

PRODUCT INFORMATION BULLETIN

COLOR NEGATIVE PAPERS

FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER

1. FEATURES AND USES

FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER is a silver halide color paper designed exclusively for digital output and a pearl-like appearance, thicker base and high stiffness. When used in conjunction with medium- or large-scale digital printer systems or FUJI DIGITAL MINILAB FRONTIER, this paper yields high-image-glossy quality digital prints that make it suitable for such professional uses as portrait, fashion or commercial photography.

Features

- **High gloss combined with Pearl effect** The embedded pearl-like crystals gives a high gloss reflectance, especially in the highlights. Pearl effect is visible because of scattering and interference of light waves at the crystal.
- **High D-max** Boasts a wide tonal range, producing high-image-quality prints with a rich textural quality
- **Purer Whiteness** Clearer, more distinct print images and sharper text quality
- **Vibrant Color Reproduction** Expanded color reproduction range with high color saturation, ideally suited to commercial use
- **Excellent Latent Image Stability** Stable production of more uniform high-quality prints for greater productivity
- **Excellent Image Stability** Highest level of image stability ideal for display purposes

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 two Fuji Safelight Filters No. 103A (or Wratten Safelight Filters 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)
	127 cm × 50 m (50 in. × 164 ft.)		12	10

- NOTES**
- Do not heat paper in order to equalize temperatures.
 - Remove paper from refrigeration on 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 qual-

ity. 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. CALIBRATION DATA FOR PRINTERS

Please refer to the following calibration data as a general guide when using FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER on a digital printer.

1. Frontier 350/355/370/375/390/550/570/590

FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER requires dedicated LUT which is available on installer A3 version R. For availability of this CD, please contact your local distributor.

The Pearl paper not recommended for Frontier 500.

<Changing Paper Type Specification of Paper Magazine for Frontier 330/350/370/390>

- 1 Make sure the printer version number in the main menu ends with an "r" or some higher letter.
- 2 Log in to the "4 Setup and Maintenance" menu with "SE2" for the user name, and a password of "7777".
- 3 Select "5 Printer Adjustment/Maintenance" – "1 Paper Magazine Registration" (Menu 451) and change the paper type to "A" as shown in the table below.

Paper	Type	Surface
CRYSTAL ARCHIVE DIGITAL PEARL PAPER	A	other 2

- 4 Select "2 Print Condition Setup and Check" – "1 Paper Condition Setup" (Menu 421) and perform a paper condition setup for all magazines for which the paper types were changed.

<Changing Paper Type Specification of Paper Magazine for Frontier 340/355/375/550/570/590

- 1 Press the (i) button in the main menu (at the bottom left-hand corner) and confirm that system version number ends with the letter "i" or some higher letter.
- 2 Log in to the "Setup and Maintenance" with the Password "7777".
- 3 Click the [Setup and Maintenance] – [02 Print Condition Setup and Check] – [0221 Paper Magazine Registration]. Change the paper type to "A" as shown in the table below.

Paper	Type	Surface
CRYSTAL ARCHIVE DIGITAL PEARL PAPER	A	other 2

- 4 Click the [Setup and Maintenance] – [02 Print Condition Setup and Check] – [0220 Paper Condition Setup] buttons and perform a paper condition setup for all magazines for which the paper types were changed.

* It is important to click the "Initialize" button to initialize the settings before making the paper condition setup. After initialization, the first paper condition setups will deviate by a great degree, but this will be balanced after the second or third attempt.

(Please note that clicking the "Initialize" button will not be possible if you do not log in with a user name of lab administrator or higher.)

<Registration and Setup of the Paper Type Specification of Paper Magazine for FRONTIER 700 series>

- 1 On the Maintenance-Application display, Click the [Maintenance] to access the Maintenance display. Click [Extension] – [Setup] – [Laser Setup] – [Paper Specification Registration/Setup].
- 2 Select the paper type "A-1" as shown in the table below.

Paper	Type
CRYSTAL ARCHIVE DIGITAL PEARL PAPER	A-1

- 3 Follow the instructions on the Paper specification registration/setup. Make the test prints, and register the measurement result.

2. Durst Reference Data

Lambda 130/131

D _{max} Aim	Basic Calibration*
R = 2.35	Y = 124.0
G = 2.35	M = 95.8
B = 2.25	C = 0.00
	D = 129.0

* If a DPII set-up is already used on the machine, please use the current DPII set-up as starting values instead of values above.

Theta 50/51

D _{max} Aim	Basic Calibration*
R = 2.35	Y = 170.7
G = 2.35	M = 112.0
B = 2.25	C = 0.00
	D = 104.3

* If a DPII set-up is already used on the machine, please use the current DPII set-up as starting values instead of values above.

Theta 76

D _{max} Aim	Basic Calibration*	Intermittency
R = 2.35	Y = 0.006	R = 101
G = 2.35	M = 0.085	G = 56
B = 2.25	C = 0.000	B = 42
	D = 1.325	

* If a DPII set-up is already used on the machine, please use the current DPII set-up as starting values instead of values above.

Epsilon 30 plus

Dmax Aim	Basic Calibration*	Intermittency
R = 2.35	Y = 0.004	R = 90
G = 2.35	M = 0.056	G = 50
B = 2.25	C = 0.000	B = 37
	D = 0.920	

* If a DPII set-up is already used on the machine, please use the current DPII set-up as starting values instead of values above.

3. Polielettronica Laserlab 50/76/127 Reference Data

Use the auto calibration tools as is in the machine. This will calibrate FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER to Dmax 2.35/2.35/2.25 (R/G/B).

4. Oce LightJet Reference Data

Same calibration routine as for Fujicolor Crystal Archive Type DPII can be used. The calibration targets for the OCE Lightjet 430, 500XL and 5000 printers can be downloaded from the following URLs (websites). http://www.oce-dgs.com/PrinterSupport/LJ_Customer_Access/Media_Targets/LJ5000_MediaTargets.htm

5. Konica R1/R2/R3 supert Reference Data

Give paper cassette unique product code and follow standards set-up routine as describe in the Konica Manual.

6. Noritsu Reference Data

Paper profile needs adjustment. Profile data is available via your local Noritsu distributor or you can contact technicalsupport@fujifilm.eu

7. Agfa d-Lab Reference Data

Manual is available on request via technicalsupport@fujifilm.eu

8. Optical printing

It is not recommended to use FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER for optical / analogue printing.

5. PROCESSING

This paper is designed for use with Fuji Hunt CP-RA Process, Fuji MINILAB Process CP-49E/CP-48S or RA-4 type processes.

6. POST-PROCESSING PAPER (PRINT) HANDLING/STORAGE

Prints are subjected to various influences (heat, humidity, light, air pollution, etc.) relative to the conditions under which they are stored.

The general conditions under which prints are stored are outlined below.

- Recommended Storage Conditions:
Temperature: Below 25°C (77°F)
Humidity: 30% to 50% RH with good ventilation
- Extended Storage Conditions:
Temperature: Below 10°C (50°F)
Humidity: 30% to 50% RH

7. LIGHT SOURCES FOR VIEWING

When inspecting finished color prints, it is essential that an illumination source 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 shut out all external light and colored reflected light.

Best pearl effect will be visible when using scattering light.

8. MOUNTING and LAMINATION

In order to maintain the high quality pearl and gloss effect we advise to mount FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER only on very smooth carrier. Also we advise to use no lamination. If due to exhibition circumstances lamination is necessary, a high gloss lamination is best when you want to maintain the level of reflectance. However special sparkling effect are possible when using matte lamination or front-side mounting of acrylic. Please consult your mounting and lamination specialist for best results.

9. PAPER SURFACES AVAILABLE

FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER is only available in glossy surface.

10. SIZES AVAILABLE

• Rolls

Width \ Length	50 m	75 m	150 m
12.7 cm			●
15.2 cm			●
17.8 cm		●	
20.3 cm		●	
25.4 cm		●	
30.5 cm		●	
50.8 cm		●	
76.2 cm	●		
106 cm	●		
127 cm	●		

11. CONTROL STRIPS

Processing control can be provided through the use of FUJICOLOR CRYSTAL ARCHIVE PAPER Control Strips - Process CP-40FA/43FA/47L/48S/49E.

12. MARKINGS (BOX/EMULSION NUMBERS)

12-1 Box Markings



12-2 Bag Labeling



12-3 Emulsion Numbers

Emulsion numbering will range between F01-F99.

13. Backprinting

FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL PAPER is only available without backprinting.

14. TECHNOLOGIES INCORPORATED IN THIS PAPER

14-1 Fujifilm Pearl Technology

This photographic paper contains a very special type of pigment: pearl mica pigments. Based on the natural mica, they are covered with a thin layer of metal oxides, for example titanium dioxide. Through an interplay of transparency, refraction, coating and multiple reflections, you will see silver-white, and metallic reflectance effects. This will lend your pictures a new warmth and depth.

The Fujifilm Pearl technology does not affect the physical properties like paper cutting.

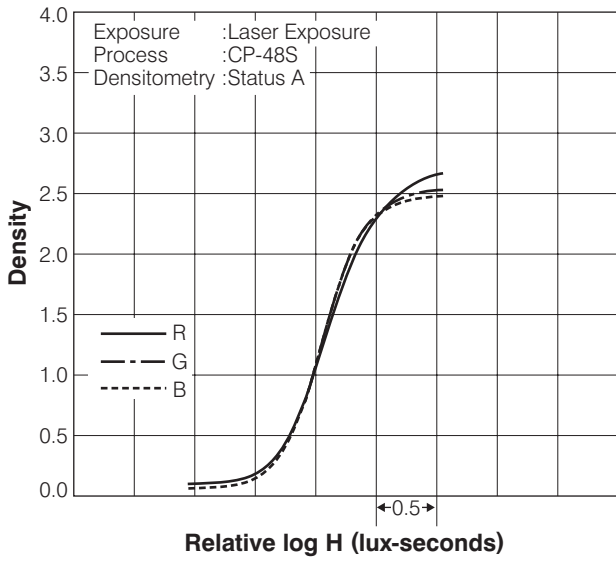
14-2 X-Coupler Technology

Through the incorporation of a new cyan coupler (X-Coupler Technology) used in FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARL, this photographic paper is capable of reproducing the subtle shades of green and of forming colors of high purity, such as vibrant blues and reds.

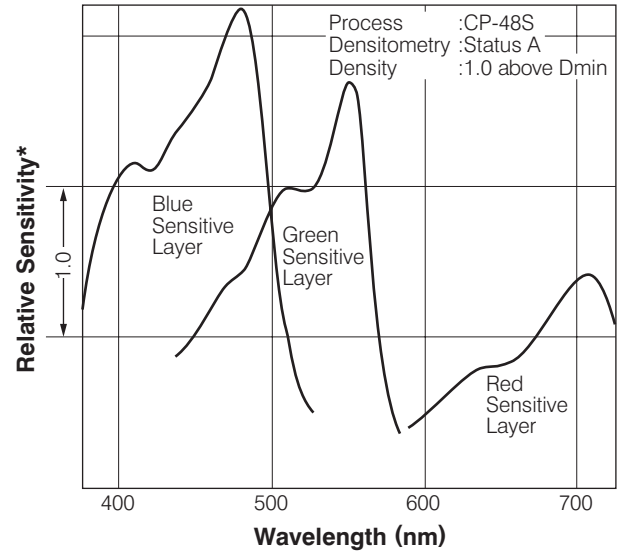
14-3 NLS (New Low Stain Spectral-Sensitizer) Technology and ARR (Advanced Resistance-to-Radiation) Technology

Through the incorporation of NLS Technology and ARR Technology used in FUJICOLOR CRYSTAL ARCHIVE DIGITAL PEARLPAPER, this photographic paper is more brilliant, purer whites and clearer and more distinct highlights, and has been incorporated to suppress color paper fogging caused by ambient radiation, enhancing the maintenance of white purity in unexposed color paper.

15. CHARACTERISTIC CURVES

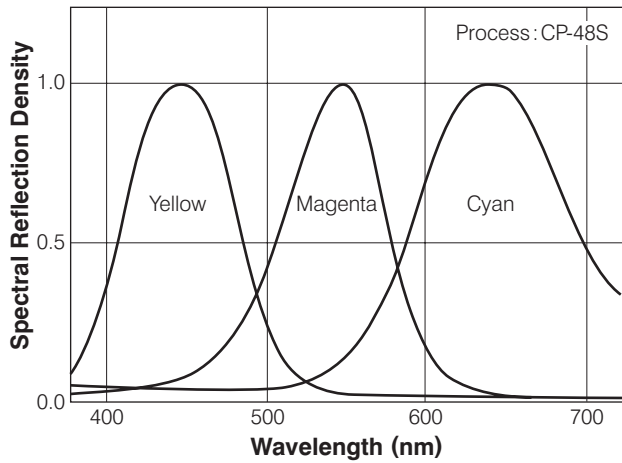


16. SPECTRAL SENSITIVITY CURVES



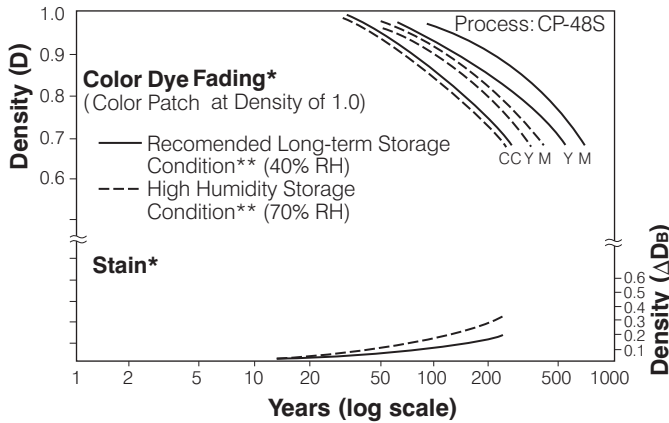
* Sensitivity equals the reciprocal of the exposure (J/cm²) required to produce a specified density.

17. SPECTRAL DYE DENSITY CURVES

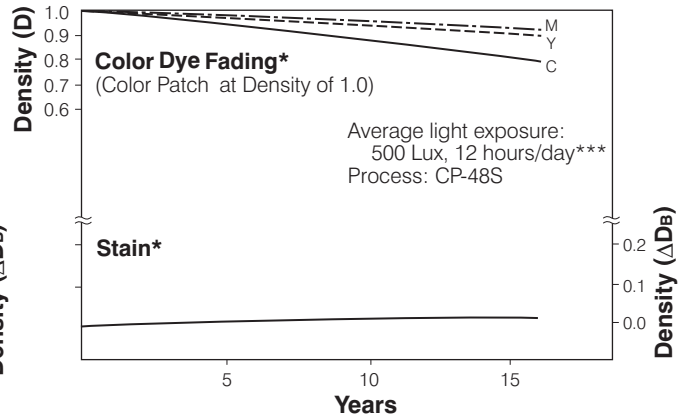


18. IMAGE STORAGE CHARACTERISTICS

• **Estimated Dark Storage Stability at 25°C (77°F)**

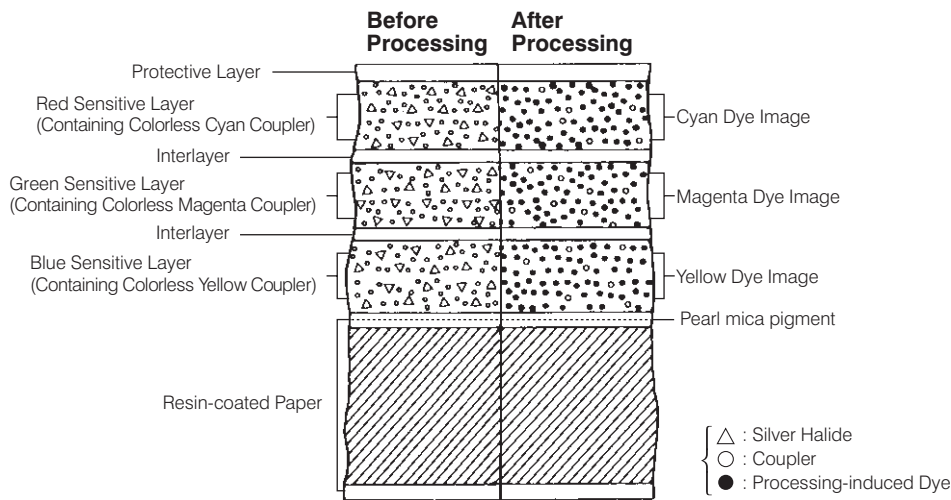


• **Estimated Light Storage Stability under 500 Lux Intermittent Illumination Conditions*****



* 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.

19. Paper structure



NOTICE The data herein published were derived from materials taken from general production runs. However, changes in specifications may occur without notice.