FUJICHROME ASTIA 100 PROFESSIONAL [RAP]

1. FEATURES AND USES

FUJICHROME ASTIA 100 PROFESSIONAL [RAP] is a high image quality color reversal film with an ISO rating of 100. ASTIA 100 provides beautiful skin tones, natural and faithful color reproduction, and smooth textures which make it particularly well suited for fashion photography. This film's versatile qualities work well in commercial and many other photographic applications. Original images photographed with ASTIA 100 can be confidently utilized for high quality printed reproductions.

Features	Results
• **Beautiful Skin Tones**	• Ultrafine grain for beautiful skin tone reproduction with smooth and continuous textures
• **Faithful Color Reproduction**	• Natural color reproduction, ranging from delicate tints to primary color-like vividness
• **Rich Tone Reproduction**	• Realistic reproduction of subtle gradations • Smooth and natural transition of tones provided by highly linear gradation curves from the highlights to the shadows
• **Enhanced Color Temperature Related Characteristics**	• Greater resistance to color temperature-induced color imbalance due to shadows and backlighting conditions, making the film more applicable in a wider range of situations
• **Excellent Push-and Pull-processing Suitability**	• No effect on color balance and gradation by 1-stop push-processing or 1/2-stop pull-processing, allowing greater exposure flexibility under varied subject conditions
• **E-6/CR-56 Processing**	• Can be processed anywhere in the world as with other FUJICHROME films

This film also shares the features of FUJICHROME PROVIA 100 (RDPⅡ), including excellent long and multiple exposure performace, color image stability, high image quality, and is highly resistant to performance variations caused by raw film aging.

2. SPEEDS

Light Source	Speed	Filter
Daylight	ISO 100/21°	None
Tungsten Lamps (3200K)	ISO 32/16°	No. 80A**(LBB-12***)

* Indicates the effective speed resulting from designated filter use.
** Kodak Filter
*** Fuji Light Balancing Filter

- Speed and color compensating filter values are included in each of the sheet film boxes. Use these values in exposure determination.

3. FILM SIZES, EMULSION NUMBER, BASE MATERIAL AND THICKNESS

Sizes		Emulsion Number
Rolls*	135 ..... 36-exp. ..... 36-exp. (5-roll and 20-roll packs) 35 mm x 30.5 m (100 ft) 120 ..... 12-exp. ..... 12-exp. (5-roll packs) 220 ..... 24-exp. (5-roll packs)	#601～
Sheets*	4 x 5 in.(10.2 x 12.7 cm) 10 sheets and 50 sheets 8 x 10 in.(20.3 x 25.4 cm) 10 sheets and 50 sheets 11 x 14 in.(27.9 x 35.6cm) 10 sheets QuickLoad 4 x 5 in 20 sheets	

* Some sizes are not available in certain markets.
Base Material ..... Cellulose Triacetate
Base Thickness ..... Rolls 135 ; 127 μm
120 ; 98 μm
220 ; 98 μm
Sheets ; 205 μm

4. EXPOSURE GUIDE AND EXPOSURE UNDER VARIOUS LIGHT CONDITIONS

Use a meter for exposure determination. If a meter is not available refer to the following table.

Light Conditions	Seashore or Snow Scenes under Bright Sun	Bright Sunlight	Hazy Sunlight	Cloudy Bright	Cloudy Day or Open Shade
Lens Aperture	f/16	f/11	f/8	f/5.6	f/4

(Exposure Time 1/250th Sec.)

NOTES

- The foregoing settings are for 2 hours after sunrise and 2 hours before sunset.
- Provide lens opening 1/2 stop smaller during the summer and 1/2 stop larger during the winter.
- Excessively bright (or dark) or backlighted subjects may require plus or minus 1 stop lens opening adjustments.

Daylight

Under daylight conditions, color balancing filters are not necessary, but the following exposure conditions may require the indicated filters.

Subject Conditions	Filter	Exposure Correction
Fair weather open shade and shaded landscapes.	UV Filter No. 2C* (SC-39 or SC-40)**	None
Bright distant scenes, snow landscapes, seaside scenes, aerial scenes and open landscapes.		
Close-ups of plants and subjects having bright colors.		

Excessively high or low subject color temperatures may require the following filter additions and exposure corrections.

Subject Conditions	Filter	Exposure Correction
High Color Temperature: Cloudy weather landscapes or portraits and clear weather open shade.	No. 81A* (LBA-2)***	+1/3 stop ****
Low Color Temperature: Morning and evening twilight scenes and portraits.	No. 82A* or No. 82C* (LBB-2 or LBB-4)***	+1/3 to +2/3 stop ****

* Kodak Filters
** Fuji Sherp-Cut Filter
*** Fuji Light Balancing Filter
**** "+" = Lens opening

Electronic Flash

- Since electronic flash characteristics are similar to daylight, no filters are required. Effective light output and color balance will differ with equipment type, age and other factors, requiring initial exposure tests.
- Adjust lens openings for electronic flash according to following formula.

$$\text{Lens Aperture (f-number)} = \frac{\text{ISO 100 Electronic Flash Guide Number}}{\text{Electronic Flash-to-Subject Distance (meters)}}$$

- Set the film speed at ISO 100. Since the amount of light reflected onto the subject from surrounding surfaces will differ with the conditions, refer to flash unit instructions.

Photo-Reflector Lamps (Daylight Photoflood Lamps)

- Daylight photoflood lamps tend to result in underexposure, so it is sometimes essential to increase exposure light output beyond that indicated by an exposure meter.
- Color balance and light output will differ with lamp configuration, duration of use and applied voltage. It is essential that exposure conditions be determined in relation to the particular lighting equipment employed.

Fluorescent Lamps

- Color balance corrections should be made using the filter combinations suggested below because effective light intensity and color balance varies with lamp make and age.
- For exacting work, test exposures are recommended.

(Exposure Time: 1/4 second)

Fluorescent Lamp Type	White (W)	Daylight (D)	Cool White (CW)	Warm White (W.W)
Color Compensating Filters*	15M+20B	35R	30M	No.80B
Exposure Corrections**	+1 stop	+1 stop	+2/3 stop	+1 1/3 stops

* Kodak Color Compensating Filters (or Fuji CC Filters) recommended.
** Exposure correction values include filter exposure factors. These values are added to unfiltered exposure meter reading. "+" = Lens opening.

NOTES

- Use 1/30th or slower shutter speeds.
- For shutter speeds longer than 64 seconds, exposure adjustments will be necessary to compensate for reciprocity.

Tungsten Lamps

- A Kodak Filter No. 80A (or Fuji Light Balancing Filter LBB-12) is recommended with photoflood lamps. A 1 2/3 stop larger lens opening is also recommended.
- With household tungsten lamps, a Kodak Filter No. 82A (or Fuji Light Balancing Filter LBB-2) will compensate for inherent color temperatures lower than photoflood lamps. A 2 stop larger lens opening is recommended.

Mixed Light Sources

Under mixed light conditions, derive the basic filter configuration for the main light source.

5. LONG AND MULTIPLE EXPOSURE COMPENSATIONS

No exposure or color balance compensation is required for exposures within a 1/4000 to 32 seconds shutter speed range. However for exposures of 64 seconds or longer, reciprocity-related color balance and exposure compensations are required.

Exposure Time	1/4000 to 32 sec	64 sec.	2 min.	8 min.
Color Compensating Filters	None	None	None	Not recommended
Exposure Corrections*		+1/3 stop	+½ stop	

Multiple Exposures

Make the following color and exposure compensations for electronic flash multiple exposures.

Number ofFlashes	1	2	4	8
Color Compensating Filters	—	None		2.5Y
Exposure Corrections*	—			+1/3 stop

* Exposure correction values include filter exposure factors. These values are added to unfiltered exposure meter readings. "+" = Lens opening.

6. EXPOSURE PRECAUTIONS

For artificial light sources such as electronic flash, photoflood lamps, fluorescent lamps, tungsten lamps, mercury lamps and the like, effective light output and color temperatures will vary with the type, the applied voltage and the age of the equipment. Also, light intensity or color temperature differences may be caused by variations in auxiliary lighting equipment such as reflectors and diffusers.

7. FILM HANDLING

- Expose film before the expiration date indicated on the film package and process promptly after exposure.
- When loading and unloading roll film avoid direct sunlight. If there is no shade, turning one's back toward the sun will shade the film.
- Handle sheet film in total darkness. (The use of a safelight will cause fogging.)
- Under certain conditions, the X-ray equipment used to inspect carry-on baggage at airport terminals will adversely affect photographic film (cause fogging). The adverse effects of this are increased with the strength of the X-rays, the speed of the film, and the cumulative number of inspection exposures.
  Therefore, it is recommended that at each inspection the film be removed from the baggage and airport security personnel be asked to inspect the film manually.
- Film fogging may occur in hospitals, factories, laboratories and other locations using X-rays and other radiation sources.

8. FILM STORAGE

Unprocessed Film

- Storing exposed or unprocessed film under high temperature and humidity conditions will cause adverse speed, color balance and physical property changes. Store film under the following conditions.

  ○ Short-to-medium term Storage:
  Below 15°C (59°F) ..... (Refrigerator)
  ○ Long-term Storage:
  Below 0°C (32°F) ..... (Freezer)

- Building supplies, newly manufactured furniture, paints and bonding agents may produce noxious gases. Do not store film, lighttight boxes with film, loaded cameras or film holders under these conditions.

- Before use, allow films to stand in room-temperature; over 3 hours for refrigerated film, and over 6 hours for frozen film. Further, long windings such as 100 feet will require more time. Opening container while film is cold may cause harmful condensation.

Processed Film

Light, high temperature and humidity cause color changes in processed films. Therefore, place such films in mounts or sleeves and store in dark, dry, cool and well ventilated locations under the following conditions.

○ Medium-term Storage:
Below 25°C (77°F) at 30 to 60% RH
○ Long-term Storage:
Below 10°C (50°F) at 30 to 50% RH

9. PROCESSING

Handle film in total darkness.
Process in standard E-6, CR-56 or equivalent chemicals.

10. VIEWING LIGHT SOURCES

Use a standard viewer. Visual responses will differ with light source quality and brightness. Therefore, employ a viewer which meets the ISO/ANSI standards.

* The ISO standard (ISO/DP3664-2) specifies an illuminated viewer surface with a color temperature derived from a CIE illuminant D50 (D: Daylight) with a reciprocal color temperature of 5000K, an average brightness of 1400cd/m^2 ± 300cd/m^2, a brightness uniformity of more than 75%, a light diffusion level of more than 90% and an average color rendition assessment value of more than Ra90. Transparency viewers should meet these standards.

11. PRINTS AND DUPLICATES

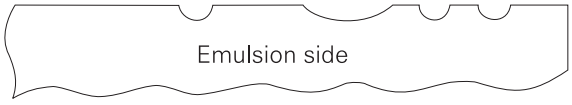
Processed transparencies can be made into prints on FUJICHROME PAPER TYPE 35 or FUJICOLOR INTERNEGATIVE FILM IT-N. Duplicates can be made on FUJICHROME DUPLICATING FILM CDU TYPEⅡ.

12. RETOUCHING

Use commercially available retouching dyes and bleaching chemicals.

13. SHEET FILM CODE NOTCHING

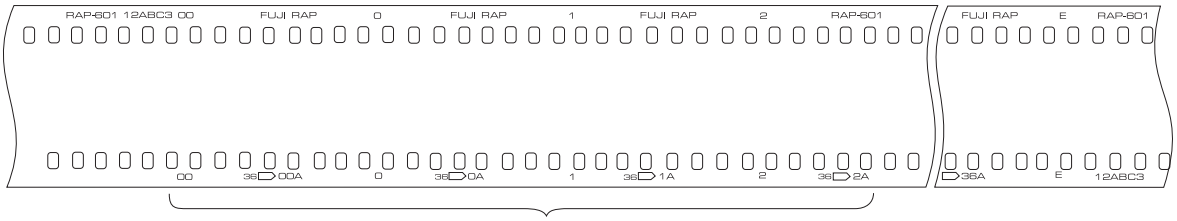
A notch code to identify this emulsion type is located in the upper right-hand corner when the emulsion surface is facing toward you.



14. PROCESSED FILM EDGE MARKINGS*

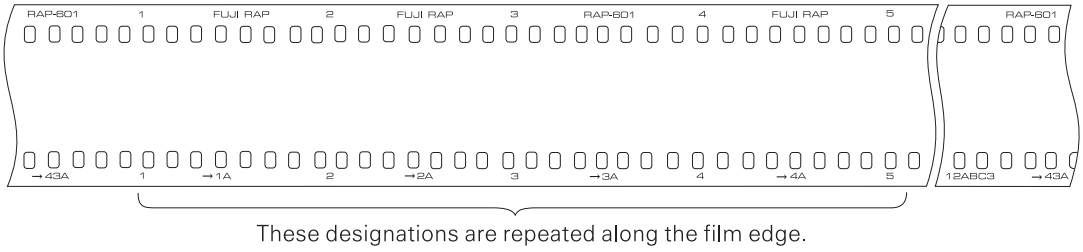
<Rolls>

- 135 Size

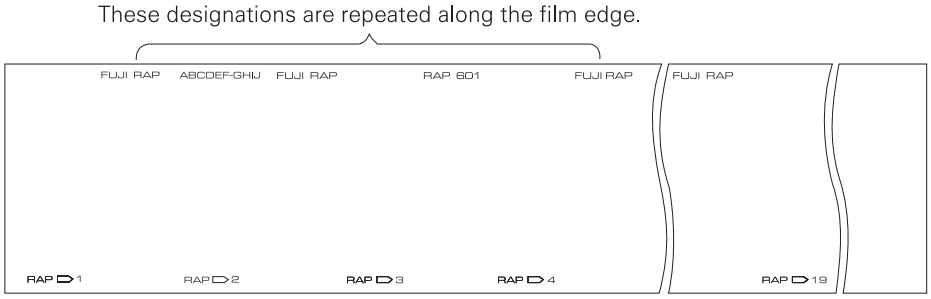


These designations are repeated along the film edge.

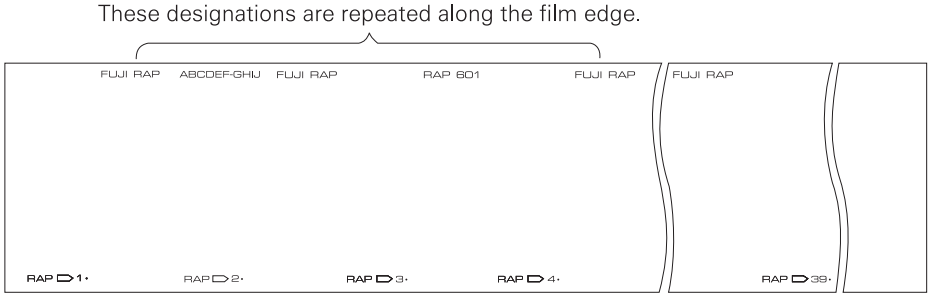
- 35 mm x 30.5 m



- 120 Size

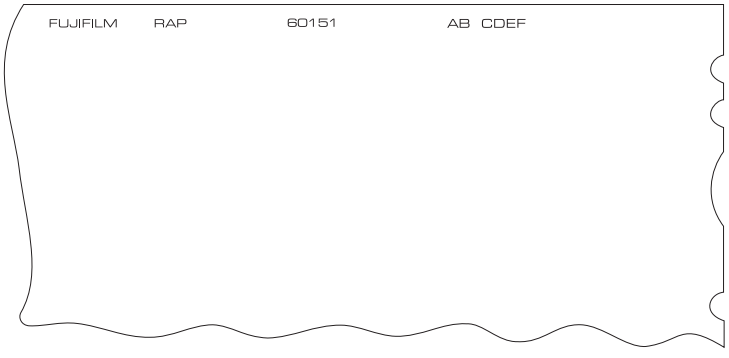


- 220 Size

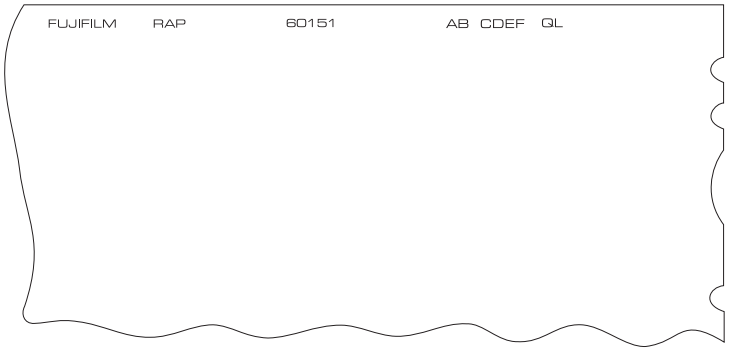


<**Sheets**>

- Sheet Size

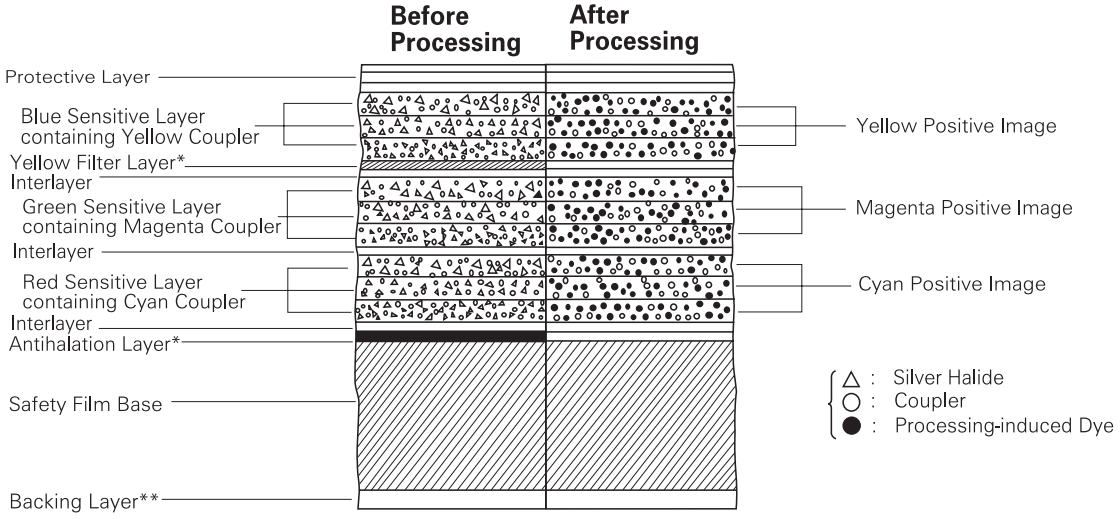


- QuickLoad type



* The emulsion is on the opposite side. (Base side facing you)

15. FILM STRUCTURE



* These layers become colorless and transparent after processing.
** The backing layer is colorless and transparent both before and after processing, but it is not provided with 135 size film.

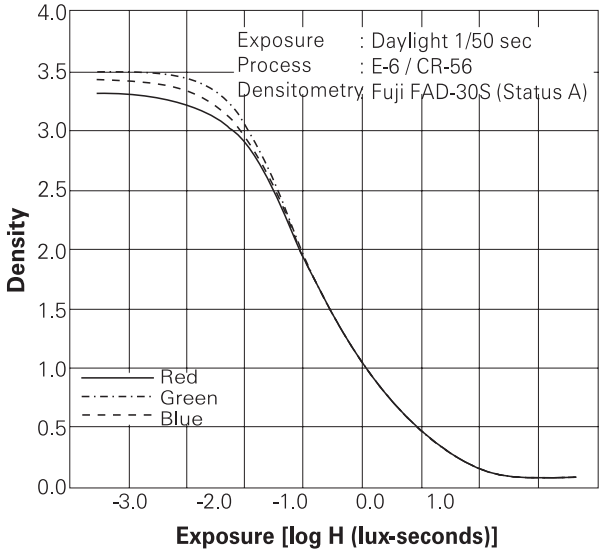
16. DIFFUSE RMS GRANULARITY VALUE — **10**

Micro-Densitometer Measurement Aperture: 48 μm in diameter.
Sample Density: 1.0 above minimum density.

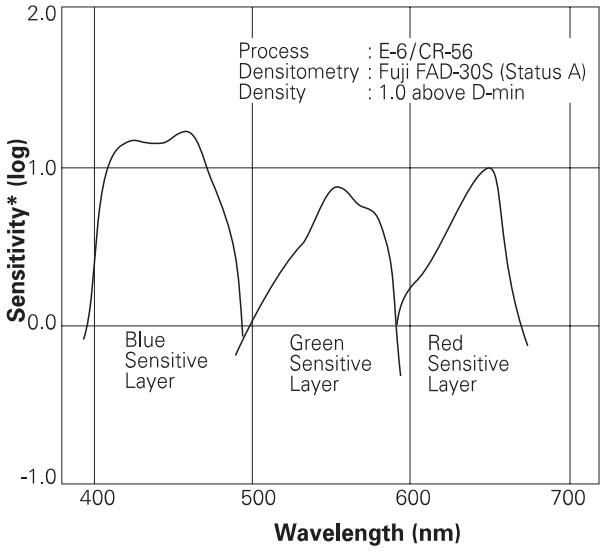
17. RESOLVING POWER

Chart Contrast 1.6 : 1 ..... **55** lines/mm
Chart Contrast 1000 : 1 ..... **135** lines/mm

18. CHARACTERISTIC CURVES

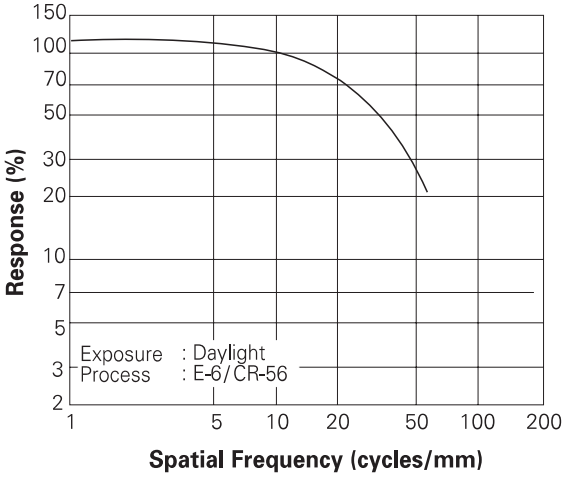


19. SPECTRAL SENSITIVITY CURVES

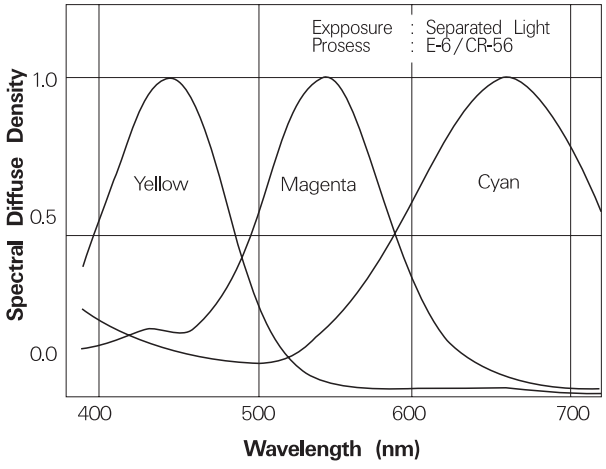


* Sensitivity equals the reciprocal of the exposure (ergs/cm²) required to produce a specified density.

20. MTF CURVE



21. 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 notice.

FUJIFILM

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