

## FUJICOLOR NPC 160 PROFESSIONAL [NPC]

### 1. FEATURES AND USES

FUJICOLOR NPC 160 PROFESSIONAL [NPC] is an ISO 160 daylight color negative film that is suitable for high-contrast depiction and portrait photography.

Features	Results
<ul style="list-style-type: none"> <li><b>Lively Skin Tone Reproduction with Higher Contrast</b></li> </ul>	<ul style="list-style-type: none"> <li>Excellent and dynamic skin tones even in flatly lit or extremely high-key situations</li> <li>Natural and vivid skin tones in portrait and fashion photography where skin tone is of utmost importance.</li> </ul>
<ul style="list-style-type: none"> <li><b>Very Wide Exposure Latitude</b></li> </ul>	<ul style="list-style-type: none"> <li>Excellent and reliable results even in over- and under-exposures</li> </ul>
<ul style="list-style-type: none"> <li><b>Rich Color Reproduction</b></li> </ul>	<ul style="list-style-type: none"> <li>Highly vivid colors with enhanced saturation across the entire spectrum</li> </ul>
<ul style="list-style-type: none"> <li><b>Accurate Color Reproduction</b></li> </ul>	<ul style="list-style-type: none"> <li>Colors as they are perceived by the human eye due to the incorporation of a fourth color-sensitive layer</li> <li>Natural color rendition even under fluorescent lights or mixed light sources as a result of the film's optimized spectral characteristics</li> </ul>

It requires no color-compensating filters when used under daylight conditions or with an electronic flash.

### 2. SIZES, BASE & EMULSION NUMBER

Film Size	Base Thickness	Base Material	Emulsion Number
135 - 36	122 $\mu\text{m}$	Cellulose Triacetate	#901 - 999
120	98 $\mu\text{m}$		
220	98 $\mu\text{m}$		

### 3. EXPOSURE

- The table below will provide recommendations which will yield the best results when a series of exposures are not made.

Light Condition	Film Speed	Filter
Daylight or Electronic Flash	ISO 160/23°	None

#### Exposure Determination without an Exposure Meter

The recommendations in the table below should be used two hours after sunrise and two hours before sunset.

#### Daylight Exposure Guide

Light Conditions	Seashore or Snow Scenes under Bright Sun	Bright Sunlight	Hazy Sunlight	Cloudy	Cloudy Day or Open Shade
<b>Lens Aperture</b>	f/22	f/16	f/11	f/8	f/5.6
<b>Shutter Speed (sec.)</b>	1/500		1/250		

- NOTE**
- The use of an exposure meter is highly recommended in cloudy weather or in open shade as light conditions continually change.
  - Back lit and close up subject exposures should be increased by one to two stops.
  - A Kodak No. 1A UV absorbing filter is recommended for snow, mountain, or distant landscape scenes.

#### Low Light Exposure Guide

Light Conditions	Indoor Sports & Night Games	Nighttime Indoor Scenes (under fluorescent light)	Evening Scenes	Night Scenes
<b>Lens Aperture</b>	f/2.8 to 4	f/2 to 2.8	f/2.8 to 4	f/2 to 2.8
<b>Shutter Speed (sec.)</b>	1/60	1/30	1/60	1/30

**4. EXPOSURE UNDER VARIOUS LIGHTING SOURCES**

Since this film is designed as a daylight type, there is no need for filtering when the subject is exposed under natural daylight conditions. Even when exposed under early morning and evening twilight conditions, filtering is generally not necessary as when printed, these exposures will produce excellent results.

**Electronic Flash**

- Since electronic flash characteristics are similar to daylight, no filters are required. Effective light output and color balance will differ with the equipment type, age, color temperature and other factors. This will require making initial tests.
- With shutter speeds slower than 1/60 of a second, the influence of non-flash light sources such as modeling lamps and room illumination may cause undesirable color balance shifts. Test exposures are recommended.
- Adjust the lens opening for electronic flash according to the following formula;

$$\frac{\text{Lens Aperture}}{\text{Electronic Flash-to-Subject Distance (in Meters)}} = \frac{\text{ISO 160 Electronic Flash Guide Number}}{\text{Electronic Flash-to-Subject Distance (in Meters)}}$$

- The film speed should be set at the ISO setting currently being used for ISO 160 rated film.
- Since the amount of light reflected onto the subject from surrounding surfaces will differ with conditions, refer to the instructions for the flash unit.

**High-Intensity Discharge Lamps**

- For the best results, the following combinations of color compensating filters are recommended. However, for exacting work, test exposures are advisable.

<b>High-intensity Discharge Lamps</b>	Deluxe White Mercury	Clear Mercury
<b>Color Compensating Filters</b>	10C	40M + 40Y
<b>Exposure Corrections</b>	+1/3 stop	+1 1/3 stop

**NOTE** Different compensation may be required according to special lamp types and length of use, so test exposures are recommended, whenever possible.

- Shutter speeds of 1/125 second for high-intensity discharge lamps will avoid AC power-induced changes in brightness and color being recorded on the film.

**Fluorescent Lamps**

There is no need for exposure compensation.

**5. LONG AND SHORT EXPOSURES**

No exposure or color balance compensation is required when exposure time is within a 1/4000 to 1 second. However for exposures of 4 seconds or longer, exposure compensations are required.

<b>Exposure Time (sec.)</b>	1/4000 to 1	4	16
<b>Color Compensating Filter</b>	None	None	None
<b>Exposure Corrections (Lens Opening)</b>	None	+ 1/2 stop	+ 1 stop

Exposures longer than 16 seconds are not recommended.

**6. FILM HANDLING**

To insure quality results, NPC like all professional films requires proper handling prior to and after exposure.

- When traveling, manual film inspection at airports may be advisable due to the wide variety of X-Ray equipment in use.
- Allow sufficient time for refrigerated films to reach room temperature before using.
- Load and unload films in subdued light.
- Do not subject unexposed or exposed film to high temperatures and humidities.
- Process promptly after exposure.
- Do not use a safelight. Handle unprocessed film in total darkness.

**7. FILM STORAGE**

**Unprocessed Film**

Unexposed film should be stored at 10°C (50°F) or below in factory sealed packaging.

**Processed Film**

Processed film should be placed in protective envelopes and stored in a cool, dark, and dry location.

- Recommended Storage Conditions

- Temperature: Below 25°C (77°F), Humidity: 30 to 60% RH
- Extended Duration Conditions Temperature: Below 10°C (50°F), Humidity: 30 to 50% RH

**NOTE** Even though this film reaches new highs in long term dye stability, as with all color dyes, those used in this film will fade with time.

**8. PROCESSING**

This film is designed for standard C-41 processing chemicals. Equivalent chemicals from other manufacturers should also produce the expected results.

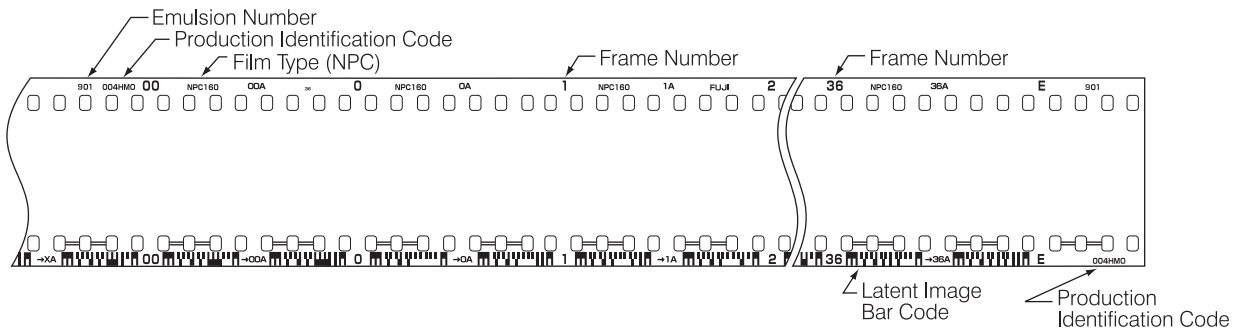
**9. NEGATIVE EXPOSURE EVALUATION**

The accuracy of exposure can be estimated through the use of an electronic densitometer equipped with Status M filters. An exposure of an 18% gray card receiving the same illumination as the subject, should provide density readings in the range of 0.80 to 1.00. These densities only apply to film which has been exposed and processed correctly.

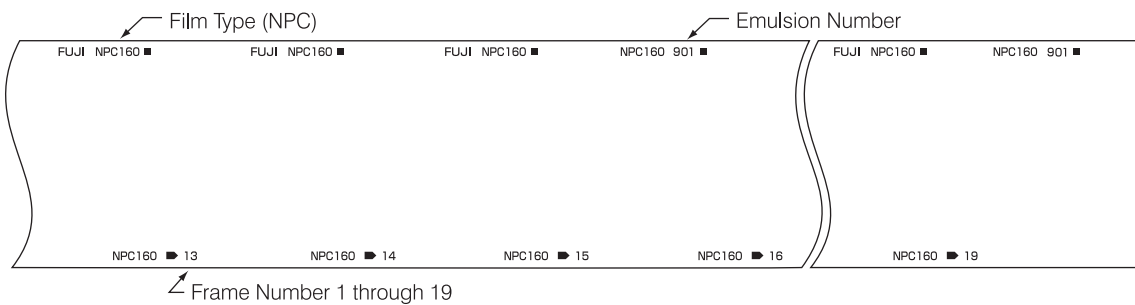
**10. IDENTIFYING FILM**

It may be necessary to segregate NPC 160 PROFESSIONAL from other color negatives when utilizing many different analyzers and printers. The following markings identify NPC 160 PROFESSIONAL films.

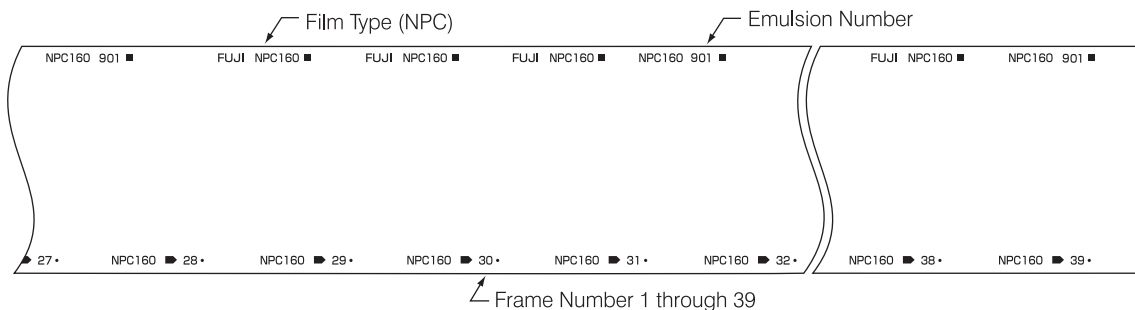
• **135 Size**



• **120 Size**



• **220 Size**



**11. VIDEO ANALYZING**

A separate channel set-up is recommended for the analyzer. Excellent results are attainable on the Kodak PVAC\*, Bremson CVIS\*\* and other analyzers. Starting values and set-up and balancing manuals are available. Please contact your local sales or technical representative for these items.

\* PVAC is a registered trademark of the Eastman Kodak Company.  
 \*\* CVIS is a registered trademark of Bremson Data Systems.

**12. PRINTING**

Color prints can be made by contact printing or enlarging on FUJICOLOR and other professional printing materials.

**13. RETOUCHING**

Conventional retouching techniques will work well with this film. For more information on retouching, please refer to the FUJI PROFESSIONAL RETOUCHING GUIDE (Ref. #02408100) and/or FUJI PROFESSIONAL WORKBOOK AND VIDEO (Ref. #02408200) available through local professional product dealers.

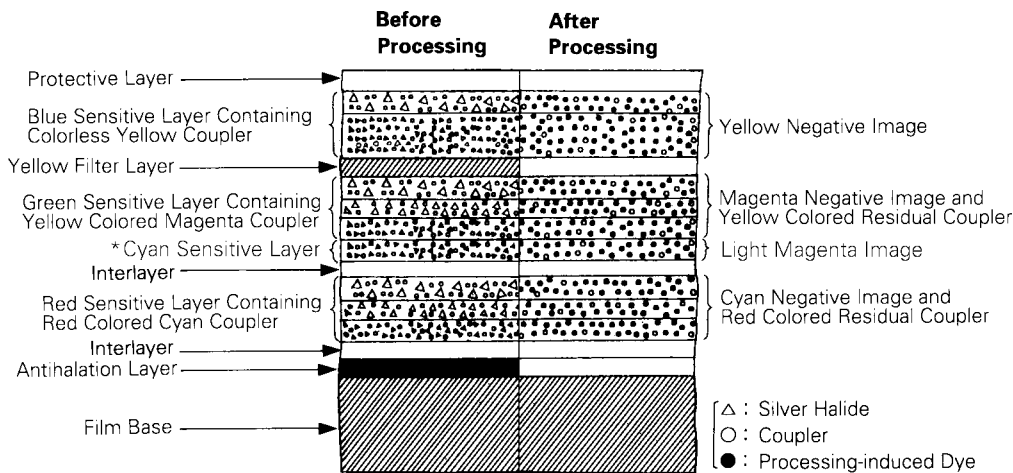
**14. DIFFUSE RMS GRANULARITY VALUE ..... 4**

Micro-densitometer Measurement Aperture : 48 μm in diameter.  
 Magnification : 12 x.  
 Measured Sample Density (NETA) : 1.0.

**15. RESOLVING POWER**

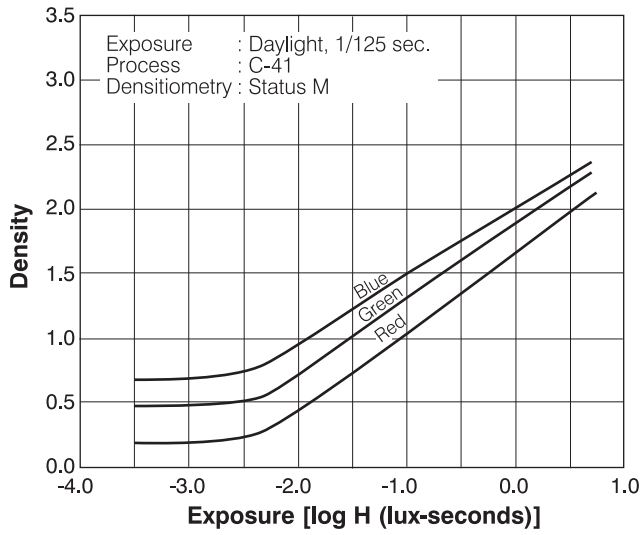
Test Object Contrast 1.6 : 1 ..... **50 lines/mm**  
 Test Object Contrast 1000 : 1 ..... **125 lines/mm**

**16. FILM STRUCTURE**

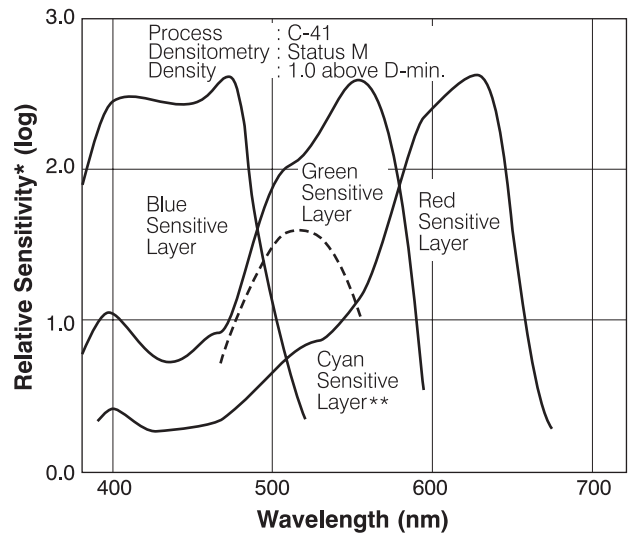


\* Fourth Color-sensitive Layer

**17. CHARACTERISTIC CURVES**

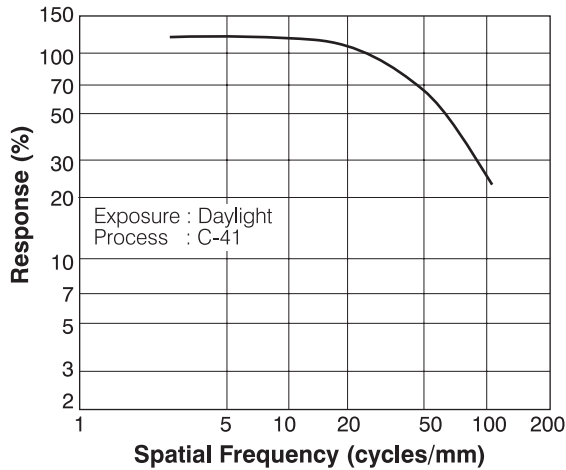


**18. SPECTRAL SENSITIVITY CURVES**

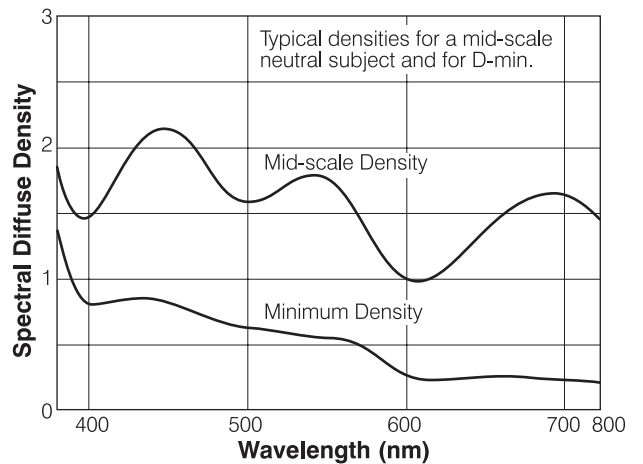


\* Sensitivity equals the reciprocal of the exposure (J/cm<sup>2</sup>) required to produce a specified density.  
 \*\* Fourth Color-sensitive Layer

**19. MTF CURVE**



**20. SPECTRAL DYE DENSITY CURVES**



**NOTICE** The sensitometric curves and other data herein published were derived from particular materials taken from general production runs. As such they do not represent in exact duplication the characteristics of every lot produced nor a standard for FUJIFILM products. Further, FUJIFILM is in a constant process of upgrading quality which may result in data changes.

