EASTMAN EXR 200T Color Negative Film 5293™ / 7293™

DESCRIPTION

EASTMAN EXR 200T Film 5293 (35 mm) and 7293 (16 mm) is a medium- to high-speed tungsten-balanced color negative camera film with micro-fine grain, very high sharpness, and high resolving power. It features wide exposure latitude and accurate tone reproduction. The emulsion contains a colored-coupler mask for good color reproduction in release prints.

BASE

This film has an acetate safety base with rem-jet backing.

DARKROOM RECOMMENDATIONS

Do not use a safelight. Handle unprocessed film in total darkness.

STORAGE

Store unexposed film at 13˚C (55˚F) or lower. For extended storage, store at –18˚C (0˚F) or lower. Process *exposed film* promptly. Store *processed film* according to the recommendations in NAPM IT9.11-1992: for medium-term storage (minimum of ten years), store at 10˚C (50˚F) or lower at a relative humidity of 20 to 30 percent; for extended-term storage (for preservation of material having permanent value), 2˚C (35˚F) or lower at a relative humidity of 20 to 30 percent. For active use, store at 25˚C (77˚F) or lower at a relative humidity of 50 5 percent. This relates to optimized film handling rather than preservation; static, dust-attraction, and curl-related problems are generally minimized at the higher relative humidity. After use, the film should be returned to the appropriate medium- or long-term storage conditions as soon as possible. For more information on long-term storage, see NAPM IT9.11-1992, and KODAK Publications No. H-1, *KODAK Motion Picture Film,* and No. H-23, *The Book of Film Care.*

EXPOSURE INDEX

Tungsten (3200 K)—200
*Daylight** — 125

Use these 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.

COLOR BALANCE

This film is balanced for exposure with tungsten illumination (3200 K). You can also expose it with tungsten lamps that have slightly higher or lower color temperatures (±150 K) without correction filters, since final color balancing can be done in printing. For other light sources, use the correction filters in the table below.

Light Source	KODAK Filters on Camera*	Exposure Index
Tungsten (3000 K)	WRATTEN Gelatin No. 82B	125
Tungsten (3200 K)	None	200
Tungsten photoflood (3400 K)	None	200
Daylight (5500 K)	WRATTEN Gelatin No. 85	125
Metal Halide	WRATTEN Gelatin No. 85	125
Yellow-flame arcs	WRATTEN Gelatin No. 81D	125
White-flame arcs	WRATTEN Gelatin No. 85C + CC50Y	100
Optima 32	None	200
Vitalite	WRATTEN Gelatin No. 85	125
Fluorescent Cool White†	WRATTEN Gelatin CC40R	64
Fluorescent Deluxe Cool White†	WRATTEN Gelatin No. 85C	125

* These are approximate corrections only. Make final corrections during printing.
† When you don't know the type of fluorescent lamps, use a CC40R filter with an exposure index of 100 for a trial exposure.

Note: Consult the manufacturer of high-intensity ultraviolet lamps for safety information on ultraviolet radiation and ozone generation.

* With a KODAK WRATTEN Gelatin Filter No. 85

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	*f*16
Footcandles required	12.5	25	50	100	200	400	800	1600

Use this table for average subjects that contain a combination of light, medium, and dark colors. When a subject includes only pastels, use at least ½ stop less exposure; dark colors require ½ stop more exposure.

Lighting Contrast

The recommended ratio of key-light-plus-fill-light to fill light is 2:1 or 3:1; you may use a 4:1 ratio if you want a special look.

RECIPROCITY

You do not need to make any filter corrections or exposure adjustments for exposure times from 1/10,000 to 1 second.

PROCESSING

Most trade motion-picture laboratories provide a processing service for this film. See KODAK Publication No. H-24.07, *Manual for Processing KODAK Motion Picture Films, Module 7, Process ECN-2 Specifications*, for more information on the solution formulas and the procedures for machine processing this film. There are prepackaged kits available for preparing the processing solutions. For information on EASTMAN ECN-2 Kit Chemicals, check Kodak's *Professional Motion Imaging Price Catalog*.

IDENTIFICATION

After processing, the product code numbers 5293 or 7293, emulsion and roll number identification, KODAK KEYKODE Numbers, and internal product symbol (L) are visible along the length of the film.

LABORATORY AIM DENSITY (LAD) CONTROL METHOD

To maintain optimum quality and consistency in the final prints, the laboratory must carefully control the color timing, printing, and duplicating procedures. To aid in color timing and curve placement, negative originals should be timed relative to the Laboratory Aim Density (LAD) Control Film supplied by Eastman Kodak Company. The LAD Control Film provides both objective sensitometric control and subjective verification of the duplicating procedures used by the laboratory.

In the LAD control method*, electronic color analyzer used for color timing is set up with the LAD Control Film to produce a gray video display the LAD patch, corresponding to 1.0 neutral density (gray) on the print. The negative printing original is then scene-to-scene timed. There are specific LAD values for each type of print or duplicating film that the original can be printed on. For print films, the LAD patch is printed to a neutral gray of 1.0 visual density. For duplicating films, the specified aims are at the center of the usable straight-line portion of the sensitometric curve of the film.

FILM-TO-VIDEO TRANSFER

When you transfer the film directly to video, you can set up the telecine with negative KODAK Telecine Analysis Film (TAF). The TAF consists of a neutral density scale and an eight-bar color test pattern with a LAD gray surround.

The TAF gray scale provides the telecine operator (colorist) with an effective way to adjust subcarrier balance and to center the telecine controls before timing and transferring a film. The TAF color bars provide the utility of electronic color bars, even though they do not precisely match the electronically generated color bars. Using the TAF will help obtain optimum quality and consistency in the film-to-video transfer.

For more information, see KODAK Publication H-822, *KODAK Telecine Analysis Film User's Guide*.

IMAGE STRUCTURE

The modulation-transfer curves, the diffuse rms granularity, and the resolving-power data were generated from samples of 5293 and 7293 Film exposed with tungsten light and processed as recommended in Process ECN-2 chemicals. For more information on image-structure characteristics, see KODAK Publication No. H-1, *KODAK Motion Picture Film.*

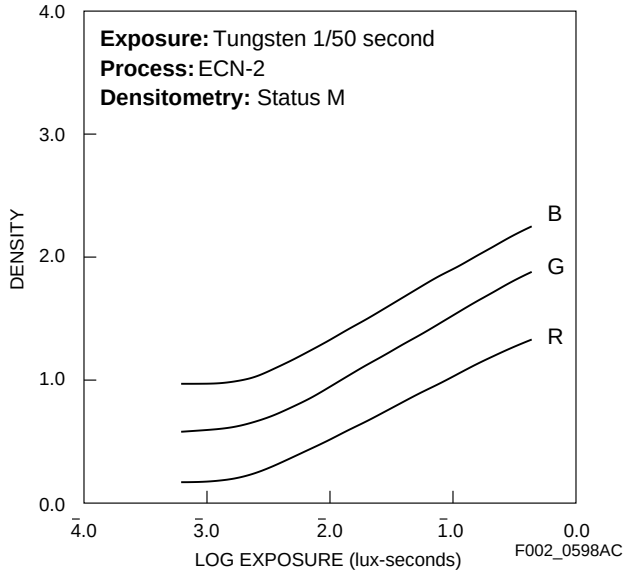
Diffuse RMS Granularity*	Less than 5	
Resolving Power†	TOC 1.6:1	50 lines/mm
	TOC 1000:1	100 lines/mm

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

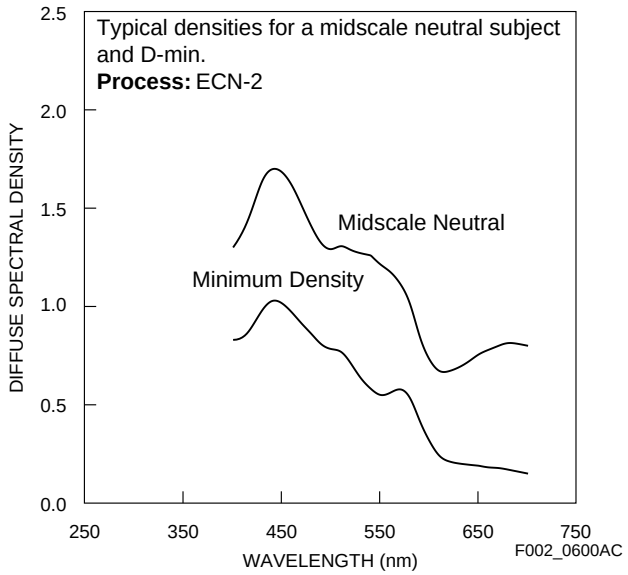
† Determined according to a method similar to the one described in ISO 6328-1982, *Photography—Photographic Materials—Determination of ISO Resolving Power.*

* The LAD control method is described in the paper "A Simplified Motion-Picture Laboratory Control Method for Improved Color Duplication", by John P. Pytlak and Alfred W. Fleischer in the October 1976 SMPTE Journal. Also refer to KODAK Publication No. H-61, *LAD—Laboratory Aim Density.*

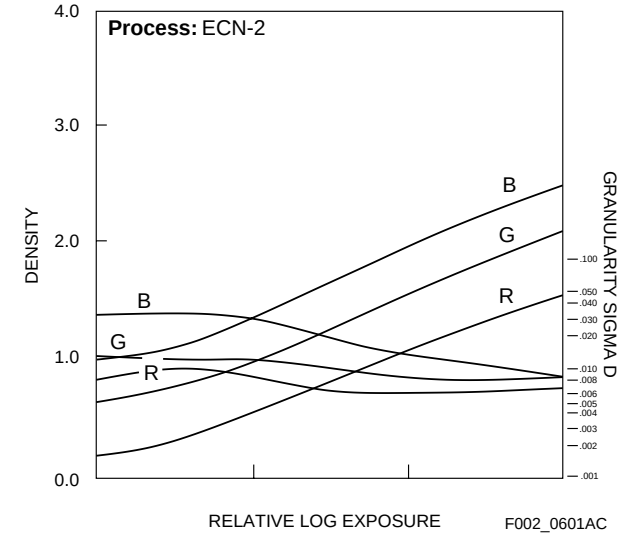
Characteristic Curves



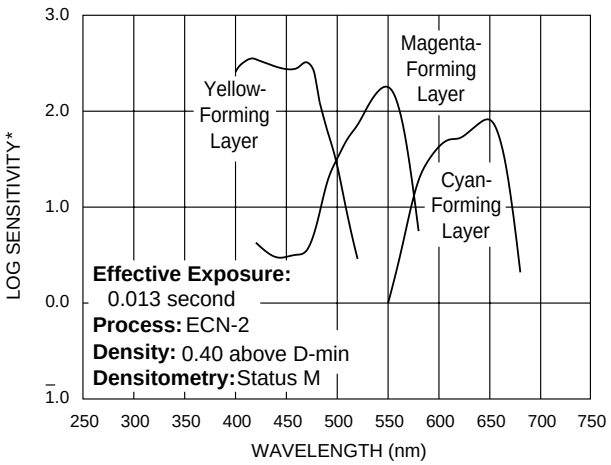
Spectral-Dye-Density Curves



Diffuse RMS Granularity Curves



Spectral-Sensitivity Curves



*Sensitivity = reciprocal of exposure (ergs/cm^2) required to produce specified density

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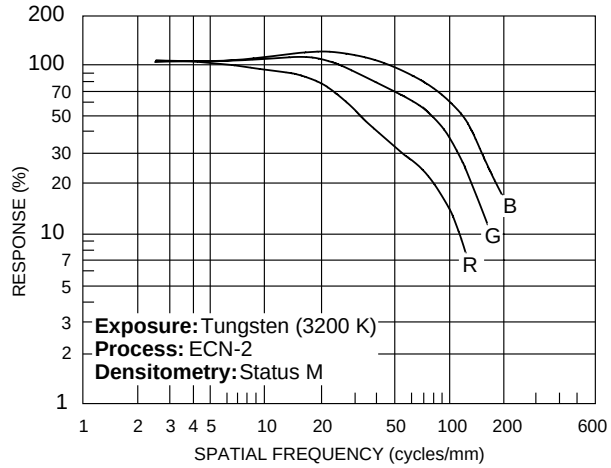
Modulation-Transfer Curves



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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.

Note: 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.

AVAILABLE ROLL LENGTHS

For information on film roll lengths, check Kodak's *Professional Motion Imaging Price Catalog* or contact Kodak 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: 972-481-1150 or 312-492-1423

HOLLYWOOD, CALIFORNIA

6700 Santa Monica Boulevard
P. O. Box 38939
Hollywood, California 90038-1203
Information: 323-464-6131

NEW YORK, NEW YORK

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

LATIN AMERICAN REGIONAL OFFICE

8600 NW 17th Street, Suite 200
Miami, Florida 33126
Information: 305-507-5656

FOR DIRECT ORDERING IN CANADA:
1-800-621-FILM

MONTREAL, CANADA

Kodak Canada Inc.
4 Place du Commerce
Ile des Soeurs
Verdun, Quebec, H3E 1J4, Canada
Information: 514-761-3481

TORONTO, CANADA

Kodak Canada Inc.
3500 Eglinton Avenue West
Toronto, Ontario, M6M 1V3, Canada
Information: 416-766-8233

VANCOUVER, CANADA

Kodak Canada Inc.
4185 Still Creek Drive
Burnaby, British Columbia, V5C 6G9, Canada
Information: 604-320-1777

KODAK On Line At:
http://www.kodak.com/go/motion

KODAK SHOOTSAVER Express Film Delivery Service (U.S. Only) 1-800-404-2016 (Visa or MasterCard only—service fee applies)

Professional Motion Imaging

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