KODAK VISION 250D Color Negative Film / 5246, 7246

Daylight. Or Mixed LIght. Without Compromise.

Shooting in daylight has often involved compromise. You'd start with a tungsten-balanced film and add filtration. It was not the most direct approach, but the images it produced were more pleasing and more predictable. They intercut better with those from other film stocks.

A more direct route to capturing great images in daylight or mixed light - without the trade-offs you've had to make in the past. And its color reproduction is consistent with the family of Kodak motion picture films. KODAK VISION 250D Color Negative Film - a giant leap forward in film balanced for daylight.

This remarkable medium-speed product has grain structure and sharpness you associate with slower speed stocks. Plus, it has all the color, contrast, and latitude you've come to expect from Kodak products. Rich black shadows. Clean white highlights. Excellent flesh-to-neutral reproduction. And, it intercuts beautifully with other Kodak color negative motion picture films.

Of course, this film, like other members of the family of KODAK VISION Films, is made in the most advanced Kodak sensitizing complex in the world. So you can trust its consistency - emulsion to emulsion, roll to roll, batch to batch. And, because it's from Kodak, it's available when you need it, where you need it, virtually everywhere in the world.

Bring your imagination to light. Daylight. With KODAK VISION 250D Color Negative Film.

BASE

KODAK VISION 250D Film / 5246,7246 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), store at 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 usage, the film should be returned to the appropriate medium- or long-term storage conditions as soon as possible.

For more information about medium- and long-term storage, see ANSI/PIMA IT9.11-1998, SMPTE RP131-2002, and KODAK Publications No. H-1, *KODAK Motion Picture Film* available online at http://www.kodak.com/US/en/motion/support/h1, and No. H-23, *The Book of Film Care*.

EXPOSURE INDEXES

Daylight (5500K)—250 Tungsten (3200K)—64 (with KODAK WRATTEN Gelatin Filter No. 80A)

COLOR BALANCE

These films are balanced for exposure with daylight illumination (5500K). For other light sources, use the correction filters in the table below.

Light Source	KODAK Filters on Camera [1]	Exposure Index
Tungsten (3000 K)	WRATTEN Gelatin No. 80A	64
Tungsten (3200 K)	WRATTEN Gelatin No. 80A	64
Tungsten photoflood(3400 K)	WRATTEN Gelatin No. 80A	64
Daylight (5500 K)	None	250
White-Flame Arcs	Color Compensating Filter CC20Y + CC10C	160
Optima 32	WRATTEN Gelatin No. 80A	64
Vitalite	None	250
Fluorescent, Cool White	Color Compensating Filter CC20M	200
Fluorescent, Deluxe Cool White	WRATTEN Gelatin No. 82C	200
Metal Halide	None	250

[1] These are approximate corrections only. Make final corrections during printing.

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

EXPOSURE TABLE - DAYLIGHT ILLUMINATION

At 24 frames per second (fps), 170-degree 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	10	20	40	80	160	320	640	1250

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 1/2 stop less exposure; dark colors require 1/2 stop more exposure.

Lighting Contrast -

The recommended ratio of key-light-plus-fill-light to fill light is 2:1 or 3:1. However, you may use 4:1 or greater when a particular look is desired.

RECIPROCITY CHARACTERISTICS

You do not need to make any filter corrections or exposure adjustments for exposure times from 1/1000 to 1 second. If your exposure is in the 10 second range, it is recommended that you increase your exposure 2/3 stop and use a KODAK Color Compensating Filter CC10Y.

PROCESSING

Process in Process ECN-2.

Most commercial motion-picture laboratories provide a processing service for these films. See KODAK Publication No. H-24.07, *Processing KODAK Color Negative Motion Picture Films, Module 7* available online at http://www.kodak.com/US/en/motion/support/processing/h24m7.shtml, for more information on the solution formulas and the procedure for machine processing these films. There are also pre-packaged kits available for preparing the processing solutions. For more information on the EASTMAN ECN-2 Kit Chemicals, check Kodak's Motion Picture Films for Professional Use price catalog.

IDENTIFICATION

After processing, the product code numbers 5246 (35 mm) or 7246 (16 mm), emulsion and roll number identification, KEYKODE numbers, and internal product symbol (I) are visible along the length of the film.

LABORATORY AIM DENSITIES (LAD)

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 Laboratory Aim Density (LAD) Control Film supplied by Eastman Kodak Company.[1] The LAD Control Film provides both objective sensitometric control and subjective verification of the duplicating procedures use by the laboratory.

In the LAD Control Method,[2] the electronic color analyzer used for color timing is set-up with the LAD Control Film to produce a gray video display of 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 TRANSFERS

When you transfer the film directly to video, you can set up the telecine using the negative Telecine Analysis Film (TAF) supplied by Eastman Kodak Company. 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

1.Direct any inquiries to one of the regional sales offices.

2.Use of 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.

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 regarding TAF, see KODAK Publication No. H-9, TAF User's Guide.

IMAGE STRUCTURE

The modulation-transfer curves, and the diffuse rms granularity data were generated from samples of 5246 Film exposed with daylight illumination 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*.

MTF:

Refer to curve.

The "perceived" sharpness of any film depends on various components of the motion picture production system. The camera and projector lenses and film printers, among other factors, all play a role. But the specific sharpness of a film can be measured and charted in the Modulation Transfer Curve.

rms Granularity:

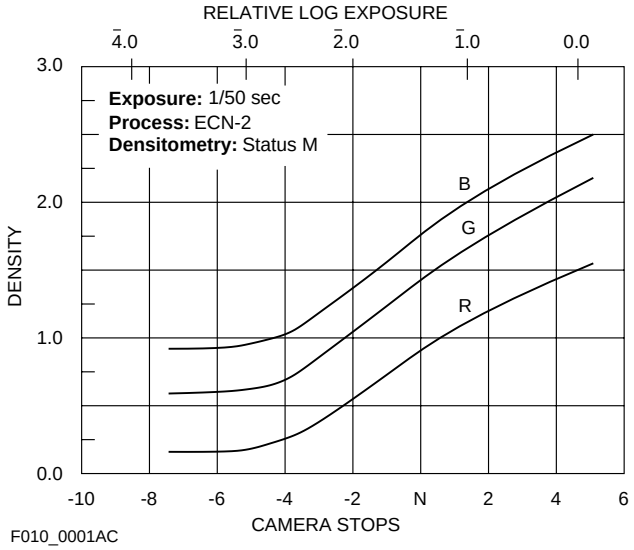
Refer to curve.

Read with a microdensitometer, (red, green, blue) using a 48-micrometer aperture.

The "perception" of the graininess of any film is highly dependent on scene content, complexity, color, and density. Other factors, such as film age, processing, exposure conditions, and telecine transfer may also have significant effects.

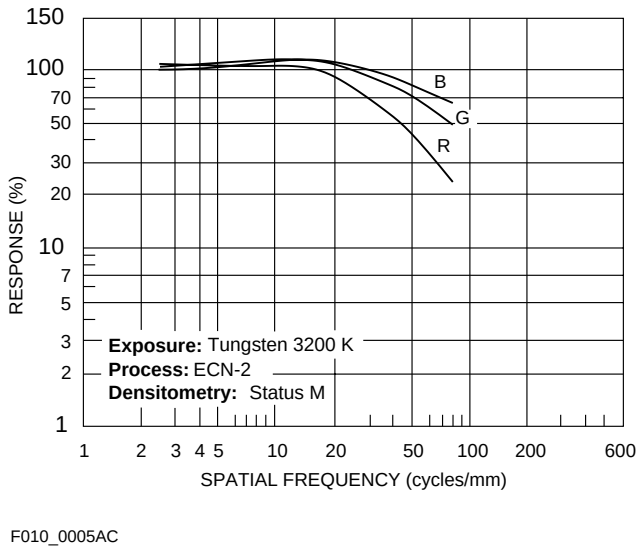
CURVES

Sensitometric Curves



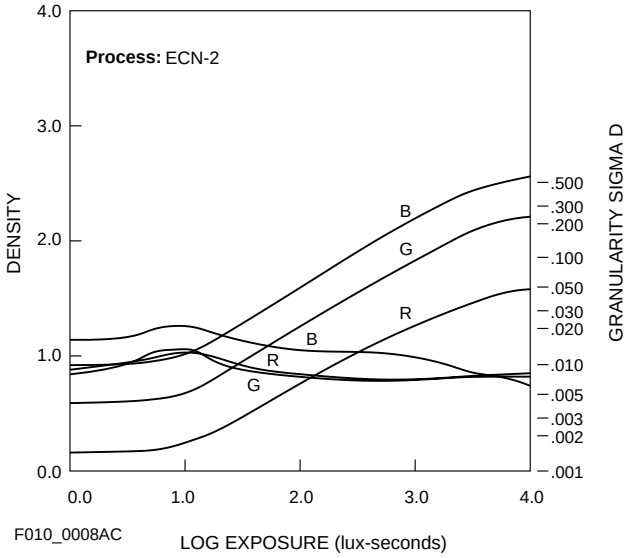
The curves describe this film's response to red, green, and blue light. Sensitometric curves determine the change in density on the film for a given change in log exposure.[3]

Modulation-Transfer Function Curves



This graph shows a measure of the visual sharpness of this film. The x-axis, "Spatial Frequency," refers to the number of sine waves per millimeter that can be resolved. The y-axis, "Response," corresponds to film sharpness. The longer and flatter the line, the more sine waves per millimeter that can be resolved with a high degree of sharpness—and, the sharper the film.

Diffuse rms Granularity Curves

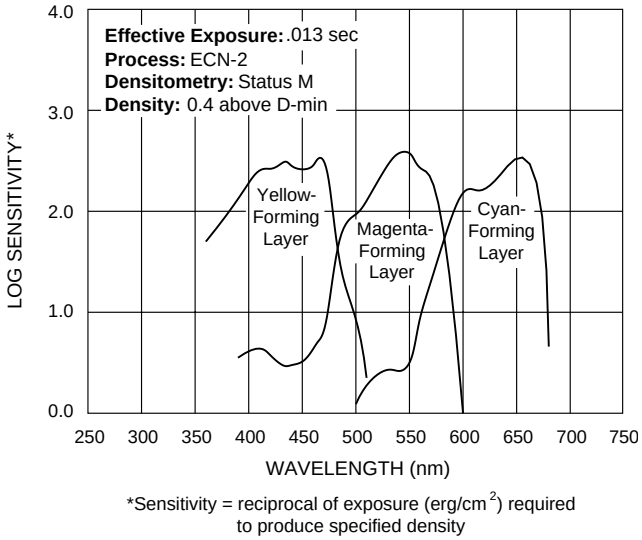


To find the rms Granularity value for a given density, find the density on the left vertical scale and follow horizontally to the characteristic curve and then go vertically (up or down) to the granularity curve. At that point, follow horizontally to the Granularity Sigma D scale on the right. Read the number and multiply by 1000 for the rms value.

Note: This curve represents granularity based on modified measuring techniques.[3]

3.NOTE: Sensitometric and Diffuse RMS Granularity curves are produced on different equipment. A slight variation in curve shape may be noticed.

Spectral Sensitivity Curves

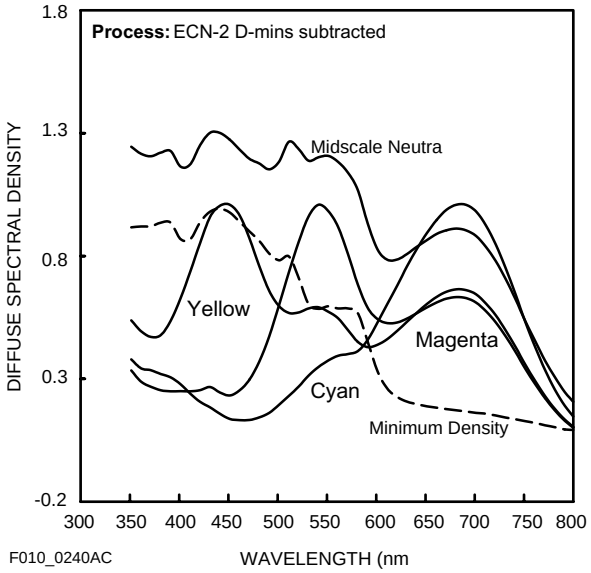


*Sensitivity = reciprocal of exposure (erg/cm^2) required to produce specified density

F010_0002AC

These curves depict the sensitivity of this film to the spectrum of light. They are useful for determining, modifying, and optimizing exposure for blue- and green-screen special-effects work.

Spectral Dye Density Curves



F010_0240AC

These curves depict the spectral absorptions of the dyes formed when the film is processed. They are useful for adjusting or optimizing any device that scans or prints the film.

Note: Cyan, Magenta, and Yellow Dye Curves are peak-normalized.

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.

STANDARD PRODUCTS AVAILABLE

Format and Specification No.	Length Meters (Feet)	Core	Description	Perforation/Pitch Metric (Imperial)
35 mm VMD417	30 (100)	S-83 100-ft. spool		BH-4740 (BH-1866)
35 mm VMD718	61 (200)	U		BH-4740 (BH-1866)
35 mm VMD718	122 (400)	U		BH-4740 (BH-1866)
35 mm VMD718	305 (1000)	U		BH-4740 (BH-1866)
16 mm VMD449	30 (100)	R-90 100-ft. spool		2R-7605 (2R-2994)
16 mm VMD451	122 (400)	T		2R-7605 (2R-2994)
16 mm VMD578	122 (400)	S-153 400-ft. spool		2R-7605 (2R-2994)
16 mm VMD455	30 (100)	R-90 100-ft. spool	Winding B	1R-7605 (1R-2994)
16 mm SP445*	61 (200)	A	Winding A	1R-7605 (1R-2994)
16 mm VMD457	122 (400)	T	Winding B	1R-7605 (1R-2994)
16 mm SP458	244 (800)	Z	Winding B	1R-7605 (1R-2994)

*for AATON A-MINIMA Cameras

MORE INFORMATION

Outside the United States and Canada, please contact your Kodak representative.

You can also visit our web site at **www.kodak.com/go/motion** for further information. You may want to bookmark our location so you can find us easily the next time.

Films	*Cinematographer's Field Guide* KODAK Publication No. H-2
Image Structure	*KODAK Motion Picture Film* KODAK Publication No. H-1
Specification Numbers	*Cinematographer's Field Guide* KODAK Publication No. H-2
Storage	*KODAK Motion Picture Film* KODAK Publication No. H-1 *The Book of Film Care* KODAK Publication No. H-23
LAD	*LAD—Laboratory Aim Density* KODAK Publication No. H-61
Transfer	*KODAK Telecine Analysis Film User's Guide* KODAK Publication No. H-822 *KODAK Telecine Exposure Calibration Film User's Guide* KODAK Publication No. H-807

Kodak Locations

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

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