

What is a lightfast rating when quoted for ink jet printing?

A lightfastness or image permanence rating is not a durability claim, but refers to the amount of time it takes for noticeable fading to occur in a print due to light, when framed under glass in normal indoor display conditions. Epson and most other manufacturers use 450 lux, the approximate light of a brightly lit room, to calculate a lightfastness rating. Some manufacturers, however, may use lower lux ratings to improve their lightfast numbers, so be aware when comparing lightfast claims.

Wilhelm Imaging Research, Inc. is an independent laboratory that performs lightfastness tests by interpolating data from high-intensity lighting and other techniques to project print longevity. A complete list of the Wilhelm permanence results for Epson papers recommended for long display life is available at www.epson.com.

Did You Know?

All prints, whether produced by an ink jet printer or a photo lab, are susceptible to fading when exposed to light, especially direct sunlight or any other direct ultraviolet light source. To protect your photo lab prints or ink jet prints to last for generations, they should be displayed under glass or stored properly in an archival sleeve.

The key to lightfastness lies in the combination of inks and paper. Third-party inks may not yield the same lightfastness results as the manufacturer's inks. You will also get different results on different papers. For example, using EPSON Matte Paper Heavyweight, the EPSON Photo Ink™ used in many of the EPSON Stylus® Photo printers yields a lightfastness rating of 18 years. The same paper, when used with the EPSON DuraBrite Ink™ of the EPSON Stylus C80, yields a lightfastness rating of 72 years.



The glass-framed print on the left will resist fading longer and have greater resistance to humidity, ozone, and other airborne pollutants than the exposed memo board prints on the right

Other factors that affect the longevity of ink jet prints are humidity, ozone, and other airborne pollutants, and their effects can also be reduced by framing a print under glass or in dark storage. A paper's storage characteristics will also affect the longevity of a print. For example, it is possible for a paper to yellow before the inks begin to fade. A paper storage rating is based on testing each paper for its resistance to yellowing over time using accelerated tests incorporating high temperature and high humidity. Epson is currently conducting dark storage tests and will publish them when they become available.

Epson offers a variety of ink solutions, including dye-based 4-color and 6-color EPSON Photo Ink, as well as pigment-based EPSON DuraBrite Ink, EPSON UltraChrome™ Ink, and EPSON Archival Ink. In general, dye inks offer the widest color gamut and have the greatest media compatibility, yet are the most susceptible to fading. Epson's pigment ink solutions generally offer the greatest print longevity, and some have output quality that rivals that of dye inks. (For an overview of the Epson inks, refer to the Epson Ink Solutions Epson Answers document.)

When lightfastness is a concern, keep prints framed under glass or in an archival sleeve, use genuine Epson inks and papers, and carefully select a printer based on its ink system and the combination of its inks and papers to produce your desired results.

Notable Quotes

"Both the paper you choose for your ink jet printer and the ink you use with your hardware make a big difference in whether your snapshot will last or will fade within a year or two—and sometimes whether it will print well at all...For the best longevity and quality, the Wilhelm study confirms that you're better off with the manufacturer's recommended papers and inks instead of the typically cheaper third-party brands." (*PC World*, "The Fade Factor," by Anush Yeghazarian, November 2002)

"The Old Masters mixed their colors from pigments, and their paintings have hung around for centuries without excessive fading. If you really want prints that will live to a ripe, old age and look good doing it, pigment-based inks are the way to go." (*Digital Photography Insider*, "Light fade, dark fade," by Arthur H. Bleich, June 26, 2001)