

# KODAK EKTACHROME 100 Professional Film

**Kodak**

## TECHNICAL DATA / COLOR REVERSAL FILM

July 2007 • E-27

KODAK EKTACHROME 100 Professional Film is a daylight-balanced color transparency film designed to meet the special demands of commercial photographers, especially those whose primary business is catalog photography. The film features very fine grain, very high sharpness, and exceptional color accuracy.

EKTACHROME 100 Professional Film is an excellent choice for photographic applications where natural color rendition is required; i.e., commercial images of furniture, fabric, and clothing—particularly those with reflectance characteristics that often adversely affect color reproduction.

The film is intended for exposure with daylight or electronic flash. You can also expose it with photolamps (3400 K) or tungsten (3200 K) illumination with conversion filters.

The exposure range is 1/10,000 to 1/10 second without the need for filter correction or exposure compensation.

You can use this film to produce color transparencies for viewing with 5000 K illumination. You can also print the transparencies by photomechanical methods or by the photographic methods of direct duplication and direct reversal printing. They can be scanned for graphic-arts reproduction as well.

### SIZES AVAILABLE

Sizes and catalog numbers differ from country to country. For a complete list of sizes, contact a dealer who supplies KODAK PROFESSIONAL Products.

Rolls	Film Code	Acetate Base
135-36	EPN	5-mil (0.13 mm)
35 mm x 100 ft	EPN SP404*	
35 mm x 400 ft	EPN SP663*	
120	EPN	3.9-mil (0.10 mm)
220		

\* Perforated on both edges.

Sheets	Film Code	ESTAR Thick Base
4 x 5	EPN	7-mil (0.18 mm)
8 x 10	EPN	

#### FEATURES

#### BENEFITS

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▪ Spectral sensitivity designed to optimize color reproduction</li> </ul> | <ul style="list-style-type: none"> <li>▪ The most accurate film for color reproduction, most obvious with teal, green, and blue hues</li> </ul> |
| <ul style="list-style-type: none"> <li>▪ Exceptional shadow detail and color saturation</li> </ul>               | <ul style="list-style-type: none"> <li>▪ Rich colors without compromising color accuracy</li> </ul>   |
| <ul style="list-style-type: none"> <li>▪ Excellent flesh-to-neutral color balance</li> </ul>                     | <ul style="list-style-type: none"> <li>▪ Accurately records neutral colors while maintaining pleasing flesh tones</li> </ul>                    |
| <ul style="list-style-type: none"> <li>▪ Very high sharpness</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Able to provide images with excellent detail</li> </ul>  |

## STORAGE AND HANDLING

Load and unload film in subdued light.

Store unexposed film at 13°C (55°F) or lower, in the original sealed package. To avoid moisture condensation on film that has been refrigerated, allow the film to warm up to room temperature before opening the package. Process film as soon as possible after exposure.

Protect processed film from strong light, and store them in a cool dry place. For more information on storing transparencies, see KODAK Publication No. E-30, *Storage and Care of KODAK Photographic Materials—Before and After Processing*.

## DARKROOM RECOMMENDATIONS

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

## EXPOSURE

### Exposure Index Numbers

Use the exposure index (EI) numbers below with light meters or cameras marked for ISO or ASA speeds or exposure indexes. Do not change the film-speed setting when metering through a filter. Metering through filters may affect light meter accuracy; see your meter or camera manual for specific information. For critical work, make a series of test exposures.

Light Source	KODAK WRATTEN Gelatin Filter	Exposure Index
Daylight or Electronic Flash	None	100
Photolamp (3400 K)	No. 80B	32
Tungsten (3200 K)	No. 80A	25

### Daylight

Use the exposures in the table below for average frontlit subjects from 2 hours after sunrise to 2 hours before sunset.

Lighting Conditions	Shutter Speed (second)	Lens Opening
Bright /hazy sun on light sand or snow	1/125	f/22
Bright or hazy sun, distinct shadows	1/125	f/16*
Weak, hazy sun, soft shadows	1/125	f/11
Cloudy bright, no shadows	1/125	f/8
Heavy overcast, open shade†	1/125	f/5.6

\* Use f/8 for back-lit close-up subjects.

† Subject shaded from the sun but lit by a large area of clear sky.

## Electronic Flash

Use the appropriate guide number in the table below as a starting point for your equipment. First select the unit output closest to the number given by your flash manufacturer. Then find the guide number for feet or metres. To determine the lens opening, divide the guide number by the flash-to-subject distance. If transparencies are consistently too thin (overexposed), use a higher guide number; if they are too dense (underexposed), use a lower number.

Unit Output (BCPS)*	Guide Number	
	Distance in Feet	Distance in Metres
350	40	12
500	50	15
700	60	18
1000	70	21
1400	85	26
2000	100	30
2800	120	36
4000	140	42
5600	170	50
8000	200	60

\*BCPS = beam candlepower seconds.

## Multiple Exposures with Electronic Flash

No filter corrections or exposure adjustments are required for 1 or 2 flashes (multipops). For additional multipops, see the adjustments in the table below.

Number of Flashes	KODAK Color Compensating Filter	Exposure Adjustment
1 or 2	None	None
4	CC025M	+1/3 stop
8	CC05M	+1/2 stop
16	CC05M	+2/3 stop

## Fluorescent and High-Intensity Discharge Lamps

Use the color-compensating filters and exposure adjustments below as starting points to expose this film under fluorescent or high-intensity discharge lamps. For critical applications, make a series of test exposures under your actual conditions.

To avoid the brightness and color variations that occur during a single alternating-current cycle, use exposure times of 1/60 second or longer with fluorescent lamps; with high-intensity discharge lamps, use exposure times of 1/125 second or longer.

Fluorescent Lamps	KODAK Color Compensating Filters	Exposure Adjustment
Daylight	50R	+11/3 stops
White	40M	+2/3 stop
Warm White	20C + 40M	+1 stop
Warm White Deluxe	30B + 30C	+2 stops
Cool White	40M + 10Y	+1 stop
Cool White Deluxe	20C + 10M	+2/3 stop
Unknown Fluorescent *	30M	+2/3 stop

\*When the type of fluorescent lamp is unknown, try this filter and exposure adjustment; color rendition may be less than optimum.

High-Intensity Discharge Lamps	KODAK Color Compensating Filters	Exposure Adjustment
General Electric Lucalox *	80B + 20C	+21/3 stops
General Electric Multi-Vapor	20R + 20M	+2/3 stop
Deluxe White Mercury	30R + 30M	+11/3 stops
Clear Mercury	70R	+12/3 stops

\*This is a high-pressure sodium-vapor lamp. The information here may not apply to other manufacturers' high-pressure sodium-vapor lamps due to differences in spectral characteristics.

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

Some primary color filters were used in the previous tables to reduce the number of filters and keep the exposure adjustment to a minimum. Red filters were substituted for equivalent filtration in magenta and yellow. Blue filters were substituted for equivalent filtration in cyan and magenta.

## Adjustments for Long and Short Exposures

No filter correction or exposure adjustment is required for exposures from 1/10,000 to 1/10 second. At 1 second, use a CC05M filter and increase exposure by 1/3 stop. We do not recommend exposure times longer than 1 second. At longer exposures, significant color balance shifts in the cyan-green direction or contrast mismatch may occur.

**Note:** This information applies only when the film is exposed to daylight. The data are based on average emulsions rounded to the nearest 1/3 stop and assume normal recommended processing. Use the data only as a guide. For critical applications, make tests under your conditions.

## PROCESSING

Process KODAK EKTACHROME 100 Professional Film in KODAK Chemicals, Process E-6.

For consistent processing of this and other KODAK EKTACHROME Films, use a lab that is a member of the KODAK Q-LAB Process Monitoring Service.

## RETOUCHING

Use KODAK E-6 Transparency Retouching Dyes. You can chemically retouch sheet and 120/220 formats of EKTACHROME 100 Professional Film on both the base and the emulsion side. Retouch only the emulsion side of the 135 size.

For information on retouching equipment, supplies, and techniques, see KODAK Publication No. E-68, *Retouching Color Transparencies on KODAK EKTACHROME Film*.

## **PRINTING TRANSPARENCIES**

You can reproduce images made on KODAK EKTACHROME 100 Professional Film by using a variety of Kodak materials.

### **Duplicate Color Transparencies**

For direct printing, use—

KODAK PROFESSIONAL EKTACHROME Duplicating Film EDUPE

### **Color Prints**

You can scan your image to a file and print digitally to—

KODAK PROFESSIONAL PORTRA, SUPRA, and ULTRA ENDURA Papers

KODAK PROFESSIONAL ENDURA Clear Digital Display Material

KODAK PROFESSIONAL ENDURA Transparency Display Material

KODAK PROFESSIONAL ENDURA Metallic Paper

## **SCANNING TRANSPARENCIES**

### **For Graphic Arts Applications**

The KODAK EKTACHROME Film family is characterized by sets of image dyes which perform similarly when scanned. The scanner operator can set up one basic tone scale and color-correction channel for all EKTACHROME Films and then optimize the tone scale and gray balance for the requirements of individual images.

Use the KODAK Color Input Target / Q-60E1 (4 x 5-inch transparency) or Q-60E3A (35 mm slide) to establish the setup for KODAK EKTACHROME Films on all scanners. This target meets ANSI standards and represents the dye sets of all EKTACHROME Films.

### **Scanning for Photo CD Applications**

For Output to a Photo CD Player: Using the Universal E-6 Film Term should result in an image that closely matches your original transparency in density, tone scale, and overall color balance when viewed on a player. Use the Universal E-6 Film Term to scan all KODAK EKTACHROME films for Photo CD Imaging Workstation applications.

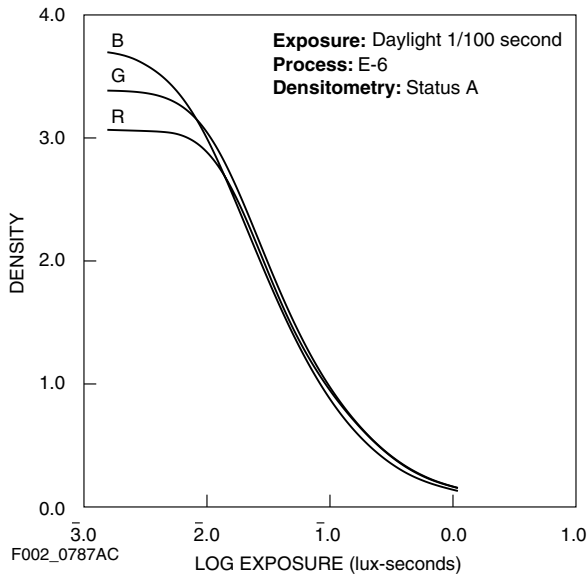
For Output to Devices Other than Photo CD Players: The YCC data that results when using the Universal E-6 Film Term is capable of producing a high-quality duplicate of your original in terms of density, tone scale, and color reproduction. Final quality of your reproduced image depends on the capabilities of your output device, the viewing environment, and the rendering path that is used.

# CURVES

## Diffuse rms Granularity\* 11 (very fine)

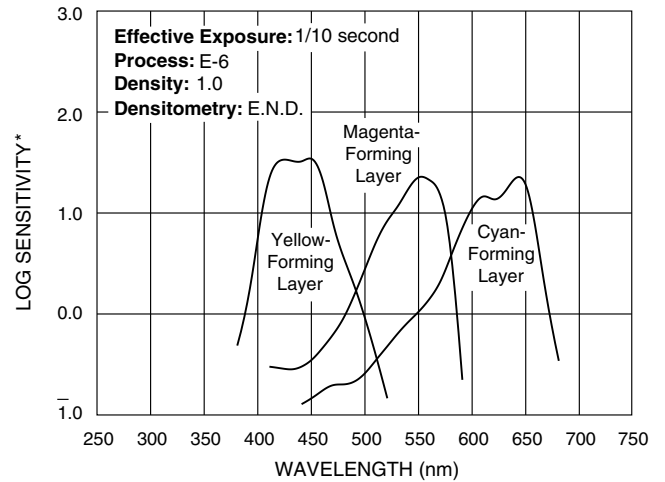
\*Read on a gross diffuse visual density of 1.0, using a 48-micrometre aperture, 12X magnification.

**Characteristic Curves**



F002\_0787AC

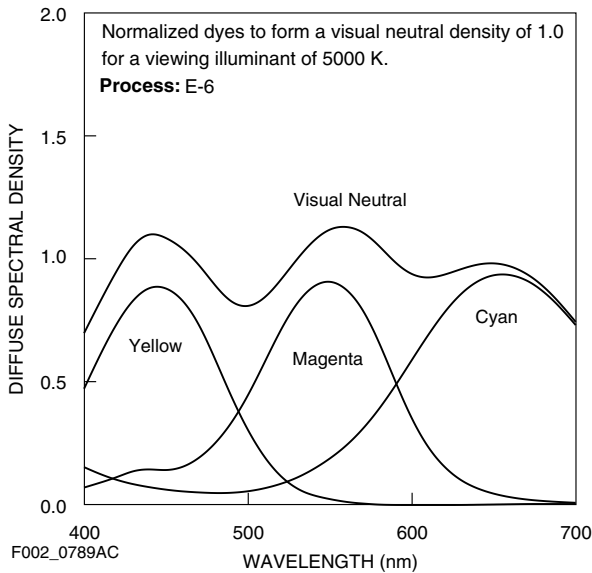
**Spectral-Sensitivity Curve**



\*Sensitivity = reciprocal of exposure (erg/cm<sup>2</sup>) required to produce specified density

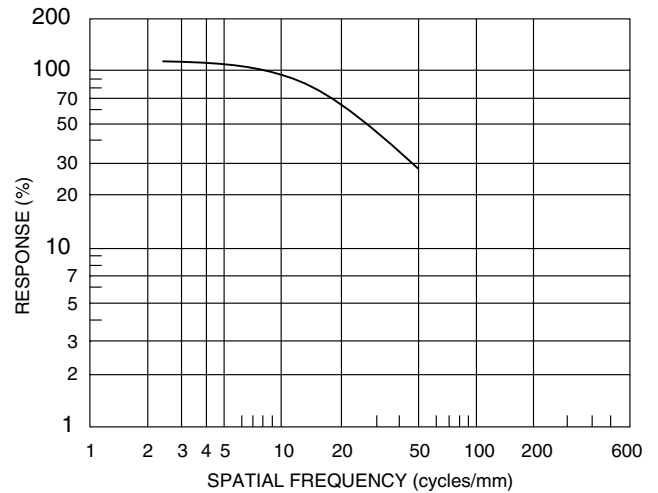
F002\_0788AC

**Spectral-Dye-Density Curves**



F002\_0789AC

**Modulation-Transfer Curve**



F002\_0786AC

**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.

# KODAK EKTACHROME 100 Professional Film

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## MORE INFORMATION

Kodak has many publications to assist you with information on Kodak products, equipment, and materials.

The following publications are available from Kodak customer service, or from dealers who sell Kodak products, or you can contact Kodak in your country for more information.

E-8	<i>KODAK EKTACHROME 64 Professional Film</i>
E-28	<i>KODAK PROFESSIONAL EKTACHROME Film E200</i>
E-30	<i>Storage and Care of KODAK Photographic Materials—Before and After Processing</i>
E-68	<i>Retouching Transparencies on KODAK EKTACHROME Film</i>
E103RF	<i>KODAK PROFESSIONAL Color Reversal Films</i>
E-113	<i>KODAK EKTACHROME 100 Plus Professional Film</i>
E-130	<i>KODAK EKTACHROME 64T Professional Film</i>
E-144	<i>KODAK EKTACHROME 160T Professional Film</i>
E-145	<i>KODAK EKTACHROME 320T Professional Film</i>
E-147	<i>KODAK EKTACHROME P1600 Professional Film</i>
E-161	<i>KODAK EKTACHROME 400X Professional Film</i>
E-163	<i>KODAK PROFESSIONAL EKTACHROME Film E100VS</i>
E-4024	<i>KODAK PROFESSIONAL EKTACHROME Films E100G and E100GX</i>
E-2529	<i>KODAK PROFESSIONAL EKTACHROME Duplicating Film EDUPE</i>
Z-119	<i>Using KODAK Chemicals, Process E-6</i>

For the latest version of technical support publications for KODAK PROFESSIONAL Products, visit Kodak on-line at:

<http://www.kodak.com/go/professional>

If you have questions about KODAK PROFESSIONAL Products, call Kodak.

In the U.S.A.:

1-800-242-2424, Ext. 19, Monday-Friday

9 a.m.-7 p.m. (Eastern time)

In Canada:

1-800-465-6325, Monday-Friday

8 a.m.-5 p.m. (Eastern time)

**Note:** The Kodak materials described in this publication for use with KODAK EKTACHROME 100 Professional Film are available from dealers who supply KODAK PROFESSIONAL Products. You can use other materials, but you may not obtain similar results.

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