

## NEOPAN 1600 Professional

### 1. FEATURES AND USES

NEOPAN 1600 SUPER PRESTO is a high speed black and white negative film with an exposure index of 1600.

- Relative to the development conditions selected, this film offers the most frequently used range of black and white photographic speeds (EI 400 ↔ 1600) while providing also a very high quality image characterized by fine grain, elevated sharpness, and three dimensional depth.
- The EI 1600 speed is derived through the same short development time required of NEOPAN 400 Professional film.
- Static mark inhibition stability has been enhanced.
- Camera contained film transportability has been increased allowing for rapid rewind.

As a result of the above, this film is particularly suited to action-stopping photography, stage photography, night and indoor work where light levels are low, mass media and reportage work, and other professional applications.

### 2. FILM SIZES, BASE MATERIAL AND THICKNESS

|       |                                           |                                        |                       |
|-------|-------------------------------------------|----------------------------------------|-----------------------|
| 135   | 24- and 36-exp.                           | Gray-tinted<br>Cellulose<br>Triacetate | 0.122 mm<br>thickness |
| 35 mm | 30.5 m (100 ft),<br>darkroom loading type |                                        |                       |

### 3. SPEED

EI\* 1600/33°

### 4. COLOR SENSITIVITY

Panchromatic

### 5. EXPOSURE GUIDE

To obtain the best photographic results, correct exposure is indispensable, and for correct exposures the use of an exposure meter is recommended. If an exposure meter is not available, as a guide use the exposures suggested in the tables below.

### Exposure Guide Tables

(1) Standard Exposure at EI 1600

| Light Conditions     | Nighttime<br>Indoor<br>Scenes | Evening<br>Scenes | Night<br>Scenes | Stage Scenes                 |                            | Indoor<br>Sports<br>Scenes | Night<br>Game<br>Scenes |
|----------------------|-------------------------------|-------------------|-----------------|------------------------------|----------------------------|----------------------------|-------------------------|
|                      |                               |                   |                 | Normally<br>Illumi-<br>nated | Highly<br>Illumi-<br>nated |                            |                         |
| Lens Aperture        | f/2.8 to 4                    | f/4 to 5.6        | f/2.8 to 4      | f/4                          | f/8                        | f/2.8                      | f/4 to 5.6              |
| Exposure Time (sec.) | 1/60                          | 1/125             | 1/60            | 1/125                        |                            | 1/250                      |                         |

(2) Outdoor Exposure at EI 800

| Light Conditions     | Seashore or<br>Snow Scenes<br>under Bright Sun | Bright<br>Sunlight | Fine Weather<br>Daylight<br>Scenes | Cloudy<br>Bright | Cloudy Day<br>or Open<br>Shade |
|----------------------|------------------------------------------------|--------------------|------------------------------------|------------------|--------------------------------|
| Lens Aperture        | f/22                                           | f/16               | f/16                               | f/11             | f/8                            |
| Exposure Time (sec.) | 1/1000                                         |                    |                                    | 1/500            |                                |

\* EI (Exposure Index) is the exposure determination designator and the camera or exposure meter ISO speed should be set to this value.

### Flash Exposures

When electronic flash exposures are to be made, use the shutter speeds designated for the particular camera involved. The lens aperture for electronic flash exposure is determined from the particular flash unit guide number, using the formula given below.

$$\text{Lens Aperture (f-number)} = \frac{\text{Guide Number (EI 1600)}}{\text{Flash-to-Subject Distance (meters or feet)}}$$

When an automatic electronic flash unit is employed, it should be set at EI 1600. Electronic flash is, in the same manner as flashbulb photography, dependent on the reflectivity of the surroundings. Observe the electronic flash unit instructions.

### Filter Recommendations

When a filter is to be used, multiply the normal exposure by a proper filter factor using the table below as a guide.

| Filter        | Fuji Filter    | SC-39<br>(UV) | SC-48<br>(yellow) | SC-56<br>(orange) | SC-60<br>(red) |
|---------------|----------------|---------------|-------------------|-------------------|----------------|
|               | Wratten Filter | No. 1A        | No. 8             | No. 21            | No. 25         |
| Filter Factor | Daylight       | 1.0           | 2.0               | 4.0               | 8.0            |
|               | Tungsten       | 1.0           | 1.5               | 3.0               | 6.0            |

## 6.

## SAFELIGHT

The film should be handled in total darkness. If a safelight is required, a Fuji Safelight Filter SLG4 (dark green) with a 20 watt bulb may be used at a distance not less than 1 meter (3.3 feet). In such cases, use the safelight durations that are short as possible and towards the end of the development period.

## 7.

## PROCESSING

## (1) Development

Processing times and temperatures for development are shown below. To prevent the appearance of development marks and assure uniform finish, agitate the developer continuously for the first minute and for five seconds every minute thereafter.

## • Development Conditions (Small Tank Processing)

Agitation: Agitate continuously for the first minute and for five seconds every minute thereafter.

Unit: minutes

| Developer             | Temp.<br>EI | 18°C<br>(64°F) | 20°C<br>(68°F) | 22°C<br>(72°F) | 24°C<br>(75°F) | 26°C<br>(79°F) |
|-----------------------|-------------|----------------|----------------|----------------|----------------|----------------|
| SPD<br>[Super Prodol] | 1600        | 5 1/4          | 4 1/4          | 3 1/2          | NR             | NR             |
|                       | 3200        | 10             | 8              | 6 1/2          | 5              | 4              |
| SPD(1:1)              | 1600        | 8              | 6 1/2          | 5 1/2          | 4 1/2          | 3 3/4          |
| Fujidol E             | 1600        | 8              | 6 1/2          | 5 1/4          | 4 1/4          | 3 1/2          |
| Fujidol E (1:1)       | 1600        | 10             | 8              | 6 1/4          | 5              | 4              |
| Microfine             | 250         | 6 1/4          | 5              | 4              | 3 1/4          | NR             |
|                       | 400         | 7 1/2          | 6              | 4 3/4          | 3 3/4          | 3              |
|                       | 800         | 10             | 8              | 6 1/2          | 5              | 4              |

NR: Not Recommended

(Non-Fuji Film Developer Processing)

Unit: minutes

| Developer               | Temp.<br>EI | 18°C<br>(64°F) | 20°C<br>(68°F) | 22°C<br>(72°F) | 24°C<br>(75°F) | 26°C<br>(79°F) |
|-------------------------|-------------|----------------|----------------|----------------|----------------|----------------|
| D-76                    | 400         | 4 3/4          | 4              | 3 1/4          | NR             | NR             |
|                         | 800         | 6              | 5              | 4 1/4          | 3 1/2          | NR             |
|                         | 1600        | 9              | 7 1/2          | 6              | 5              | 4              |
|                         | 3200        | NR             | 15             | 12             | 10             | 8              |
| D-76 (1:1)              | 400         | 6 1/2          | 5 1/2          | 4 3/4          | 4              | 3 1/2          |
|                         | 800         | 8              | 7              | 6              | 5              | 4 1/4          |
|                         | 1600        | 11             | 9              | 7 1/2          | 6 1/2          | 5 1/2          |
| D-76 (1:3)              | 800         | 13             | 11 1/2         | 10             | 9              | 8              |
|                         | 1600        | 17             | 15 1/4         | 13 1/2         | 12             | 10 1/2         |
| Microdol-X              | 400         | 8              | 6 1/2          | 5 1/4          | 4 1/4          | 3 1/2          |
|                         | 800         | 10             | 8 1/4          | 6 3/4          | 5 1/2          | 4 1/2          |
|                         | 1600        | 13             | 10 1/2         | 8 1/2          | 7              | 5 3/4          |
| HC-110<br>(Dil.B)       | 800         | 5 1/2          | 4 3/4          | 4              | 3 1/2          | NR             |
|                         | 1600        | 8 1/4          | 7              | 5 3/4          | 5              | 4 1/4          |
| T-MAX<br>Developer      | 1600        | 5 1/2          | 4 1/2          | 4              | 3 1/2          | 3              |
|                         | 3200        | 12             | 10             | 8 1/2          | 7 1/2          | 6 3/4          |
| T-MAX RS<br>Developer   | 1600        | 5 3/4          | 5              | 4 1/2          | 3 3/4          | 3 1/4          |
|                         | 3200        | 10 1/2         | 9 1/2          | 8 1/2          | 7 3/4          | 7              |
| Xtol                    | 1600        | 7 1/2          | 6              | 4 3/4          | 4              | 3 1/4          |
|                         | 3200        | 13 1/2         | 11             | 9              | 7 1/4          | 6              |
| Microphen               | 1600        | 4              | 3 1/4          | NR             | NR             | NR             |
|                         | 3200        | 7              | 5 3/4          | 4 3/4          | 4              | 3 1/4          |
| ID-11                   | 800         | 5 1/4          | 4 1/2          | 3 3/4          | 3 1/4          | NR             |
|                         | 1600        | 8              | 6 1/2          | 5 1/2          | 4 1/2          | 3 3/4          |
| ILFOTEC<br>LC 29 (1:19) | 1600        | 8              | 6 1/2          | 5 1/2          | 4 1/2          | 3 3/4          |

NR: Not Recommended

## NOTE

- The (1:1) and (1:3) parenthetical expressions contained in the above table indicate the amount of water dilution in terms of 1 or 3 parts water to one part developer. Those locations where there are no such parenthetical expressions indicate processing in the developer stock solution without dilution.

### • Processing Capacities and Times (Small Tank Development, 20°C/68°F)

Unit: minutes

| Developer                            | Processing Capacity: 135 36-exp. films |       |       |       |       |   |       |       |   |   |       |         |
|--------------------------------------|----------------------------------------|-------|-------|-------|-------|---|-------|-------|---|---|-------|---------|
|                                      | EL                                     | 1     | 2     | 3     | 4     | 5 | 6     | 7     | 8 | 9 | 10    | 11 12   |
| <b>SPD</b><br>[Super Prodol]<br>(1ℓ) | 1600                                   | 4 1/4 |       |       | 4 1/2 |   | 4 3/4 |       | 5 |   | —     |         |
| <b>Fujidol E</b> (1ℓ)                | 1600                                   | 6 1/2 | 6 1/2 | 6 1/2 | 7     | 7 | 7 1/2 | 7 1/2 | 8 | 8 | 8 1/2 | 8 1/2 9 |
| <b>Microfine</b><br>(600 ml)         | 800                                    | 8     | 8 1/2 | 9     | 9 1/2 | — | —     | —     | — | — | —     | —       |
| <b>D-76</b><br>(1ℓ)                  | 1600                                   | 7 1/2 |       |       | 8     |   | 8 1/2 |       | 9 |   | —     |         |

### • Development Conditions (Deep Tank Processing)

When deep tanks are used, development times should be extended by 5 to 10%, compared to those used with small tanks.

#### (2) Stop Bath

For the stop bath a 1.5% acetic acid solution is recommended. Immerse the film in the bath at 15 to 25°C (59 to 77°F) for 20 to 30 seconds while agitating.

#### (3) Fixing

Fujifix or Super Fujifix is recommended. The recommended fixing times at 15 to 25°C (59 to 77°F) are shown below. The required fixing time is twice the time it takes for the film to become clear. In order to avoid the lack of fixing uniformity and to prevent film staining, agitate the fixing solution continuously for the first 30 seconds.

| Fixer                | Type                                      | Fixing Time (min.) |
|----------------------|-------------------------------------------|--------------------|
| <b>Fujifix</b>       | Acid hardening fixer corresponding to F-8 | 10                 |
| <b>Super Fujifix</b> | Acid hardening rapid fixer                | 3 to 5             |

#### (4) Washing

Wash the film in running water for 20 to 30 minutes. To reduce the washing time, the use of Fuji QW (quick washing agent) is recommended. When using Fuji QW, pre-wash the film for about 30 seconds, immerse it in Fuji QW solution for 1 minute, and wash it in running water for 5 minutes. The required wash water temperature is 15 to 25°C (59 to 77°F).

#### (5) Drying

After washing, wipe both sides of the film with a sponge, immerse it in a 1-to-200 solution of Fuji Driwel for 30 seconds and hang the film up for uniform drying. For natural drying, hang the film in a well-ventilated dust free location.

## 8. PROCESSING IN AUTOMATIC PROCESSORS

### • Processing Conditions for Hanger-transport Type Processors

The processing conditions with Fujifilm developers such as Finedol, Super Finedol, and Minidol, are the same as those essential to Fuji Neopan SS film with similar results being obtained.

#### ① Processing Example for the Kodak Versamat Processor

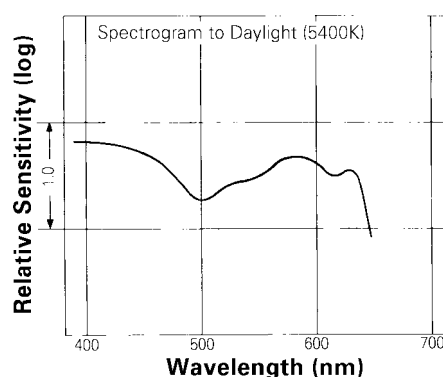
| Processor Type | Developer | Temperature   | Processing Speed (ft./min.) |                    |         |
|----------------|-----------|---------------|-----------------------------|--------------------|---------|
|                |           |               | EI 800                      | EI 1600 (Standard) | EI 3200 |
| 5AN            | HPD*      | 26.5°C (80°F) | 5.5                         | 4                  | 3       |
| 411            |           |               | 5.5                         | 4                  | 3       |
| 11C            |           |               | 11                          | 8                  | 6       |

\*Corresponding to the Kodak Duraflor RT developer.

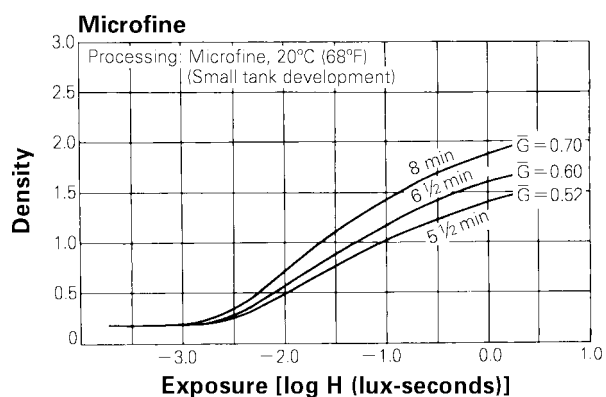
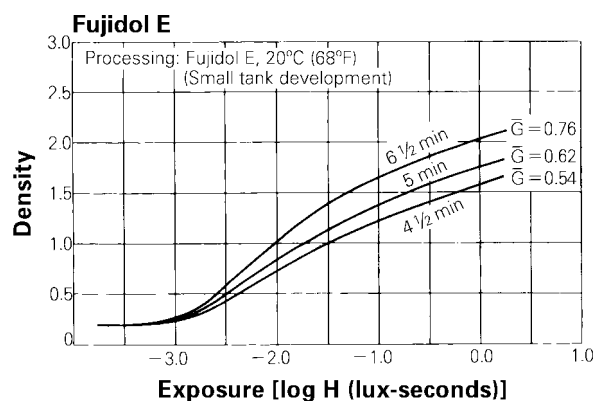
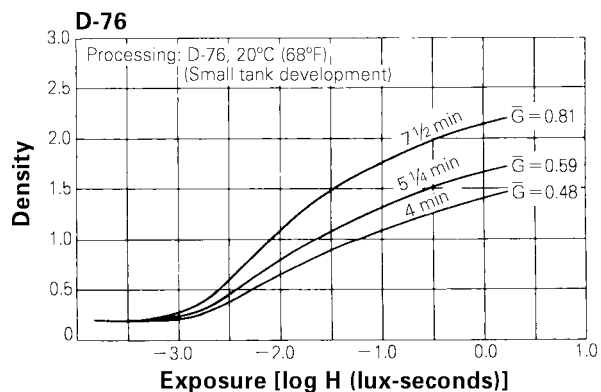
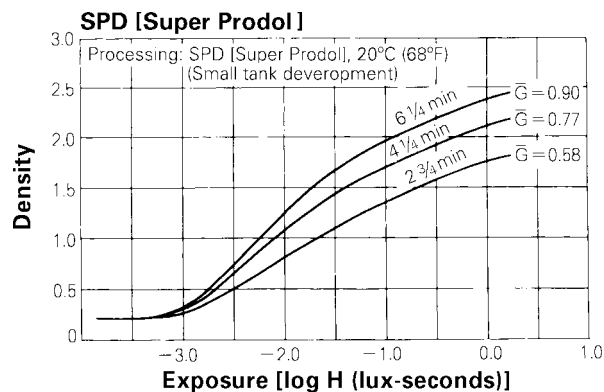
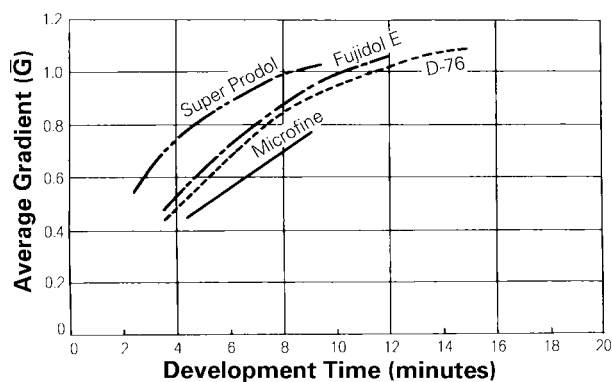
#### ② Processing Example for the FP260 (FC) Processor

| Developer          | Temperature | Development Time (min.) |         |         |
|--------------------|-------------|-------------------------|---------|---------|
|                    |             | EI 800                  | EI 1600 | EI 3200 |
| SPD [Super Prodol] | 30°C (86°F) | 50                      | 60      | 90      |

## 9. SPECTRAL SENSITIVITY CURVE



## 10. CHARACTERISTIC CURVES

11. TIME- $\bar{G}$  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.