

# KODAK PROFESSIONAL EKTACHROME Films E100S and E100SW



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

## SIZES AVAILABLE

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

### KODAK PROFESSIONAL EKTACHROME Film E100S

Rolls	Code / Spec No.	Acetate Base	CAT No.
135-36	E100S	5-mil (0.13 mm)	169 8182
135-36 (5-roll Pro pack)	E100S		818 6959
135-36 (20-roll pack)	E100S		815 9139
120	E100S	3.9-mil (0.10 mm)	830 5708
120 (5-roll pack)	E100S		889 8116
220 (5-roll pack)	E100S		161 3272
35 mm x 100 ft	E100S / SP404*	5-mil (0.13 mm)	837 5198
70 mm x 100 ft	E100S / SP475*		110 1302

\*Perforated on both edges.

Sheets	Size	Film Code	Base	CAT No.
10 50	4 x 5 in.	E100S	8.2-mil (0.205 mm) acetate	110 3241 174 7930
10 50	8 x 10 in.	E100S		199 3740 810 3384
KODAK PROFESSIONAL READYLOAD Single-Sheet Packet				
20*	4 x 5	E100S	7-mil (0.18 mm) ESTAR Thick	158 8656

\*For use with the KODAK READYLOAD Packet Film Holder or other holders such as the POLAROID Model 545/545i and FUJIFILM QUICKLOAD Film Holders.

## KODAK PROFESSIONAL EKTACHROME Film E100SW

Rolls	Code / Spec No.	Acetate Base	CAT No.
135-36	E100SW	5-mil (0.13 mm)	804 5346
135-36 (5-roll pro-pack)	E100SW		803 2898
135-36 (20-roll pack)	E100SW		859 5985
120	E100SW	3.9-mil (0.10 mm)	851 3988
120 (5-roll pack)	E100SW		134 0017
220 (5-roll pack)	E100SW		106 8444
35 mm x 100 ft	E100SW / SP404*	5-mil (0.13 mm)	816 2570

\*Perforated on both edges.

Sheets	Size	Film Code	ESTAR Thick Base	CAT No.
10 50	4 x 5 in.	E100SW	7-mil (0.18 mm)	810 4853 123 0143
10 50	8 x 10 in.	E100SW		890 2991 100 2724

## 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

### Exposure Index Numbers

Use the exposure index (EI) numbers below with meters and 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
Photo lamp (3400 K)	80B	32
Tungsten (3200 K)	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	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 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. 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 Exposure 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 exposure times of 1/125 second or longer.

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
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	+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 exposure times from 1/10,000 to 10 seconds. At exposure times of 120 seconds, increase your exposure 1/3 stop and add CC075Y filtration.

**Note:** This information applies only when the films are 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

### Chemicals

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

For consistent processing of these 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 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 by approximately 2/3 stop (EI 160). For processing at push 2, underexpose by approximately 1 2/3 stops (EI 320).

## RETOUCHING

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

For direct printing, use—

KODAK EKTACHROME Duplicating Films

KODAK EKTACHROME RADIANCE III Overhead Material

Or make internegatives on KODAK Commercial Internegative Film, and print them on—

KODAK VERICOLOR Print Film

KODAK VERICOLOR Slide Film

KODAK PROFESSIONAL DURATRANS Display Material

KODAK PROFESSIONAL DURACLEAR Display 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, SUPRA, and ULTRA III Papers

KODAK PROFESSIONAL DURAFLEX Print Material

### Digital Files

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

KODAK PROFESSIONAL Digital III Color Paper

KODAK PROFESSIONAL DURATRANS Digital Display Material

KODAK PROFESSIONAL DURACLEAR Digital Display Material

KODAK PROFESSIONAL DURAFLEX Digital 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 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 are manufactured to 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.

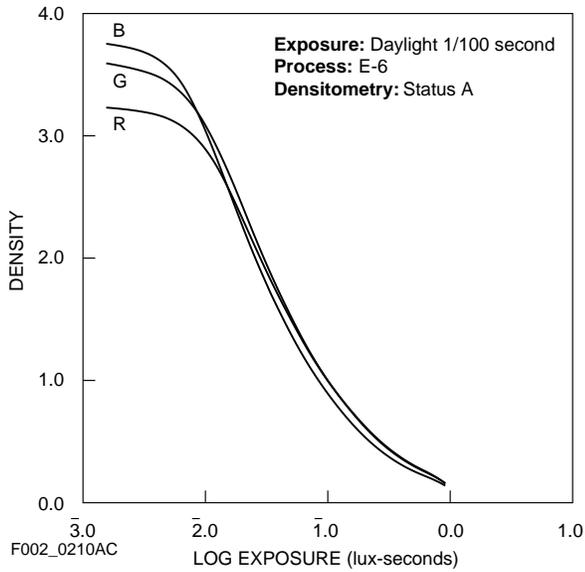
For output to Devices Other than Photo CD Players: The YCC data that results when using the Universal E-6 Film Term is capable of producing a high-quality duplicate of your original transparency in terms of density, tone scale, and color reproduction. Final quality of your reproduced image depends on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

# CURVES

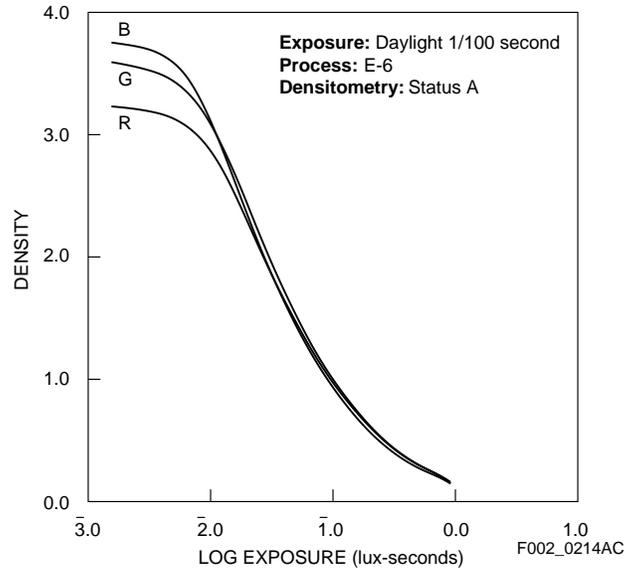
## Diffuse rms Granularity\* 10 (extremely fine)

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

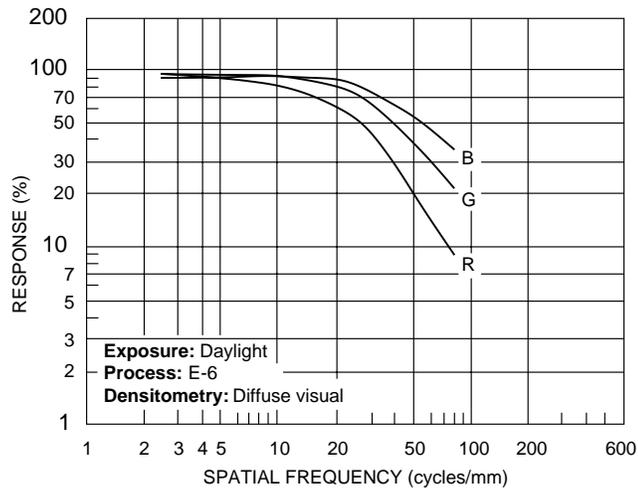
**Characteristic Curves  
E100S Film**



**Characteristic Curves  
E100SW Film**



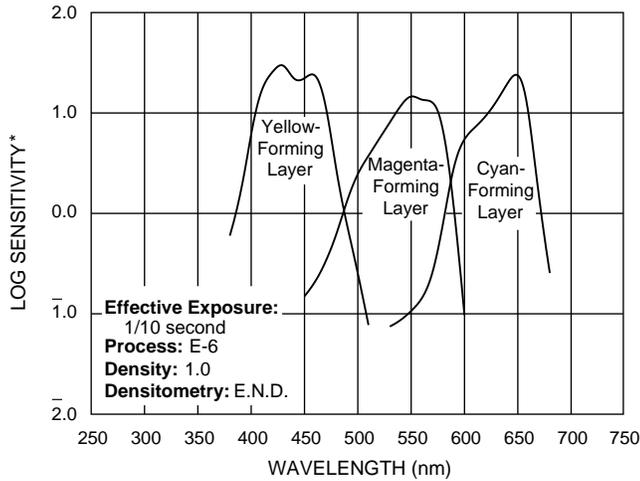
**Modulation-Transfer Curves  
E100S and E100SW Films**



F002\_0217AC

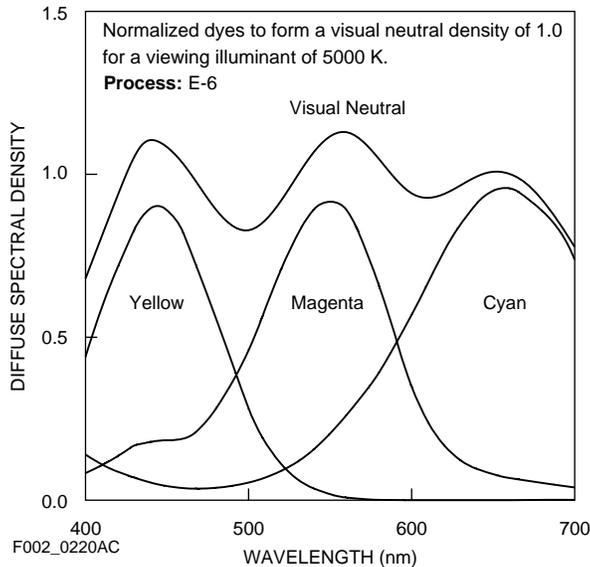
# KODAK PROFESSIONAL EKTACHROME Films E100S and E100SW

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



\*Sensitivity = reciprocal of exposure (ergs/cm<sup>2</sup>) required to produce specified density  
F002\_0219AC

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



**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.

## 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-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*
- E103RF *KODAK PROFESSIONAL Color Reversal Films*
- E-113 *KODAK EKTACHROME 100 Plus Professional Film*
- 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*
- Z-119 *Using KODAK, Chemicals, Process E-6*

For the latest version of technical support publications for KODAK PROFESSIONAL Products, visit Kodak on-line at:  
<http://www.kodak.com/go/professional>

Many technical support publications for KODAK PROFESSIONAL Products can be sent to your fax machine from the Kodak Information Center. Call:  
**U.S. 1-800-242-2424, Ext. 33 / Canada 1-800-295-5531**  
—Available 24 hours a day, 7 days a week—

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 Films E100S and E100SW are available from dealers who supply KODAK PROFESSIONAL Products. You can use other materials, but you may not obtain similar results.

**Kodak Professional**