

FUJICOLOR NPS 160 PROFESSIONAL [NPS] (Daylight Type for Short Exposures)

1. FEATURES AND USES

FUJICOLOR NPS 160 PROFESSIONAL [NPS] is a portrait-dedicated daylight-type short exposure professional color negative film with an ISO speed rating of 160 designed for shutter speeds of 1/8 second or faster.

For exposure under daylight or daylight-type artificial light source, filters are not normally required.

This film yields superb prints when used in conjunction with FUJICOLOR PROFESSIONAL PAPER SUPER FA TYPE SP.

- **Smooth, Natural Rendition of Skin Tones**
- **Rich Gradation and Optimum Gray Balance**
- **Accurate, Realistic Color Reproduction**
- **Extremely Fine Grain and High Sharpness for the Achievement of Realistic Texture and Depth**
- **Enhanced Reciprocity Characteristics**
- **Greatly Improved Color Image Stability Under Dark Storage Conditions**

2. SPEED

Daylight & Electronic Flash ISO 160/23°

Under general daylight conditions, use shutter speeds of 1/8 second or faster.

3. FILM SIZES, EMULSION NUMBERS AND BASE MATERIALS

Sizes		Emulsion Numbers
Rolls	<ul style="list-style-type: none"> • 135 36-exp. • 120 • 120 5-roll pack • 220 5-roll pack 	#501 ~ 599
Sheets	<ul style="list-style-type: none"> • 4 × 5 in (10.2 × 12.7 cm) ... 10 sheets and 50 sheets • 8 × 10 in (20.3 × 25.4 cm) .. 10 sheets • 9 × 12 cm 20 sheets • 13 × 18 cm 20 sheets 	

Base Material Rolls: Cellulose Triacetate
Sheets: Polyester

4. LONG EXPOSURE CORRECTION

When shutter speeds slower than 1/4 second are required, provide the compensations indicated below.

Exposure Time (sec)	1/4 ~ 1	2
Exposure Corrections (Lens Openings)	Unnecessary	+1/2

Shutter speeds slower than 2 seconds are not recommended.

5. EXPOSURE GUIDE AND EXPOSURE UNDER VARIOUS LIGHT CONDITIONS

Use an exposure meter for exposure determination. If 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/22 ² / ₃	f/16 ² / ₃	f/11 ² / ₃	f/8 ² / ₃	f/5.6 ² / ₃

(Exposure Time 1/125 Sec.)

NOTES

- The foregoing settings are for 2 hours after sunrise and 2 hours before sunset.
- Since light conditions vary greatly for cloudy/bright and open shade conditions, exposure metering is recommended.
- Close-up exposures under back-light conditions will require from +1 to +2 stop adjustments.

With various light source type it is recommended that the normal intensity ratio for main-to-fill subject lighting be kept from 1 : 2 to 1 : 4 except for special effects.

Daylight

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

Subject Conditions	Filter
Fair weather open shade and shaded landscapes	SC-39* (No. 2C**)
Bright distant scenes, snow landscapes, seaside scenes, aerial scenes and open landscapes	SC-40M* (No. 1A**)

* Fuji Sharp Cut Filters (Ultraviolet)

** Kodak Filters

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

Subject Conditions	Filter
High Color Temperature: Cloudy weather landscapes and portraits or clear weather open shade subjects	LBA-2* (No. 81A**)
Low Color Temperature: Scenes and portraits under morning or evening twilight conditions	LBB-2* (No. 82A**)

* Fuji Light Balancing Filters

** Kodak Filters

NOTE When using artificial illumination either as the main or auxiliary light source with sunlit subjects either indoors or out, it is important to use either blue flash bulbs or electronic flash.

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 thereby initial exposure tests.
- With shutter speeds slower than 1/60 of a second, the influence of non-flash light source such as modeling lamps and room illumination may cause undesirable color balance shifts. Make test exposures.
- Adjust lens openings for electronic flash according to following formula.

$$\text{Aperture (f-number)} = \frac{\text{ISO 160 Electronic Flash Guide Number}}{\text{Electronic Flash-to-Subject Distance (meters or feet)}}$$
- Since the amount of light reflected onto subject from surrounding surfaces will differ with the conditions, refer to the flash unit instructions.

Flash Bulbs

- With blue flash bulb exposures, compensating filters are unnecessary but with clear flash bulbs a Fuji LBB-8* (No. 80C or 80D**) filter should be used.
- Light quality will vary with bulb manufacture while variations will also depend on lighting equipment and related diffusion techniques. Make test exposures.

* Fuji Light Balancing Filter

** Kodak Filter

Daylight Photoflood Lamps

- Daylight photoflood lamps tend to result in under-exposure, 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, use duration and applied voltage. It is essential that exposure conditions be determined in relation to the particular lighting equipment employed.

6. LIGHTING EQUIPMENT

The condition of umbrellas, reflectors, diffusers and like devices, may modify photographic light quality. Periodically check lighting equipment for deterioration.

7. FILM HANDLING

- Unexposed film must be handled under conditions of absolute darkness without safe light illumination.
- Expose and process 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.
- Camera-loaded film should be exposed and processed promptly.
- 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 that 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 unexposed, unprocessing film under high temperature and humidity conditions will cause adverse speed, color balance and physical property changes. Store film under the following conditions.
 - Refrigerated Storage: Below 10°C (50°F)
 - Extended Term Storage: Below 0°C (32°F)
- New building materials, newly manufactured furniture, paints and bonding agents may produce noxious vapors. Do not store film, loaded camera or film holders near these substances.
- When refrigerated film is removed for use, allow it to reach room temperatures before opening (at least one hour or two). Opening while temperatures are still low may cause moisture condensation.

Processed Film

Light, high temperatures and humidities 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.

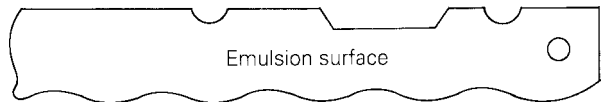
- General Storage Conditions: Below 25°C (77°F) at 30 to 60% RH
- Extended Storage Conditions: Below 10°C (50°F) at 30 to 50% RH

9. PROCESSING

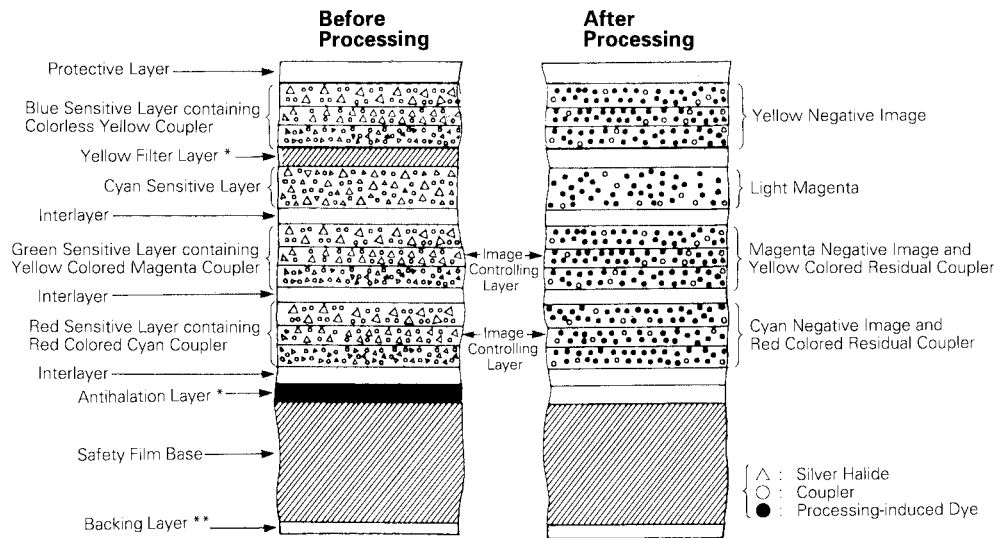
This film is intended for processing in Fujifilm Process CN-16, Kodak Process C-41 or equivalents.

10. SHEET FILM CODE NOTCHING

Code notching is cut into sheet film to designate emulsion types and positioning. Notching in the upper right-hand corner positions the emulsion surface forward.



11. FILM STRUCTURE



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

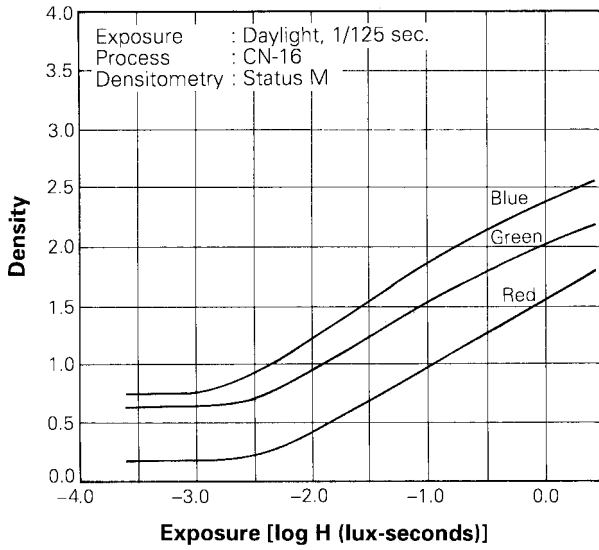
12. DIFFUSE RMS GRANULARITY VALUE 4

Micro-Densitometer Measurement Aperture: 48 μm in diameter.
 Magnification: 12X
 Sample Density: 1.0 above minimum density.

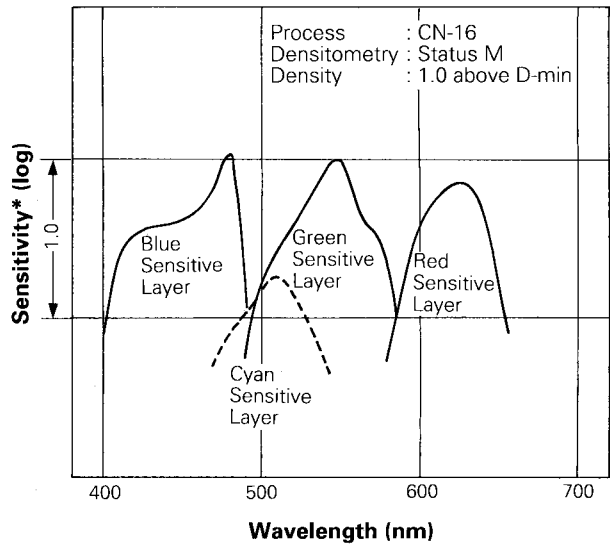
13. RESOLVING POWER

Test-Object Contrast: 1.6 : 1 63 lines/mm
 Test-Object Contrast: 1000 : 1 125 lines/mm

14. CHARACTERISTIC CURVES

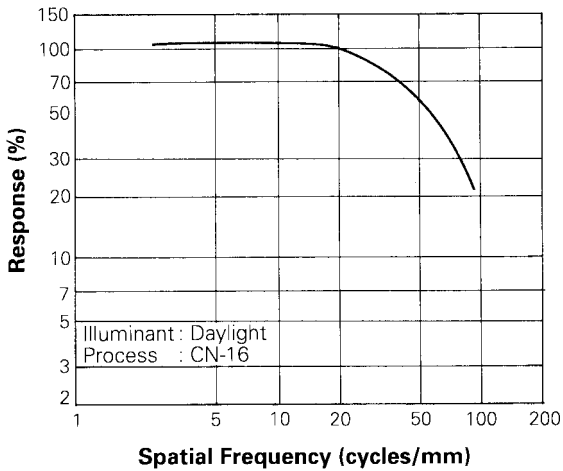


15. SPECTRAL SENSITIVITY CURVES

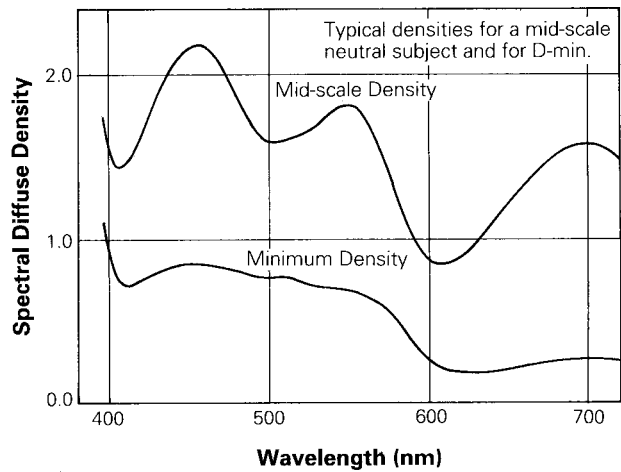


* Sensitivity equals the reciprocal of the exposure (ergs/cm²) required to produce a specified density.

16. MTF CURVE



17. 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.