

Product Information Bulletin

FUJICLEAR Display Material



1. Features and uses

The FUJICLEAR Display Material for Digital Printers is a laser-exposure-optimized clear-base color print material for use in the production of transparent color display prints. When exposed by laser light on laser printers or other digital printing devices, this material can be used to produce high-quality transparent color prints of digital image data. It is suitable for a wide range of display uses in sizes from small to large, such as advertising, publicity, and indoor decoration.

Features	Results
<ul style="list-style-type: none"> ● High D-max 	<ul style="list-style-type: none"> ● Offers an extremely wide range of gradation setup ● Creates images with rich saturation across the entire color spectrum, with improved reproduction of detail over a larger area
<ul style="list-style-type: none"> ● Neutral Gray Balance 	<ul style="list-style-type: none"> ● Balanced natural tone reproduction from the highlights to the shadows
<ul style="list-style-type: none"> ● Vibrant Color Reproduction 	<ul style="list-style-type: none"> ● Natural and more vibrant reproduction of red, green, blue, and yellow, producing a high-chroma finish suitable for displays
<ul style="list-style-type: none"> ● Highest Level of Color Image Stability 	<ul style="list-style-type: none"> ● Minimal reduction in image density even during long term display under severe conditions to provide sustained clarity and vibrancy in image quality
<ul style="list-style-type: none"> ● Excellent Latent Image Stability 	<ul style="list-style-type: none"> ● Remarkable latent image stability providing more uniform high print quality for greater productivity

2. Base material and thickness

PET base: about 180 μm (7mil.)

3. Safelight

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

- Expose material no longer than 1 minute to light emitted through a Wratten Safelight Filter No.13 (or Fuji Safelight Filter No.103A) 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 fogging is detected.
- Since exposed material is subject to safelight-induced sensitivity increases in the exposed areas, be sure that handling precautions are observed.

4. Material handling

- Raw material 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 material is taken out of its packaging immediately after being removed from refrigerated storage, condensation will form on the material surfaces, resulting in print color changes and easily damaged surfaces.

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

20 °C (68 °F) Temperature Equalization Periods

		Unit: hours		
Material Size	Storage Temperature	-20 °C (-4 °F)	0 °C (32 °F)	10 °C (50 °F)
127 cm × 40 m (50 in. × 131 ft.)		9.5	8	6

- NOTES**
- Do not heat display material in order to equalize temperatures.
 - Remove the entire quantity of material to be used on any day from refrigeration during previous day.
 - If exposed material remains unprocessed for extended periods of time under normal room conditions or is subjected

to high temperature and/or high humidity, changes in the image and color balance may occur.

- The time between exposure and processing should be fixed for purposes of uniform quality. Rather than holding exposed material for processing the next day, initiate processing as soon as possible.

5. Calibration data for printers

Please refer to the following calibration data as a general guide when using FUJICLEAR Display Material for Digital Printers.

1. Durst Reference data

Lambda 130/131

Dmax Aim	Basic Calibration
R = 280	Y = 56.57
G = 290	M = 0.00
B = 280	C = 3.53
	D = 106.07

Theta 50/51

Dmax Aim	Basic Calibration
R = 280	Y = 148.21
G = 280	M = 84.90
B = 280	C = 0.00
	D = 94.87

Theta 76/76 HS

Dmax Aim	Basic Calibration
R = 270	Y = 0.000
G = 260	M = 0.060
B = 250	C = 0.193
	D = 0.921

* For HIQ Print Mode only

Epsilon 30 plus

Dmax Aim	Basic Calibration
R = 2.70	Y = 0.000
G = 2.60	M = 0.060
B = 2.50	C = 0.193
	D = 0.921

2. Polielectronica laserlab 50/76/127 Reference data

Use the auto calibration tools as is in the machine.

3. Oce Lightjet Reference data

The calibration targets for the OCE Lightjet 430, 500XL and 5000 printers can be downloaded from the following URLs (websites).

Media targets OCE Lightjet 5000:

https://dgs.oce.com/PrinterSupport/LJ_Customer_Access/Media_Targets/LJ5000_MediaTargets.htm

Media targets for 430 and 500XL:

https://dgs.oce.com/PrinterSupport/LJ_Customer_Access/Media_Targets/LJ430andLJ500XL_MediaTargets.htm

6. Processing

This material is designed for use with RA-4 type, including Fuji Hunt CP-RA Process. With this process, the time for both color development and bleach-fix is 110 seconds. Processing steps are as indicated in the following table.

RA-4RT

Processing Steps	Time (sec.)	Processing Conditions			
		Temperature		Basic Replenishment Rate	
		°C	°F	mL/m ²	mL/ft ²
Color Developer	110	35 ± 0.3	95.0 ± 0.5	495*	46.0
Beach-Fix	110	30 to 36	86 to 97	495	46.0
Wash	220	30 to 40	86 to 104	--	--
Drying	as needed	50 to 70	122 to 158	--	--

* If the processing solution replacement ratio (processor utilization) is low, it may be necessary to increase replenishment rates. For example, if the solution replacement ratio is between 4% and 7%, the replenishment rate should be 581 mL/m² (54 mL/ft²). If it is less than 4% the replenishment rate should be 861 mL/m² (80 mL/ft²).

7. Material and print storage

Unprocessed Material

Storing exposed or unexposed material under hot and humid conditions may adversely affect the speed, color balance and physical properties of the material. Refrigerated storage is most desirable, however, as a matter of practicality, store material under the following conditions.

- Short-term storage:
 - Store (in a cool, dark place) to avoid areas that are hot, humid, or subject to direct sunlight.
- Long-term storage: Below 10 °C (50 °F)

Finished Print

When a finished print is put on display, the extent of time-induced deterioration in image quality will vary with the conditions, including the intensity of light, the changes of temperature and humidity, and the presence or absence of contaminating gases in the air.

8. Retouching

Finished prints can be retouched on both the emulsion side and base side with retouching dyes manufactured for this purpose.

9. Light sources for viewing

As the light source for finished prints, fluorescent lamps are generally the most practical. To produce the best results, however, use only high-quality fluorescent lamps with good color-rendering qualities.

10. Sizes available

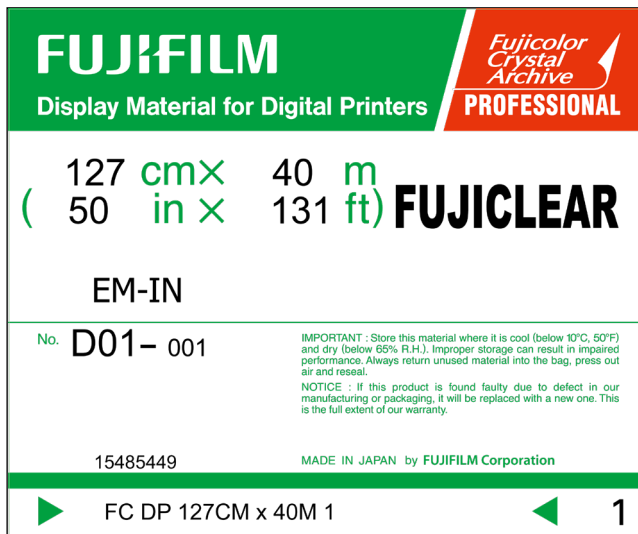
● Rolls

Width \ Length	30 m (96.4 ft.)	40 m (131 ft.)	50 m (164 ft.)
50.8 cm (20 in.)	●		
76.2 cm (30 in.)	●		
101.6 cm (40 in.)			●
112 cm (44 in.)			●
127 cm (50 in.)		●	

NOTE ● Size availability is subject to change.

11. Markings

11-1 Labeling



11-2 Emulsion Numbers

Emulsion numbers will range between D01 - D99.

12. Technologies incorporated in this material

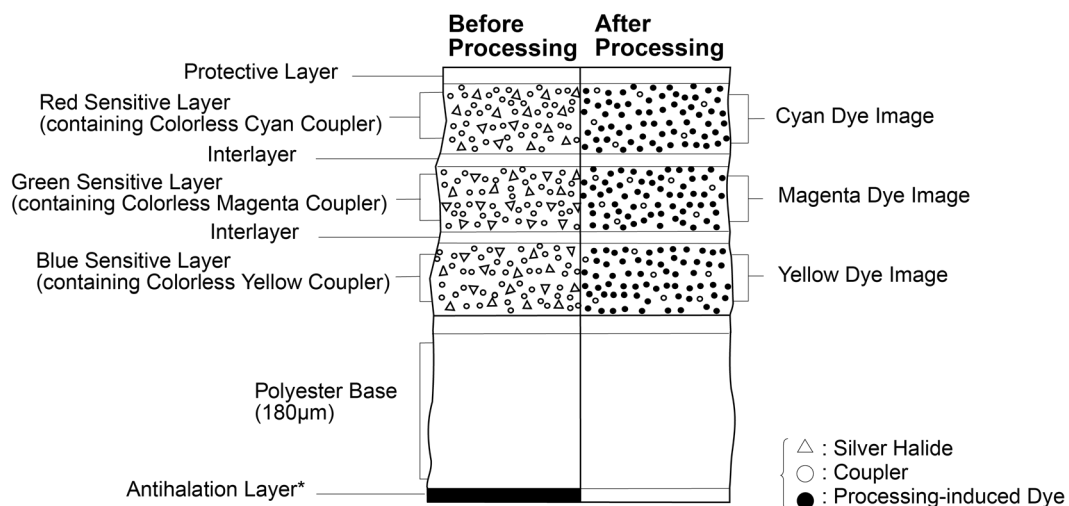
12-1 APC (Advanced Photoelectron Controlling) Technology

The improved PCL (Photoelectron Controlling Technology for Laser Exposure) technology has resulted in a more precise silver halide grain structure, and enhanced sensitivity. By applying it to the FUJICLEAR Display Material for Digital Printers, the incorporated APC technology temporarily stores the photons, which are generated in high densities, within the silver halide crystals, allowing them to be concentrated in sensitivity specks with high efficiency. The result is consistent ultrahigh-quality images with rich gradation from the highlights to the shadows.

12-2 HDS (Hybrid Dye-image Stability) Technology

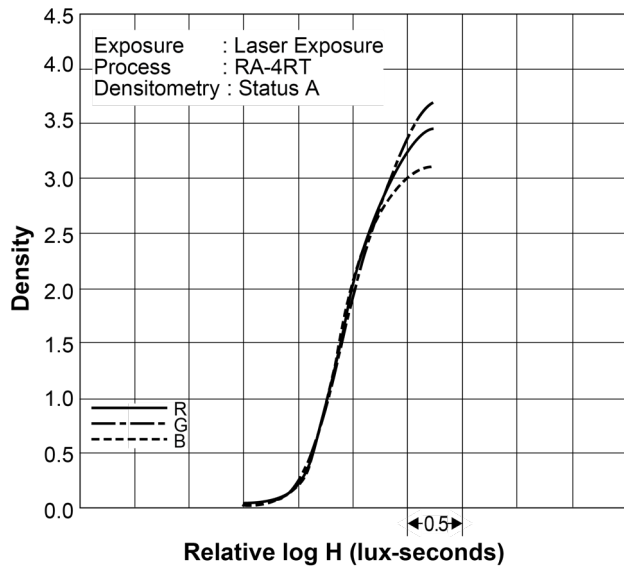
The newly developed HDS technology, based on the AVC (Advanced V-Coupler) technology, enhances the stability of the anti-fading agent to produce unparalleled image permanence.

13. Material structure

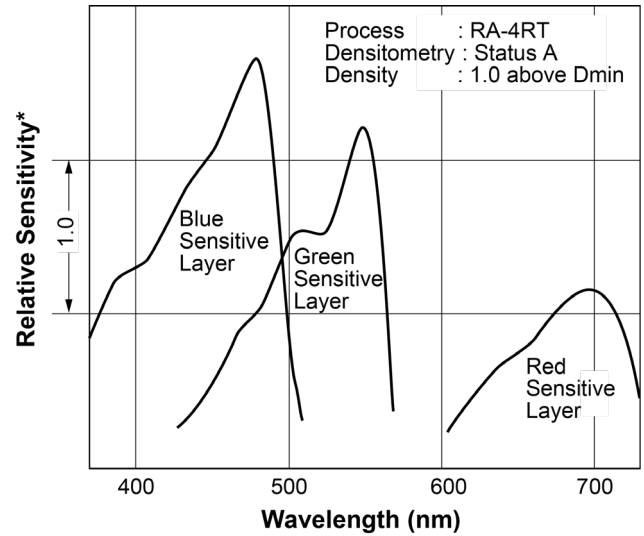


* The antihalation layer becomes colorless and transparent after processing.

14. Characteristic curves

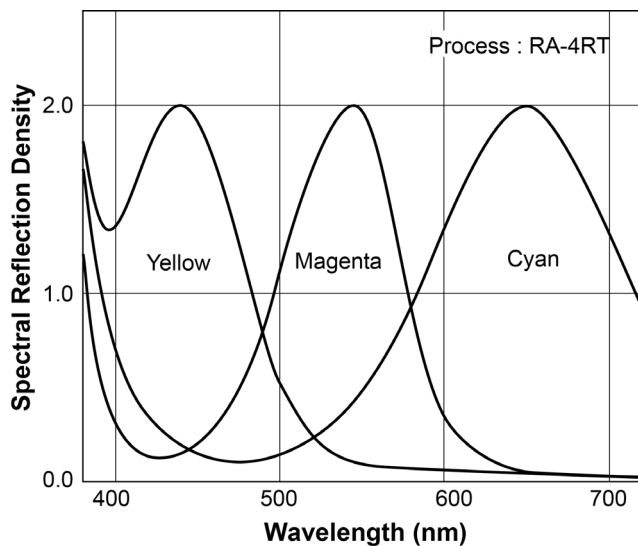


15. Spectral sensitivity curves



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

16. Spectral dye density curves



NOTICE The data herein published were derived from materials taken from general production runs. However, as FUJIFILM is constantly upgrading the quality of its products, changes in specifications may occur without prior notice.