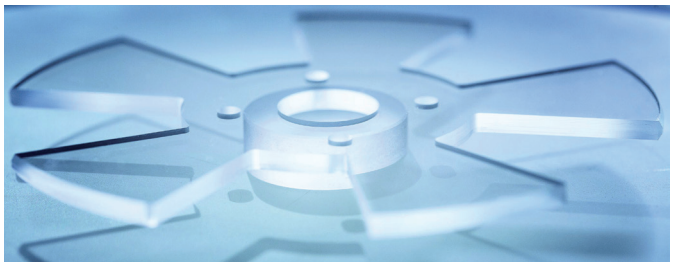
BOROFLOAT® 33 – Optical Properties

The sum of its properties is what makes it unique.

BOROFLOAT® 33 from Germany is the world's first floated borosilicate flat glass. It combines superior quality and excellent flatness with outstanding thermal, optical, chemical and mechanical features. The chemical composition and physical properties of BOROFLOAT® 33 are in accordance with DIN ISO 3585 and EN 1748 T1. Rediscover BOROFLOAT® 33 and experience the infinite potential of our most versatile material platform. BOROFLOAT® – Inspiration through Quality.



Optical wheel made of BOROFLOAT® 33.

Key benefits:

Exceptionally high transparency

- High transparency in visible and near IR & UV range of wavelengths
- Outstanding visual quality and optical clarity
- Low inherent fluorescence and solarisation tendency

Optical index of refraction

Wavelength λ (nm)	Refraction index n
435.8	1.48015
479.9	1.47676 ($n_{F'}$)
546.1	1.47311(n_e)
589.3	1.47133
643.8	1.46953 ($n_{C'}$)
656.3	1.46916

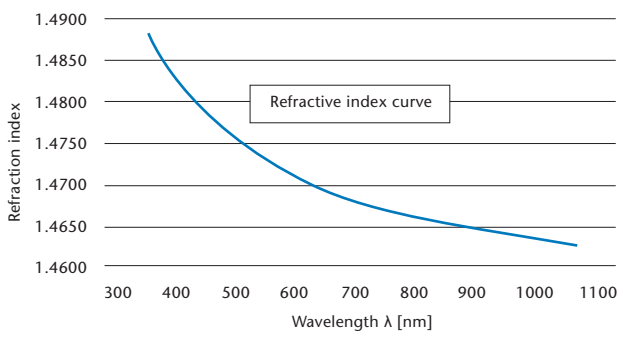
Reference values, not guaranteed values.

Optical data

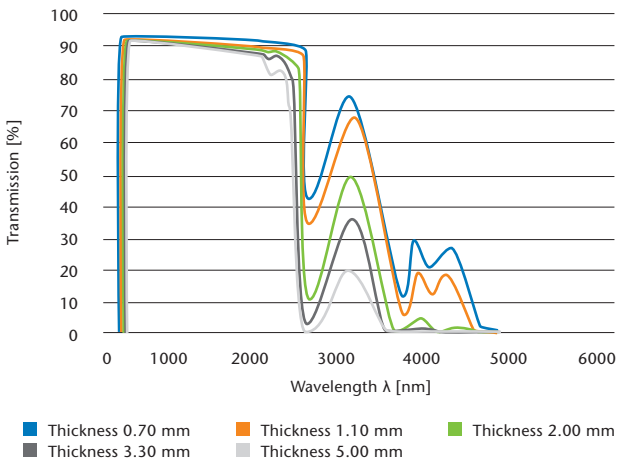
Abbe number ($v_e = (n_e - 1) / (n_{F'} - n_{C'})$)	65.41
Refraction index (n_d ($\lambda_{587.6\ nm}$))	1.47140
Dispersion ($n_F - n_C$)	71.4 x 10^{-4}
Stress-optical coefficient (K)	4.0 x 10^{-6} mm^2 N^{-1}

Reference values, not guaranteed values.

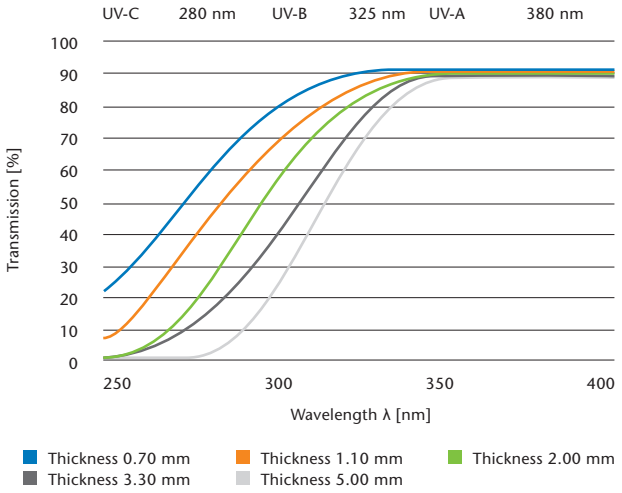
Dispersion



Transmission



Transmission in UV range



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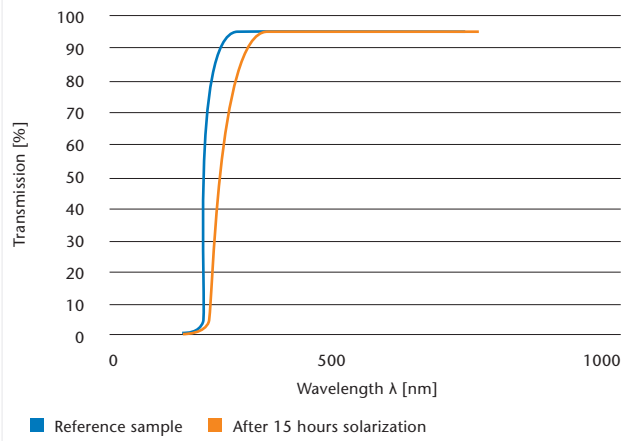
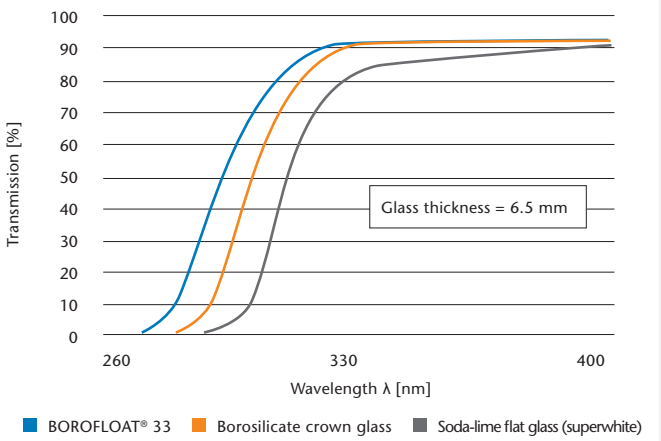
glass made of ideas

Solarization



The glass sample of a size 30 x 15 x 1 mm^3 is radiation-exposed by using the high-pressure mercury vapor lamp HOK 4/120. This lamp works with a radiation intensity of 850 W/cm^2 and with a main wavelength of 365 nm.

Transmission

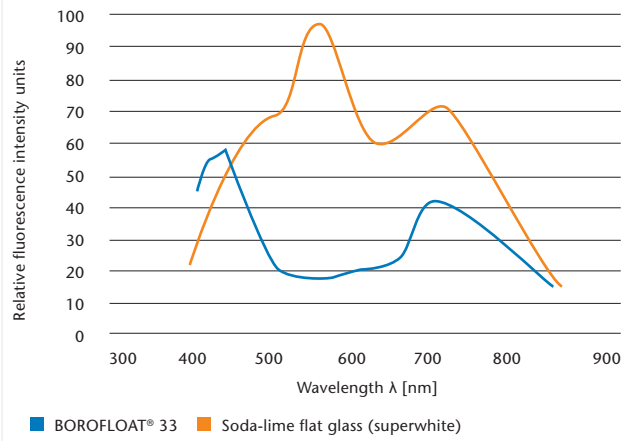


Transmission of BOROFLOAT® 33 in comparison to borosilicate crown glass and soda-lime flat glass.

Inherent fluorescence of BOROFLOAT® 33

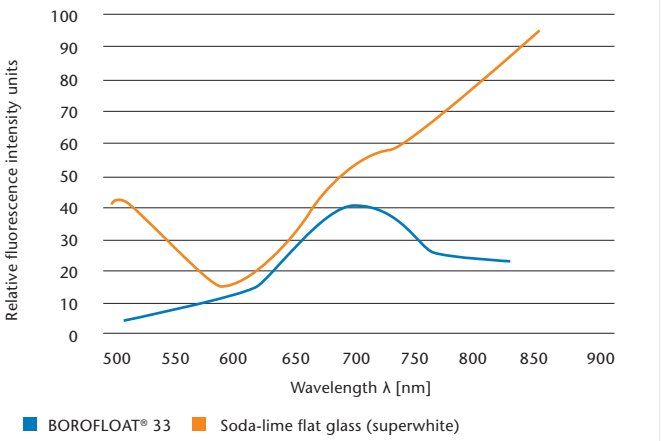
Some materials have the ability to emit electromagnetic radiation after being activated by high energy radiation. This property is referred to as fluorescence. It depends on the material's purity and structural characteristics as well as the radiation's excitation energy and excitation wavelength.
BOROFLOAT® 33 is a highly transparent glass with a much lower inherent fluorescence than soda-lime flat glass.

Inherent fluorescence at 365 nm



Inherent fluorescence of BOROFLOAT® 33 and soda-lime flat glass with an excitation wavelength of 365 nm.

Inherent fluorescence at 488 nm



Inherent fluorescence of BOROFLOAT® 33 and soda-lime flat glass with an excitation wavelength of 488 nm.

Further data and information available on request.

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