

S8023

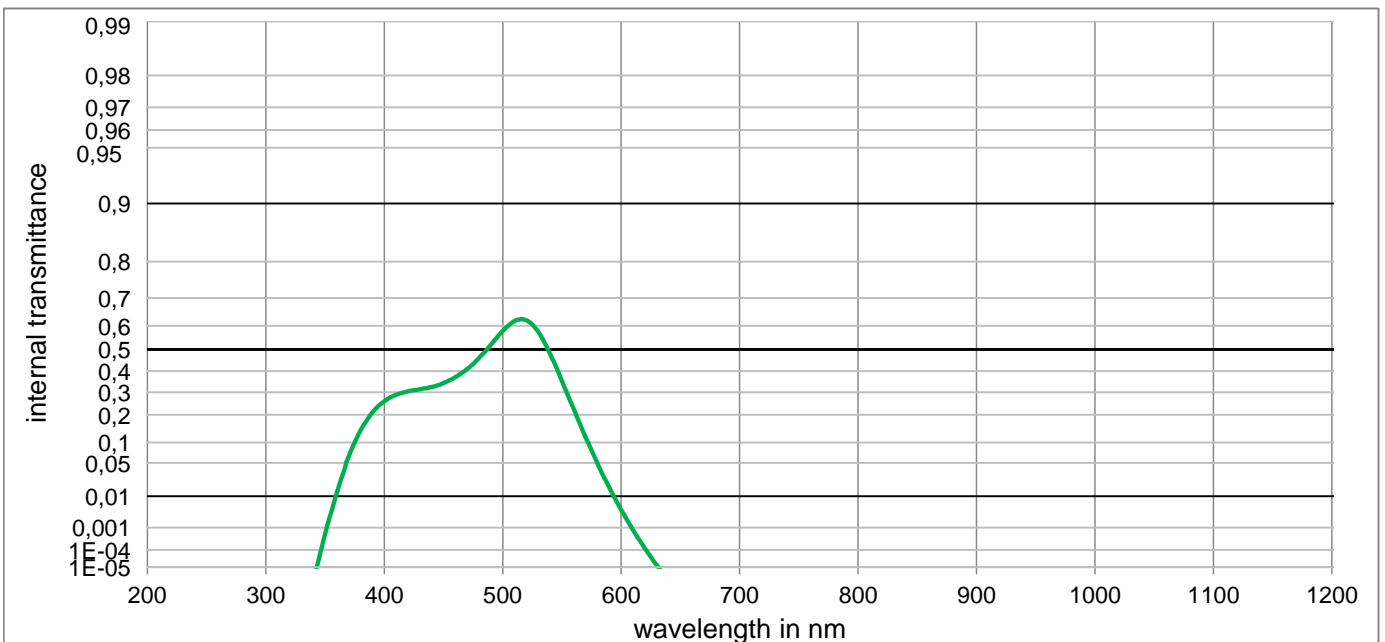
Optical properties	
Reflection factor	
$P_d = 0,913$	
Values guaranteed	
The color of glass is within a circle of the CIE Yu'v'UCS(1976) defined by $(u' - 0,088)^2 + (v' - 0,543)^2 = (0,037)^2$ for any black body radiator 1500K to 3200K	
Black body radiator	Photopic Transmittance [%]
2100 K	15,0 ±1.5
1500 K	10,0 ±1.5
Refractive indices	
n_e (546 nm) =	1,54
n_d (587,6 nm) =	1,541 ± 0,005
Sellmeier coefficients	
valid from 440 nm to 1550 nm	
	0,0304
	1,3342
	381,6503
	1,246E-01 μm^2
	32646,623 μm^2
Internal quality	
Bubble class	1

Mechanical properties	
Reference thickness	
$d =$	3 mm
Density	
$\rho =$	2,75 g/cm^3
Knoop hardness	
HK[0.1/20]	
Thermal properties	
Transformation temperature	
$T_g =$	444 °C
Thermal expansion in $10^{-6}/\text{K}$	
α (-30°C/+70°C)	
α (20°C/300°C)	
α (20°C/200°C) =	9,7

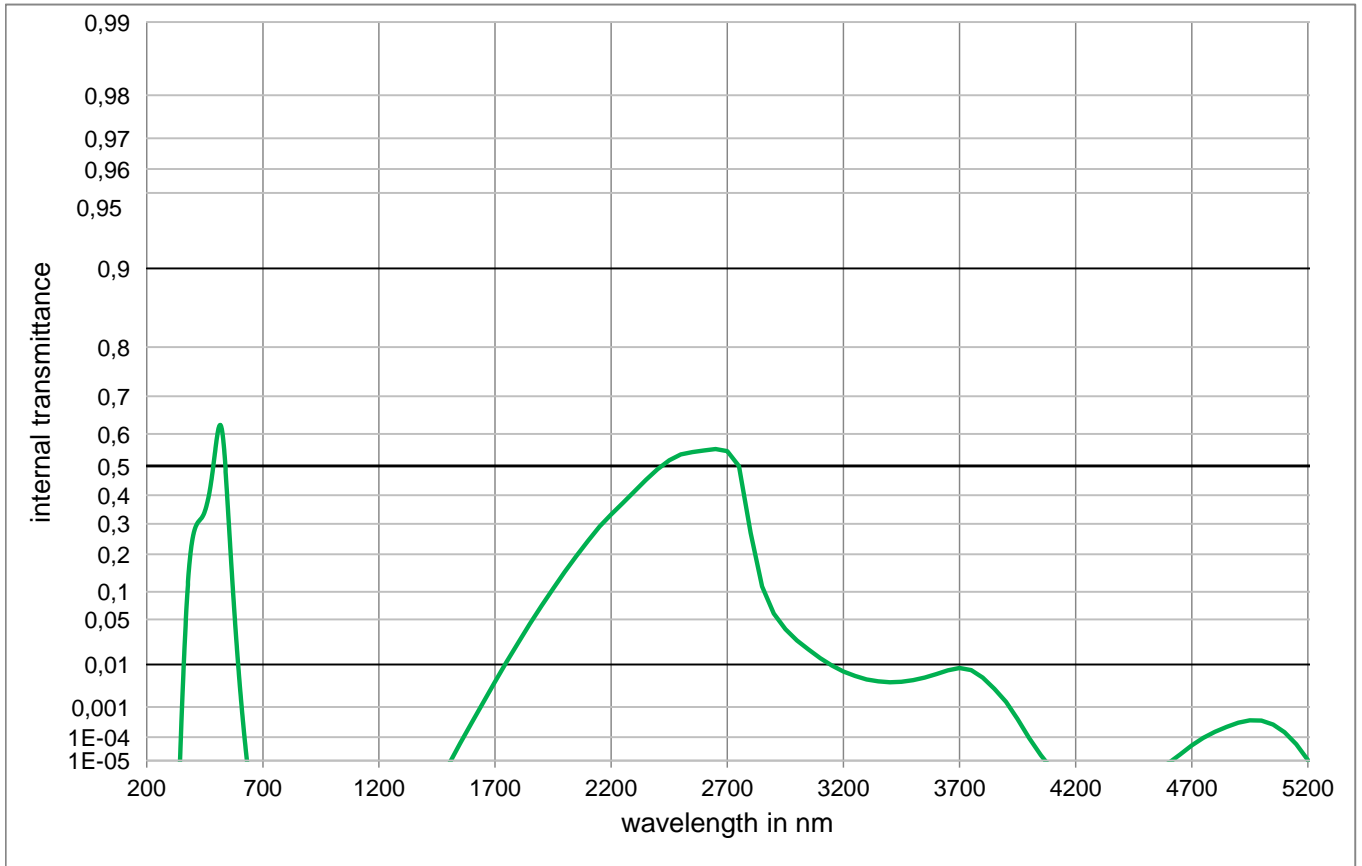
Chemical properties	
Chemical resistance	
FR class =	0
SR class =	4
AR class =	3
Resistance against humidity	
Delicate glass	
see pocket catalogue "Optical Filter Glass 2020", chapter 5.5	

Colorimetric properties				
		1 mm	2 mm	3 mm
Illuminant D65	x	0,206	0,176	0,160
	y	0,328	0,334	0,346
	Y	50,5	35,3	26,4
	λ_d	491,5	492,0	492,9
Illuminant A	P_e	0,388	0,496	0,544
	x	0,277	0,218	0,189
	y	0,459	0,474	0,486
	Y	41,3	26,9	19,3
	λ_d	500,1	499,8	500,1
P_e	0,388	0,522	0,588	

Notes	
Ionically colored glass	
Bandpass filter	
NIR cutoff filter	
NVIS-Green A - 3 mm bandpass filter according to MIL-STD-3009	
Disclaimer	
All data without tolerances are to be understood to be reference values.	



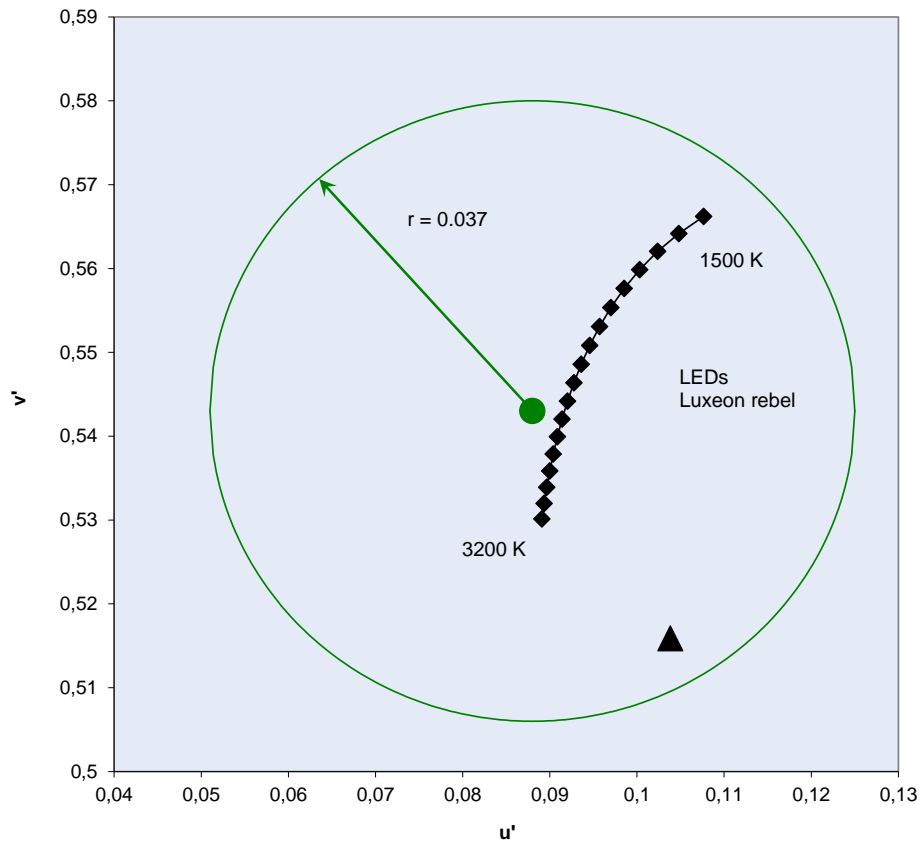
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Internal transmittance τ_i at reference thickness
 The internal transmittance values, tabulated and graphically represented, are reference values only

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	< 1,0E-05	500	5,796E-01	800	< 1,000E-05	1100	< 1,000E-05	2200	3,323E-01	3700	8,548E-03
210	< 1,0E-05	510	6,186E-01	810	< 1,000E-05	1110	< 1,000E-05	2250	3,728E-01	3750	7,773E-03
220	< 1,0E-05	520	6,216E-01	820	< 1,000E-05	1120	< 1,000E-05	2300	4,136E-01	3800	5,431E-03
230	< 1,0E-05	530	5,754E-01	830	< 1,000E-05	1130	< 1,000E-05	2350	4,531E-01	3850	3,027E-03
240	< 1,0E-05	540	4,804E-01	840	< 1,000E-05	1140	< 1,000E-05	2400	4,891E-01	3900	1,397E-03
250	< 1,0E-05	550	3,530E-01	850	< 1,000E-05	1150	< 1,000E-05	2450	5,187E-01	3950	4,345E-04
260	< 1,0E-05	560	2,225E-01	860	< 1,000E-05	1160	< 1,000E-05	2500	5,374E-01	4000	9,178E-05
270	< 1,0E-05	570	1,162E-01	870	< 1,000E-05	1170	< 1,000E-05	2550	5,451E-01	4050	1,790E-05
280	< 1,0E-05	580	4,910E-02	880	< 1,000E-05	1180	< 1,000E-05	2600	5,502E-01	4100	< 1,000E-05
290	< 1,0E-05	590	1,618E-02	890	< 1,000E-05	1190	< 1,000E-05	2650	5,547E-01	4150	< 1,000E-05
300	< 1,0E-05	600	4,118E-03	900	< 1,000E-05	1200	< 1,000E-05	2700	5,481E-01	4200	< 1,000E-05
310	< 1,0E-05	610	8,105E-04	910	< 1,000E-05	1250	< 1,000E-05	2750	4,994E-01	4250	< 1,000E-05
320	< 1,000E-05	620	1,208E-04	920	< 1,000E-05	1300	< 1,000E-05	2800	2,689E-01	4300	< 1,000E-05
330	< 1,000E-05	630	1,360E-05	930	< 1,000E-05	1350	< 1,000E-05	2850	1,121E-01	4350	< 1,000E-05
340	< 1,000E-05	640	< 1,000E-05	940	< 1,000E-05	1400	< 1,000E-05	2900	5,898E-02	4400	< 1,000E-05
350	5,305E-04	650	< 1,000E-05	950	< 1,000E-05	1450	< 1,000E-05	2950	3,724E-02	4450	< 1,000E-05
360	1,243E-02	660	< 1,000E-05	960	< 1,000E-05	1500	< 1,000E-05	3000	2,578E-02	4500	< 1,000E-05
370	6,439E-02	670	< 1,000E-05	970	< 1,000E-05	1550	5,810E-05	3050	1,840E-02	4550	< 1,000E-05
380	1,397E-01	680	< 1,000E-05	980	< 1,000E-05	1600	3,349E-04	3100	1,314E-02	4600	< 1,000E-05
390	2,098E-01	690	< 1,000E-05	990	< 1,000E-05	1650	1,381E-03	3150	9,636E-03	4650	1,919E-05
400	2,590E-01	700	< 1,000E-05	1000	< 1,000E-05	1700	4,363E-03	3200	7,306E-03	4700	4,704E-05
410	2,881E-01	710	< 1,000E-05	1010	< 1,000E-05	1750	1,129E-02	3250	5,847E-03	4750	9,473E-05
420	3,042E-01	720	< 1,000E-05	1020	< 1,000E-05	1800	2,387E-02	3300	4,945E-03	4800	1,584E-04
430	3,144E-01	730	< 1,000E-05	1030	< 1,000E-05	1850	4,389E-02	3350	4,463E-03	4850	2,376E-04
440	3,249E-01	740	< 1,000E-05	1040	< 1,000E-05	1900	7,212E-02	3400	4,260E-03	4900	3,262E-04
450	3,430E-01	750	< 1,000E-05	1050	< 1,000E-05	1950	1,074E-01	3450	4,380E-03	4950	3,896E-04
460	3,719E-01	760	< 1,000E-05	1060	< 1,000E-05	2000	1,488E-01	3500	4,740E-03	5000	3,832E-04
470	4,097E-01	770	< 1,000E-05	1070	< 1,000E-05	2050	1,947E-01	3550	5,450E-03	5050	2,843E-04
480	4,614E-01	780	< 1,000E-05	1080	< 1,000E-05	2100	2,428E-01	3600	6,450E-03	5100	1,509E-04
490	5,213E-01	790	< 1,000E-05	1090	< 1,000E-05	2150	2,908E-01	3650	7,713E-03	5150	5,275E-05

Chromaticity dependence on Incandescent Color Temperature



Chromaticity and NVIS Radiance at reference thickness 3 mm						
Planck [K]	u'	v'	x	y	Y	NR_A
1500	0,103	0,561	0,254	0,616	10,2	5,5E-11
1600	0,100	0,558	0,245	0,607	11,2	5,3E-11
1700	0,098	0,555	0,237	0,598	12,2	5,1E-11
1800	0,096	0,551	0,231	0,587	13,0	4,9E-11
1900	0,095	0,548	0,224	0,577	13,8	4,8E-11
2000	0,094	0,545	0,219	0,566	14,6	4,7E-11
2100	0,093	0,541	0,214	0,556	15,3	4,6E-11
2200	0,092	0,538	0,209	0,546	15,9	4,6E-11
2300	0,091	0,535	0,205	0,536	16,6	4,5E-11
2400	0,091	0,531	0,202	0,526	17,1	4,4E-11
2500	0,090	0,528	0,198	0,516	17,7	4,4E-11
2600	0,090	0,525	0,196	0,507	18,2	4,3E-11
2700	0,090	0,522	0,193	0,499	18,6	4,3E-11
2800	0,090	0,519	0,190	0,490	19,1	4,3E-11
2900	0,089	0,516	0,188	0,482	19,5	4,2E-11
3000	0,089	0,513	0,186	0,475	19,9	4,2E-11
3100	0,089	0,510	0,184	0,467	20,2	4,2E-11
3200	0,089	0,508	0,182	0,460	20,6	4,2E-11
LED	u'	v'	x	y	Y	NR_A
LUXEON rebel A2-RM-G	0,104	0,516	0,214	0,472	23,0	4,0E-11
other sources of illumination	A service for calculating chromaticity or NVIS radiance can be provided					

NVIS Green A

NVIS Green A Chromaticity coordinates
(as defined by MIL-STD-3009)

$u' = 0.088$

$v' = 0.543$

with radius of tolerance $r = 0.037$