# KODAK EKTACHROME 100 Plus Professional Film

Kodak

TECHNICAL DATA / **COLOR REVERSAL FILM**

**July 2007 • E-113**

This versatile, 100-speed, color transparency film features high color saturation and dependable neutrals combined with pleasing skin tones. It is an excellent choice for daylight exposures under controlled conditions or electronic flash in a wide range of commercial applications including fashion, advertising, and industrial work. You can also expose it with photolamps (3400 K) or tungsten (3200 K) illumination with conversion filters.

EKTACHROME 100 Plus Professional Film has an intended exposure range of 1/10,000 to 1/10 second with no filter correction or exposure compensation.

Use this film to produce color transparencies for viewing with 5000 K illumination. You can also use the transparencies for printing by photomechanical methods and by photographic methods of direct duplication and direct reversal printing. In addition, you can scan transparencies for digital printing and for graphic arts and photo CD applications.

| FEATURES | BENEFITS |
|---|---|
| • Increased color saturation | • Produces vibrant colors |
| • Excellent flesh-to-neutral color balance | • Records neutrals while maintaining pleasing skin tones |
| • Lower highlight contrast | • Offers reasonable control over contrast with lighting variations |

## SIZES AVAILABLE

Sizes and catalog numbers may differ from country to country. See your dealer who supplies KODAK PROFESSIONAL Products.

| Rolls | Film Code / Spec No. | Acetate Base |
|---|---|---|
| 135-36 | EPP | 5-mil (0.13 mm) |
| 35 mm x 100 ft | EPP / SP 404* | |
| 120 | EPP | 3.9-mil (0.10 mm) |
| 220 | | |

*Perforated on both edges.

| Size (inches) | Film Code [redacted] | ESTAR Thick Base |
|---|---|---|
| 4 x 5 | EPP | 7-mil (0.18 mm) |
| 8 x 10 | | |

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## 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 it in a cool, dry place. For more information, 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 cameras or light meters and 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 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 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 backlit 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. 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. For additional multipops, see the adjustments in the table below.

| Number of Flashes | KODAK Color Compensating Filter | Exposure Adjustment |
|---|---|---|
| 1 to 2 | None | None |
| 4 | CC02M | +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 | + 1 stop |
| White | 40M | + 2/3 stop |
| Warm White | 20C + 40M | + 1 stop |
| Warm White Deluxe | 30B + 30C | + 1 1/3 stops |
| Cool White | 40M + 10Y | + 1 stop |
| Cool White Deluxe | 20C + 10M | + 2/3 stop |

**Note:** When you don't know the type of fluorescent lamp, try a 30M filter and increase exposure by 2/3 stop; color rendition will probably be less than optimum.

| High-Intensity Discharge Lamps | KODAK Color Compensating Filters | Exposure Adjustment |
|---|---|---|
| General Electric Lucalox * | 80B + 20C | +2 1/3 stops |
| General Electric Multi-Vapor | 20R + 20M | +2/3 stop |
| Deluxe White Mercury | 30R + 30M | +1 1/3 stops |
| Clear Mercury | 70R | +1 1/3 stops |

*This is a high-pressure sodium-vapor lamp. The information in the table 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 compensation is required for exposures from 1/10,000 to 1/10 second. At a 1-second exposure, use a CC025R filter and increase exposure by 1/3 stop. At 10 seconds, use a CC025R filter and increase exposure by 1 stop. At 100 seconds, we suggest that you use CC10Y + CC025R filtration and increase exposure by 2 stops.

**Note:** This information applies only when exposing the films 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 this film in KODAK Chemicals, Process E-6.

For consistent processing of this and all other 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 sizes of this film on both the base and the emulsion side. Retouch only the emulsion side on the 135 size. For information on retouching equipment, supplies, and techniques, see KODAK Publication No. E-68, *Retouching Transparencies on KODAK EKTACHROME Film.*

## PRINTING TRANSPARENCIES

You can reproduce images made on EKTACHROME 100 Plus 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 that 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-60E3 (35 mm slide) to establish the setup for KODAK EKTACHROME Films on all scanners. These targets meet ANSI standards and represent the dye sets of all EKTACHROME Films.

### For Photo CD Applications

Use the Universal E-6 Film Term to scan all KODAK EKTACHROME films for Photo CD Imaging Workstation 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.

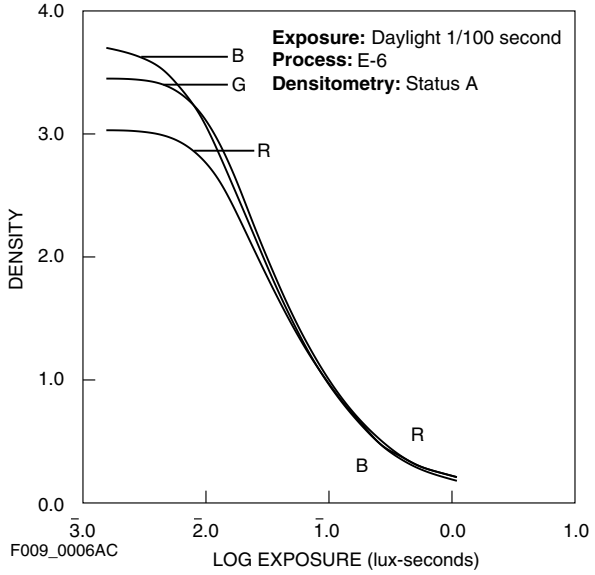
For Output to Devices Other than Photo CD Players: The YCC data that results when using the Universal E-6 Film Term is capable of producing a high-quality duplicate of your original transparency in terms of density, tone scale, and color reproduction. Final quality of your reproduced image depends on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

## CURVES

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

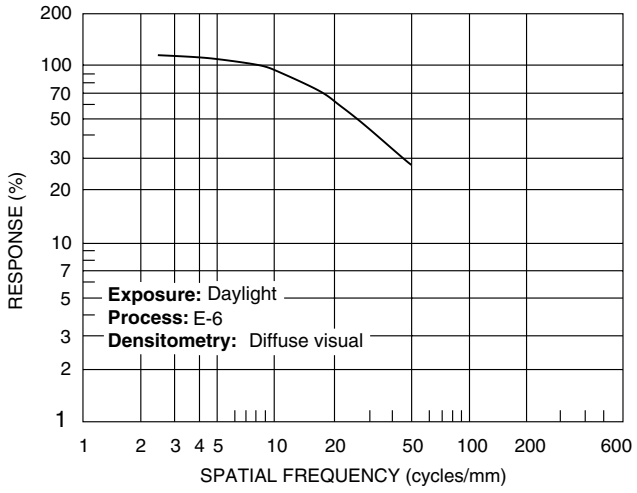
*Read on a gross diffuse visual density of 1.0, using a 48-micrometre aperture, 12X magnification.
[1]Read on a gross diffuse visual density of 1.0, using a 48-micrometre aperture, 12X magnification.

**Characteristic Curves**



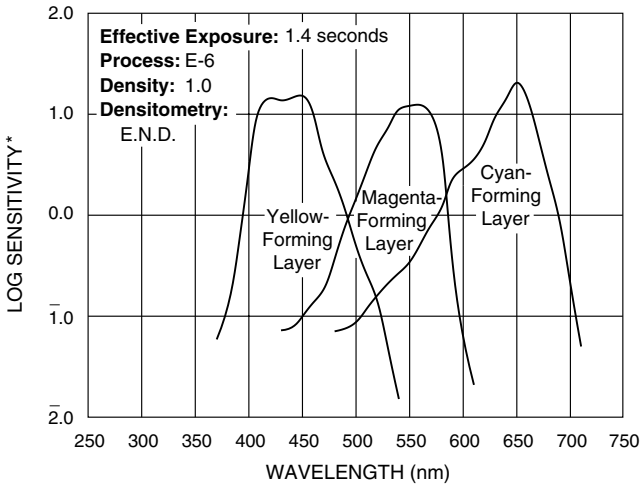

F009_0006AC

**Modulation-Transfer Curves**




F009_0005AC

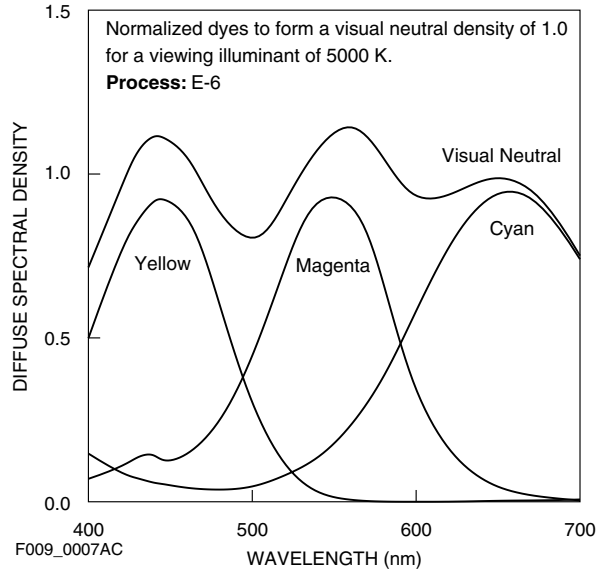
**Spectral-Sensitivity Curves**




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

F009_0008AC

**Spectral-Dye-Density Curves**

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**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

## 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 | *KODAK EKTACHROME 64 Professional Film* |
| E-27 | *KODAK EKTACHROME 100 Professional Film* |
| E-28 | *KODAK PROFESSIONAL EKTACHROME Film E200* |
| E-30 | *Storage and Care of KODAK Photographic Materials—Before and After Processing* |
| E-38 | *KODAK EKTACHROME Duplicating Films* |
| E-68 | *Retouching Transparencies on KODAK EKTACHROME Film* |
| E-103RF | *KODAK PROFESSIONAL Color Reversal Films* |
| E-130 | *KODAK EKTACHROME 64T Professional Film* |
| E-144 | *KODAK EKTACHROME 160T Professional Film* |
| E-145 | *KODAK EKTACHROME 320T Professional Film* |
| E-147 | *KODAK EKTACHROME 1600 Professional Film* |
| E-161 | *KODAK EKTACHROME 400X Professional Film* |
| E-163 | *KODAK PROFESSIONAL EKTACHROME Film E100VS* |
| E-4024 | *KODAK PROFESSIONAL EKTACHROME Films E100G and E100GX* |
| E-2529 | *KODAK PROFESSIONAL EKTACHROME Duplicating Film EDUPE* |

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 Plus 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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