

KODAK VISION 320T Color Negative Film / 5277, 7277



A LOOK THAT'S SOFTER. DIFFERENT. FROM A FILM THAT'S VERY FLEXIBLE.

This is a film that lets you create a very different look. Softer. More pastel. But still picking up all the detail you want to capture in the scene. For projection prints, the recommended exposure gives a good balance between blacks and shadow detail. Overexpose it a bit and maintain the shadow detail, but the blacks get blacker. For best telecine performance, shoot it at the recommended exposure.

KODAK VISION 320T Color Negative Film has very wide latitude that lets you see deep, deep into the shadows without losing the highlights. And reproduce a very wide variety of colors. All with fine grain and high sharpness you'll find unbelievable in a film of this speed.

KODAK VISION 320T Color Negative Film has all the color and performance you're currently receiving from Kodak color negative products. Clean white highlights. Accurate fleshtone reproduction. But with softer colors. It cuts seamlessly 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.

KODAK VISION 320T Color Negative Film. A difference that's softer from a film that's very flexible.

BASE

KODAK VISION 320T Film 5277,7277 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 ANSI/PIMA IT9.11-1998: 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 RP131-1998, and KODAK Publications No. H-1, *KODAK Motion Picture Film* and No. H-23, *The Book of Film Care*.

EXPOSURE INDEXES

Tungsten (3200K) - 320

Daylight - 200 (with a KODAK WRATTEN Gelatin Filter No. 85)

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

These films are balanced for exposure with tungsten illumination (3200K). You can also expose them with tungsten lamps that have slightly higher or lower color temperatures (+/- 150K) 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 ¹	Exposure Index
Tungsten (3000 K)	WRATTEN Gelatin No. 82B	200
Tungsten (3200 K)	None	320
Tungsten photoflood (3400 K)	None	320
Daylight (5500 K)	WRATTEN Gelatin No. 85	200
White-Flame Arcs	WRATTEN Gelatin No. 85B	125
OPTIMA 32	None	320
VITALITE	WRATTEN Gelatin No. 85	200
Fluorescent, Cool White ²	WRATTEN Gelatin No. 85 + 10M	125
Fluorescent, Deluxe Cool White ²	WRATTEN Gelatin No. 85C + 10R	200
Metal Halide	WRATTEN Gelatin No. 85	200

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

² These are starting-point recommendations for trial exposures. If the kind of lamp is unknown, a KODAK Color Compensating Filter CC 40R can be used with an exposure index (EI) of 100.

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

EXPOSURE TABLE - TUNGSTEN LIGHT

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	8	16	32	64	125	250	500	1000

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

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*, 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 5277 (35 mm) or 7277 (16 mm), emulsion and roll number identification, KEYCODE numbers, and internal product symbol (Q) 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 used by the laboratory.

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

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 KODAK 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 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, the diffuse rms granularity, and the resolving-power data were generated from samples of 5277 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*.

MTF:

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-micrometre 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

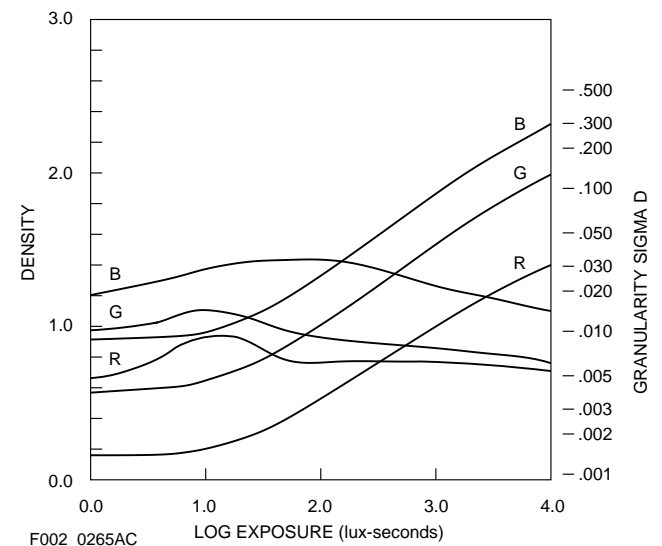
conditions, and telecine transfer may also have significant effects. In VISION 320T Film, the measured granularity is very low.

CURVES

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 sensitometric 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.

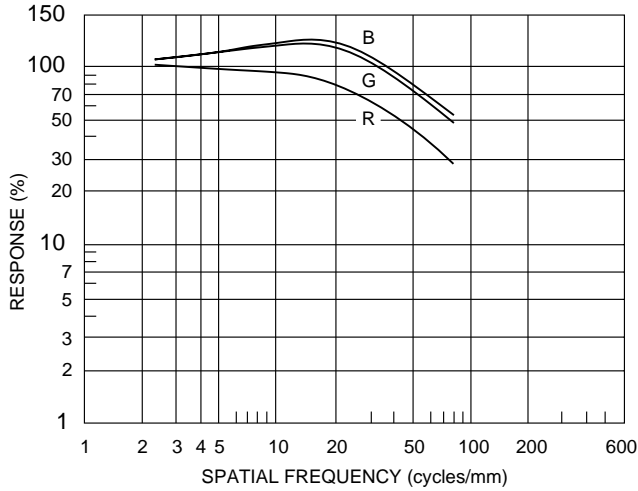


NOTICE: The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent 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.

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.

Modulation-Transfer Curves

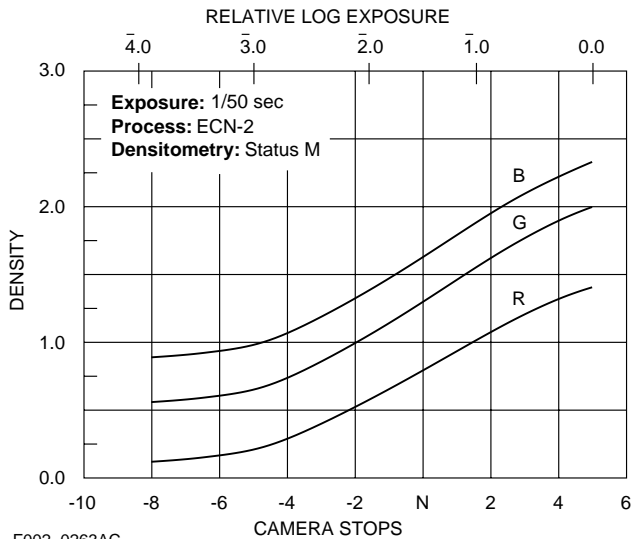
This graph shows a measure of the visual sharpness of this film. The x-axis, "Spatial Frequency," refers to the number of sine waves per millimetre that can be resolved. The y-axis, "Response," corresponds to film sharpness. The longer and flatter the line, the more sine waves per millimetre that can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



F002_0262AC

Sensitometric Curves

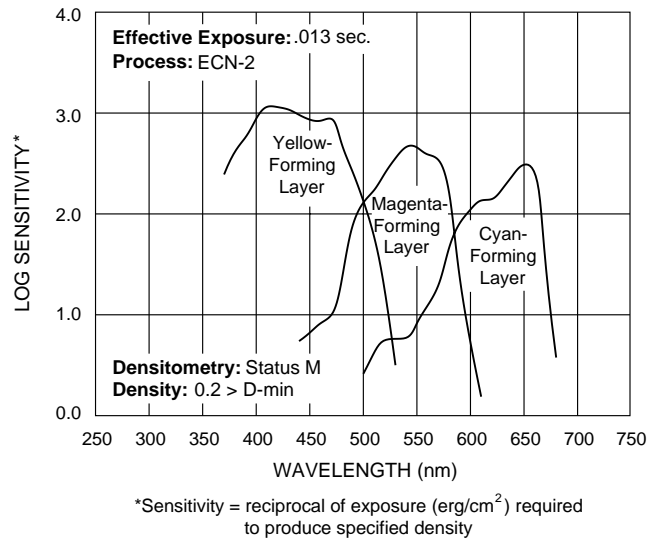
The center point ("N") on the x-axis corresponds to a normal exposure of an 18-percent gray card in the red, green, and blue layers of this film. A white card is 2 1/3 stops higher than normal exposure. Anything more is overexposure latitude. Threshold exposure is 4 2/3 stops below a gray card.



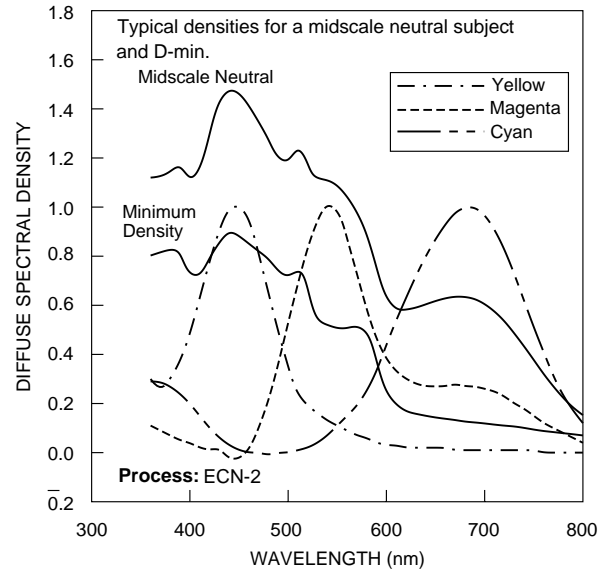
F002_0263AC

Spectral-Sensitivity Curves

These curves depict the sensitivity of this film to the spectrum of light. They are useful for adjusting optical printers and film recorders and for determining, modifying, and optimizing exposure.



Spectral-Dye Density Curves



SIZES AVAILABLE

Standard Products Available

Identification No.	Length in Feet (Metres)	Core	Description	Perforations
35 mm VXL417	30 (100)	S-83 100-ft. spool		BH-4740 (BH-1866)
35 mm VXL718	61 (200)	U		BH-4740 (BH-1866)
35 mm VXL718	122 (400)	U		BH-4740 (BH-1866)
35 mm VXL718	305 (1000)	U		BH-4740 (BH-1866)
16 mm VXL449	30 (100)	R-90 100-ft. spool		2R-7605 (2R-2994)
16 mm VXL450	61 (200)	R-190 200-ft. spool		2R-7605 (2R-2994)
16 mm VXL451	122 (400)	T		2R-7605 (2R-2994)
16 mm VXL452	366 (1200)	Z		2R-7605 (2R-2994)
16 mm VXL455	30 (100)	R-90 100-ft. spool	Winding B	1R-7605 (1R-2994)
16 mm VXL445*	61 (200)	A	Winding A	1R-7620 (1R-3000)
16 mm VXL457	122 (400)	T	Winding B	1R-7605 (1R-2994)
16 mm VXL458	244 (800)	Z	Winding B	1R-7605 (1R-2994)
65 mm VXL334	152 (500)	PA	Emulsion In	KS-4740 (KS-1866)
65 mm VXL332	305 (1000)	P	Emulsion In	KS-4740 (KS-1866)

*for AATON A-MINIMA Camera only

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

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