



artglass

ARTGLASS UV PROTECTIVE GLASS

Preserve materials and colors -
Protect what's important!

THE IMPACT OF ULTRAVIOLET LIGHT (UV)

Ultraviolet light is much like the visible light that we see, but the UV rays have shorter wavelengths and pack much more energy. Because of this energy, UV light can damage the molecular structure of various materials. Even low levels of UV radiation can cause damage to various types of art, if long-term exposure is allowed.

WHAT'S THE RISK?

Yellowing

UV radiation can damage the cellulose in paper - causing the paper to gain yellow undertones.

Fading

UV damage can cause shifts in hues and colors, gradually impacting the original colors of an artwork. Different color pigment compositions are more susceptible to UV damage, but most do suffer, if exposed to sunlight over long periods.

Structural damage

UV light can harm the molecular structures of various materials and cause visual and mechanical degradation over a period of time.

Original

Yellowing

Fading

Structural damage



UV PROTECTIVE GLASS PROPERTIES

UV protective glazing acts as a protective barrier - limiting the amount of UV that reaches the artwork. Depending on the desired application and the type of the artwork, the appropriate UV protection should be chosen.

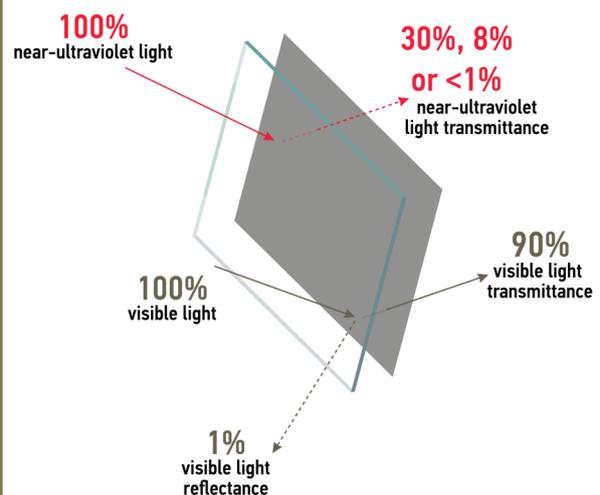
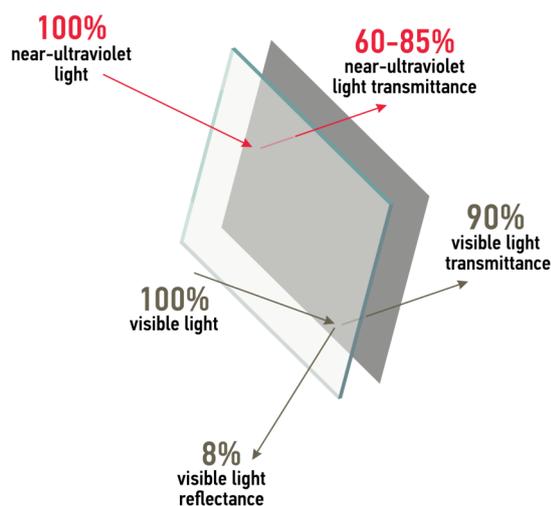
Uncoated glass

Depending on the thickness and type, uncoated regular glass transmits from 60 to 85% of UV light*, which in long term may cause gradual, but irreversible deterioration of artworks and mediums.

* UV light transmittance measured according to EN410 standard.

Coated glass

Glazing products with anti-reflective and UV-protective properties increase the protection level and limit the transmission of UV radiation on artworks. The appropriate level of UV protection should be chosen according to the artwork's value, medium and display conditions.



70% UV PROTECTION ARTGLASS AR 70

Basic 70% UV protection reduces the percentage of UV light that reaches the artwork, but the main purpose of such glazing is anti-reflection and true transmission of colors. This glazing is easy to handle and should be chosen for chemically stable pieces.

92% UV PROTECTION ARTGLASS AR 92

92% UV block achieves the optimal combination between truest color transmission and a strong UV protection. The AR 92 product is easy to handle and recommended for framing where longevity of materials is a priority.

99% UV PROTECTION ARTGLASS AR 99

99% UV absorbing coating guarantees conservation-grade UV protection, approved by PFFA and FATG. These products require extra care when handling, and offer the best UV protection available on the market.

TESTING

To compare the effects of UV-protective coatings in comparison to regular glass, we conducted a UV exposure experiment to measure the visible effect on print images.

For our testing, we used Q-UV Accelerated Weathering Tester (UVA-340 Lamps), with UV exposure measured at 130 w/m². The samples were contained in a unique environment, to compare the protection provided by different Artglass products vs uncoated glass.

The results were documented in three stages

Results for uncoated low-iron glass



Before UV exposure



After 168 hours in the accelerated UV light chamber
(the equivalent of approximately **2 months** of constant exposure to direct sunlight*)



After 547 hours in the accelerated UV light chamber
(the equivalent of approximately **half a year** of constant exposure to direct sunlight*)

* Simulated values, based on average solar radiation - the effects may differ, depending on the intensity of the UV exposure

OUR PRODUCTS AND PERFORMANCE

ARTGLASS AR 99

Near-invisible conservation-grade protection

The combined glass coating method achieves more than 99% UV protection and <1% visible light reflection.

This is the standard for museums, galleries and framing jobs where maximum UV protection is essential.



Original image

After 574 hours
of intensive UV
exposure



Regular glass



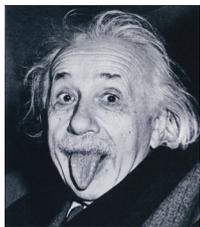
Artglass AR 99



ARTGLASS AR 92

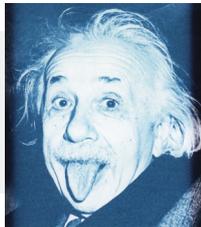
Best of all worlds – clarity, ease of handling and UV protection

Artglass AR 92 provides very high UV protection, and its easy-to-clean anti-reflective magnetron-sputtered coating on a low-iron substrate guarantees the truest color transmission, and visible light reflection decreased to <1%.

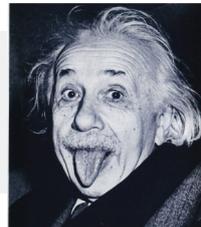


Original image

After 574 hours
of intensive UV
exposure



Regular glass



Artglass AR 92



ARTGLASS AR 70

Basic UV protection - with maximum clarity

Impeccable anti-reflective performance, truest transmission of colors, easy to clean and handle.

Artglass AR 70 provides an effective display and protects from UV light significantly better than uncoated glass.



Original image

After 574 hours
of intensive UV
exposure



Regular glass



Artglass AR 70



TIPS FOR PROTECTING AGAINST UV LIGHT DAMAGE

- Choose glazing with appropriate level of UV protection,
- Always hang artwork away from direct sunlight,
- Remember that visible light and other factors also contribute to long-term degradation of materials,
- Remember that UV damage is irreversible, so consult with your framer about the appropriate protection!

ABOUT ARTGLASS

Artglass is a high-quality anti-reflective and UV protective glazing manufacturer, and #1 supplier of anti-reflective glass in Europe. From the Rijksmuseum in Amsterdam to the Forbidden City Museum in Beijing, the world's leading museums trust Artglass to preserve and display their most cherished collections.

Find out more about our products and get inspired by visiting our website: artglass.groglass.com

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SOURCES:

- ASTM G173-03 Reference Spectra Derived from SMARTS v.2.9.2, available in (American Society for Testing and Materials, 2012; Gueymard, 2004;Gueymard et al., 2002; NREL, 2015;2012; Gueymard, 2004; Gueymard et al., 2002; NREL, 2015 BEEK, HCA VAN, and Pieter M. Heertjes. "Fading by light of organic dyes on textiles and other materials." *Studies in Conservation* 11.3 (1966): 123-132.
- Cuttle, Christopher. "Damage to museum objects due to light exposure." *International Journal of Lighting Research and Technology* 28.1 (1996): 1-9.
- Feller, Robert L. "Control of deteriorating effects of light upon museum objects." *Museum International* 17.2 (1964): 57-98.
- Michalski, Stefan. "Damage to museum objects by visible radiation (light) and ultraviolet radiation (UV)." *Lighting in museums, galleries and historic houses. Papers of the conference. Bristol, 9-10th April 1987.* 1987.
- Michalski, Stefan. "Agent of deterioration: light, ultraviolet and infrared." *Canadian Conservation Institute* 17 (2018).
- Saunders, David, and Jo Kirby. "Light-induced colour changes in red and yellow lake pigments." *National Gallery Technical Bulletin* 15.1 (1994): 79-97.
- Stigter, Sanneke. "Living artist, living artwork? The problem of faded colour photographs in the work of Ger van Elk." *Studies in Conservation* 49.sup2 (2004): 105-108.

