

**FUJIFILM**

AF3-0244E

**PRODUCT INFORMATION BULLETIN**

Color negative paper

**Fujicolor Crystal Archive Premium HDX Paper  
X-tra coat****1. Features and uses**

The Premium HDX paper X-tra coat has a standard base which enables the creation of photo book blocks with a special lay-flat binding technology, but still keeping optimal handling of the pages when viewing the photo album made with it.

The Premium HDX paper incorporates the High Definition silver halide emulsion technology which delivers enhanced color reproduction, white purity and excellent image stability. Furthermore the special X-tra coat layer resulting in high resistance against sticky surface at high humidity (extreme environmental conditions) and fingerprints.

The Premium HDX paper allows the reproduction of a much higher color gamut than electrostatic prints. Digital cameras use the RGB gamut and HDX paper is also printed in RBG gamut. As a result, no image quality loss occurs and an automated produced photo album can be viewed with a brilliance as never before.

**Features**

- |   |  |
|---|--|
| • Surface   | Glossy and Matte   |
| • Special protection layer                          | Surface less fingerprint and sticky sensitive  |
| • Optimal designed thickness properties             | Resulting in smooth paper handling   |
| • More vivid color reproduction / wider color range | Retains beautiful colors such as subtle shades of green, vivid blues and reds  |
| • More brilliant white and deeper blacks            | Clearer, more distinct highlight details and deep black  |
| • Excellent image stability                         | Exhibits high image stability during high long-term dark storage and excellent light storage condition, as well as storability with respect to nitrogen oxide, ozone and other gases |

**2. Safelight**

Handle in total darkness. If safelight use is unavoidable, observe the following precautions.

- Expose paper no longer than 1 minute to light emitted through a Fuji Safelight Filter No. 103 (or Wratten Safelight Filter No. 13) in a 10-watt tungsten lamp safelight located at least 1 meter from the work area
- Safelight filters fade with extended use and need regular checking. Replace when paper fogging is detected.
- Exposed paper is susceptible to safelight-induced sensitivity increases in the exposed area. For this reason, exposed paper should be subjected as little as possible to safelight illumination.

**3. Pre-processing paper handling / storage**

The higher the temperature and humidity, the more paper, whether unused, unexposed or exposed, is susceptible to adverse changes in speed, color balance, physical characteristics and other properties. Unprocessed paper is best stored at low temperatures. Specifically, the following conditions should be used for paper storage.

- Short-term storage: Store in a cool and dark location, away from direct sunlight, high temperature and high humidity
- Long-term storage: Below 10°C (50°F)

Raw paper which has been stored at a low temperature (by refrigeration) should be set aside and allowed to warm to room temperature prior to being opened. If the paper is taken out of its packaging immediately after being removed from refrigerated storage, condensation will form on the paper surfaces, resulting in print color changes and easily damaged surfaces.

The shortest periods required to return freezer- or refrigerator-stored paper to room temperature (minimum temperature equalization periods) are as follows:

20°C(68°F)Temperature Equalization Periods  
Unit: hours

Paper Size \ Storage Temperature	-20°C (-4°F)	0°C (32°F)	10°C (50°F)
20.3 cm x 250 m (8 in. x 820 ft.)	10	8	5

**NOTES**

- Do not heat paper in order to equalize temperatures.
- Remove paper from refrigeration one day before use.

If exposed paper remains unprocessed for extended periods of time under normal room conditions or is subjected to high temperature and/or high humidity, changes in the color balance and other properties may occur. The time between exposure and development should be fixed in order to obtain consistent quality. Avoid waiting until the next day to develop the exposed paper. Rather than holding the paper for processing the next day, initiate processing as soon as possible.

**4. Printing and processing**

This paper is designed for use with Fujicolor Paper processing chemicals as CPRA and RA4 type processes. Premium HDX paper is recommended for Frontier minilab 350 and higher versions.

**5. Control strips**

Processing control can be provided through the use of FUJICOLOR CRYSTAL ARCHIVE PAPER Control Strips- Process CP-48S and 49E.

Since prints are usually used for the long-term recording of images, as much effort as possible is made to use materials that exhibit the least amount of change overtime. But the effects of high force during folding, light, heat, oxygen in the air, contaminating gases, humidity and mold cannot be completely avoided. It is advised to use low forces during assembling the album. Also the change in the photographic image or base material are minimized by maintaining the appropriate storage conditions for prints, such as those used by museums and art galleries. Temperature and humidity control is the most important key to minimizing the change that occurs in prints. Prints stored in the dark under the following conditions may be expected to show almost no changeover time.

Storage period with almost no change	Temperature	Relative Humidity
More than 20 years	Below 10°C (50°F)	30% — 50%
10 — 20 years	Below 25°C (77°F)	30% — 50%

Notes on Photo Album storage

When prints have been assembled and mounted, it is recommended to store the album at a place as free as possible from hot and extreme humid conditions, and away from direct sunlight and other strong light, or from direct illumination. The following are examples of undesirable storage conditions.

- Storage in a room closet facing a wall exposed to cold outside air (which may cause condensation).
- Storage in a place near the ceiling, such as an attic, the top of a closet or cupboard (where high temperatures may occur).

**7. Light sources for viewing**

When inspecting finished color prints, it is essential that an illumination source will be used that has superior spectral characteristics, adequately high color temperature and sufficient brightness. This is because results can appear different, depending on light quality. For precise results prints should be examined under the conditions designated by ISO 3664-2000. As a general guide, the following conditions are recommended.

Color Temperature : 5000±300 K  
Average Illumination : 500 Lux or more  
General Color Rendering Index : Ra 90 or more\*

\* To attain these values, special fluorescent lamps designed for color evaluation (e.g. EDL type) should be used.

When inspecting finished prints, be careful to eliminate all external light and colored reflected light.

**8. Paper surface available**

Fujicolor Crystal Archive Premium HDX paper X-tra coat is available in Glossy and Matte.

**9. Paper thickness**

Paper thickness is 215 µm.

**10. Back printing**

This product has no backprinting.

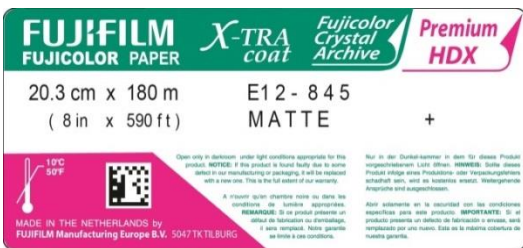
**11. Markings (Box/Emulsion numbers)**

**11.1 Box markings**



“+” indication means that at least 1 spliced babyroll is packed and or a different production control roll number having same photographic properties.

**11.2 Bag labelling**



“+” indication means that a splice is present in the babyroll.

**11.3 Emulsion numbers**

Emulsion numbering will be in ascending order from Exx-xxx at introduction.

Note FUJICOLOR paper is marked with a three-digit emulsion number followed by an additional three digit number which is provided for production control purpose only. Should any problem arise with FUJICOLOR CRYSTAL ARCHIVE Premium HDX PAPER, the additional three digit number suffix to the emulsion number should be indicated on the claim.

**12. Technologies incorporated in this paper**

**12.1 Base paper technology**

Special designed base paper having unique characteristics is used for this product. Optimized paper thickness will result in improved leafing through of photo albums with double-sided pages.

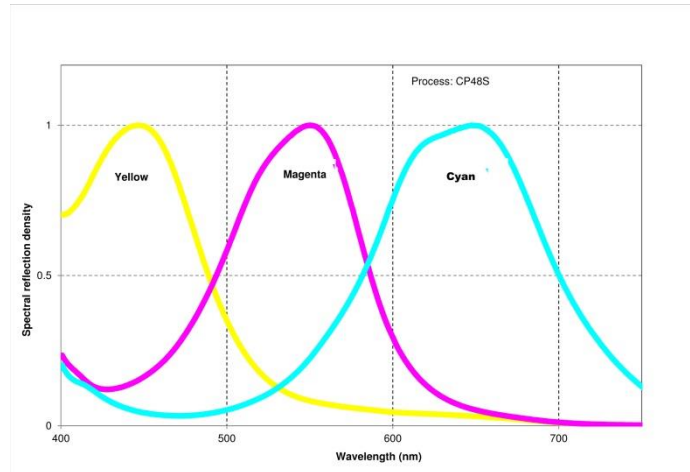
**12.2 X-Coupler Technology**

Through the incorporation of a latest designed cyan coupler (X-Coupler Technology), which features a molecular structure developed by Fujifilm’s proprietary technologies, this paper is capable of colors of high purity, such as vibrant blues and reproducing the subtle shades of green and of forming reds.

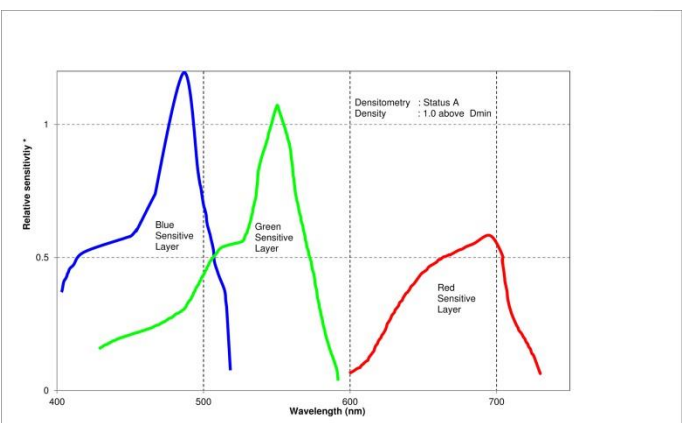
**12.3 Toplayer Technology**

Special designed X-tra coat toplayer contains components which will result in high resistance against sticky surface at high humidity (extreme environmental conditions) and fingerprints.

**13. Spectral dye density curves**

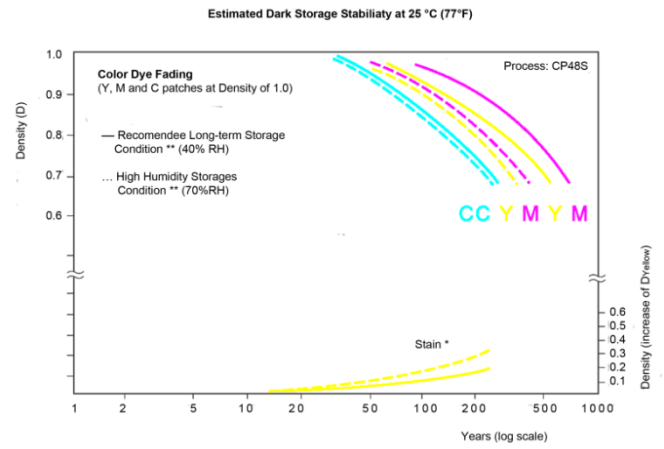
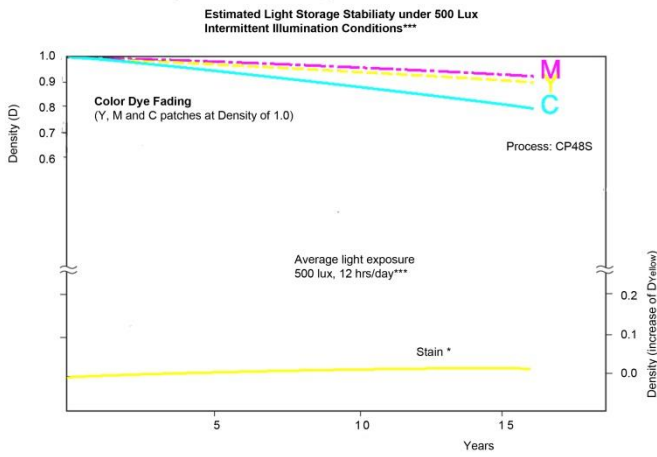


**14. Spectral sensitivity curves**



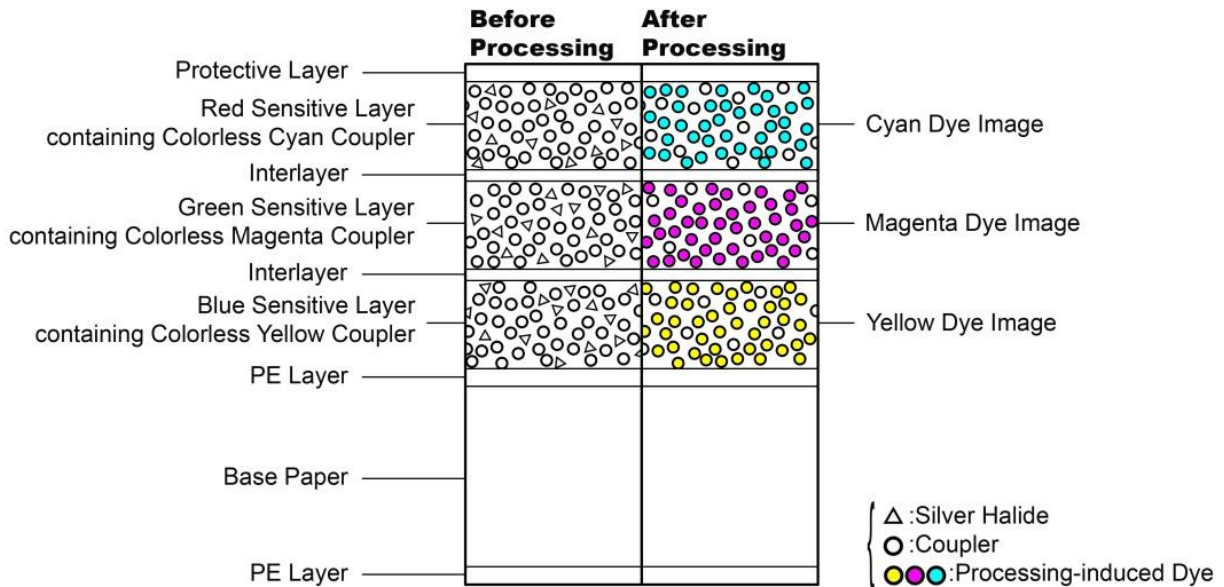
\* Sensitivity equals the reciprocal of the exposure (J/cm<sup>2</sup>) requires to produce a specified density

## 15. Image storage characteristics



- \* Time-induced white background staining (yellowing) is as important as dye image fading in affecting image quality.
- \*\* In regard to color image dark storage stability, the level of humidity is just as important as temperature. For this reason, more accurate evaluations can be made by using the two humidity standards – one for high humidity storage conditions (70%RH) and that recommended for long-term storage (40%RH).
- \*\*\* Since in common domestic situations sunlit areas may be bright as 1,000 lux or more during the day and drop to 300 lux in the evening and at night, storage conditions are usually designated to be at an average of 500 lux of light exposure for 12 hours per day.

## 16. Paper structure



## 17. Sizes available

	Box
Length	180 m
Width	(590 ft)
15.2cm (6 in.)	■
20.3 cm (8 in.)	■
25.4cm (10 in.)	■
30.5 cm (12 in.)	■

**Note:** Size availability may change without prior notice.  
Availability depends on surface

## 18. Calibration data

Equipment		Software	Calibration data		Basic calibration ymcd	Intermittance rgb	Thickness
Brand	Name		LUT + Target density RGB				
				Glossy	Matte		
Frontier	3 series	Installer R	LUT D + surface indication		n.a.	n.a.	n.a.
	5 series	Installer R	LUT D + surface indication				
	7 series	N4.42	LUT D-1	LUT D-2			
Noritsu	QSS 28x ~ LP24Pro	Vol.713	174		n.a.	n.a.	n.a.
	35xx, 37xx	N4.42	174				
Agfa	DLab 1, 2, 3		2.20 / 2.20 / 2.15	2.15 / 2.15 / 2.10	0.97 / 1.00 / 1.02		
KIS	DKS 15x, 16x, 17x		Printer defines own and highest possible Dmax settings (exposure vs chemistry relation)				
ISAG	Fastprint		2.20 / 2.20 / 2.15	2.15 / 2.15 / 2.10	n.a.	n.a.	0.21
	Wideprint 8", 12"		174		n.a.	n.a.	n.a.
	Wideprint R2R		174		n.a.	n.a.	n.a.
ZBE Chromira	SE, Pro, R2R		2.20 / 2.20 / 2.15	2.15 / 2.15 / 2.10	n.a.	n.a.	n.a.
Polielettronica	Laserlab 50/76		Printer defines own and highest possible Dmax settings (exposure vs chemistry relation)				
Durst	Epsilon		2.20 / 2.20 / 2.15	2.15 / 2.15 / 2.10	0.004 / 0.056 / 0.000 / 0.920	90 / 50 / 37	n.a.
	Zeta						
	Theta 50/51				170.2 / 112.0 / 0.0 / 104.3		
	Theta 76/76HS				0.006 / 0.085 / 0.000 / 1.325	101 / 56 / 42	
All recommended Dmax values can only be reached when using high active chemistry equal to Fujifilm CPRA Digital Pro AC and Fujifilm ADM chemistry							
For competitive and recycling chemistry the Dmax should be reduced with -0.10 density							
* Profiles location : <a href="http://products.fujifilm.eu/support/color_management/photographic/">http://products.fujifilm.eu/support/color_management/photographic/</a>							

## 19. Technical Support

In case abnormalities are found when using this FUJICOLOR CRYSTAL ARCHIVE PREMIUM HDX PAPER please contact your local Fujifilm subsidiary and/or distributor

Relevant Fujifilm subsidiary and/or distributor contact information can be found on the following internet address:  
<http://www.fujifilm.com/worldwide/>

**Notice:** The data herein published were derived from materials taken from general production runs. However changes in specification may occur without notice



FUJIFILM Manufacturing Europe B.V.  
PO box 90156  
5000 LJ Tilburg  
the Netherlands

©Technical Market Support