Data Sheet

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 ±1.5
1500 K	10,5 ±1.5

Refractive indices

n_d (587,6 nm) = 1,541 ± 0,005

Sellmeier coefficients

on request

Internal quality

Bubble class 1

Mechanical properties

Reference thickness

d = 3 mm

Density

ρ = 2,75 g/cm³

Knoop hardness

HK[0.1/20]

Thermal properties

Transformation temperature

Tg = 444 °C

Thermal expansion in 10^{-6}/K

$\alpha_{(-30°C/+70°C)}$

$\alpha_{(20°C/300°C)}$

$\alpha_{(20°C/200°C)}$ = 9,7

Chemical properties

Chemical resistance

FR class = 0

SR class = 4

AR class = 3

Long-term changes in the polished surface are possible.

Colormetric 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
	P_e	0,388	0,496	0,544
Illuminant A	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

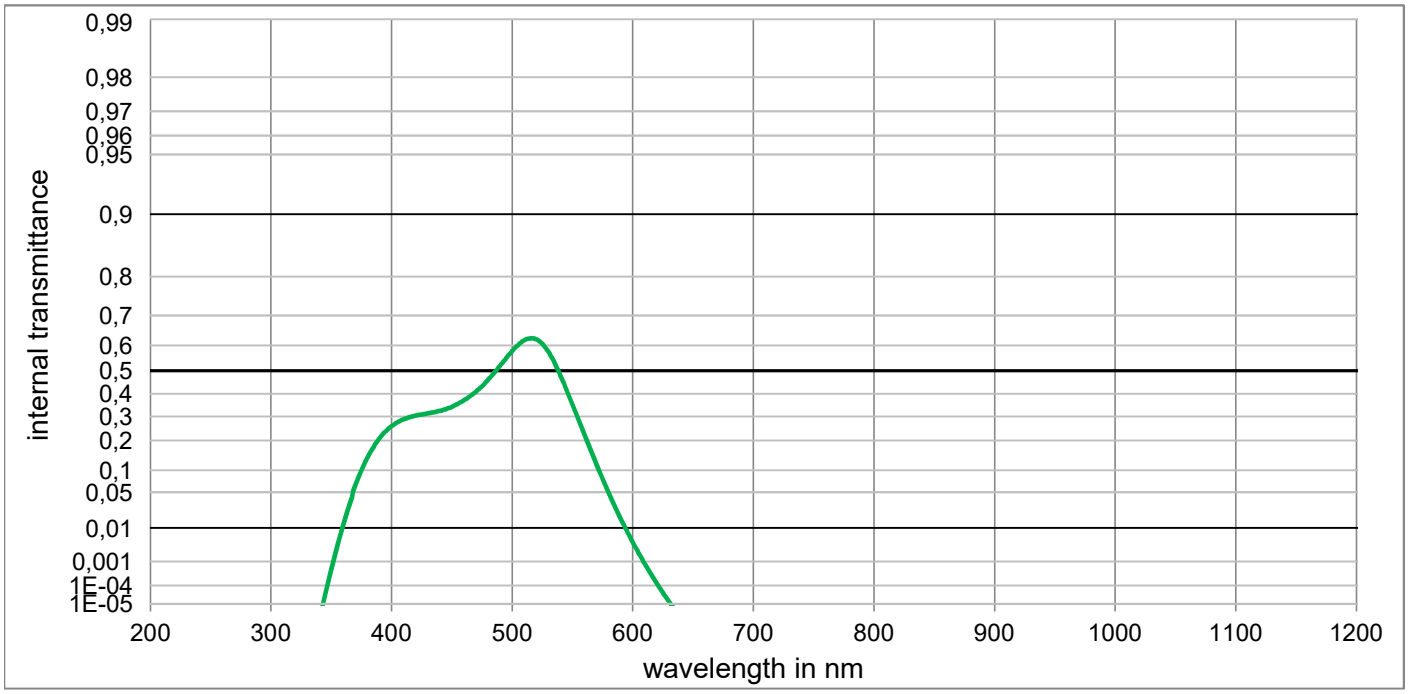
Bandpass filter

NIR cutoff filter

NVIS-Green A - 3 mm bandpass filter
according to MIL-STD-3009

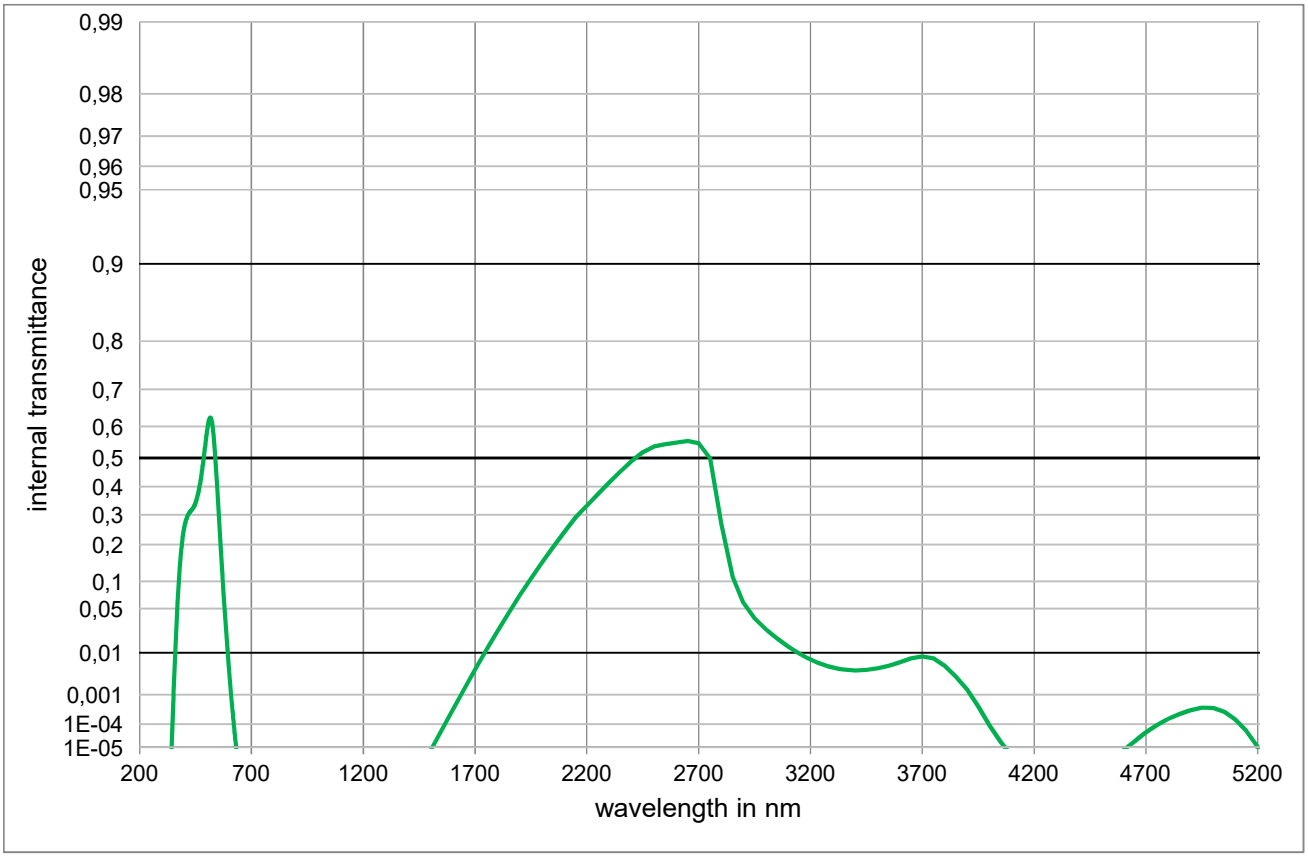
Disclaimer

All data without tolerances are to be understood to be reference values



Data Sheet

S8023



Internal transmittance ti at reference thickness

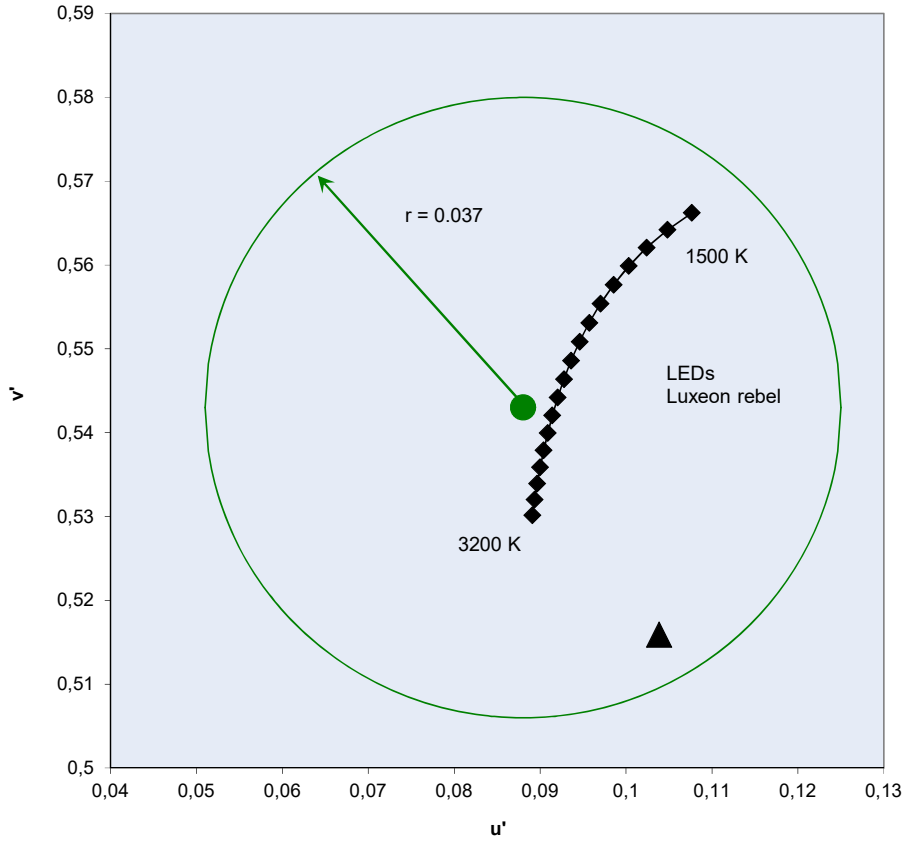
The internal transmittance values, tabulated and graphically represented, are reference values only

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

Data Sheet

S8023

Chromaticity dependence on Incandescent Color Temperature



Chromaticity and NVIS Radiance at reference thickness 3 mm							
Planck [K]	**u'**	**v'**	**x**	**y**	**Y**	**NR_A**	**NVIS Green 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	**NVIS Green A Chromaticity coodinates**
1700	0,098	0,555	0,237	0,598	12,2	5,1E-11	**(as defined by MIL-STD-3009)**
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	**u' = 0.088**
2000	0,094	0,545	0,219	0,566	14,6	4,7E-11	**v' = 0.543**
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	**with radius of tolerance r = 0.037**
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						