

KODAK PANATOMIC-X Film

35 mm and Wider Film in Long Rolls

This is a slow-speed panchromatic film that yields negatives with extremely fine grain and excellent definition. Use this film whenever you require a very high degree of enlargement.

Safelight: Handle and process the film in total darkness. After development is half completed, you can use a KODAK 3 Safelight Filter (dark green) in a suitable safelight lamp with a 15-watt bulb for a few seconds only. Keep the safelight at least 4 feet (1.2 metres) from the film.

EXPOSURE • Speed: ISO 32/16°

These speed numbers are for use with meters and cameras marked for ISO, ASA, or DIN speeds or exposure indexes in either daylight or artificial light. They will normally lead to approximately the minimum exposure required to produce negatives of highest quality.

Outdoor Exposure Guide for Average Subjects:

Set Shutter at 1/100 or 1/125 Second				
Bright or Hazy Sun on Light Sand or Snow	Bright or Hazy Sun (Distinct Shadows)	Weak, Hazy Sun (Soft Shadows)	Cloudy Bright (No Shadows)	Open Shade† or Heavy Overcast
<i>f/11</i>	<i>f/8*</i>	<i>f/5.6</i>	<i>f/4</i>	<i>f/2.8</i>

**f/4* for backlit close-up subjects.
†Subject shaded from sun but lighted by a large area of sky.

Filter Factors: Multiply the normal exposure by the filter factor given below:

KODAK WRATTEN Gelatin Filter	No. 6	No. 8	No. 11	No. 15	No. 25	Polarizing Screen
Daylight	1.5	2*	4	2.5	8	2.5
Tungsten	1.5	1.5	4*	1.5	5	2.5

*For gray-tone rendering of colors approximating their visual brightness.

Electronic-Flash Guide Numbers: To determine the *f*-number for average subjects, divide the proper guide number by the distance (in feet) from the flash to the subject.

Output of Unit (BCPS or ECPS)	350	500	700	1000	1400	2000	2800	4000	5600	8000
Guide Number for Trial	24	28	32	40	50	55	65	80	95	110

Adjustments for Long and Short Exposures:

If Indicated Exposure Time Is (seconds)	Use Either		And, in Either Case, Use This Development Adjustment
	This Lens Aperture Adjustment	This Adjusted Exposure Time (seconds)	
1/1000	none	no adjustment	10% more
1/100	none	no adjustment	none
1/10	none	no adjustment	none
1	1 stop more	2	10% less
10	2 stops more	50	20% less
100	3 stops more	1200	30% less

PROCESSING

Recommended Development for Long Rolls (Up to 100-Foot Lengths) on Spiral Reels:

KODAK Developer	Developing Times (in Minutes)	
	68°F (20°C)	75°F (24°C)
HC-110 (Dilution B)	5	4
D-76 (1:1)*	8½	6
MICRODOL-X	8½	6

*One part water to one part developer.

In loading the reel, secure the end of the film with a rubber band or waterproof tape to prevent the film from unwinding during processing. Then use the following agitation procedure.

1. Lower the reel into the developer, giving it a vigorous turning motion to rotate the reel one-half to one revolution in the developer. Raise and lower the reel approximately one-half inch (keeping the reel in the solution) for the first 15 seconds of the development, tapping it against the bottom of the tank to release air bubbles from the film.

2. Agitate once each minute by lifting the reel out of the solution, tilting it 30 degrees to drain for 5 to 10 seconds, and immersing it again with a vigorous turning motion sufficient to rotate it one-half to one revolution in the developer. Alternate the direction of rotation each minute.

3. Agitate in the same manner in the stop bath and once per minute in the fixing bath.

Note: Too little agitation during development will cause mottle and uneven development. Too much pumping of the reel in and out of the developer can produce streaks across the film at the reel spokes. Too much turning of the reel in the solution can cause longitudinal streaks on the film. This agitation procedure provides a compromise which minimizes these effects.

Recommended Development for Short Lengths (Up to 5½-Foot Lengths):

KODAK Developer	Suggested Developing Time (in Minutes)*									
	SMALL TANK†—(Agitation at 30-Second Intervals)†					LARGE TANK†—(Agitation at 1-Minute Intervals)†				
	65°F (18.5°C)	68°F (20°C)	70°F (21°C)	72°F (22°C)	75°F (24°C)	65°F (18.5°C)	68°F (20°C)	70°F (21°C)	72°F (22°C)	75°F (24°C)
HC-110 (Dilution A)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
HC-110 (Dilution B)	4½	4	4	3½	3½	5½	4½	4½	4	3½
MICRODOL-X	8	7	6½	6	5	9	7½	7	6½	5½
MICRODOL-X (1:3)‡	—	—	11	10	8½	—	—	12	11	9½
D-76	6	5	4½	4½	3½	6½	5½	5	4½	4
D-76 (1:1)	8	7	6½	6	5	9	7½	7	6½	5½

*With properly exposed film, these suggested developing times should yield negative contrast suitable for printing with a diffusion enlarger or by contact. For printing with a condenser enlarger, a lower contrast (achieved by a reduction in development time) is usually better. For complete information about contrast control, see KODAK Publication No. F-5, *KODAK Professional Black-and-White Films*.
†Unsatisfactory uniformity may result with development times of less than 5 minutes.
‡For greater sharpness (see developer instructions).
NR = Not recommended
NOTE: Do not use developers containing silver halide solvents.

Rinse at 65 to 75°F (18.5 to 24°C) with agitation in KODAK Indicator Stop Bath or KODAK Stop Bath SB-5 for 30 seconds.

Fix at 65 to 75°F (18.5 to 24°C) with agitation in KODAK Fixer or KODAK Fixing Bath F-5 for 2 to 4 minutes, or in KODAK Rapid Fixer or KODAFIX Solution for 1 to 2 minutes.

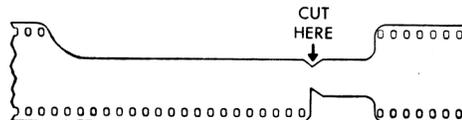
Wash for 20 to 30 minutes in running water at 65 to 75°F (18.5 to 24°C). To minimize drying marks, use KODAK PHOTO-FLO Solution after washing, or wipe surfaces carefully with a KODAK Photo Chamois or a soft viscose sponge. To save time and conserve water, use KODAK Hypo Clearing Agent.

Dry film in a dust-free place.

You can dry long rolls of film without removing them from their processing reels.

No. FX410

No. FX410 is tongued and notched every 66 inches, as shown below. The roll is 27½ feet long and gives five 36-exposure lengths, frame-numbered 1 through 36.



The Kodak materials described in this publication for use with KODAK PANATOMIC-X Film are available from those dealers normally supplying Kodak products. Other materials may be used, but similar results may not be obtained.

NOTICE: This film will be replaced if defective in manufacture, labeling, or packaging. Except for such replacement, the sale or any subsequent handling of this film is without warranty or liability even though defect, damage, or loss is caused by negligence or other fault.



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