FUJICOLOR NPL 160 PROFESSIONAL [NPL] (Tungsten Type for Long Exposures)

1. FEATURES AND USES

FUJICOLOR NPL 160 PROFESSIONAL [NPL] is a portrait-dedicated tungsten-type long exposure professional color negative film with an ISO speed rating of 160 designed for shutter speeds of 1/30 to 2 seconds. For exposure under 3200K tungsten lamp illumination, 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

Light Source	Speed	Filter
Tungsten Lamps (3200K)	ISO 160/23°	None
Daylight	ISO 100/21°*	LBA-12** (No. 85B***)

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

3. FILM SIZES, EMULSION NUMBERS AND BASE MATERIALS

Sizes		Emulsion Numbers
Rolls	• 120 • 120 ..... 5-roll pack	#601～699
Sheets	• 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 • 30 × 40 cm ..... 10 sheets	

Base Material ..... Rolls: Cellulose Triacetate
Sheets: Polyester

4. LONG EXPOSURE CORRECTION

When shutter speeds slower than 4 seconds are required, provide the compensations indicated below.

Exposure Time (sec.)	4	16	32
Exposure Corrections (Lens Openings)	+1/2	+1	+1

5. EXPOSURE UNDER VARIOUS LIGHT SOURCES

This film is designed for best results when exposed at designated speeds under tungsten lamp (3200K) illumination. 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.

Tungsten Lamps (3200K)

Tungsten lamp voltages should be maintained at levels specified by the lamp manufacturer.
Lamp color temperatures vary with line voltage fluctuations and total use duration. It is therefore recommended that test exposures be made with existing lighting equipment.

Daylight

For exposures under daylight conditions, a Fuji LBA-12* (No. 85B**) filter should be used along with an ISO 100 film speed.
Long exposures of 4 seconds or more duration require compensation. For extended exposure lens aperture adjustments, refer to the foregoing Exposure Correction Table.

* Fuji Light Balancing Filter
** Kodak Filter

Daylight Type Photoflood Lamps

When making exposures under photoflood lamp illumination a Fuji LBA-12* (No. 85B**) filter should be used with an adjusted speed rating of ISO 100/21°.
When compared with other artificial sources, daylight type photoflood lamps are prone to result in underexposures. With this light source it may be necessary to expose somewhat longer than those indicated by exposure meter readings. Further, it is well to remember that reflector incorporated lamp color quality may be affected by line voltage fluctuations and/or lamp aging. For best results it is recommended that test exposures be made with existing lighting equipment and that results be evaluated on the basis of exposure meter derived data.

* Fuji Light Balancing Filter
** Kodak Filter

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, unprocessed 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.

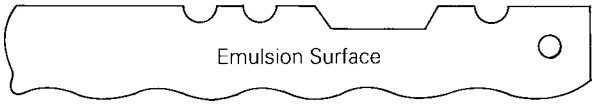
○ General Storage Conditions:
Below 25°C (77°F) at 30 to 60% RH
○ Extended Storage Conditions:
Below 10°C (50°F) at 30 to 50% RH

9. PROCESSING

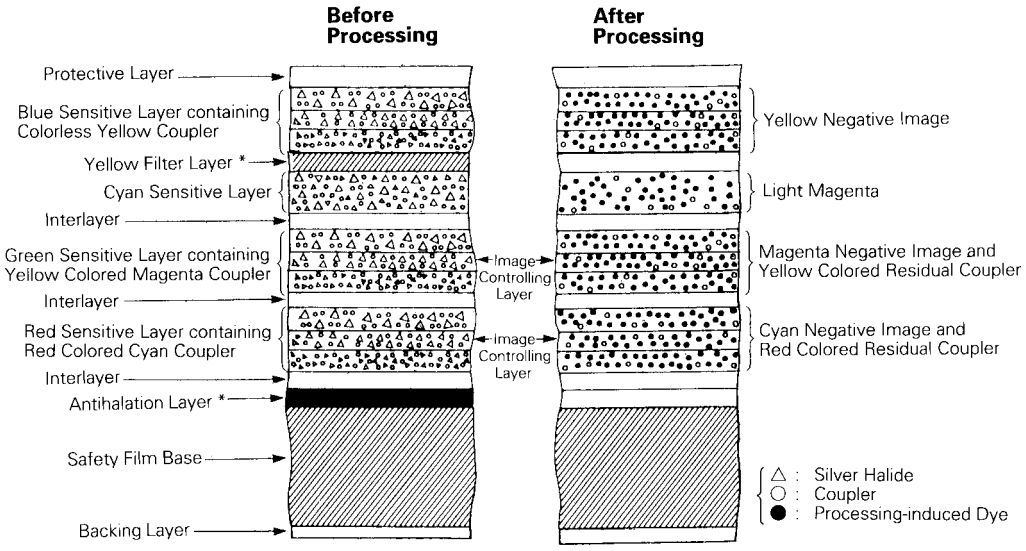
This film is intended for processing in Fujifilm Process CN-16, Kodak Process C-41 or equivalents.

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.

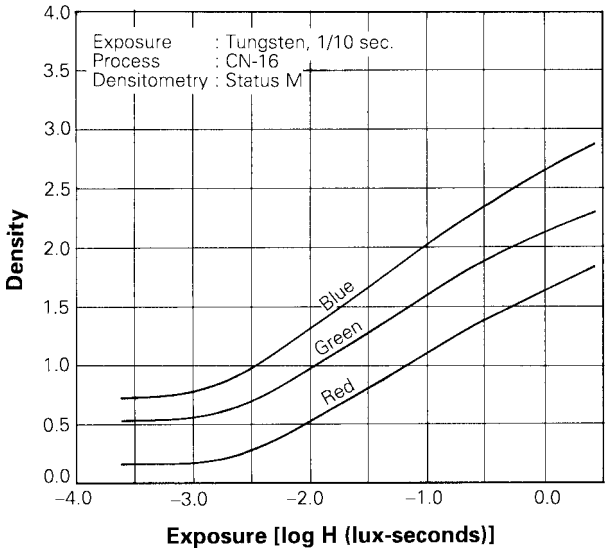
12. DIFFUSE RMS GRANULARITY VALUE **4**

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

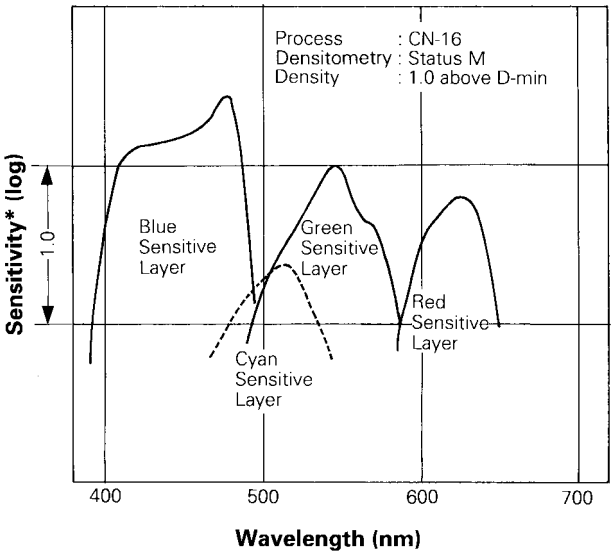
13. RESOLVING POWER

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

14. CHARACTERISTIC CURVES

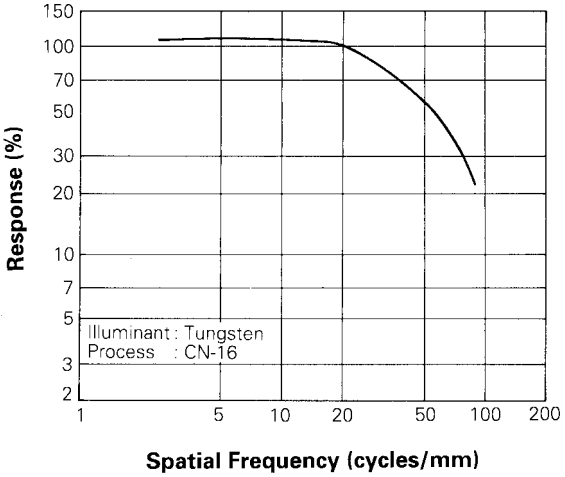


15. SPECTRAL SENSITIVITY CURVES

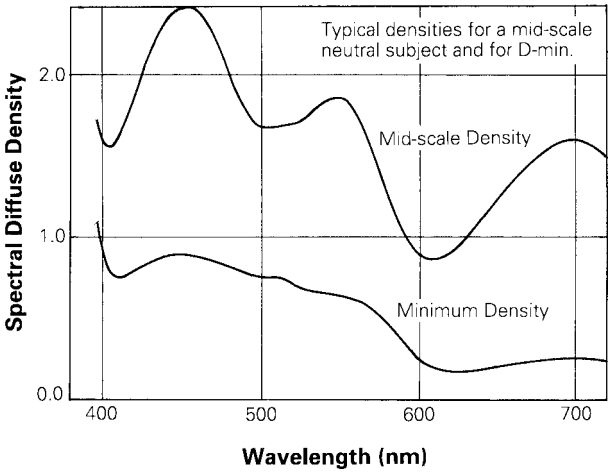


* Sensitivity equals the reciprocal of the exposure (ergs/cm²) required to produce a specified density.

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.

FUJIFILM
FUJI PHOTO FILM CO., LTD.
26-30, Nishiazabu 2-chome, Minato-ku, Tokyo 106-8620, Japan
Ref. No. **AF3-810E(N)** (EIGI-99.1-HB•8-4❸) Printed in Japan