

EASTMAN DOUBLE-X

Negative Film 5222™ / 7222™



DESCRIPTION

This black-and-white negative camera film is designed for general production use both outdoors and in the studio. You can also use this film for photography under dim lighting conditions and where you need greater depth of field without an increase in the illumination level.

EASTMAN DOUBLE-X Negative Film 5222 (35 mm) and 7222 (16 mm) is a high-speed, panchromatic material that has good image-structure characteristics and excellent sharpness.

BASE

This film has a gray acetate safety base.

DARKROOM RECOMMENDATIONS

Handle unprocessed film in total darkness. If necessary, the film can be examined *for a few seconds only* after developing is 50 percent complete, using the following safelight combination: a 15-watt bulb and KODAK Safelight Filter No. 3 / dark green, no closer than 4 feet (1.2 metres) to the film.

STORAGE

Store *unexposed film* at 13°C (55°F) or below. Process *exposed film* promptly. Store processed *film* at 21°C (72°F) or lower at a relative humidity of 40 to 50 percent for normal commercial storage. For more information on long-term storage conditions, see KODAK Publications No. H-1, *KODAK Professional Motion Picture Films*, and No. H-23, *The Book of Film Care*.

EXPOSURE INDEX/DIN

(For development to gamma of 0.65)

Daylight—250/25

Tungsten (3200 K)—200/24

Use these exposure indexes with incident- or reflected-light exposure meters and cameras marked for ISO or ASA speeds or exposure indexes. These indexes apply for meter readings of average subjects made from the camera position or for readings made from a gray card of 18-percent reflectance held close to and in front of the subject. For unusually light- or dark-colored subjects, decrease or increase the exposure indicated by the meter accordingly.

EXPOSURE TABLE FOR TUNGSTEN LIGHT

At 24 frames per second (fps) 170° shutter opening:

Lens Aperture	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8	f/11
Footcandles required *	13	25	50	100	200	400	800

* At 18 fps, use ¾ of the footcandles (fc) shown.

FILTER FACTORS

KODAK WRATTEN Filter No.	3	8	12	15	21	23A	25	96†	29
Filter Factor for Daylight	1.5	2.0	3.0	5	8	20			

† For use in bright sunlight to reduce the exposure without modifying color rendering or depth of field. This neutral density filter with a density of 0.9 reduces the exposure by 3 stops.

RECIPROCITY CHARACTERISTICS

No filter or exposure adjustments are needed for exposure times from 1/10,000 to 1 second.

PROCESSING

The following starting-point recommendations are for a typical continuous-immersion processing machine. See KODAK Publication No. H-24, *Manual for Processing KODAK Motion Picture Films*, Module 1, for more information on solution formulas and procedures for machine processing.

Processing Step	Temperature	Time (min:sec)	Replenishment Rate (mL per 100 ft)	
			35 mm	16 mm
KODAK Developer D-96*	21 ±0.3°C (70 ±0.5°F)	Approx 7:00†	1,250 (D-96R)	625 (D-96R)
Stop Rinse‡	21 ±1°C (70 ±2°F)	0:50	12,000	6,000
KODAK Fixing Bath F-5*	21 ±1°C (70 ±2°F)	6:00	850	425
Wash (counter-current)	21 ±1°C (70 ±2°F)	10:00	12,000	6,000
Dry§	35°C (95°F)	—	—	—

* Agitation in the developer and fixing bath should be by recirculation through submerged spray jets that impinge on the film strands.

† Develop to recommended control gamma of 0.65 to 0.70 calculated using Status M densitometry (blue).

‡ Fixer-laden water from wash tank, pH about 6.

§ Drying depends on many factors such as air temperature, humidity, volume and rate of air flow, flow distribution pattern, final squeezeing, etc. In a typical motion-picture film drying cabinet with air at about 35°C (95°F) and 40- to 50-percent relative humidity (RH), satisfactory drying will require 15 to 20 minutes. Film leaving the drying cabinet when it has reached room temperature should be at equilibrium with room air at approximately 50-percent RH.

IDENTIFICATION

After processing, the product code numbers 5222 or 7222, and internal product symbol (E) are visible along the length of the film.

IMAGE STRUCTURE

The modulation-transfer curves, rms granularity, and resolving power data were generated from samples of EASTMAN DOUBLE-X Negative Film exposed to tungsten light and processed in KODAK Developer D-96 at 21°C (70°F) to the recommended control gamma. For more information on image-structure characteristics, see KODAK Publication No. H-1, *KODAK Professional Motion Picture Films*.

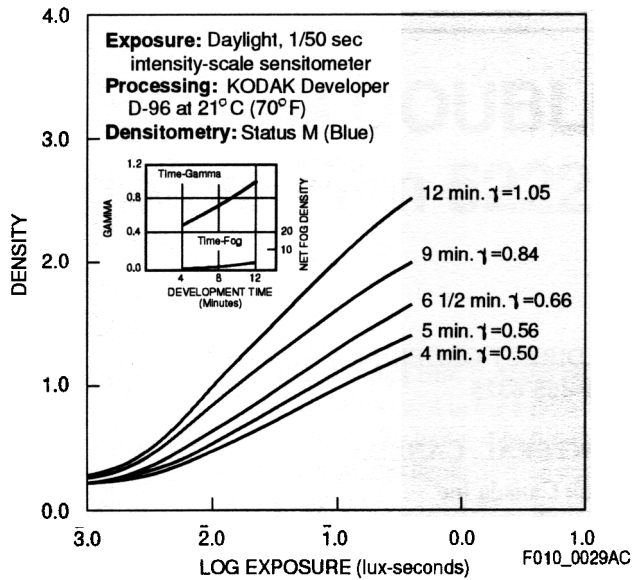
Diffuse RMS Granularity* 14

Resolving Power†	TOC 1.6:1	32 lines/mm
	TOC 1000:1	100 lines/mm

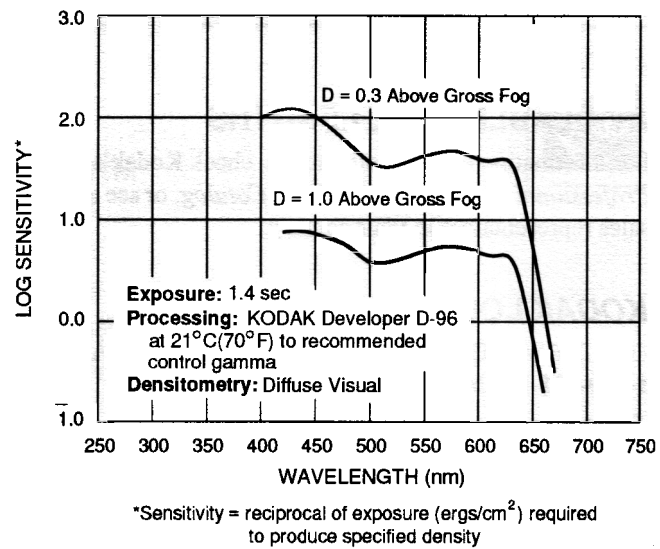
* Read at a net diffuse visual density of 1.0, using a 48-micrometer aperture.

† Determined according to a method similar to the one described in ISO 6328-1982, *Photography—Photographic Materials—Determination of ISO Resolving Power*.

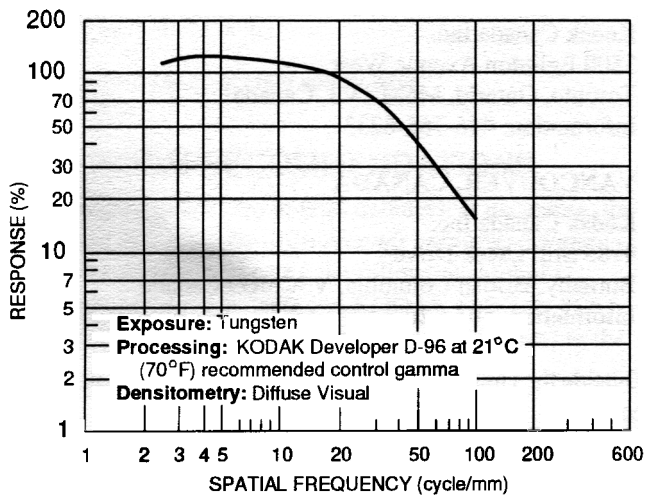
Characteristic Curves



Spectral-Sensitivity Curves



Modulation-Transfer Curve



Notice: While the data presented are typical of production coatings, they do not represent standards which must be met by Kodak. Varying storage, exposure, and processing conditions will affect results. The company reserves the right to change and improve product characteristics at any time.

These photographic modulation-transfer values were determined by using a method similar to the one described in ANSI Standard PH2.39-1977(R1990). The film was exposed with the specified illuminant to spatially varying sinusoidal test patterns having an aerial image modulation of a nominal 60 percent at the image plane, with processing as indicated. In most cases, the photographic modulation-transfer values are influenced by development-adjacency effects and are not equivalent to the true optical modulation-transfer curve of the emulsion layer in the particular photographic product.

AVAILABLE ROLL LENGTHS

For information on film roll lengths, check Kodak's *Professional Motion Imaging Price Catalog*, or see a Kodak sales representative in your country.

KODAK LOCATIONS

FOR DIRECT ORDERING IN THE UNITED STATES:
1-800-621-FILM

ATLANTA, GEORGIA

4 Concourse Parkway
Suite 300
Atlanta, Georgia 30328-5379
Information: 800-800-8398

CHICAGO, ILLINOIS

815 West Van Buren, Suite 320
Chicago, Illinois 60607
Information: 312-492-1423

DALLAS, TEXAS

11337 Indian Trail
Dallas, Texas 75229
Information: 972-481-1170

HOLLYWOOD, CALIFORNIA

6700 Santa Monica Boulevard
P. O. Box 38939
Hollywood, California 90038-1203
Information: 213-464-6131

NEW YORK, NEW YORK

360 West 31st Street
New York, New York 10001-2727
Information: 212-631-3450

FOR DIRECT ORDERING IN CANADA:
1-800-465-6325

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VANCOUVER, CANADA

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Outside the United States and Canada, contact Kodak in your country.

Kodak On-line At:
<http://www.kodak.com/go/motion/>



**Professional
Motion Imaging**