

TECHNICAL DATA / BLACK-AND-WHITE INTERMEDIATE FILM

MARCH 2022 H-1-2366

KODAK Fine Grain Duplicating Positive Film 2366 (35mm) is a low-speed duplicating film intended for making master positives from black-and-white camera negatives which, when printed onto EASTMAN Fine Grain Duplicating Panchromatic Negative Film 2234 / ESTAR Base produces duplicate negatives that are only distinguishable from the originals by skilled observers. This blue-sensitive black-and-white film has very high resolution and incorporates a yellow dye, which is removed during processing, to provide very high acutance.

BASE

2366 Film has a clear ESTAR safety base. The back side of the base contains an anti-static layer with a carnauba wax lubricant.

DARKROOM RECOMMENDATIONS

Handle unprocessed film in total darkness. If necessary, you can examine the film for *less than one minute*, using the following safelight combination: a 15-watt bulb and KODAK OC Safelight Filter (greenish-yellow), no closer than 1.2 meters (4 feet) to the film.

STORAGE

Store unexposed film at 55°F (13°C) or lower. For extended storage, store it at 0°F (-18°C) or below. Process exposed film promptly. Store processed film at 70°F (21°C) or lower at a relative humidity of 40 to 50 percent for normal commercial storage. For extended-term storage (for preservation of material having permanent value), store at 21°C (70°F) or lower, at a relative humidity of 20 to 50 percent.

Store processed film according to the recommendations in ISO 18911:2010, *Imaging Materials - Processed Safety Photographic Films - Storage Practices*.

EXPOSURE

For laboratories with subtractive printers, such as a Bell & Howell Model D Printer, these recommendations should be helpful as a starting point. Use a 500-watt tungsten lamp operating with a diffuser at a lamp setting of 75 volts. With a printer speed of 90 feet per minute and a diaphragm setting of 15, satisfactory master positives should be produced from original negatives of average density. (The maximum density of the negative image should produce a density of about 0.6 to 0.8 in the master positive, i.e., just above the lower end of the straight-line portion of the characteristic curve.)

PROCESSING

The following process recommendations should be used as starting points for a typical continuous-immersion processing machine using formulas presented in [KODAK Publication No.H-24.15, Manual for Processing KODAK Motion Picture Films, Module 15](#). The processing times may require modification for a particular machine.

Processing Step	Temperature	Time	Replenishment Rate (mL per 100 ft)
KODAK Developer D-96 ^[1]	70 +1/2°F (21 +-0.3°C)	^[2]	1250 (D-96R)
Stop Rinse ^[3]	70 +-2°F (21 +-1°C)	50 sec	12,000
KODAK Fixing Bath F-5 ^[1]	70 +-2°F (21 +-1°C)	11 min	850
Wash (counter-current)	75 +-2°F (24 +-1°C)	10 min	12,000
Dry	95°F (35°C)	- ^[4]	

^[1] Provide agitation in the developer and fixing bath by recirculation through submerged spray jets that impinge on the film strands.

^[2] Develop to recommended control gamma of 1.2 to 1.6.

^[3] Use a countercurrent flow of fixer-laden water overflow from the wash tank, pH about 6.

^[4] Drying depends on many factors such as air temperature, relative humidity, volume and rate of air flow, flow distribution pattern, final squeegeeing, etc. In a typical motion picture film drying cabinet with air at about 95°F (35°C) and 40 to 50 percent RH, satisfactory drying will require 15 to 20 minutes. Film leaving the drying cabinet when it has reached room temperature should be in equilibrium with room air at approximately 50 percent RH.

IDENTIFICATION

After processing, the product code number 2366, emulsion and roll number identification, and internal product symbol (EX) are visible along the length of the film.

IMAGE STRUCTURE

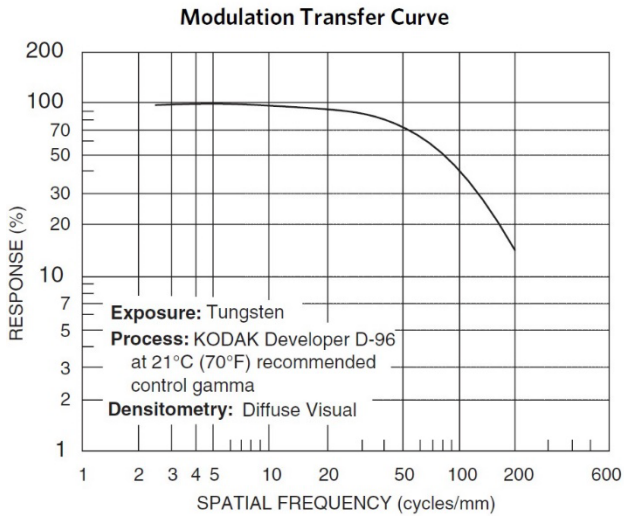
The modulation-transfer curves (there is no curve for this?), and the resolving-power data were generated from samples of 2366 Film exposed with tungsten light and processed as recommended in Process D-96 at 70 F (21 C) to the recommended control gamma. For more information on image-structure characteristics, see [KODAK Publication No. H-845, The Essential Reference Guide for Filmmakers](#).

Diffuse RMS Granularity	9
Resolving Power	100 lines/mm (TOC 1.6:1)
	200 lines/mm (TOC 1000:1)

Read at a net diffuse visual density of 1.0, using a 48-micrometre aperture. Determined according to a method similar to the one described in ISO 6328-1982, Photography—Photographic Materials—Determination of ISO Resolving Power.

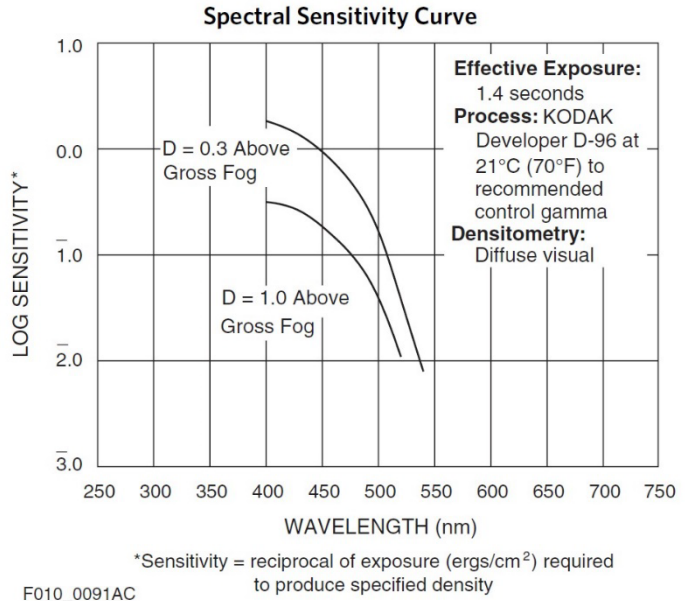
CURVES

MTF

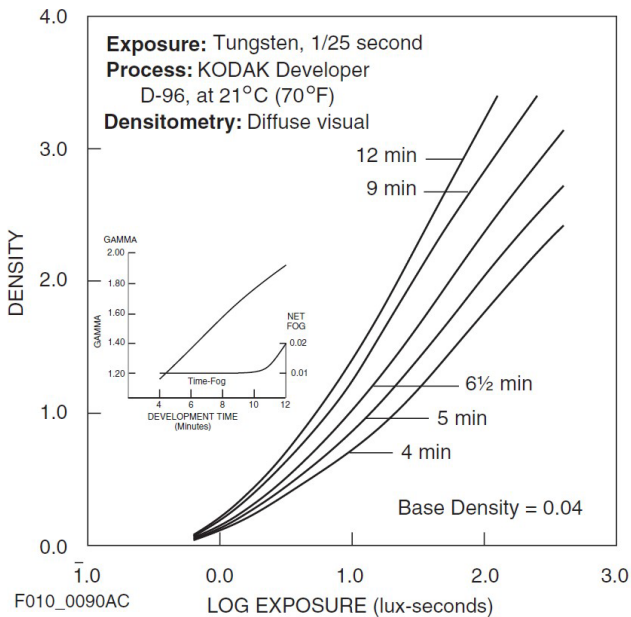


Note: These photographic modulation-transfer values were determined by using a method similar to the one described in ANSI Standard PH2.39-1977 (R1990). The film was exposed with the specified illuminant to spatially varying sinusoidal test patterns having an aerial image modulation of a nominal 60 percent at the image plane, with processing as indicated. In most cases, these 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.

SPECTRAL SENSITIVITY



CHARACTERISTIC



NOTICE: The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent standards or specifications that must be met by Eastman Kodak Company. The company reserves the right to change and improve product characteristics at any time.

Available Roll Lengths and Formats

See Kodak Motion Picture Products Catalog at www.kodak.com/go/mpcatalog

To order film in the United States and Canada, call 1- 800-356-3259, prompt 3.

Worldwide customers can find the nearest sales office at www.kodak.com/go/salesoffices

