

Accelerated UV Testing Document

OUTDOOR AND MEMORIAL GLASS PRINTS

OUR CONTINUAL TESTING SHOWS EXCELLENT PRINTED IMAGE LIGHTFASTNESS

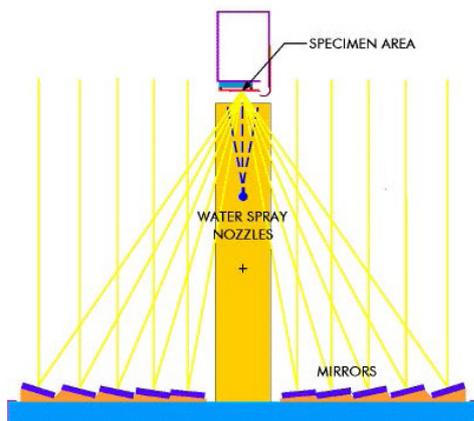
Lightfastness is a term used in the print industry to describe image resistance to fading overtime. The main factors that contribute to fading are exposure to UV radiation, humidity & pollutants such as ozone & smoke.

Prints on Glass outdoor pieces, including memorials, signage and feature walls are sealed with 2 pack industrial paints which protect the embedded image from the ultra violet light pollutants and humidity. The specially selected glass reduces the transmission of UV radiation that contributes to fading.

The pigments used to print the image are also used in excellent weatherproof automotive and architectural products.

To guarantee the lightfastness of our outdoor and memorial glass prints, Prints on Glass have run extensive tests on the Altrac, ASTM G90, Accelerated Exposure Testing at Allunga's Townsville Site. Altrac uses Fresnel-like arrays of first-surface mirrors and tracks the sun in two axes (see illustration, below).

To date, Prints on Glass outdoor and memorial glass prints has achieved the equivalent of 10 years lightfastness in the accelerated testing. It is expected to demonstrate many additional years as testing continue.



Lightfastness Test Criteria

- Light Source: Townsville, concentrated sunlight
- Test Protocol: Altrac, ASTM G90, Accelerated Exposure.
- Fade Criteria: ICA in accordance with AS1580.601.2, 3, and 4*
- Measurements: $<1 \Delta E$ for 10-year period

Colour changes with Delta E Values <1 will probably not be visible to untrained observers. Colour changes Delta E* values between 1 and 2 may not be noticeable to untrained observers no unexposed material is available to act as a reference. Colour changes with Delta E* values >2 may be noticeable to untrained observers.

Average acceleration rates, in radiation terms are in the 4.5 to 5.0 range, using the average annual solar radiation of approx. 7,500 MJ/m², received on fixed-rack open exposure at a latitude angle of 19°, as a base.

The data demonstrates that these pigments should have limited fading or discolouration for at least 10 years of exposure. Colour changes during this time would not be noticeable by an ordinary observer.