.978	1010	0.950	1750	0.972	3250	0.224	4750	$4.5 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.977	1020	0.949	1800	0.970	3300	0.206	4800	$2.3 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.975	1030	0.949	1850	0.968	3350	0.188	4850	$1.1 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.974	1040	0.949	1900	0.965	3400	0.175	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.973	1050	0.949	1950	0.963	3450	0.166	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.971	1060	0.949	2000	0.961	3500	0.160	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.970	1070	0.949	2050	0.959	3550	0.155	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.968	1080	0.949	2100	0.956	3600	0.153	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.967	1090	0.949	2150	0.952	3650	0.156	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	$< 10^{-5}$	800	0.963	1100	0.946	2200	0.936	3700	0.167
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.961	1110	0.946	2250	0.933	3750	0.173
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.960	1120	0.946	2300	0.935	3800	0.179
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.959	1130	0.946	2350	0.934	3850	0.184
240	$< 10^{-5}$	540	$1.3 \cdot 10^{-4}$	840	0.957	1140	0.946	2400	0.930	3900	0.188
250	$< 10^{-5}$	550	$8.8 \cdot 10^{-3}$	850	0.956	1150	0.946	2450	0.922	3950	0.189
260	$< 10^{-5}$	560	0.139	860	0.955	1160	0.946	2500	0.913	4000	0.184
270	$< 10^{-5}$	570	0.517	870	0.954	1170	0.947	2550	0.911	4050	0.170
280	$< 10^{-5}$	580	0.816	880	0.953	1180	0.947	2600	0.912	4100	0.150
290	$< 10^{-5}$	590	0.930	890	0.953	1190	0.947	2650	0.899	4150	0.130
300	$< 10^{-5}$	600	0.965	900	0.952	1200	0.947	2700	0.829	4200	0.109
310	$< 10^{-5}$	610	0.976	910	0.951	1250	0.948	2750	0.455	4250	$8.8 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.981	920	0.951	1300	0.950	2800	0.354	4300	$6.6 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.982	930	0.950	1350	0.953	2850	0.357	4350	$4.4 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.982	940	0.950	1400	0.953	2900	0.367	4400	$2.5 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.982	950	0.949	1450	0.958	2950	0.368	4450	$1.1 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.981	960	0.949	1500	0.963	3000	0.353	4500	$4.9 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.980	970	0.948	1550	0.966	3050	0.332	4550	$1.9 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.979	980	0.948	1600	0.969	3100	0.305	4600	$6.6 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.978	990	0.948	1650	0.971	3150	0.276	4650	$2.5 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.977	1000	0.947	1700	0.971	3200	0.251	4700	$1.1 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.976	1010	0.947	1750	0.970	3250	0.229	4750	$5.3 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.975	1020	0.946	1800	0.969	3300	0.209	4800	$2.5 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.974	1030	0.946	1850	0.967	3350	0.191	4850	$1.2 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.972	1040	0.946	1900	0.964	3400	0.173	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.971	1050	0.946	1950	0.962	3450	0.160	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.969	1060	0.946	2000	0.960	3500	0.154	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.968	1070	0.946	2050	0.957	3550	0.154	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.966	1080	0.946	2100	0.954	3600	0.157	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.964	1090	0.946	2150	0.950	3650	0.162	5150	$< 10^{-5}$

Data Sheet



OG590

Reflection factor	
P_d	0.921

Reference thickness	
d [mm]	3

Spectral values guaranteed	
λ_c ($\tau_i = 0.5$) [nm]	= 590 ± 6
λ_s ($\tau_{i,U} = 0.00001$) [nm]	= 510
λ_p ($\tau_{i,L} = 0.93$) [nm]	= 660

Refractive Index n	
n_d (587.6 nm) = 1.510	
n_s (852.1 nm) = 1.510	
n_t (1014.0 nm) = 1.500	

Density	
ρ [g/cm ³]	2.56

Bubble content	
Bubble class	3

Chemical Resistance	
FR class	0
SR class	1.0
AR class	1.0

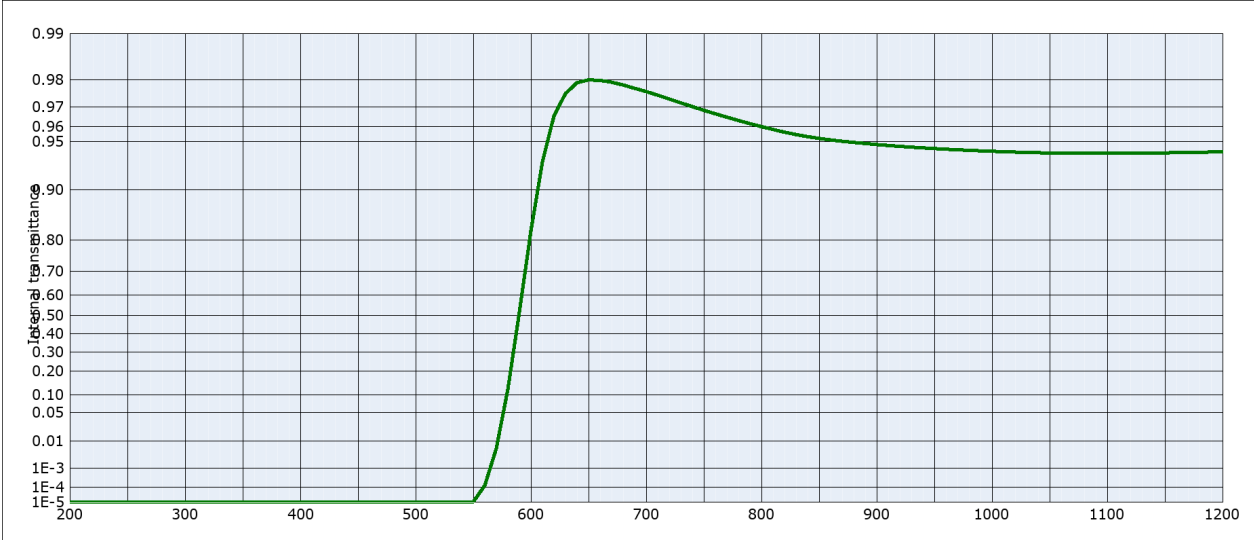
Transformation temperature	
T_g [°C]	506

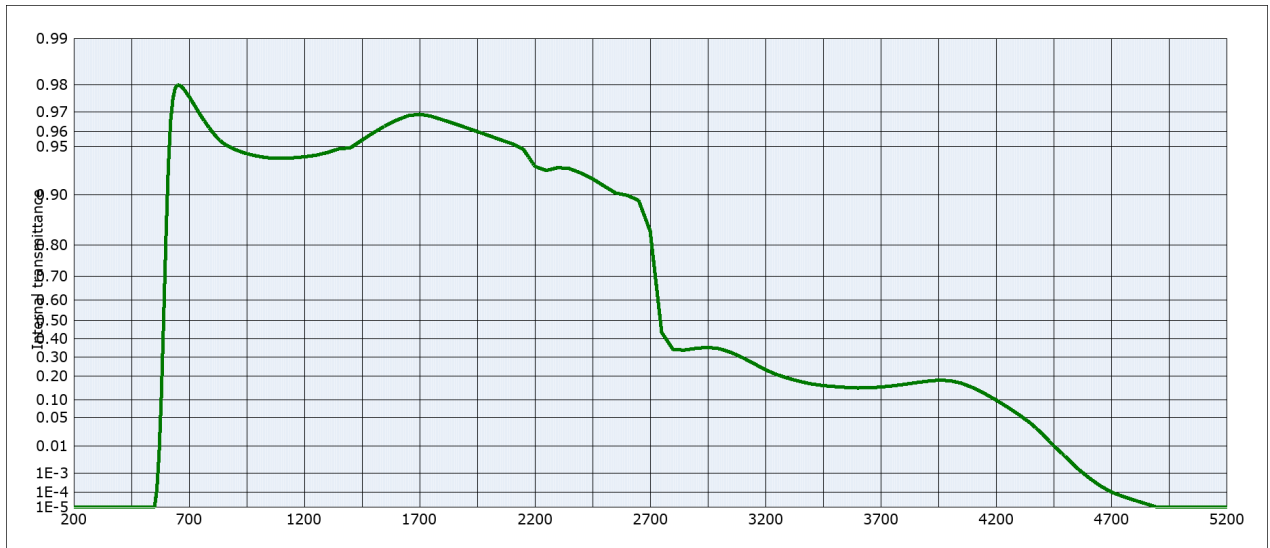
Thermal expansion	
$\alpha_{30/+70^\circ\text{C}}$ [10 ⁻⁶ /K]	7.9
$\alpha_{20/300^\circ\text{C}}$ [10 ⁻⁶ /K]	9.0
$\alpha_{20/200^\circ\text{C}}$ [10 ⁻⁶ /K]	

Temperature coefficient	
T_K [nm/°C]	0.13

Notes	
Colloidally colored glass	
Longpass 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".	

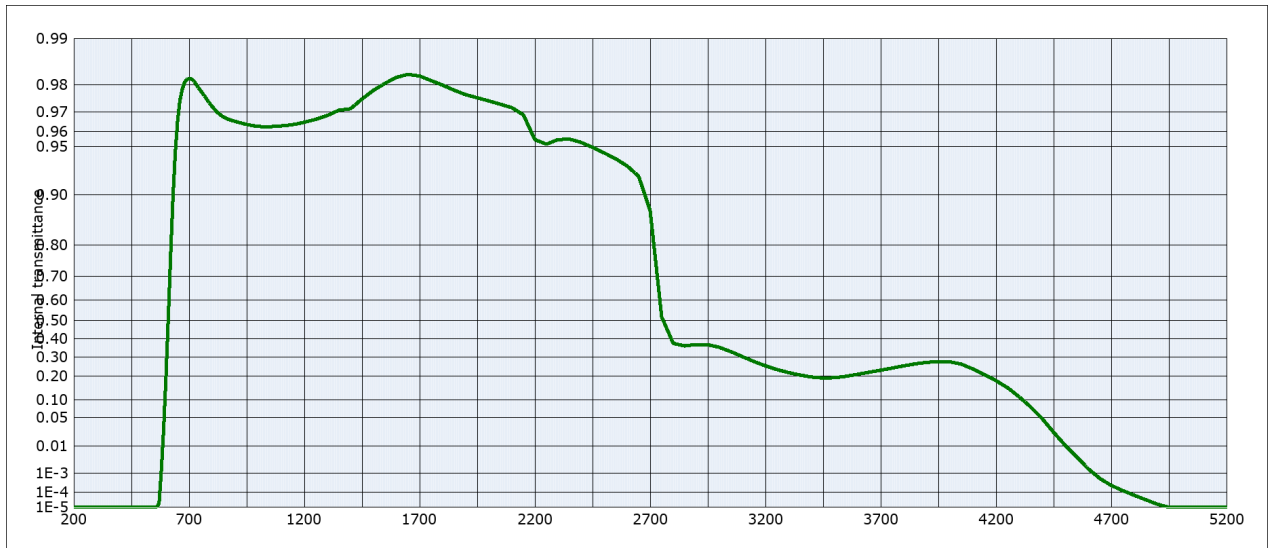
Colorimetric evaluation											
Illuminant A (Planck T = 2856 K)				Illuminant Planck T = 3200 K				Illuminant D65 (T _c = 6504 K)			
d [mm]	1	2	3	d [mm]	1	2	3	d [mm]	1	2	3
x	0.639	0.662	0.669	x	0.635	0.660	0.667	x	0.610	0.652	0.661
y	0.354	0.338	0.331	y	0.356	0.340	0.332	y	0.361	0.347	0.338
Y	39	33	30	Y	37	31	28	Y	27	22	19
λ_d [nm]	605	609	611	λ_d [nm]	604	608	611	λ_d [nm]	602	606	609
P _e	0.96	1.00	1.00	P _e	0.95	1.00	1.00	P _e	0.92	1.00	1.00





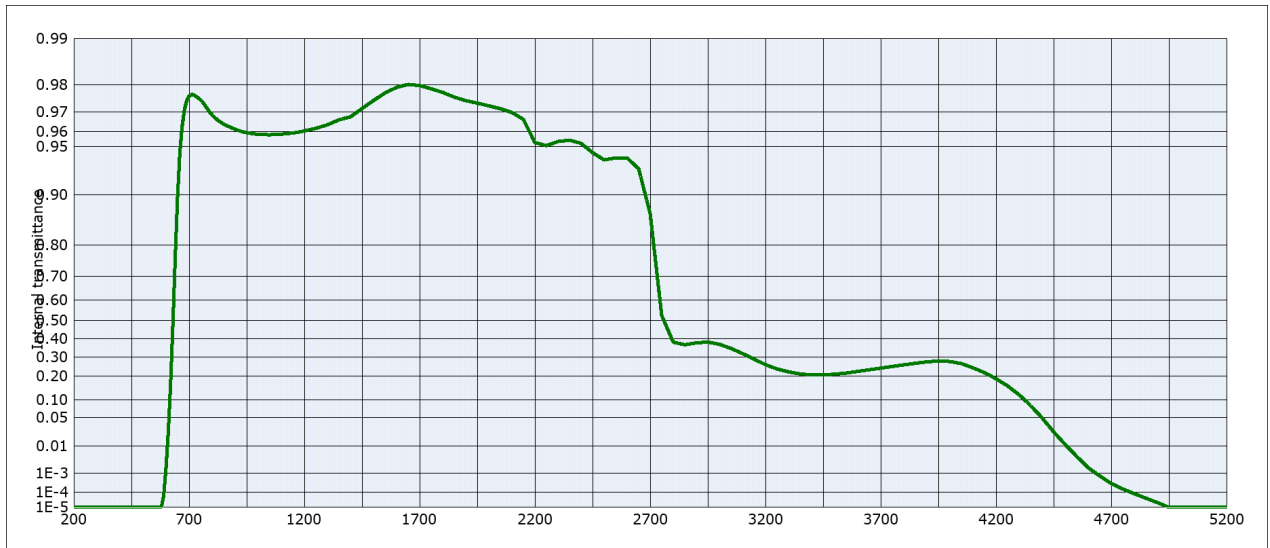
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.960	1100	0.941	2200	0.933	3700	0.151
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.958	1110	0.941	2250	0.929	3750	0.156
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.957	1120	0.941	2300	0.932	3800	0.162
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.955	1130	0.941	2350	0.931	3850	0.170
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.954	1140	0.941	2400	0.927	3900	0.176
250	$< 10^{-5}$	550	$1.1 \cdot 10^{-5}$	850	0.952	1150	0.941	2450	0.921	3950	0.181
260	$< 10^{-5}$	560	$1.3 \cdot 10^{-4}$	860	0.951	1160	0.941	2500	0.912	4000	0.179
270	$< 10^{-5}$	570	$5.9 \cdot 10^{-3}$	870	0.950	1170	0.942	2550	0.902	4050	0.168
280	$< 10^{-5}$	580	0.121	880	0.950	1180	0.942	2600	0.899	4100	0.148
290	$< 10^{-5}$	590	0.515	890	0.949	1190	0.942	2650	0.892	4150	0.125
300	$< 10^{-5}$	600	0.823	900	0.948	1200	0.942	2700	0.834	4200	0.101
310	$< 10^{-5}$	610	0.933	910	0.947	1250	0.943	2750	0.434	4250	$7.7 \cdot 10^{-2}$
320	$< 10^{-5}$	620	0.966	920	0.947	1300	0.946	2800	0.339	4300	$5.7 \cdot 10^{-2}$
330	$< 10^{-5}$	630	0.975	930	0.946	1350	0.949	2850	0.338	4350	$3.9 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.979	940	0.945	1400	0.949	2900	0.347	4400	$2.2 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.980	950	0.945	1450	0.955	2950	0.352	4450	$1.0 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.980	960	0.944	1500	0.959	3000	0.345	4500	$4.7 \cdot 10^{-3}$
370	$< 10^{-5}$	670	0.979	970	0.944	1550	0.963	3050	0.325	4550	$1.7 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.978	980	0.943	1600	0.966	3100	0.297	4600	$6.6 \cdot 10^{-4}$
390	$< 10^{-5}$	690	0.977	990	0.943	1650	0.968	3150	0.265	4650	$2.5 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.976	1000	0.943	1700	0.969	3200	0.232	4700	$1.1 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.975	1010	0.942	1750	0.968	3250	0.208	4750	$5.7 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.973	1020	0.942	1800	0.966	3300	0.190	4800	$3.2 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.972	1030	0.942	1850	0.964	3350	0.176	4850	$1.8 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.970	1040	0.941	1900	0.962	3400	0.164	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.969	1050	0.941	1950	0.960	3450	0.157	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.967	1060	0.941	2000	0.958	3500	0.153	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.965	1070	0.941	2050	0.955	3550	0.149	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.963	1080	0.941	2100	0.952	3600	0.147	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.962	1090	0.941	2150	0.948	3650	0.148	5150	$< 10^{-5}$



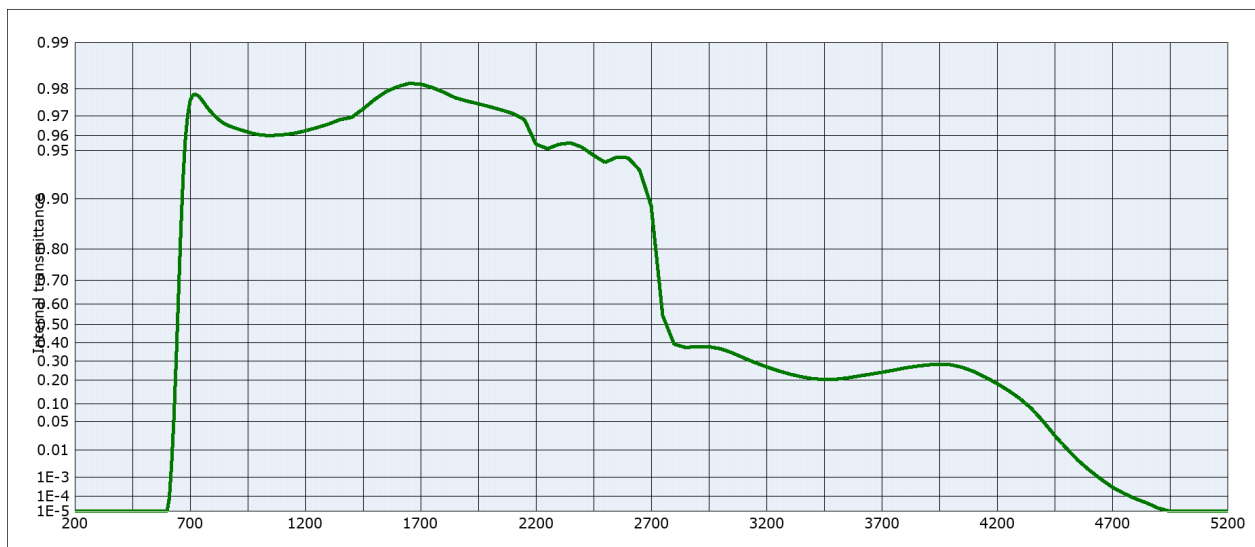
Internal transmittance τ_i at reference thickness $d = 3$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.972	1100	0.963	2200	0.955	3700	0.230
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.971	1110	0.963	2250	0.952	3750	0.241
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.970	1120	0.963	2300	0.955	3800	0.253
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.969	1130	0.964	2350	0.955	3850	0.263
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.968	1140	0.964	2400	0.953	3900	0.271
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.968	1150	0.964	2450	0.950	3950	0.276
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.967	1160	0.964	2500	0.945	4000	0.274
270	$< 10^{-5}$	570	$2.1 \cdot 10^{-5}$	870	0.967	1170	0.964	2550	0.941	4050	0.261
280	$< 10^{-5}$	580	$1.5 \cdot 10^{-3}$	880	0.966	1180	0.965	2600	0.934	4100	0.236
290	$< 10^{-5}$	590	$3.1 \cdot 10^{-2}$	890	0.966	1190	0.965	2650	0.923	4150	0.208
300	$< 10^{-5}$	600	0.202	900	0.966	1200	0.965	2700	0.875	4200	0.179
310	$< 10^{-5}$	610	0.516	910	0.965	1250	0.967	2750	0.517	4250	0.148
320	$< 10^{-5}$	620	0.770	920	0.965	1300	0.968	2800	0.375	4300	0.112
330	$< 10^{-5}$	630	0.895	930	0.965	1350	0.971	2850	0.361	4350	$7.8 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.945	940	0.964	1400	0.971	2900	0.368	4400	$4.8 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.966	950	0.964	1450	0.975	2950	0.367	4450	$2.4 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.975	960	0.964	1500	0.978	3000	0.353	4500	$1.1 \cdot 10^{-2}$
370	$< 10^{-5}$	670	0.978	970	0.964	1550	0.980	3050	0.329	4550	$4.5 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.981	980	0.963	1600	0.982	3100	0.302	4600	$1.6 \cdot 10^{-3}$
390	$< 10^{-5}$	690	0.982	990	0.963	1650	0.983	3150	0.275	4650	$5.7 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.982	1000	0.963	1700	0.982	3200	0.253	4700	$2.5 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.982	1010	0.963	1750	0.981	3250	0.233	4750	$1.3 \cdot 10^{-4}$
420	$< 10^{-5}$	720	0.981	1020	0.963	1800	0.980	3300	0.218	4800	$6.7 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.980	1030	0.963	1850	0.978	3350	0.206	4850	$3.4 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.979	1040	0.963	1900	0.977	3400	0.196	4900	$1.7 \cdot 10^{-5}$
450	$< 10^{-5}$	750	0.978	1050	0.963	1950	0.976	3450	0.192	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.977	1060	0.963	2000	0.975	3500	0.193	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.976	1070	0.963	2050	0.973	3550	0.200	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.975	1080	0.963	2100	0.972	3600	0.210	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.974	1090	0.963	2150	0.969	3650	0.220	5150	$< 10^{-5}$



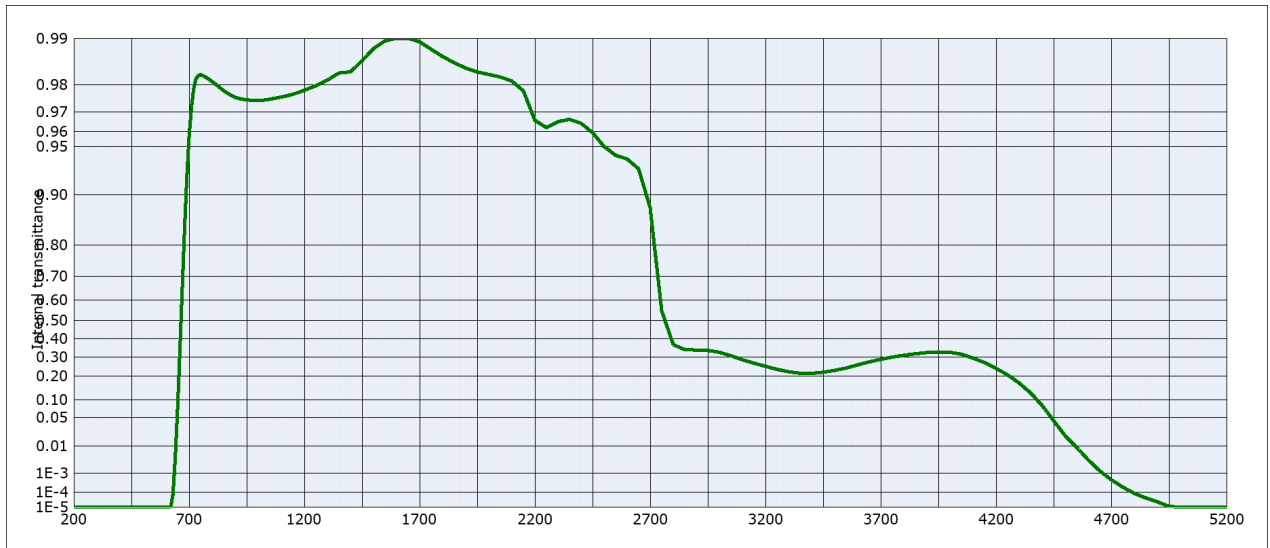
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.969	1100	0.958	2200	0.953	3700	0.241
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.968	1110	0.959	2250	0.951	3750	0.250
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.967	1120	0.959	2300	0.954	3800	0.258
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.966	1130	0.959	2350	0.955	3850	0.266
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.965	1140	0.959	2400	0.953	3900	0.274
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.964	1150	0.959	2450	0.946	3950	0.278
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.964	1160	0.959	2500	0.940	4000	0.275
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.963	1170	0.960	2550	0.941	4050	0.264
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.962	1180	0.960	2600	0.941	4100	0.243
290	$< 10^{-5}$	590	$6.2 \cdot 10^{-5}$	890	0.962	1190	0.960	2650	0.931	4150	0.218
300	$< 10^{-5}$	600	$1.7 \cdot 10^{-3}$	900	0.961	1200	0.960	2700	0.870	4200	0.188
310	$< 10^{-5}$	610	$2.5 \cdot 10^{-2}$	910	0.961	1250	0.962	2750	0.524	4250	0.156
320	$< 10^{-5}$	620	0.169	920	0.960	1300	0.964	2800	0.381	4300	0.120
330	$< 10^{-5}$	630	0.487	930	0.960	1350	0.966	2850	0.367	4350	$8.3 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.765	940	0.960	1400	0.968	2900	0.378	4400	$4.9 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.897	950	0.959	1450	0.972	2950	0.382	4450	$2.4 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.946	960	0.959	1500	0.975	3000	0.370	4500	$1.1 \cdot 10^{-2}$
370	$< 10^{-5}$	670	0.963	970	0.959	1550	0.977	3050	0.347	4550	$4.7 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.971	980	0.959	1600	0.979	3100	0.319	4600	$1.7 \cdot 10^{-3}$
390	$< 10^{-5}$	690	0.975	990	0.959	1650	0.980	3150	0.288	4650	$7.5 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.976	1000	0.958	1700	0.980	3200	0.259	4700	$3.2 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.977	1010	0.958	1750	0.979	3250	0.237	4750	$1.6 \cdot 10^{-4}$
420	$< 10^{-5}$	720	0.977	1020	0.958	1800	0.978	3300	0.222	4800	$8.4 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.976	1030	0.958	1850	0.976	3350	0.212	4850	$4.4 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.976	1040	0.958	1900	0.975	3400	0.206	4900	$2.2 \cdot 10^{-5}$
450	$< 10^{-5}$	750	0.975	1050	0.958	1950	0.974	3450	0.206	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.974	1060	0.958	2000	0.973	3500	0.210	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.973	1070	0.958	2050	0.971	3550	0.216	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.971	1080	0.958	2100	0.970	3600	0.224	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.970	1090	0.958	2150	0.967	3650	0.232	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3$ 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	$< 10^{-5}$	800	0.971	1100	0.960	2200	0.955	3700	0.240
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.970	1110	0.961	2250	0.952	3750	0.250
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.969	1120	0.961	2300	0.955	3800	0.262
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.968	1130	0.961	2350	0.956	3850	0.271
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.967	1140	0.961	2400	0.953	3900	0.279
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.966	1150	0.961	2450	0.947	3950	0.283
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.966	1160	0.962	2500	0.941	4000	0.279
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.965	1170	0.962	2550	0.945	4050	0.266
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.965	1180	0.962	2600	0.945	4100	0.244
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.964	1190	0.962	2650	0.934	4150	0.215
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.964	1200	0.963	2700	0.889	4200	0.184
310	$< 10^{-5}$	610	$7.6 \cdot 10^{-5}$	910	0.964	1250	0.964	2750	0.544	4250	0.153
320	$< 10^{-5}$	620	$3.6 \cdot 10^{-3}$	920	0.963	1300	0.966	2800	0.392	4300	0.120
330	$< 10^{-5}$	630	$6.1 \cdot 10^{-2}$	930	0.963	1350	0.968	2850	0.374	4350	$8.5 \cdot 10^{-2}$
340	$< 10^{-5}$	640	0.311	940	0.962	1400	0.969	2900	0.379	4400	$5.1 \cdot 10^{-2}$
350	$< 10^{-5}$	650	0.645	950	0.962	1450	0.973	2950	0.378	4450	$2.5 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.845	960	0.962	1500	0.977	3000	0.367	4500	$1.2 \cdot 10^{-2}$
370	$< 10^{-5}$	670	0.927	970	0.961	1550	0.979	3050	0.346	4550	$4.8 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.959	980	0.961	1600	0.981	3100	0.318	4600	$2.0 \cdot 10^{-3}$
390	$< 10^{-5}$	690	0.971	990	0.961	1650	0.982	3150	0.291	4650	$8.3 \cdot 10^{-4}$
400	$< 10^{-5}$	700	0.976	1000	0.961	1700	0.981	3200	0.269	4700	$3.3 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.978	1010	0.960	1750	0.980	3250	0.248	4750	$1.5 \cdot 10^{-4}$
420	$< 10^{-5}$	720	0.978	1020	0.960	1800	0.979	3300	0.231	4800	$7.3 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.978	1030	0.960	1850	0.977	3350	0.218	4850	$3.8 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.977	1040	0.960	1900	0.976	3400	0.208	4900	$1.7 \cdot 10^{-5}$
450	$< 10^{-5}$	750	0.977	1050	0.960	1950	0.975	3450	0.204	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.975	1060	0.960	2000	0.974	3500	0.205	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.974	1070	0.960	2050	0.973	3550	0.211	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.973	1080	0.960	2100	0.971	3600	0.221	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.972	1090	0.960	2150	0.968	3650	0.230	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	$< 10^{-5}$	800	0.981	1100	0.976	2200	0.966	3700	0.287
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.980	1110	0.976	2250	0.962	3750	0.299
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.980	1120	0.976	2300	0.965	3800	0.309
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.979	1130	0.977	2350	0.967	3850	0.317
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.979	1140	0.977	2400	0.965	3900	0.324
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.978	1150	0.977	2450	0.959	3950	0.327
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.978	1160	0.977	2500	0.950	4000	0.326
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.977	1170	0.977	2550	0.943	4050	0.315
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.977	1180	0.978	2600	0.940	4100	0.294
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.976	1190	0.978	2650	0.931	4150	0.270
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.976	1200	0.978	2700	0.880	4200	0.240
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.976	1250	0.980	2750	0.548	4250	0.207
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.975	1300	0.981	2800	0.368	4300	0.169
330	$< 10^{-5}$	630	$7.4 \cdot 10^{-5}$	930	0.975	1350	0.983	2850	0.340	4350	0.127
340	$< 10^{-5}$	640	$4.3 \cdot 10^{-3}$	940	0.975	1400	0.984	2900	0.338	4400	$8.3 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$7.2 \cdot 10^{-2}$	950	0.975	1450	0.986	2950	0.336	4450	$4.3 \cdot 10^{-2}$
360	$< 10^{-5}$	660	0.330	960	0.975	1500	0.988	3000	0.326	4500	$2.0 \cdot 10^{-2}$
370	$< 10^{-5}$	670	0.643	970	0.975	1550	0.990	3050	0.307	4550	$9.2 \cdot 10^{-3}$
380	$< 10^{-5}$	680	0.834	980	0.975	1600	0.990	3100	0.285	4600	$3.5 \cdot 10^{-3}$
390	$< 10^{-5}$	690	0.920	990	0.975	1650	0.990	3150	0.267	4650	$1.3 \cdot 10^{-3}$
400	$< 10^{-5}$	700	0.957	1000	0.975	1700	0.989	3200	0.250	4700	$5.0 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.972	1010	0.975	1750	0.988	3250	0.235	4750	$2.0 \cdot 10^{-4}$
420	$< 10^{-5}$	720	0.979	1020	0.975	1800	0.987	3300	0.222	4800	$8.7 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.982	1030	0.975	1850	0.986	3350	0.215	4850	$4.5 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.983	1040	0.975	1900	0.984	3400	0.214	4900	$2.5 \cdot 10^{-5}$
450	$< 10^{-5}$	750	0.983	1050	0.975	1950	0.983	3450	0.220	4950	$1.2 \cdot 10^{-5}$
460	$< 10^{-5}$	760	0.983	1060	0.975	2000	0.983	3500	0.229	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.982	1070	0.976	2050	0.982	3550	0.241	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.982	1080	0.976	2100	0.981	3600	0.258	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.981	1090	0.976	2150	0.978	3650	0.273	5150	$< 10^{-5}$

Data Sheet



RG695

Density	
ρ [g/cm ³]	2.76

Notes

Colloidally colored glass
Longpass filter

Reflection factor	
P_d	0.914

Bubble content	
Bubble class	3

Reference thickness	
d [mm]	3

Chemical Resistance	
FR class	0
SR class	1.0
AR class	1.0

Spectral values guaranteed	
λ_c ($\tau_i = 0.5$) [nm]	= 695 ± 6
λ_s ($\tau_{i,U} = 0.00001$) [nm]	= 610
λ_p ($\tau_{i,L} = 0.96$) [nm]	= 780

Transformation temperature	
Tg [°C]	532

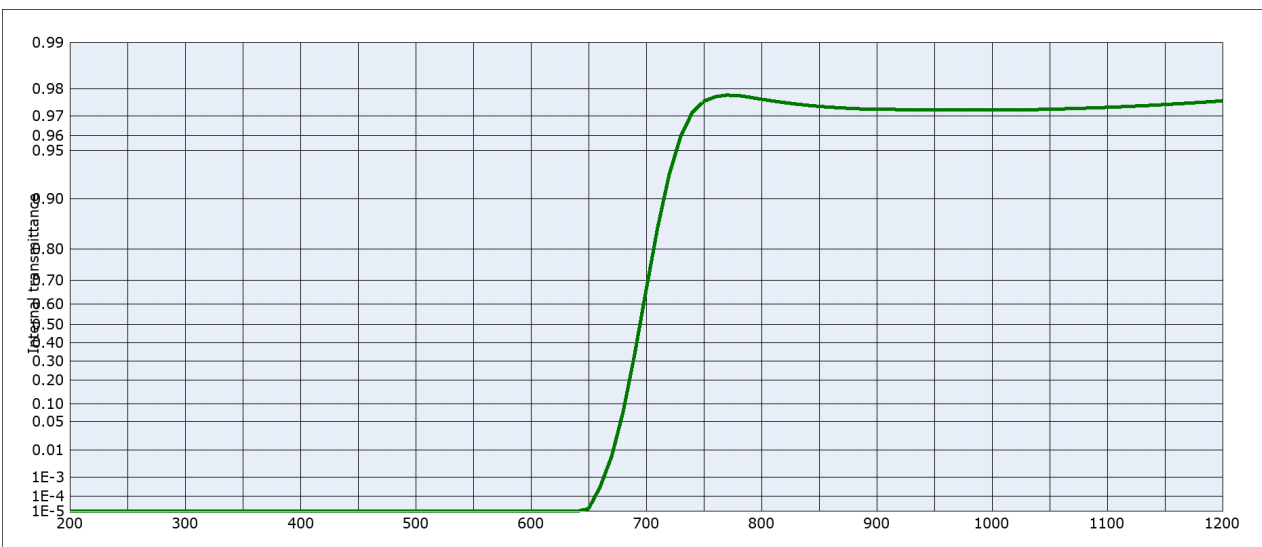
Thermal expansion	
$\alpha_{30/+70^\circ\text{C}}$ [10 ⁻⁶ /K]	8.1
$\alpha_{20/300^\circ\text{C}}$ [10 ⁻⁶ /K]	9.4
$\alpha_{20/200^\circ\text{C}}$ [10 ⁻⁶ /K]	

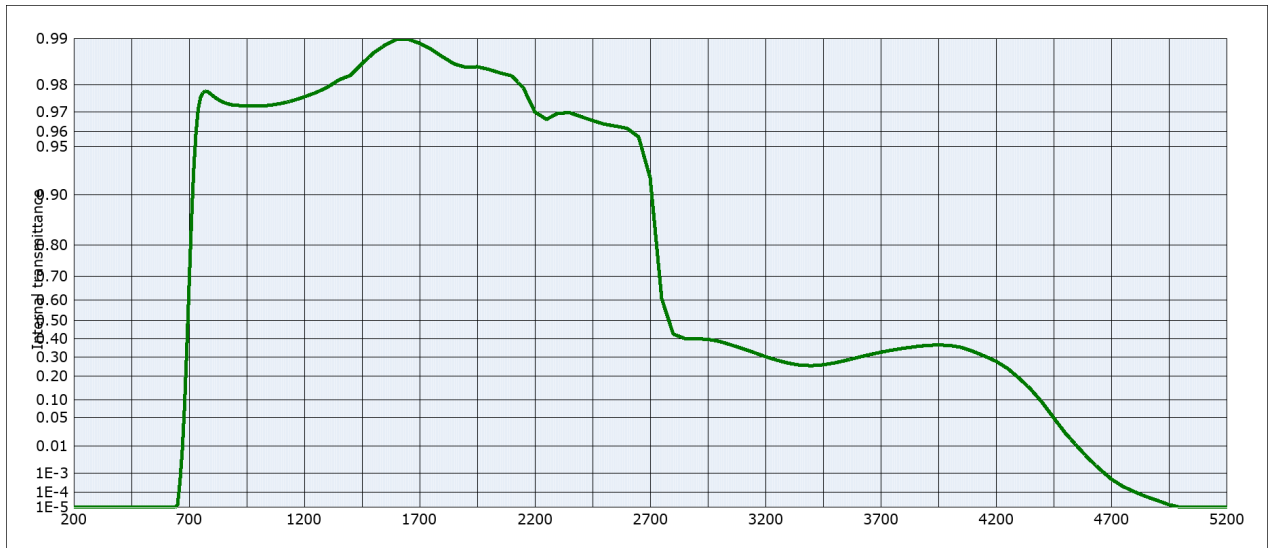
Refractive Index n	
n_d (587.6 nm) =	1.540
n_s (852.1 nm) =	1.530
n_i (1014.0 nm) =	1.520

Temperature coefficient	
T_K [nm/°C]	0.18

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".

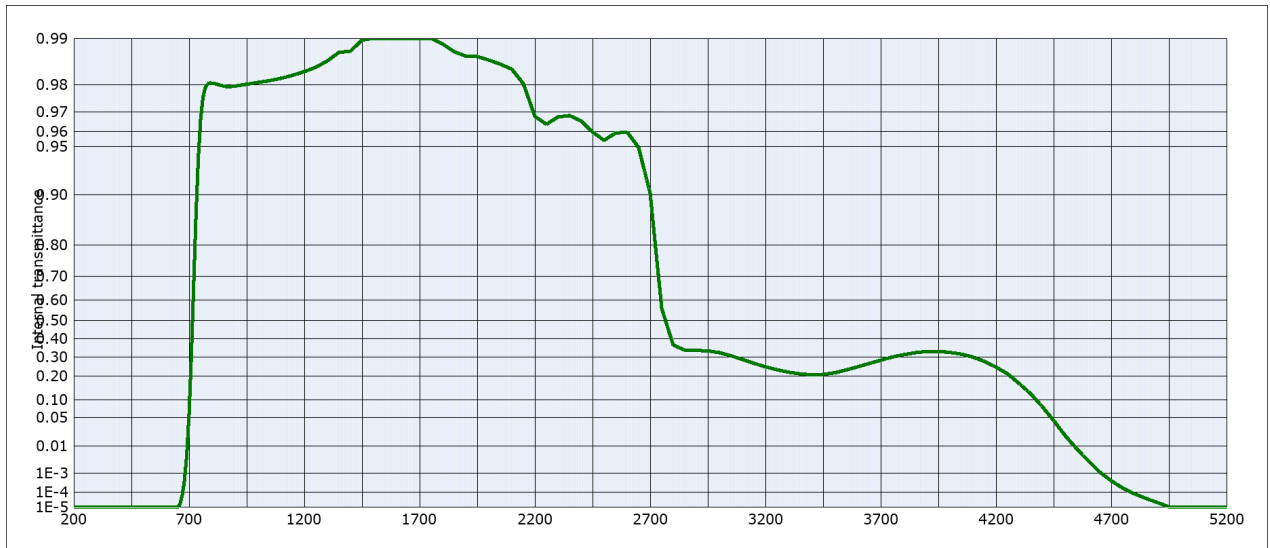
Colorimetric evaluation												
Illuminant	A (Planck T = 2856 K)			Illuminant	Planck T = 3200 K			Illuminant	D65 (T _C = 6504 K)			
	d [mm]	1	2		3	d [mm]	1		2	3	d [mm]	1
x				x				x				
y				y				y				
Y				Y				Y				
λ_d [nm]				λ_d [nm]				λ_d [nm]				
P_e				P_e				P_e				





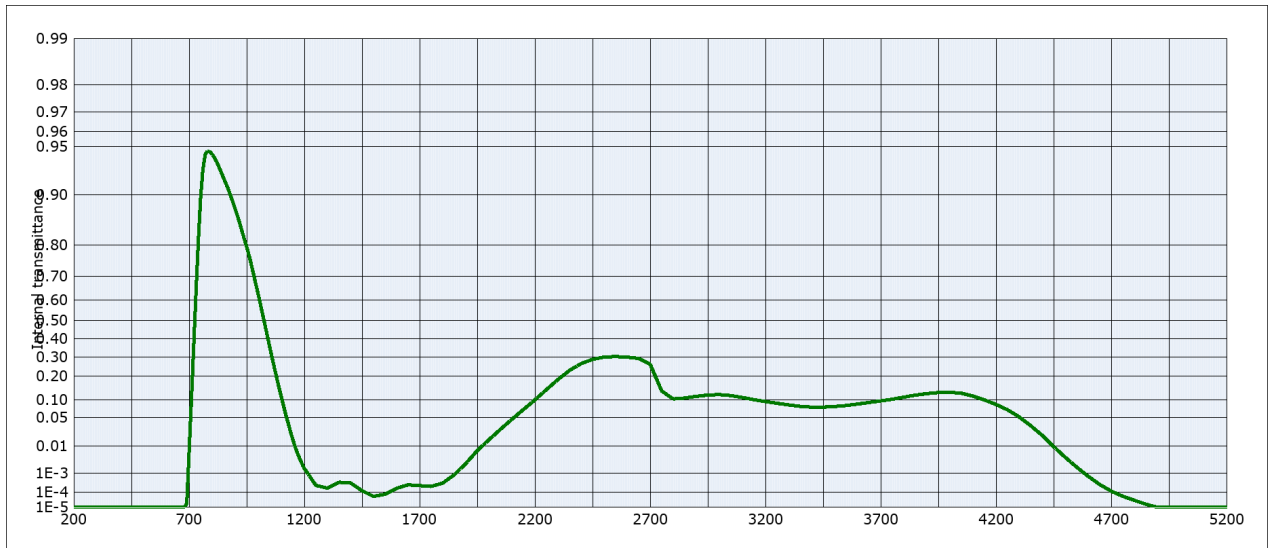
Internal transmittance τ_i at reference thickness $d = 3$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.977	1100	0.974	2200	0.970	3700	0.326
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.976	1110	0.974	2250	0.967	3750	0.338
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.975	1120	0.974	2300	0.969	3800	0.348
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.975	1130	0.974	2350	0.970	3850	0.356
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.974	1140	0.974	2400	0.968	3900	0.363
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.974	1150	0.975	2450	0.966	3950	0.366
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.974	1160	0.975	2500	0.964	4000	0.363
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.973	1170	0.975	2550	0.963	4050	0.352
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.973	1180	0.976	2600	0.962	4100	0.331
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.973	1190	0.976	2650	0.957	4150	0.305
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.973	1200	0.976	2700	0.921	4200	0.277
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.973	1250	0.978	2750	0.606	4250	0.239
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.973	1300	0.979	2800	0.426	4300	0.191
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.973	1350	0.981	2850	0.401	4350	0.142
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.973	1400	0.983	2900	0.400	4400	$9.2 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$1.5 \cdot 10^{-5}$	950	0.973	1450	0.985	2950	0.397	4450	$5.0 \cdot 10^{-2}$
360	$< 10^{-5}$	660	$3.4 \cdot 10^{-4}$	960	0.973	1500	0.988	3000	0.386	4500	$2.3 \cdot 10^{-2}$
370	$< 10^{-5}$	670	$6.3 \cdot 10^{-3}$	970	0.973	1550	0.989	3050	0.367	4550	$1.0 \cdot 10^{-2}$
380	$< 10^{-5}$	680	$7.5 \cdot 10^{-2}$	980	0.973	1600	0.990	3100	0.346	4600	$4.0 \cdot 10^{-3}$
390	$< 10^{-5}$	690	0.337	990	0.973	1650	0.990	3150	0.324	4650	$1.5 \cdot 10^{-3}$
400	$< 10^{-5}$	700	0.661	1000	0.973	1700	0.989	3200	0.302	4700	$5.3 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.851	1010	0.973	1750	0.988	3250	0.282	4750	$2.2 \cdot 10^{-4}$
420	$< 10^{-5}$	720	0.929	1020	0.973	1800	0.987	3300	0.267	4800	$1.1 \cdot 10^{-4}$
430	$< 10^{-5}$	730	0.960	1030	0.973	1850	0.985	3350	0.256	4850	$5.6 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.972	1040	0.973	1900	0.985	3400	0.253	4900	$3.1 \cdot 10^{-5}$
450	$< 10^{-5}$	750	0.976	1050	0.973	1950	0.985	3450	0.258	4950	$1.6 \cdot 10^{-5}$
460	$< 10^{-5}$	760	0.978	1060	0.973	2000	0.984	3500	0.268	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.978	1070	0.973	2050	0.983	3550	0.282	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.978	1080	0.973	2100	0.982	3600	0.297	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.977	1090	0.973	2150	0.979	3650	0.312	5150	$< 10^{-5}$



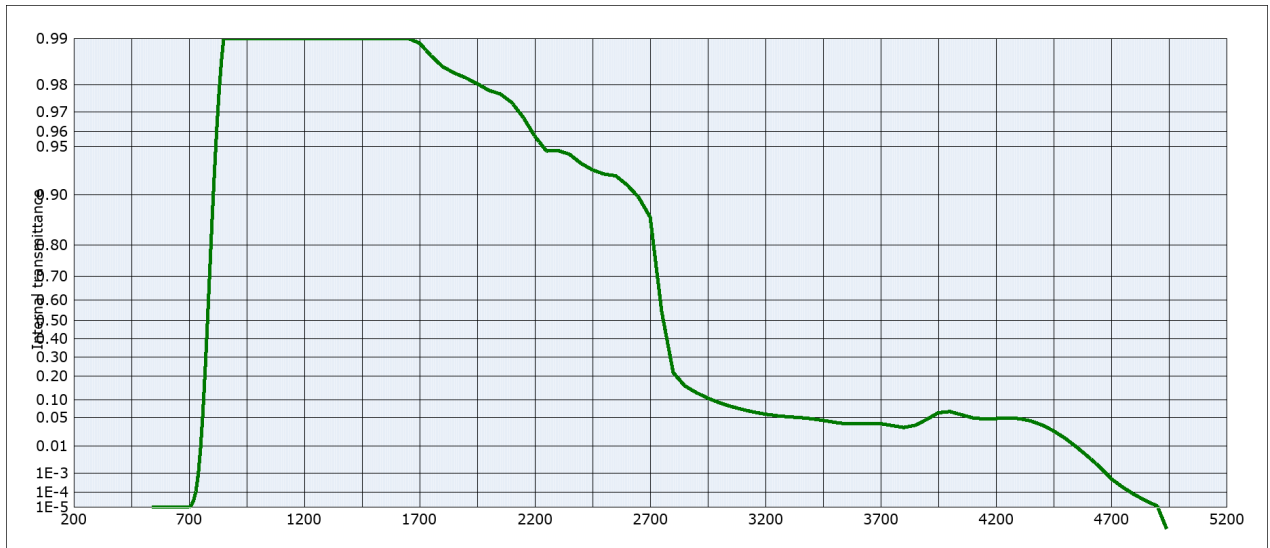
Internal transmittance τ_i at reference thickness $d = 3$ mm
 The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.980	1100	0.982	2200	0.968	3700	0.283
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.980	1110	0.982	2250	0.964	3750	0.300
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.980	1120	0.982	2300	0.968	3800	0.313
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.980	1130	0.982	2350	0.968	3850	0.323
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.980	1140	0.982	2400	0.966	3900	0.330
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.980	1150	0.983	2450	0.960	3950	0.330
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.979	1160	0.983	2500	0.954	4000	0.325
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.979	1170	0.983	2550	0.959	4050	0.315
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.979	1180	0.983	2600	0.960	4100	0.299
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.980	1190	0.983	2650	0.949	4150	0.276
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.980	1200	0.984	2700	0.902	4200	0.246
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.980	1250	0.985	2750	0.560	4250	0.212
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.980	1300	0.986	2800	0.365	4300	0.167
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.980	1350	0.988	2850	0.338	4350	0.124
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.980	1400	0.988	2900	0.336	4400	$8.0 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.980	1450	0.990	2950	0.334	4450	$4.4 \cdot 10^{-2}$
360	$< 10^{-5}$	660	$1.6 \cdot 10^{-5}$	960	0.980	1500	0.992	3000	0.324	4500	$2.0 \cdot 10^{-2}$
370	$< 10^{-5}$	670	$6.3 \cdot 10^{-5}$	970	0.980	1550	0.993	3050	0.307	4550	$8.4 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$4.5 \cdot 10^{-4}$	980	0.980	1600	0.993	3100	0.286	4600	$3.3 \cdot 10^{-3}$
390	$< 10^{-5}$	690	$5.4 \cdot 10^{-3}$	990	0.981	1650	0.993	3150	0.266	4650	$1.1 \cdot 10^{-3}$
400	$< 10^{-5}$	700	$5.9 \cdot 10^{-2}$	1000	0.981	1700	0.992	3200	0.248	4700	$4.4 \cdot 10^{-4}$
410	$< 10^{-5}$	710	0.311	1010	0.981	1750	0.990	3250	0.233	4750	$1.8 \cdot 10^{-4}$
420	$< 10^{-5}$	720	0.666	1020	0.981	1800	0.989	3300	0.220	4800	$8.3 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.866	1030	0.981	1850	0.988	3350	0.212	4850	$4.2 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.941	1040	0.981	1900	0.987	3400	0.207	4900	$2.2 \cdot 10^{-5}$
450	$< 10^{-5}$	750	0.967	1050	0.981	1950	0.987	3450	0.209	4950	$1.1 \cdot 10^{-5}$
460	$< 10^{-5}$	760	0.976	1060	0.981	2000	0.986	3500	0.217	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.979	1070	0.981	2050	0.985	3550	0.231	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.980	1080	0.982	2100	0.984	3600	0.248	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.981	1090	0.982	2150	0.980	3650	0.265	5150	$< 10^{-5}$



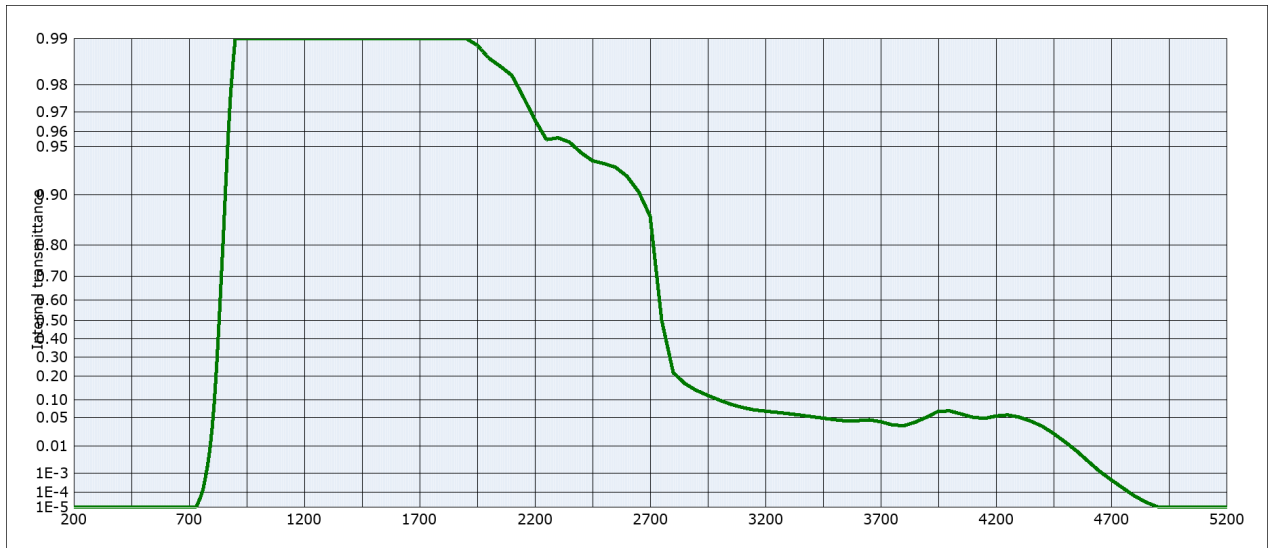
Internal transmittance τ_i at reference thickness $d = 3$ mm
 The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.944	1100	0.112	2200	0.101	3700	$9.7 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.941	1110	$8.1 \cdot 10^{-2}$	2250	0.140	3750	0.103
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.938	1120	$5.6 \cdot 10^{-2}$	2300	0.184	3800	0.111
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.933	1130	$3.9 \cdot 10^{-2}$	2350	0.229	3850	0.118
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.927	1140	$2.5 \cdot 10^{-2}$	2400	0.264	3900	0.124
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.921	1150	$1.6 \cdot 10^{-2}$	2450	0.287	3950	0.128
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.915	1160	$9.6 \cdot 10^{-3}$	2500	0.300	4000	0.129
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.908	1170	$6.1 \cdot 10^{-3}$	2550	0.302	4050	0.126
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.899	1180	$3.9 \cdot 10^{-3}$	2600	0.299	4100	0.114
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.889	1190	$2.5 \cdot 10^{-3}$	2650	0.292	4150	0.101
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.878	1200	$1.6 \cdot 10^{-3}$	2700	0.261	4200	$8.6 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.865	1250	$2.5 \cdot 10^{-4}$	2750	0.134	4250	$7.0 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.851	1300	$1.8 \cdot 10^{-4}$	2800	0.104	4300	$5.2 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.833	1350	$3.7 \cdot 10^{-4}$	2850	0.107	4350	$3.4 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.814	1400	$3.4 \cdot 10^{-4}$	2900	0.114	4400	$2.0 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.794	1450	$1.3 \cdot 10^{-4}$	2950	0.119	4450	$9.8 \cdot 10^{-3}$
360	$< 10^{-5}$	660	$< 10^{-5}$	960	0.770	1500	$5.7 \cdot 10^{-5}$	3000	0.120	4500	$4.4 \cdot 10^{-3}$
370	$< 10^{-5}$	670	$< 10^{-5}$	970	0.740	1550	$7.8 \cdot 10^{-5}$	3050	0.116	4550	$1.8 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$< 10^{-5}$	980	0.705	1600	$1.7 \cdot 10^{-4}$	3100	0.109	4600	$7.2 \cdot 10^{-4}$
390	$< 10^{-5}$	690	$1.9 \cdot 10^{-5}$	990	0.666	1650	$2.7 \cdot 10^{-4}$	3150	0.102	4650	$2.8 \cdot 10^{-4}$
400	$< 10^{-5}$	700	$6.4 \cdot 10^{-3}$	1000	0.625	1700	$2.4 \cdot 10^{-4}$	3200	$9.5 \cdot 10^{-2}$	4700	$1.2 \cdot 10^{-4}$
410	$< 10^{-5}$	710	$9.9 \cdot 10^{-2}$	1010	0.577	1750	$2.2 \cdot 10^{-4}$	3250	$8.9 \cdot 10^{-2}$	4750	$5.8 \cdot 10^{-5}$
420	$< 10^{-5}$	720	0.357	1020	0.524	1800	$3.3 \cdot 10^{-4}$	3300	$8.4 \cdot 10^{-2}$	4800	$3.2 \cdot 10^{-5}$
430	$< 10^{-5}$	730	0.633	1030	0.470	1850	$8.6 \cdot 10^{-4}$	3350	$8.0 \cdot 10^{-2}$	4850	$1.7 \cdot 10^{-5}$
440	$< 10^{-5}$	740	0.809	1040	0.413	1900	$2.5 \cdot 10^{-3}$	3400	$7.7 \cdot 10^{-2}$	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	0.895	1050	0.354	1950	$7.4 \cdot 10^{-3}$	3450	$7.8 \cdot 10^{-2}$	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	0.931	1060	0.297	2000	$1.5 \cdot 10^{-2}$	3500	$7.9 \cdot 10^{-2}$	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.944	1070	0.242	2050	$2.8 \cdot 10^{-2}$	3550	$8.2 \cdot 10^{-2}$	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.947	1080	0.194	2100	$4.6 \cdot 10^{-2}$	3600	$8.7 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.946	1090	0.148	2150	$7.0 \cdot 10^{-2}$	3650	$9.2 \cdot 10^{-2}$	5150	$< 10^{-5}$



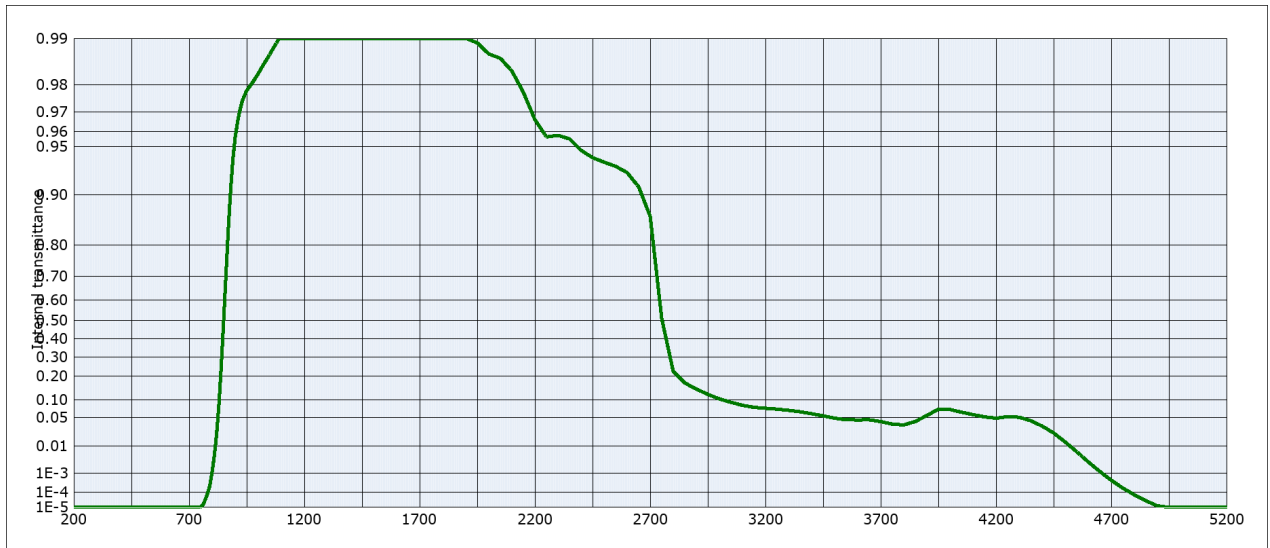
Internal transmittance τ_i at reference thickness $d = 3$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	0.859	1100	0.994	2200	0.957	3700	$3.8 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.928	1110	0.994	2250	0.947	3750	$3.4 \cdot 10^{-2}$
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.961	1120	0.994	2300	0.947	3800	$3.1 \cdot 10^{-2}$
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.978	1130	0.994	2350	0.944	3850	$3.5 \cdot 10^{-2}$
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.986	1140	0.994	2400	0.936	3900	$4.6 \cdot 10^{-2}$
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.990	1150	0.995	2450	0.930	3950	$6.2 \cdot 10^{-2}$
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.991	1160	0.995	2500	0.926	4000	$6.5 \cdot 10^{-2}$
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.992	1170	0.995	2550	0.924	4050	$5.7 \cdot 10^{-2}$
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.992	1180	0.995	2600	0.913	4100	$4.9 \cdot 10^{-2}$
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.993	1190	0.995	2650	0.896	4150	$4.7 \cdot 10^{-2}$
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.993	1200	0.995	2700	0.863	4200	$4.8 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.993	1250	0.995	2750	0.544	4250	$4.9 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.993	1300	0.995	2800	0.218	4300	$4.8 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.993	1350	0.995	2850	0.156	4350	$4.3 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.993	1400	0.993	2900	0.128	4400	$3.5 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.993	1450	0.993	2950	0.107	4450	$2.6 \cdot 10^{-2}$
360	$< 10^{-5}$	660	$< 10^{-5}$	960	0.993	1500	0.994	3000	$9.1 \cdot 10^{-2}$	4500	$1.7 \cdot 10^{-2}$
370	$< 10^{-5}$	670	$< 10^{-5}$	970	0.993	1550	0.994	3050	$8.0 \cdot 10^{-2}$	4550	$9.4 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$< 10^{-5}$	980	0.994	1600	0.993	3100	$7.1 \cdot 10^{-2}$	4600	$4.6 \cdot 10^{-3}$
390	$< 10^{-5}$	690	$< 10^{-5}$	990	0.994	1650	0.991	3150	$6.4 \cdot 10^{-2}$	4650	$1.9 \cdot 10^{-3}$
400	$< 10^{-5}$	700	$< 10^{-5}$	1000	0.994	1700	0.989	3200	$5.8 \cdot 10^{-2}$	4700	$5.5 \cdot 10^{-4}$
410	$< 10^{-5}$	710	$1.4 \cdot 10^{-5}$	1010	0.994	1750	0.987	3250	$5.4 \cdot 10^{-2}$	4750	$2.0 \cdot 10^{-4}$
420	$< 10^{-5}$	720	$3.2 \cdot 10^{-5}$	1020	0.994	1800	0.985	3300	$5.2 \cdot 10^{-2}$	4800	$7.4 \cdot 10^{-5}$
430	$< 10^{-5}$	730	$1.3 \cdot 10^{-4}$	1030	0.994	1850	0.983	3350	$5.0 \cdot 10^{-2}$	4850	$3.0 \cdot 10^{-5}$
440	$< 10^{-5}$	740	$9.3 \cdot 10^{-4}$	1040	0.994	1900	0.982	3400	$4.8 \cdot 10^{-2}$	4900	$1.2 \cdot 10^{-5}$
450	$< 10^{-5}$	750	$8.9 \cdot 10^{-3}$	1050	0.994	1950	0.980	3450	$4.4 \cdot 10^{-2}$	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	$6.3 \cdot 10^{-2}$	1060	0.994	2000	0.978	3500	$4.0 \cdot 10^{-2}$	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.235	1070	0.994	2050	0.977	3550	$3.7 \cdot 10^{-2}$	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.496	1080	0.994	2100	0.974	3600	$3.7 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.722	1090	0.994	2150	0.967	3650	$3.8 \cdot 10^{-2}$	5150	$< 10^{-5}$



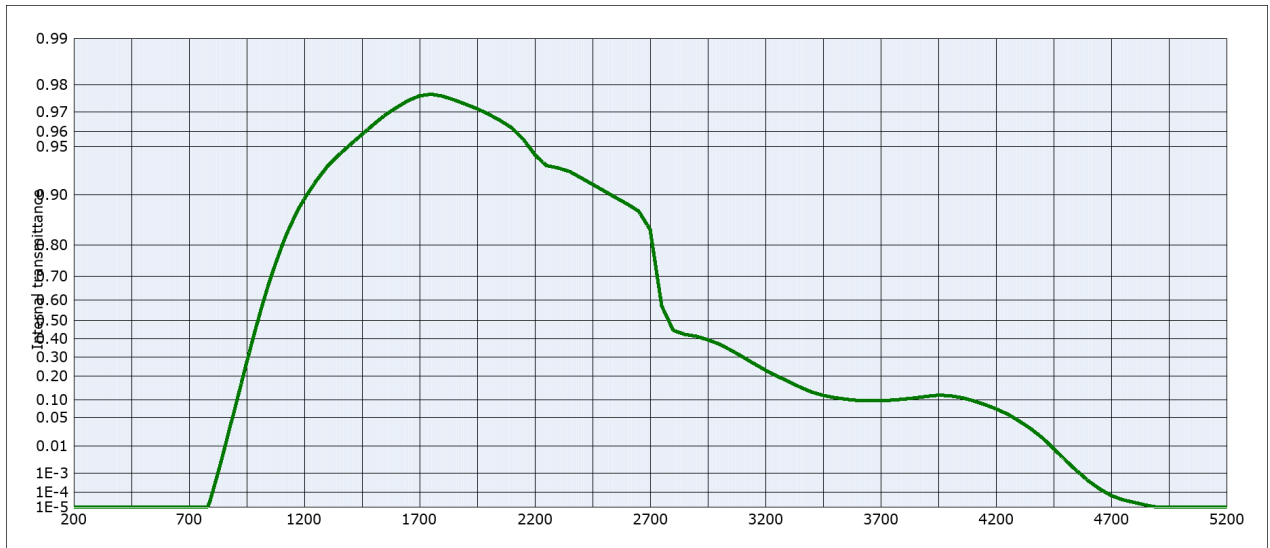
Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
The internal transmittance values, tabulated and graphically represented, are reference values only

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	$< 10^{-5}$	800	$3.0 \cdot 10^{-2}$	1100	0.997	2200	0.966	3700	$4.1 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$< 10^{-5}$	810	$9.9 \cdot 10^{-2}$	1110	0.997	2250	0.955	3750	$3.5 \cdot 10^{-2}$
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.260	1120	0.997	2300	0.956	3800	$3.4 \cdot 10^{-2}$
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.490	1130	0.997	2350	0.953	3850	$4.1 \cdot 10^{-2}$
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.699	1140	0.997	2400	0.946	3900	$5.1 \cdot 10^{-2}$
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.837	1150	0.997	2450	0.939	3950	$6.6 \cdot 10^{-2}$
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.919	1160	0.997	2500	0.936	4000	$6.7 \cdot 10^{-2}$
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.958	1170	0.998	2550	0.933	4050	$5.9 \cdot 10^{-2}$
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.977	1180	0.998	2600	0.923	4100	$5.1 \cdot 10^{-2}$
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.985	1190	0.998	2650	0.904	4150	$4.8 \cdot 10^{-2}$
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.990	1200	0.998	2700	0.865	4200	$5.4 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.993	1250	0.998	2750	0.500	4250	$5.6 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.994	1300	0.999	2800	0.218	4300	$5.1 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.995	1350	1.000	2850	0.166	4350	$4.3 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.995	1400	0.998	2900	0.137	4400	$3.3 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.996	1450	0.999	2950	0.117	4450	$2.2 \cdot 10^{-2}$
360	$< 10^{-5}$	660	$< 10^{-5}$	960	0.996	1500	1.000	3000	0.100	4500	$1.3 \cdot 10^{-2}$
370	$< 10^{-5}$	670	$< 10^{-5}$	970	0.996	1550	1.000	3050	$8.6 \cdot 10^{-2}$	4550	$7.1 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$< 10^{-5}$	980	0.996	1600	1.000	3100	$7.6 \cdot 10^{-2}$	4600	$3.1 \cdot 10^{-3}$
390	$< 10^{-5}$	690	$< 10^{-5}$	990	0.996	1650	0.998	3150	$7.0 \cdot 10^{-2}$	4650	$1.2 \cdot 10^{-3}$
400	$< 10^{-5}$	700	$< 10^{-5}$	1000	0.996	1700	0.996	3200	$6.6 \cdot 10^{-2}$	4700	$4.9 \cdot 10^{-4}$
410	$< 10^{-5}$	710	$< 10^{-5}$	1010	0.996	1750	0.994	3250	$6.3 \cdot 10^{-2}$	4750	$1.8 \cdot 10^{-4}$
420	$< 10^{-5}$	720	$< 10^{-5}$	1020	0.996	1800	0.992	3300	$5.9 \cdot 10^{-2}$	4800	$6.2 \cdot 10^{-5}$
430	$< 10^{-5}$	730	$1.0 \cdot 10^{-5}$	1030	0.996	1850	0.991	3350	$5.6 \cdot 10^{-2}$	4850	$2.4 \cdot 10^{-5}$
440	$< 10^{-5}$	740	$2.3 \cdot 10^{-5}$	1040	0.997	1900	0.990	3400	$5.2 \cdot 10^{-2}$	4900	$1.1 \cdot 10^{-5}$
450	$< 10^{-5}$	750	$5.2 \cdot 10^{-5}$	1050	0.997	1950	0.989	3450	$4.9 \cdot 10^{-2}$	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	$1.4 \cdot 10^{-4}$	1060	0.997	2000	0.987	3500	$4.6 \cdot 10^{-2}$	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	$5.6 \cdot 10^{-4}$	1070	0.997	2050	0.985	3550	$4.3 \cdot 10^{-2}$	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	$2.0 \cdot 10^{-3}$	1080	0.997	2100	0.983	3600	$4.4 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	$7.8 \cdot 10^{-3}$	1090	0.997	2150	0.976	3650	$4.5 \cdot 10^{-2}$	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	$< 10^{-5}$	800	$1.2 \cdot 10^{-3}$	1100	0.990	2200	0.966	3700	$4.2 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$< 10^{-5}$	810	$5.3 \cdot 10^{-3}$	1110	0.991	2250	0.957	3750	$3.7 \cdot 10^{-2}$
220	$< 10^{-5}$	520	$< 10^{-5}$	820	$2.4 \cdot 10^{-2}$	1120	0.991	2300	0.958	3800	$3.5 \cdot 10^{-2}$
230	$< 10^{-5}$	530	$< 10^{-5}$	830	$9.1 \cdot 10^{-2}$	1130	0.992	2350	0.956	3850	$4.2 \cdot 10^{-2}$
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.261	1140	0.992	2400	0.947	3900	$5.5 \cdot 10^{-2}$
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.500	1150	0.993	2450	0.941	3950	$7.2 \cdot 10^{-2}$
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.704	1160	0.993	2500	0.937	4000	$7.1 \cdot 10^{-2}$
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.838	1170	0.994	2550	0.934	4050	$6.3 \cdot 10^{-2}$
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.905	1180	0.994	2600	0.927	4100	$5.7 \cdot 10^{-2}$
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.940	1190	0.994	2650	0.911	4150	$5.2 \cdot 10^{-2}$
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.957	1200	0.995	2700	0.865	4200	$4.9 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.965	1250	0.996	2750	0.510	4250	$5.2 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.971	1300	0.997	2800	0.224	4300	$5.1 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.974	1350	0.998	2850	0.169	4350	$4.4 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.977	1400	0.997	2900	0.143	4400	$3.3 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.978	1450	0.998	2950	0.121	4450	$2.3 \cdot 10^{-2}$
360	$< 10^{-5}$	660	$< 10^{-5}$	960	0.979	1500	1.000	3000	0.104	4500	$1.3 \cdot 10^{-2}$
370	$< 10^{-5}$	670	$< 10^{-5}$	970	0.980	1550	1.000	3050	$9.3 \cdot 10^{-2}$	4550	$6.8 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$< 10^{-5}$	980	0.981	1600	1.000	3100	$8.3 \cdot 10^{-2}$	4600	$3.0 \cdot 10^{-3}$
390	$< 10^{-5}$	690	$< 10^{-5}$	990	0.982	1650	0.999	3150	$7.7 \cdot 10^{-2}$	4650	$1.2 \cdot 10^{-3}$
400	$< 10^{-5}$	700	$< 10^{-5}$	1000	0.983	1700	0.997	3200	$7.4 \cdot 10^{-2}$	4700	$4.7 \cdot 10^{-4}$
410	$< 10^{-5}$	710	$< 10^{-5}$	1010	0.984	1750	0.995	3250	$7.2 \cdot 10^{-2}$	4750	$1.8 \cdot 10^{-4}$
420	$< 10^{-5}$	720	$< 10^{-5}$	1020	0.985	1800	0.993	3300	$6.8 \cdot 10^{-2}$	4800	$7.2 \cdot 10^{-5}$
430	$< 10^{-5}$	730	$< 10^{-5}$	1030	0.986	1850	0.992	3350	$6.4 \cdot 10^{-2}$	4850	$3.0 \cdot 10^{-5}$
440	$< 10^{-5}$	740	$< 10^{-5}$	1040	0.987	1900	0.991	3400	$5.9 \cdot 10^{-2}$	4900	$1.3 \cdot 10^{-5}$
450	$< 10^{-5}$	750	$< 10^{-5}$	1050	0.987	1950	0.989	3450	$5.4 \cdot 10^{-2}$	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	$1.5 \cdot 10^{-5}$	1060	0.988	2000	0.987	3500	$4.9 \cdot 10^{-2}$	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	$3.4 \cdot 10^{-5}$	1070	0.989	2050	0.987	3550	$4.5 \cdot 10^{-2}$	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	$8.5 \cdot 10^{-5}$	1080	0.989	2100	0.984	3600	$4.5 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	$2.4 \cdot 10^{-4}$	1090	0.990	2150	0.978	3650	$4.5 \cdot 10^{-2}$	5150	$< 10^{-5}$



Internal transmittance τ_i at reference thickness $d = 3 \text{ mm}$
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	$< 10^{-5}$	800	$8.4 \cdot 10^{-5}$	1100	0.792	2200	0.944	3700	$9.8 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$< 10^{-5}$	810	$2.5 \cdot 10^{-4}$	1110	0.808	2250	0.934	3750	0.100
220	$< 10^{-5}$	520	$< 10^{-5}$	820	$6.5 \cdot 10^{-4}$	1120	0.823	2300	0.932	3800	0.104
230	$< 10^{-5}$	530	$< 10^{-5}$	830	$1.6 \cdot 10^{-3}$	1130	0.835	2350	0.928	3850	0.108
240	$< 10^{-5}$	540	$< 10^{-5}$	840	$3.4 \cdot 10^{-3}$	1140	0.846	2400	0.922	3900	0.114
250	$< 10^{-5}$	550	$< 10^{-5}$	850	$6.8 \cdot 10^{-3}$	1150	0.856	2450	0.914	3950	0.118
260	$< 10^{-5}$	560	$< 10^{-5}$	860	$1.3 \cdot 10^{-2}$	1160	0.866	2500	0.905	4000	0.116
270	$< 10^{-5}$	570	$< 10^{-5}$	870	$2.2 \cdot 10^{-2}$	1170	0.874	2550	0.896	4050	0.109
280	$< 10^{-5}$	580	$< 10^{-5}$	880	$3.6 \cdot 10^{-2}$	1180	0.882	2600	0.886	4100	$9.8 \cdot 10^{-2}$
290	$< 10^{-5}$	590	$< 10^{-5}$	890	$5.2 \cdot 10^{-2}$	1190	0.888	2650	0.874	4150	$8.6 \cdot 10^{-2}$
300	$< 10^{-5}$	600	$< 10^{-5}$	900	$7.7 \cdot 10^{-2}$	1200	0.894	2700	0.837	4200	$7.2 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.107	1250	0.918	2750	0.572	4250	$5.9 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.141	1300	0.934	2800	0.446	4300	$4.3 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.182	1350	0.944	2850	0.424	4350	$2.9 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.225	1400	0.952	2900	0.414	4400	$1.8 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.273	1450	0.958	2950	0.394	4450	$8.5 \cdot 10^{-3}$
360	$< 10^{-5}$	660	$< 10^{-5}$	960	0.318	1500	0.964	3000	0.370	4500	$3.5 \cdot 10^{-3}$
370	$< 10^{-5}$	670	$< 10^{-5}$	970	0.368	1550	0.969	3050	0.337	4550	$1.3 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$< 10^{-5}$	980	0.413	1600	0.972	3100	0.302	4600	$4.4 \cdot 10^{-4}$
390	$< 10^{-5}$	690	$< 10^{-5}$	990	0.461	1650	0.975	3150	0.264	4650	$1.6 \cdot 10^{-4}$
400	$< 10^{-5}$	700	$< 10^{-5}$	1000	0.503	1700	0.976	3200	0.230	4700	$6.4 \cdot 10^{-5}$
410	$< 10^{-5}$	710	$< 10^{-5}$	1010	0.546	1750	0.977	3250	0.201	4750	$3.4 \cdot 10^{-5}$
420	$< 10^{-5}$	720	$< 10^{-5}$	1020	0.585	1800	0.976	3300	0.175	4800	$2.2 \cdot 10^{-5}$
430	$< 10^{-5}$	730	$< 10^{-5}$	1030	0.619	1850	0.975	3350	0.151	4850	$1.4 \cdot 10^{-5}$
440	$< 10^{-5}$	740	$< 10^{-5}$	1040	0.653	1900	0.973	3400	0.130	4900	$< 10^{-5}$
450	$< 10^{-5}$	750	$< 10^{-5}$	1050	0.682	1950	0.971	3450	0.117	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	$< 10^{-5}$	1060	0.708	2000	0.969	3500	0.109	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	$< 10^{-5}$	1070	0.732	2050	0.966	3550	0.103	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	$< 10^{-5}$	1080	0.754	2100	0.962	3600	$9.9 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	$2.6 \cdot 10^{-5}$	1090	0.773	2150	0.955	3650	$9.8 \cdot 10^{-2}$	5150	$< 10^{-5}$

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