

KODAK PROFESSIONAL EKTACHROME Films E100S and E100SW



DESCRIPTION

KODAK PROFESSIONAL EKTACHROME Films E100S and E100SW are versatile, daylight-balanced, color reversal films designed for processing in KODAK Chemicals, Process E-6. These films feature KODAK T-GRAIN® Emulsions for extremely fine grain and very high sharpness, plus improvements in push, reciprocity, multipop, and process performance.

These films are designed for exposure with daylight or electronic flash. You can also expose them with tungsten illumination (3200 K) or photolamps (3400 K) using filters.

Use these films 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 |
|--|---|
| • Popular, medium speed of EI 100 | • Easy to use with flash and in a variety of outdoor lighting conditions |
| • Excellent multipop flash performance | • No compensation for effects of multiple, consecutive flash exposures up to 8 pops |
| • Precision Control Dopant Technology (PCDT) | • Excellent for reciprocity. No filter compensation for exposures 1/10,000 second to 10 seconds |
| • Patented KODAK T-GRAIN® Emulsions in all color records | • Consistently tight grain structure and very high sharpness |
| • Two new spectral sensitizing dyes | • Provide a broader range of blue-light capture |
| • Solid-Particle Filter Dye for wavelength-selective, green-light protection | • Clean, rich colors |
| • New interlayer structure | • For improved push and excellent processing characteristics |

KODAK PROFESSIONAL EKTACHROME FILM E100S

- Excellent neutral color rendition and natural skin-tone reproduction
- Enhanced color saturation (the “S” is for saturated)
- Ideal for use in studios or in cloudy-bright to sunny conditions outdoors
- Exceptional results in advertising, catalog/product, fashion, corporate/industrial, and nature/wildlife applications

KODAK PROFESSIONAL EKTACHROME FILM E100SW

- Produces warm, saturated colors (the “SW” is for saturated warm)
- Well suited for location photography with unpredictable or cool/overcast lighting conditions
- Excellent for photographers who prefer a warmer scene rendition
- Exceptional results in editorial, sports, travel, advertising, and corporate/industrial applications

MANUFACTURING UNIFORMITY

E100S and E100SW Films are the first films to take full advantage of Kodak’s new state-of-the-art manufacturing facility in Rochester, New York. The results are films with excellent edge-to-edge uniformity and roll-to-roll, sheet-to-sheet consistency.

STORAGE AND HANDLING

Load and unload film in subdued light.


Store unexposed film in a refrigerator at 55°F (13°C) 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 transparencies from strong light, and store them 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*.

SIZES AVAILABLE


KODAK PROFESSIONAL EKTACHROME Film E100S

| Rolls | Code/ Spec No. | Base | CAT No. |
|--------------------------|-------------------|-----------------|----------|
| 135-36 | E100S | 5-mil acetate | 169 8182 |
| 135-36 (20-roll pack) | E100S | 5-mil acetate | 815 9139 |
| 35 mm x 100 ft | E100S / SP404 | 5-mil acetate | 837 5198 |
| 70 mm x 100 ft | E100S / SP475 | 5-mil acetate | 110 1302 |
| 120 | E100S | 3.9-mil acetate | 830 5708 |
| 120 (5-roll pack) | E100S | 3.9-mil acetate | 889 8116 |
| 220 (5-roll pack) | E100S | 3.9-mil acetate | 161 3272 |

| Sheets | Size | Code  | Base | CAT No. |
|------------------------|------------|---|-----------------|----------------------|
| 10 50 | 4 x 5 in. | E100S | 8.2-mil acetate | 110 3241 174 7930 |
| 10 50 | 8 x 10 in. | E100S | 8.2-mil acetate | 199 3740 810 3384 |
| KODAK READYLOAD Packet | | | | |
| 20 | 4 x 5 in. | E100S | 8.2-mil acetate | 843 3625 |

KODAK PROFESSIONAL EKTACHROME Film E100SW

| Rolls | Code/ Spec No. | Base | CAT No. |
|--------------------------|-------------------|-----------------|----------|
| 135-36 | E100SW | 5-mil acetate | 804 5346 |
| 135-36 (20-roll pack) | E100SW | 5-mil acetate | 859 5985 |
| 35 mm x 100 ft | E100SW SP404 | 5-mil acetate | 816 2570 |
| 120 | E100SW | 3.9-mil acetate | 851 3988 |
| 120 (5-roll pack) | E100SW | 3.9-mil acetate | 134 0017 |
| 220 (5-roll pack) | E100SW | 3.9-mil acetate | 106 8444 |

| Sheets | Size | Code  | Base | CAT No. |
|------------------------|------------|---|-----------------|----------------------|
| 10 50 | 4 x 5 in. | E100SW | 8.2-mil acetate | 810 4853 123 0143 |
| 10 50 | 8 x 10 in. | E100SW | 8.2-mil acetate | 890 2991 100 2724 |
| KODAK READYLOAD Packet | | | | |
| 20 | 4 x 5 in. | E100SW | 8.2-mil acetate | 866 2645 |

DARKROOM RECOMMENDATIONS

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

EXPOSURE

Exposure Index Numbers

Use the exposure index 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 | 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 Sand or Snow | 1/125 | <i>f/22</i> |
| Bright/Hazy Sun, Distinct Shadows | 1/125 | <i>f/16*</i> |
| Weak, Hazy Sun, Soft Shadows | 1/125 | <i>f/11</i> |
| Cloudy Bright, No Shadows | 1/125 | <i>f/8</i> |
| Heavy Overcast or Open Shade† | 1/125 | <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 | 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 the effects of multiple, consecutive flashes (multipops) up to 8 flashes.

Fluorescent and High-Intensity Discharge Lamps

Use the color-compensating filters and exposure adjustments below as starting points to expose these films 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.

| Type of Fluorescent Lamp | 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 do not know the type of fluorescent lamps, try a 30M filter and increase exposure by 2/3 stop; color rendition will probably be less than optimum.

| High-Intensity Discharge Lamp | 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 |

* A high-pressure sodium-vapor lamp. The information here may not apply to other manufacturers' sodium-vapor lamps because of 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 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

Chemicals

Process E100S and E100SW Films in KODAK Chemicals, Process E-6.

Push Processing Characteristics

You can increase the effective speed (i.e., push) of E100S and E100SW Films 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 will also slightly increase contrast, sharpen highlights, and compensate for underexposure. By understanding these effects in advance, you can use pushing creatively and reliably.

Exposure for Push Processing

Labs that provide push processing with Process E-6 usually offer the service for fixed time increases; i.e., push 1 or push 2 in the first developer. 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 1 and push 2.

As starting-point recommendations when you intend to have E100S or E100SW Films processed at push 1, underexpose the films by approximately 2/3 stop (EI 160). For processing at push 2, underexpose by approximately 1 2/3 stops (EI 320).

RETOUCHING TRANSPARENCIES

Use KODAK E-6 Transparency Retouching Dyes. You can chemically retouch sheet and 120/220 formats of these films 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 E100S and E100SW Films by using a variety of Kodak materials.

Duplicate Color Transparencies

Or make internegatives on KODAK Commercial Internegative Film, and print them on—
KODAK VERICOLOR Print Film
KODAK VERICOLOR Slide Film
KODAK DURATRANS® RA Display Material
KODAK DURACLEAR™ RA Display Material

For direct printing, use—
KODAK EKTACHROME Duplicating Films
KODAK EKTACHROME RADIANCE Overhead Material

Color Prints

For direct printing, use—
KODAK EKTACHROME RADIANCE III Papers
KODAK EKTACHROME RADIANCE III SELECT Material

Or make internegatives on KODAK Commercial Internegative Film, and print them on—
KODAK PROFESSIONAL PORTRA III Papers
KODAK PROFESSIONAL SUPRA III Paper
KODAK PROFESSIONAL ULTRA III Paper
KODAK DURAFLEX® RA Print Material

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 or Q-60E3 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.

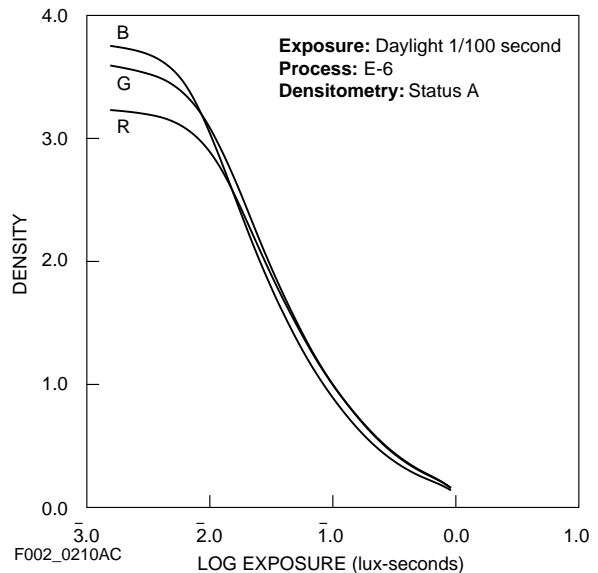
For output to a Photo CD player: Using the Universal E-6 Film Term should result in an image that closely matches your original in density, tone scale, and overall color balance when viewed on a player.

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.

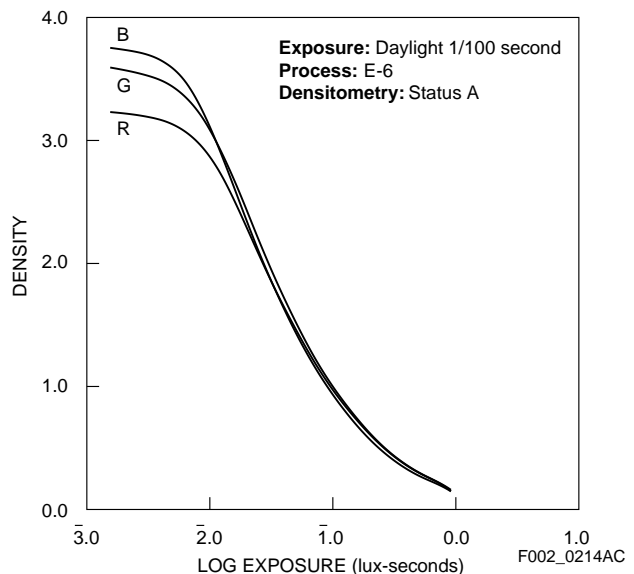
IMAGE STRUCTURE

Diffuse rms Granularity* 10

Characteristic Curves
E100S Film

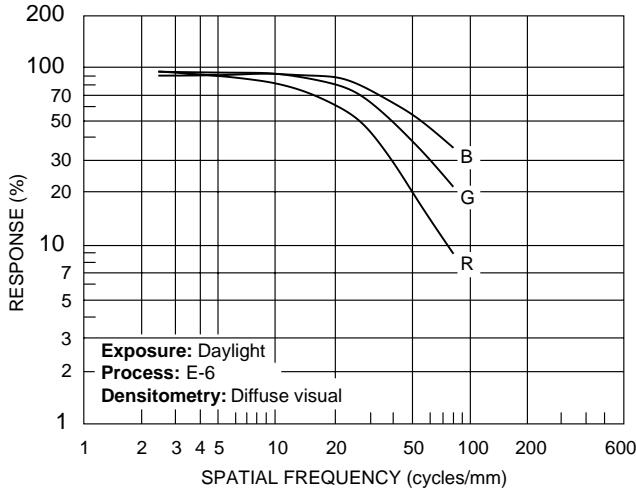


Characteristic Curves
E100SW Film



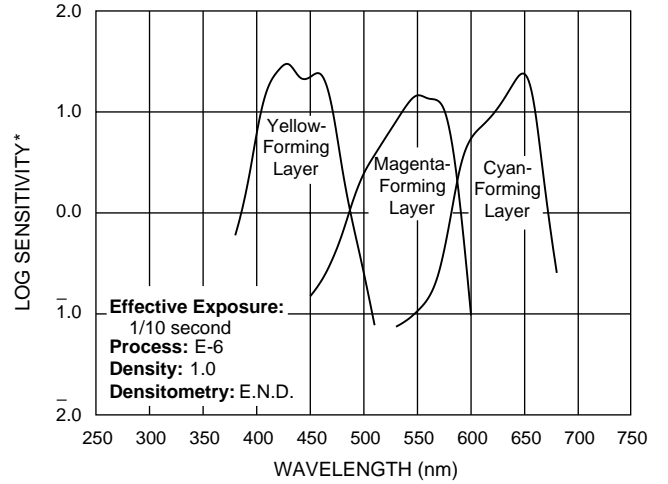
* Read at a gross diffuse visual density of 1.0, using a 48-micrometre aperture, 12X magnification.

**Modulation-Transfer Curves
E100S and E100SW Films**



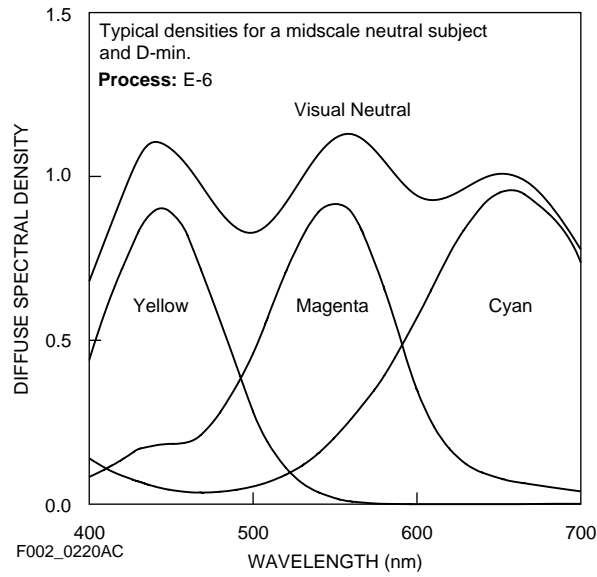
F002_0217AC

**Spectral-Sensitivity Curves
E100S and E100SW Films**



F002_0219AC *Sensitivity = reciprocal of exposure (ergs/cm²) required to produce specified density

**Spectral-Dye-Density Curves
E100S and E100SW Films**



F002_0220AC

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.

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MORE INFORMATION

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

Additional information is available on the Kodak website and through the U.S.A./Canada faxback system.

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

- E-10 *KODAK EKTACHROME RADIANCE III Paper*
- 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*
- H3-995 *KODAK Q-60 Color Input Targets*
(Brochure/order form available from the address above.)

Kodak Information Center's Faxback System

—Available 24 hours a day, 7 days a week—

Many technical support publications for Kodak products can be sent to your fax machine from the Kodak Information Center. Call:

U.S.A. 1-800-242-2424, Ext. 33
Canada 1-800-295-5531

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)*

*Or contact Kodak on-line at:
<http://www.kodak.com/go/professional>*

Note: The Kodak materials described in this publication for use with KODAK PROFESSIONAL EKTACHROME E100S and E100SW Films are available from dealers who supply KODAK PROFESSIONAL Products. You can use other materials, but you may not obtain similar results.



Kodak Professional Division
EASTMAN KODAK COMPANY

Kodak Professional

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Films E100S and E100SW
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