

KODAK PROFESSIONAL EKTACHROME Film E200



KODAK PROFESSIONAL EKTACHROME Film E200 is a daylight-balanced 200-speed color transparency film designed for processing in KODAK Chemicals, Process E-6. The film offers moderate contrast, along with excellent color and image structure, making it the first high-speed color transparency film with the “look” of a lower speed film. In addition, E200 Film delivers outstanding push-processing performance to an exposure index (EI) of 800 with only minimal shifts in contrast and color balance.

E200 Film also features KODAK T-GRAIN® Emulsions for extremely fine grain and very high sharpness, plus improvements in reciprocity and manufacturing consistency.

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

Use E200 Film to produce color transparencies for projection or viewing with 5000 K illumination. Duplicate transparencies can be made by direct printing. To make color prints, you can print transparencies onto color reversal paper. Or make internegatives for printing onto color negative paper. You can also scan transparencies for digital printing and for graphic arts and photo CD applications.

| FEATURES | BENEFITS |
|---|--|
| <ul style="list-style-type: none"> Outstanding push-processing performance out to EI 800 | <ul style="list-style-type: none"> Maintains good contrast and color balance Extends shooting range under demanding existing-light conditions |
| <ul style="list-style-type: none"> Preferred contrast of an EI 100-speed color transparency film (lower contrast than other high-speed color-transparency films) | <ul style="list-style-type: none"> Improved reproduction of highlight and shadow details More tone gradation for more natural-appearing images |
| <ul style="list-style-type: none"> KODAK T-GRAIN® Emulsions in all color records | <ul style="list-style-type: none"> Finest grain structure of any daylight, high-speed color transparency film on the market High sharpness Grain and sharpness hold up well under push conditions |
| <ul style="list-style-type: none"> Enhanced colors while maintaining natural-looking skin tones | <ul style="list-style-type: none"> Pleasing colors for exceptional results both outdoors and in the studio Beautiful skin-tone reproduction for both outdoor and studio applications |
| <ul style="list-style-type: none"> Superb reciprocity | <ul style="list-style-type: none"> Consistent results in exposures from 10 seconds to 1/10,000 second with no exposure or filter corrections |

SIZES AVAILABLE

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

| Rolls | Code | Acetate Base |
|----------------|---------------|-------------------|
| 135-36 | E200 | 5-mil (0.13 mm) |
| 120 | | 3.9-mil (0.10 mm) |
| 220 | | |
| 35 mm x 100 ft | E200 / SP404* | 5-mil (0.13 mm) |

* Perforated on both edges

STORAGE AND HANDLING

Load and unload film in subdued light.

Store unexposed film in a refrigerator 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

Use the exposure index (EI) numbers below with cameras or light meters 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 | 200 |
| Photolamp (3400 K) | No. 80B | 64 |
| Tungsten (3200 K) | No. 80A | 50 |

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 sand or snow | 1/250 | <i>f/22</i> |
| Bright/hazy sun, distinct shadows | 1/250 | <i>f/16*</i> |
| Weak, hazy sun, soft shadows | 1/250 | <i>f/11</i> |
| Cloudy bright, no shadows | 1/250 | <i>f/8</i> |
| Heavy overcast or open shade† | 1/250 | <i>f/5.6</i> |

*Use *f/8* for backlit close-up subjects.

† Subjects shaded from sun but lit by large area of clear sky.

Electronic Flash

Use the appropriate guide number in the following table 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 | 60 | 18 |
| 500 | 70 | 21 |
| 700 | 85 | 26 |
| 1000 | 100 | 30 |
| 1400 | 120 | 36 |
| 2000 | 140 | 42 |
| 2800 | 170 | 50 |
| 4000 | 200 | 60 |
| 5600 | 240 | 70 |
| 8000 | 280 | 85 |

* BCPS=beam candlepower seconds.

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 1/125 second or longer.

| Fluorescent Lamp | KODAK Color Compensating Filters | Exposure Adjustment |
|----------------------|--|------------------------|
| Daylight | 50R | +1 stop |
| White | 40M | + $\frac{2}{3}$ stop |
| Warm White | 20C + 40M | +1 stop |
| Warm White Deluxe | 30B + 30C | +1 $\frac{1}{3}$ stops |
| Cool White | 40M + 10Y | +1 stop |
| Cool White Deluxe | 20C + 10M | + $\frac{2}{3}$ stop |
| Unknown Fluorescent* | 30M | + $\frac{2}{3}$ 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 Lamp | KODAK Color Compensating Filters | Exposure Adjustment |
|----------------------------------|--|------------------------|
| General Electric Lucalox* | 80B + 20C | +2 $\frac{1}{3}$ stops |
| General Electric Multi-Vapor | 20R + 20M | + $\frac{2}{3}$ stop |
| Deluxe White Mercury | 30R + 30M | +1 $\frac{1}{3}$ stops |
| Clear Mercury | 70R | +1 $\frac{1}{3}$ stops |

* This is a high-pressure sodium-vapor lamp. The information here may not apply to other manufacturers' 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 10 seconds.

Note: This information applies only when exposing the film 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 E200 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.

Push Processing Characteristics

You can increase the effective speed (i.e., push) of E200 Film by adjusting the time of the first developer. Increased film speed is useful under dim lighting conditions, or when you need high shutter speeds to stop action or small lens openings for increased depth of field. Pushing E200 Film will also compensate for underexposure.

Exposing KODAK PROFESSIONAL EKTACHROME Film E200 for Push Processing

Labs that provide push processing with Process E-6 usually offer the service for fixed time increases such as push 1, push 2, or push 3 in the first developer (see the following table). It is a good idea to make a series of test exposures and then work with your lab to determine optimum exposure settings for push processing.

The following exposure indexes are good starting points for daylight exposures when you intend to have E200 film push processed.

Starting-Point Exposures for Push Processing EKTACHROME Film E200

| Exposure Index | Specify This Push Condition to the Lab | Typical Time in First Developer |
|----------------|--|---------------------------------|
| 320 | Push 1 | 8 minutes |
| 640 | Push 2 | 11 minutes |
| 800 | Push 3 | 13 minutes |

RETOUCHING TRANSPARENCIES

Use KODAK E-6 Transparency Retouching Dyes. You can chemically retouch the 120 format 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 of E200 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 Transparency
Display Material

KODAK PROFESSIONAL ENDURA Clear 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 very similarly when scanned. The scanner operator can set up one basic tone scale and color correction channel for 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-in. transparency) or Q-60E3 (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.

For Photo CD Applications

Use the Universal E-6 Film Term to scan all KODAK EKTACHROME Films for KODAK PCD Imaging Workstation applications.

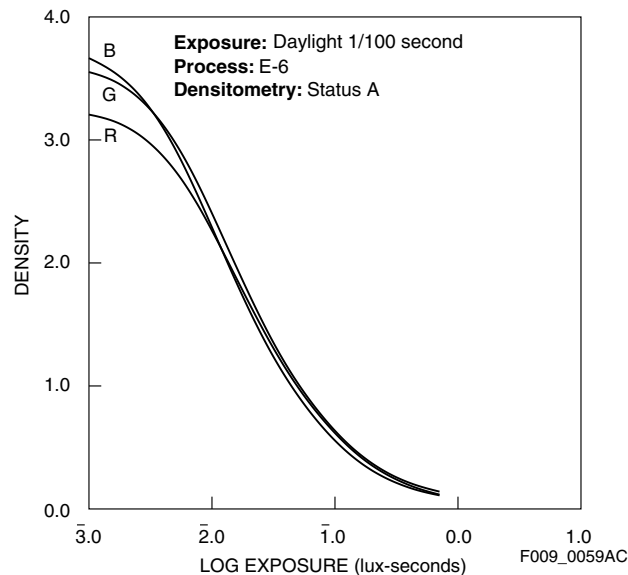
For output to a Photo CD player: Using the Universal E-6 Film Term should result in an image that closely matches your original in density, tone scale, and overall color balance when viewed on a player.

For output 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 used.

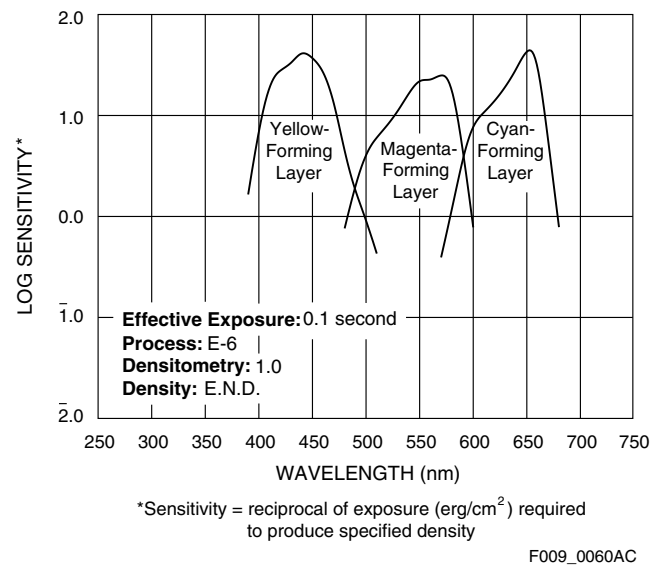
IMAGE STRUCTURE

Diffuse rms Granularity* 12 very fine

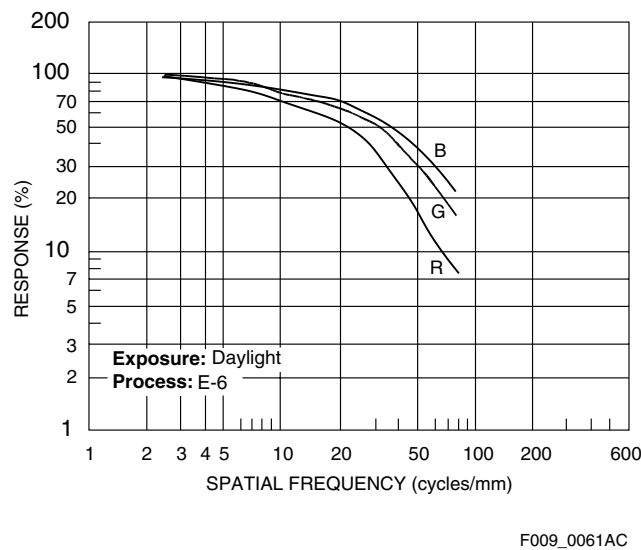
Characteristic Curves



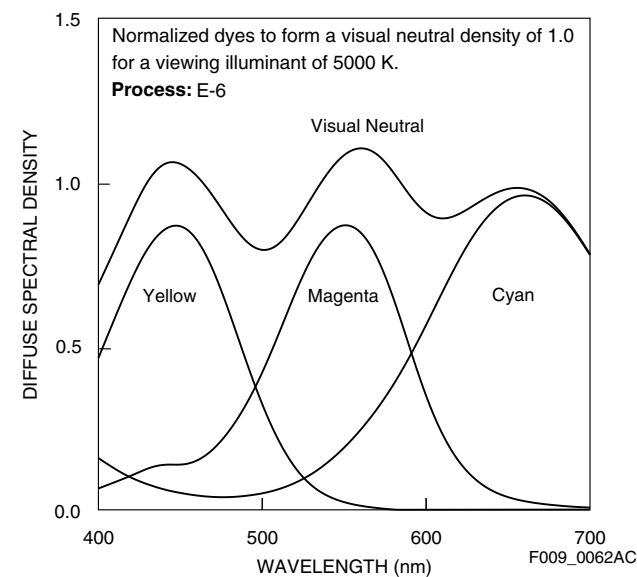
Spectral-Sensitivity Curves



Modulation-Transfer Curves



Spectral-Dye-Density Curves



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.

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

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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-30 *Storage and Care of KODAK Photographic Materials—Before and After Processing*
- E-31 *Reciprocity and Special Filter Data for KODAK Films*
- E-38 *KODAK EKTACHROME Duplicating Films*
- E-68 *Retouching Transparencies on KODAK EKTACHROME Film*
- E103RF *KODAK PROFESSIONAL Color Reversal Films*
- E-163 *KODAK PROFESSIONAL EKTACHROME Film E100VS*
- E-4024 *KODAK PROFESSIONAL EKTACHROME Films E100G and E100GX*

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 PROFESSIONAL EKTACHROME Film E200 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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