

KODAK EKTACHROME P1600 Professional Film



Use this film for low-light-level photography, for action or sports photography, or in situations that call for high shutter speeds combined with small lens openings for good depth of field. Ideal for photojournalism, this film features bold, saturated color, and KODAK T-GRAIN® Emulsions for high sharpness and fine grain.

This high-speed color transparency film is optimized for an effective speed of EI 1600 using a 2-stop push with Process E-6P. Designed for exposure with daylight or electronic flash, you can also expose it with photolamps (3400 K) or tungsten (3200 K) illumination with filters. It is intended for typical high-speed film applications at times from 1/10,000 to 1/10 second with no filter or exposure adjustment.

FEATURES

- DX coded at EI 1600
- Bright, bold colors
- KODAK T-GRAIN® Emulsions

BENEFITS

- Very high speed for low light levels; allows faster shutter speeds to stop camera or subject movement
- Optimized for 2-push processing
- Good color reproduction even in dimly lit conditions
- Fine grain and high sharpness

SIZES AVAILABLE

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

Roll	Film Code	Acetate Base	CAT No.
135-36	EPH	5.0-mil (0.13 mm)	116 3112

STORAGE AND HANDLING

Load and unload film in subdued light.

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

Store exposed film in a cool, dry place. 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 about 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. 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* (Process E-6P/ Push 2 Processing)
Daylight or Electronic Flash	None	1600
Photolamp (3400 K)	80B	500
Tungsten (3200 K)	80A	400

*Indexes for tungsten and photolamp illumination include the recommended filtration and are for use with handheld exposure meters. For through-the-lens meters, see your camera manual.

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* for EI 1600
Bright/hazy sun on light sand or snow	1/1,000	f/32
Bright or hazy sun, distinct shadows	1/1,000	f/22†
Weak, hazy sun, soft shadows	1/1,000	f/16
Cloudy bright, no shadows	1/1,000	f/11
Heavy overcast, open shade‡	1/1,000	f/8

*If the smaller lens openings recommended in the table are not available, use a higher shutter speed, or an appropriate neutral density filter, or expose and process the film to a slower speed.

†Use f/8 at EI 1600 for backlit close-up subjects.

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

Electronic Flash

Use the guide numbers in the table below as starting-point recommendations for your equipment. Select the unit output closest to the number given by your flash manufacturer. 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 for EI 1600	
	Distances in Feet	Distances in Metres
350	170	50
500	200	60
700	240	70
1000	280	85
1400	340	100
2000	400	120
2800	480	140
4000	560	170
5600	670	205
8000	800	240

*BCPS = beam candlepower seconds

Fluorescent and High-Intensity Discharge Lamps

Use the KODAK 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 stops
Cool White Deluxe	20C + 10M	+2/3 stop
Unknown Fluorescent*	CC30M	+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 1/10 second.

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. 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.

Push/Pull Processing

EKTACHROME P1600 Professional Film is optimized for a 2-stop push process (e.g. exposed at EI 1600). Change the first developer as indicated below.

Note: Additional first developer information is included for film exposed at EI 800 or 400.

For Film Exposed At	Process	First Developer		
		Time*	OR	Temperature*
EI 1600	2-stop push	Increase by 5 minutes		Increase by 7°C (12°F)
EI 800	1-stop push	Increase by 2 minutes		Increase by 4°C (8°F)
EI 400	Normal	Use your normal development time		

*Both temperature and time adjustments of the first developer provide comparable results for underexposed film.

RETOUCHING

Retouch only the emulsion side. For information on retouching equipment, supplies, and techniques, see KODAK Publication E-68, *Retouching Color Transparencies on KODAK EKTACHROME Film*.

PRINTING TRANSPARENCIES

You can reproduce images made on this film by using a variety of Kodak materials.

Duplicate Color Transparencies

For direct printing, use—

KODAK PROFESSIONAL EKTACHROME

Duplicating Film EDUPE

Or make internegatives on KODAK Commercial

Internegative Film, and print them on—

KODAK PROFESSIONAL ENDURA Transparency

Optical Display Material

KODAK PROFESSIONAL ENDURA Clear Optical

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 ENDURA Paper

KODAK PROFESSIONAL SUPRA ENDURA Paper

KODAK PROFESSIONAL ULTRA ENDURA Paper

KODAK PROFESSIONAL DURAFLEX® Plus Digital
Display Material

KODAK PROFESSIONAL ENDURA Metallic Paper

Digital Files

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

KODAK PROFESSIONAL ENDURA Transparency
Digital Display Material

KODAK PROFESSIONAL ENDURA Clear Digital
Display Material

KODAK PROFESSIONAL DURAFLEX® Plus Digital
Display Material

KODAK PROFESSIONAL ENDURA Metallic Paper

KODAK PROFESSIONAL Day/Night Digital Display
Material

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 transparencies) 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.

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.

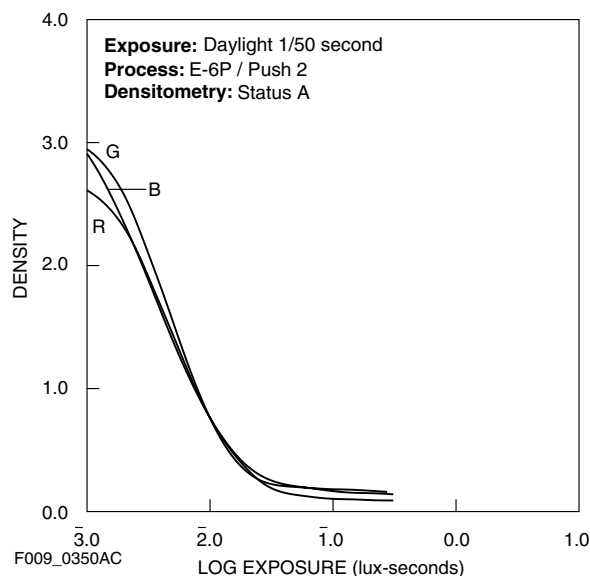
For Output to Devices Other than Photo CD Players: The YCC data that results when using the Universal E-6 Film Term is capable of producing a high-quality duplicate of your original transparency in terms of density, tone scale, and color reproduction. Final quality of your reproduced image depends on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

CURVES

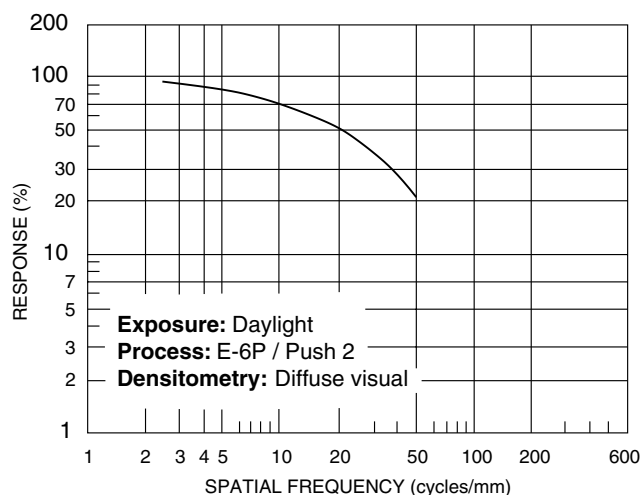
Diffuse rms Granularity* EI 1600 34 (Coarse)

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

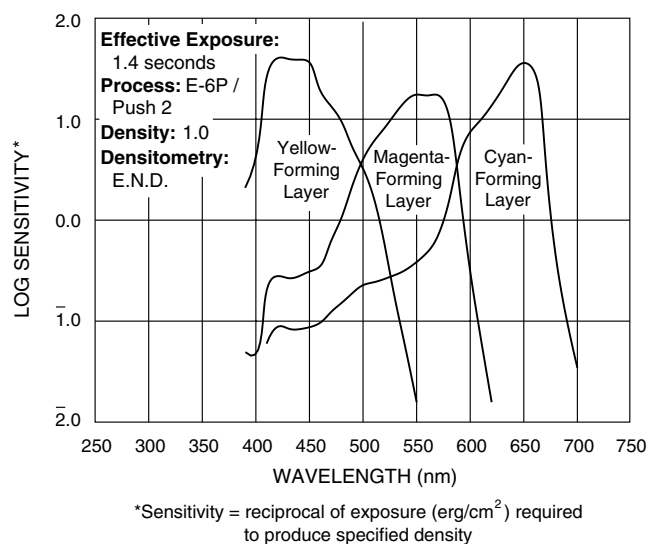
Characteristic Curves



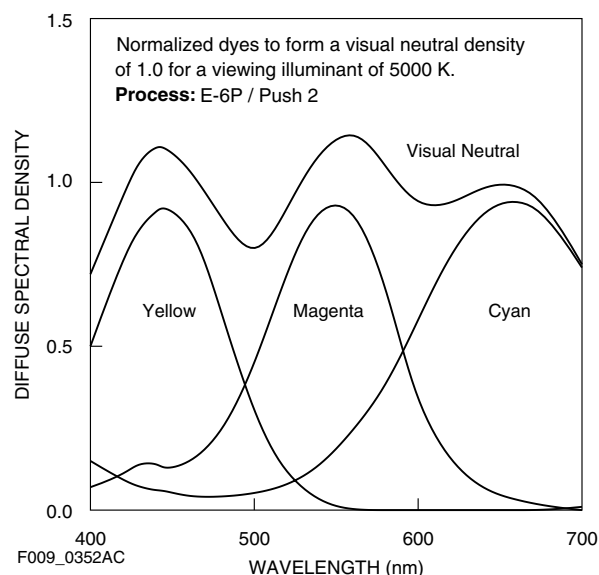
Modulation-Transfer Curve



Spectral-Sensitivity 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.

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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, 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-27	<i>KODAK EKTACHROME 100 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-31	<i>Reciprocity and Special Filter Data for KODAK Films</i>
E-38	<i>KODAK EKTACHROME Duplicating Films</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-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>

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 P1600 Professional Film 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