

KODAK PROFESSIONAL ROYAL SUPRA Colour Negative Films



This new family of commercial colour negative print films offers superior image structure, bold/dynamic colour, and natural skin tones. They are an excellent choice when negatives will be electronically scanned. KODAK PROFESSIONAL ROYAL SUPRA Colour Negative Films are designed for exposure with daylight or electronic flash.

KODAK PROFESSIONAL ROYAL SUPRA 200 Colour Negative Film features extremely fine grain and excellent sharpness, allowing for a high degree of enlargement. This film is an excellent choice for fashion, landscape, nature, product, lifestyle, and medical photography.

KODAK PROFESSIONAL ROYAL SUPRA 400 Colour Negative Film offers the finest grain of any colour negative film in its speed class, plus vibrant colours without oversaturated skin tones. In addition, a new emulsion overcoat makes the negatives more scratch resistant for improved scans and prints. Suggested applications include fashion, wildlife, sports, news, lifestyle, and product photography. This film can also be push-processed one stop with good results.

KODAK PROFESSIONAL ROYAL SUPRA 800 Colour Negative Film is a high-speed colour negative film that is unsurpassed for image structure in its speed class. It also delivers excellent colour saturation, even when underexposed. ROYAL SUPRA 800 Film can be push-processed up to EI3200 with minimal impact on grain, contrast, colour, and shadow detail. Use this film to capture sports, action, news, and runway fashion events.

KODAK PROFESSIONAL ROYAL SUPRA 200 Film

FEATURE	ADVANTAGE	BENEFIT
• Kodak's proprietary Advanced Development Accelerator™	• Finest grain of any colour negative film in this speed class	• Make bigger enlargements. Obtain higher quality scans and prints.
• Colour Precision Technology with triple coated blue layer	• More accurate interaction between individual red, green, and blue colour records	• Vibrant colour without over-saturated skin tones
• New emulsion overcoat	• A more durable negative reduces the risk of handling damage	• Less negative scratching for higher quality scans and prints
• "Eye-like" spectral sensitivity	• "Sees" colours similarly to the eye with multi-illuminant capability	• Excellent reproduction of difficult to reproduce colours. Improved pictures in mixed lighting.

KODAK PROFESSIONAL ROYAL SUPRA 400 Film

FEATURE	ADVANTAGE	BENEFIT
• Kodak's proprietary Advanced Development Accelerator™	• Finest grain of any colour negative film in this speed class	• Make bigger enlargements. Obtain higher quality scans and prints.
• Colour Precision Technology with triple coated blue layer	• More accurate interaction between individual red, green, and blue colour records	• Vibrant colour without over-saturated skin tones
• New emulsion overcoat	• A more durable negative reduces the risk of handling damage	• Less negative scratching for higher quality scans and prints
• One stop push process capability	• Minimal impact on grain, contrast, colour, and shadow detail	• Added versatility for low-light conditions or outdoor sports
• "Eye-like" spectral sensitivity	• "Sees" colours similarly to the eye with multi-illuminant capability	• Excellent reproduction of difficult to reproduce colours. Improved pictures in mixed lighting.

KODAK PROFESSIONAL ROYAL SUPRA 800 Film

FEATURE	ADVANTAGE	BENEFIT
• New High-Efficiency T-GRAIN Emulsions	• Unsurpassed image structure in this speed class	• Capture precise outlines and fine details
• Kodak's proprietary Advanced Development Accelerator	• Exceptionally fine grain	• Make bigger enlargements. Obtain higher quality scans and prints.
• Improved DIR, Universal DIR, and DIAR Chemistries	• Excellent colour saturation, even when underexposed	• Great images from scans or prints!
• Two stop push process capability	• Minimal impact on grain, contrast, colour, and shadow detail	• Added versatility for low-light conditions or sporting events

SIZES AVAILABLE

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

KODAK PROFESSIONAL ROYAL SUPRA 200 Film

Film Size	Base	CAT No.	Availability
135-24 (single box)	0.13 mm (0.005 inch) acetate	383 3678	Export
135-36 (single box)	0.13 mm (0.005 inch) acetate	387 0540	Export
135-36 (5-roll pro-pack)	0.13 mm (0.005 inch) acetate	386 0533	Export
135-36 (20-roll pro-pack)	0.13 mm (0.005 inch) acetate	386 0335	Export

KODAK PROFESSIONAL ROYAL SUPRA 400 Film

Film Size	Base	CAT No.	Availability
135-24 (single box)	0.13 mm (0.005 inch) acetate	386 0046	Export
135-36 (single box)	0.13 mm (0.005 inch) acetate	386 7421	Export
135-36 (5-roll pro-pack)	0.13 mm (0.005 inch) acetate	386 5060	Export
135-24 (20-roll pro-pack)	0.13 mm (0.005 inch) acetate	385 8511	Export
135-36 (20-roll pro-pack)	0.13 mm (0.005 inch) acetate	386 8270	Export

KODAK PROFESSIONAL ROYAL SUPRA 800 Film

Film Size	Base	CAT No.	Availability
135-36 (single box)	0.13 mm (0.005 inch) acetate	386 3248	Export
135-36 (5-roll pro-pack)	0.13 mm (0.005 inch) acetate	386 7447	Export
135-36 (20-roll pro-pack)	0.13 mm (0.005 inch) acetate	385 4205	Export

STORAGE AND HANDLING

Load and unload film in subdued light.

Store unexposed film at 70°F (21°C) or lower in the *original sealed package*. Process film as soon as possible after exposure. Protect negatives from strong light. For more information about storing negatives, see KODAK Publication No. E-30, *Storage and Care of KODAK Photographic Materials—Before and After Processing*.

Note: High speed films, such as ROYAL SUPRA 800 Film, are sensitive to environmental radiation. Expose and process this film promptly. As exposure to radiation is cumulative, you may also want to request *visual* inspection of ROYAL SUPRA 800 Film at airport and other security x-ray inspection stations.

DARKROOM RECOMMENDATIONS

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

EXPOSURE

Exposure Compensation

For light sources other than daylight, use the filtration and exposure compensation in the table below.

Light Source	KODAK WRATTEN Gelatin Filter	Exposure Compensation* (lens stops)
Photolamp (3400 K)	No. 80B	+ 1 2/3
Tungsten (3200 K)	No. 80A	+ 2

* SLR cameras will automatically adjust when metering through the filter.

Daylight

Recommended exposures in the table below are for frontlit subjects from 2 hours after sunrise to 2 hours before sunset when you expose each of these films at its *nominal speed*.

Lighting Conditions	Shutter Speed (second) and Lens Opening—ROYAL SUPRA Film		
	200	400	800
Bright or Hazy Sun on Light Sand or Snow	1/250 f/16	1/500 f/16	1/1000 f/16
Bright or Hazy Sun (Distinct Shadows)	1/250 f/11*	1/500 f/11*	1/1000 f/11*
Weak, Hazy Sun (Soft Shadows)	1/250 f/8	1/500 f/8	1/1000 f/8
Cloudy Bright (No Shadows)	1/250 f/5.6	1/500 f/5.6	1/1000 f/5.6
Heavy Overcast or Open Shade†	1/250 f/4	1/500 f/4	1/1000 f/4

* Use f/5.6 for backlit close-up subjects.

† Subject shaded from the sun but lighted by a large area of sky.

Fluorescent and High-Intensity Discharge Light:

Use the colour-compensating filters and exposure adjustments in the tables below as starting points to expose ROYAL SUPRA 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 colour variations that occur during a single alternating-current cycle, use exposure times of 1/60 second or longer with fluorescent lamps; with high-intensity lamps, use exposure times of 1/125 second or longer.

Type of Fluorescent Lamp	KODAK Color Compensating Filter(s)	Exposure Adjustment
KODAK PROFESSIONAL ROYAL SUPRA 200 Film		
"Daylight"	20R + 5M	+ 1 stop
White	50C + 30M	+ 1 $\frac{2}{3}$ stops
Warm White	40B + 50C	+ 2 stops
Warm White Deluxe	90C + 30M	+ 2 stops
Cool White	30B	+ 1 stop
Cool White Deluxe	40C + 10M	+ 1 stop
T8 741	40B + 20C	+ 1 $\frac{2}{3}$ stops
T8 830	50B + 60C	+ 2 $\frac{1}{3}$ stops
T8 835	40B + 40C	+ 1 $\frac{2}{3}$ stops
T8 841	50C + 20M	+ 1 $\frac{1}{3}$ stops
KODAK PROFESSIONAL ROYAL SUPRA 400 Film		
"Daylight"	20R + 5M	+ 1 stop
White	50C + 30M	+ 1 $\frac{2}{3}$ stops
Warm White	40B + 50C	+ 2 stops
Warm White Deluxe	90C + 30M	+ 2 stops
Cool White	30B	+ 1 stop
Cool White Deluxe	40C + 10M	+ 1 stop
T8 741	40B + 20C	+ 1 $\frac{2}{3}$ stops
T8 830	50B + 60C	+ 2 $\frac{1}{3}$ stops
T8 835	40B + 40C	+ 1 $\frac{2}{3}$ stops
T8 841	50C + 20M	+ 1 $\frac{1}{3}$ stops
KODAK PROFESSIONAL ROYAL SUPRA 800 Film		
"Daylight"	40R	+ 1 $\frac{1}{3}$ stop
White	30C + 40M	+ 1 $\frac{2}{3}$ stop
Warm White	50B + 5C	+ 2 stops
Warm White Deluxe	40B + 40C	+ 2 stops
Cool White	30M	+ 1 stop
Cool White Deluxe	20B + 20C	+ 1 stop
T8 741	20B + 20M	+ 1 $\frac{2}{3}$ stop
T8 830	55B + 20C	+ 2 $\frac{1}{3}$ stops
T8 835	40B	+ 1 $\frac{2}{3}$ stop
T8 841	20B + 10C	+ 1 $\frac{1}{3}$ stop

High-Intensity Discharge Lamp (CCT)*	KODAK Color Compensating Filter(s)	Exposure Adjustment
KODAK PROFESSIONAL ROYAL SUPRA 200 Film		
High-Pressure Sodium Vapor (2700 K)	50B + 70C	+ 2 $\frac{2}{3}$ stops
High-Pressure Sodium Vapor (2200 K)	50B + 90C	+ 3 stops
High-Pressure Sodium Vapor (2100 K)	20M + 200C	+ 4 stops
Metal Halide (4300 K)	10M	+ $\frac{2}{3}$ stop
Metal Halide (3200 K)	80C + 10M	+ 1 $\frac{2}{3}$ stops
Mercury Vapor (3700 K)	20B + 10C	+ 1 stop
KODAK PROFESSIONAL ROYAL SUPRA 400 Film		
High-Pressure Sodium Vapor (2700 K)	50B + 70C	+ 2 $\frac{2}{3}$ stops
High-Pressure Sodium Vapor (2200 K)	50B + 90C	+ 3 stops
High-Pressure Sodium Vapor (2100 K)	20M + 200C	+ 4 stops
Metal Halide (4300 K)	10M	+ $\frac{2}{3}$ stop
Metal Halide (3200 K)	80C + 10M	+ 1 $\frac{2}{3}$ stops
Mercury Vapor (3700 K)	20B + 10C	+ 1 stop
KODAK PROFESSIONAL ROYAL SUPRA 800 Film		
High-Pressure Sodium Vapor (2700 K)	60B + 50C	+ 2 $\frac{2}{3}$ stops
High-Pressure Sodium Vapor (2200 K)	120C + 50M	+ 3 $\frac{1}{3}$ stops
High-Pressure Sodium Vapor (2100 K)	55B + 100C	+ 4 stops
Metal Halide (4300 K)	5R + 20M	+ 1 stop
Metal Halide (3200 K)	20B + 30C	+ 1 $\frac{2}{3}$ stop
Mercury Vapor (3700 K)	30M	+ 1 stop

* CCT = Correlated Colour Temperature. Phosphor emission emulates the colour temperature of a continuous spectrum lamp, such as tungsten.

Electronic Flash:

Use the guide numbers in the table below as starting-point recommendations for your equipment when you expose these films at its *nominal speed*. 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.

Unit Output (BCPS)*	Guide Number Distances in Feet/Metres ROYAL SUPRA Film		
	200	400	800
350	60/18	85/26	120/36
500	70/21	100/30	140/42
700	85/26	120/36	170/50
1000	100/30	140/42	200/60
1400	120/36	170/50	240/70
2000	140/42	200/60	280/85
2800	170/50	240/70	340/100
4000	200/60	280/85	400/120
5600	240/70	340/100	470/140
8000	280/85	400/120	560/170

* BCPS = beam candlepower seconds

Adjustments for Long and Short Exposures

For ROYAL SUPRA 200 and ROYAL SUPRA 400 Films, no filter corrections or exposure adjustments are required for exposure times of 1/10,000 to 10 seconds; for ROYAL SUPRA 800 Film, no adjustments are required for exposures from 1/10,000 second to 1 second. At longer exposure times, exposure compensation is required.

PROCESSING

Process these films in KODAK FLEXICOLOR Chemicals for Process C-41.

ROYAL SUPRA 200 Film

Exposure Index	200
Development Time (minutes:seconds)	3:15

ROYAL SUPRA 400 Film

Exposure Index	400	800 Push 1
Development Time (minutes:seconds)	3:15	3:45

ROYAL SUPRA 800 Film

Exposure Index	800	1600 Push 1	3200 Push 2
Development Time (minutes:seconds)	3:15	3:45	4:15

JUDGING NEGATIVE EXPOSURES

You can check the exposure level with a suitable electronic densitometer equipped with a filter such as a KODAK WRATTEN Gelatin No. 92 or the red filter for Status M densitometry. Depending on the subject and the light source used for exposure, a normally exposed and processed colour negative measured through the red filter should have the approximate densities listed below.

Because of the extreme range in skin colour, use the red density values for a normally lit forehead only as a guide. For best results, use a *KODAK Gray Card* (gray side), KODAK Publication No. R-27.

Area Measured	ROYAL SUPRA 200 Film Density Reading
<i>KODAK Gray Card</i> (gray side) receiving same illumination as subject	0.80 to 1.00
Lightest step (darkest in the negative) of a <i>KODAK Paper Gray Scale</i> receiving same illumination as subject	1.20 to 1.40
Highest diffuse density on normally lighted forehead —light complexion —dark complexion	1.05 to 1.35 0.90 to 1.25

Area Measured	ROYAL SUPRA 400 Film Density Reading	
	EI 400	(EI 800) Push 1
<i>KODAK Gray Card</i> (gray side) receiving same illumination as subject	0.80 to 1.00	1.00 to 1.20
Lightest step (darkest in the negative) of a <i>KODAK Paper Gray Scale</i> receiving same illumination as subject	1.15 to 1.35	1.40 to 1.60
Highest diffuse density on normally lighted forehead —light complexion —dark complexion	1.05 to 1.35 0.90 to 1.20	1.20 to 1.50 0.95 to 1.30

Area Measured	ROYAL SUPRA 800 Film Density Reading		
	EI 800	(EI 1600) Push 1	(EI 3200) Push 2
<i>KODAK Gray Card</i> (gray side) receiving same illumination as subject	0.80 to 1.00	0.75 to 0.95	0.70 to 0.90
Lightest step (darkest in the negative) of a <i>KODAK Paper Gray Scale</i> receiving same illumination as subject	1.15 to 1.35	1.15 to 1.35	1.15 to 1.35
Highest diffuse density on normally lighted forehead —light complexion —dark complexion	0.85 to 1.20 0.65 to 1.00	0.85 to 1.20 0.60 to 0.95	0.80 to 1.15 0.55 to 0.90

RETOUCHING

Retouch only the emulsion side; apply KODAK Retouching Fluid before using KODAK Retouching Pencils.

For information on retouching equipment, supplies, and techniques, see KODAK Publication No. E-71, *Retouching Color Negatives*.

SCANNING NEGATIVES

You can easily scan ROYAL SUPRA Film negatives with a variety of linear-array-CCD, area-array-CCD, and PMT film scanners. You can scan negatives on desk-top scanners as well as high-end drum scanners.

Because no standards exist to define the coloured filter sets that film scanners use to capture the red, green, and blue information of the film image, each manufacturer's scanner has its own characteristic output. The output depends on the scanner's sensitivity to the dyes in the film. This sensitivity is determined by the spectral distribution of the coloured filter sets and/or the spectral sensitivity of the charge-coupled-device (CCD). In addition to these spectral specifications, scanner output depends on the look-up tables or matrices that the scanner uses to output information for CRT monitors, transmission, etc. These tables or matrices are part of either "plug-in" programs used with specific software packages designed for image manipulation, updateable ROMs included with the equipment, or fixed algorithms for calibrating and balancing, similar to those used in photographic colour printing equipment.

The generic "colour negative film" channel designation available with scanner software is only a starting point. You can adjust the final colour balance and the scene-dependent contrast and brightness of an image by using the scanner's controls during pre-scan, or by using an image-manipulation software program or workstation after acquisition. Some scanners allow you to use "plug-in" programs to customize scanner setups.

For more information, visit the following web sites.

To access	Go to
Film Terms for KODAK PHOTO CD Imaging Workstations	www.kodak.com/go/pcdFilmTerms
Drivers for KODAK Film Scanners	www.kodak.com/go/scannerDrivers

PRINTING NEGATIVES

This film is optimized for printing on KODAK PROFESSIONAL PORTRA, SUPRA and ULTRA Papers, KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material, and on KODAK PROFESSIONAL Color Metallic Paper.

Make colour slides and transparencies by printing the negatives on KODAK PROFESSIONAL DURATRANS Plus Display Material or KODAK PROFESSIONAL DURACLEAR Plus Display Material.

Make black-and-white prints on KODAK PANALURE SELECT RC Paper for conventional black-and-white processing, or KODAK PROFESSIONAL PORTRA Black & White Paper for Process RA-4.

To set up a colour printer or negative analyzer, use the following control negatives.

KODAK PROFESSIONAL PORTRA Printer Control Negative	CAT No.
Set / Size 135*	179 8511

* This set includes one each: very under, under, normal, over, and very over negatives.

Digital Files

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

- KODAK PROFESSIONAL Digital III Color Paper
- KODAK PROFESSIONAL DURATRANS Plus Digital Display Material
- KODAK PROFESSIONAL DURACLEAR Plus Digital Display Material
- KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material
- KODAK PROFESSIONAL Day/Night Digital Display Material
- KODAK PROFESSIONAL Color Metallic Paper

IMAGE STRUCTURE

Print Grain Index

The Print Grain Index number refers to a method of defining graininess in a print made with diffuse-printing illumination. It replaces rms granularity and has a different scale which cannot be compared to rms granularity.

- The method uses a uniform perceptual scale, with a change of four units equaling a just noticeable difference in graininess to 90 percent of observers.
- A Print Grain Index rating of 25 on the scale represents the approximate visual threshold for graininess. A higher number indicates an increase in the amount of graininess observed.
- The standardized inspection (print-to-viewer) distance for all print sizes is 14 inches, the typical viewing distance for a 4 x 6-inch print.
- In practice, larger prints will likely be viewed from distances greater than 14 inches, which reduces apparent graininess.
- Print Grain Index numbers may not represent graininess observed from more specular printing illuminants, such as condenser enlargers.

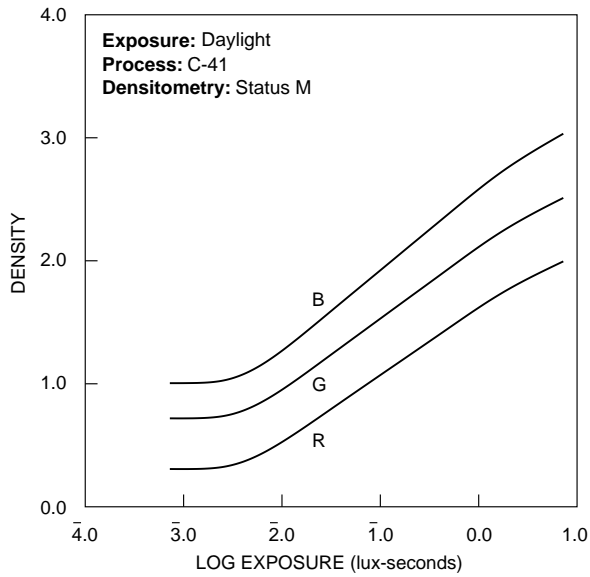
Negative Size: 24 x 36 mm (Size 135)

Print Size in inches	4 x 6	8 x10	16 x 20
Magnification	4.4X	8.8X	17.8X
Print Grain Index for—			
ROYAL SUPRA 200 Film	32	54	84
ROYAL SUPRA 400 Film	39	61	90
ROYAL SUPRA 800 Film	50	72	101

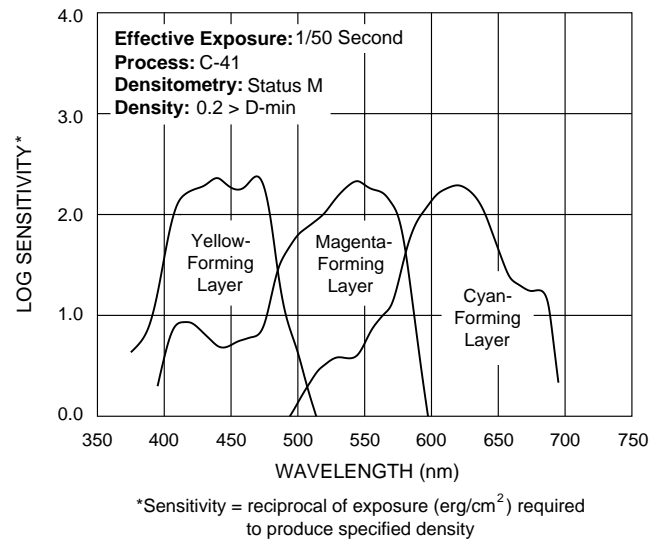
For more information, see KODAK Publication No. E-58, *Print Grain Index—An Assessment of Print Graininess from Color Negative Films*.

KODAK PROFESSIONAL ROYAL SUPRA 200 Film

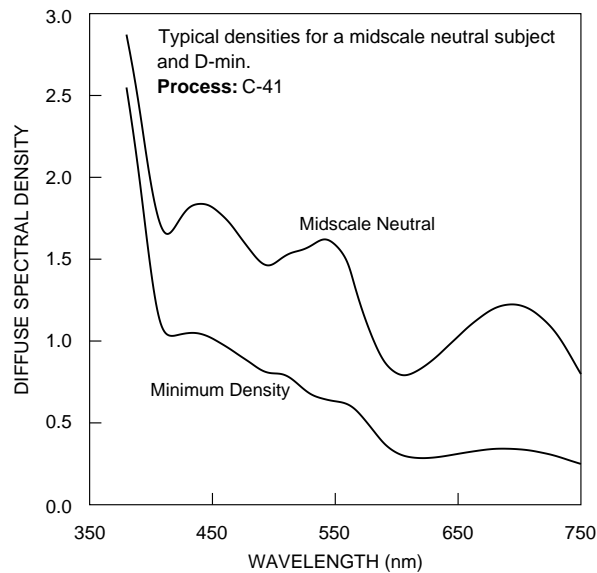
Characteristic Curves



Spectral Sensitivity Curves



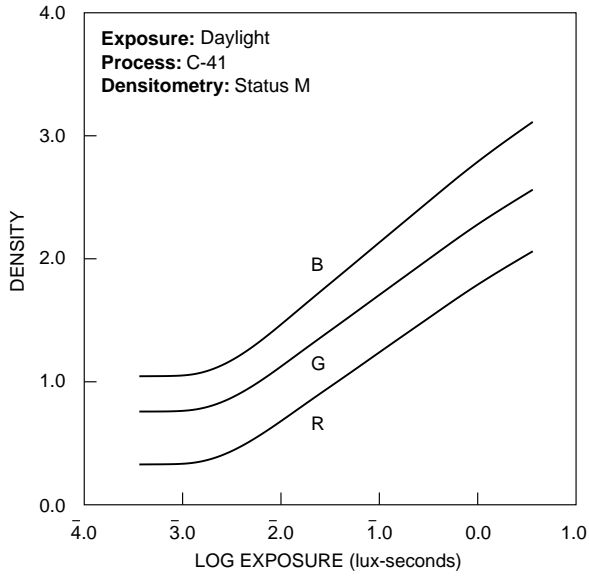
Spectral Dye Density Curves



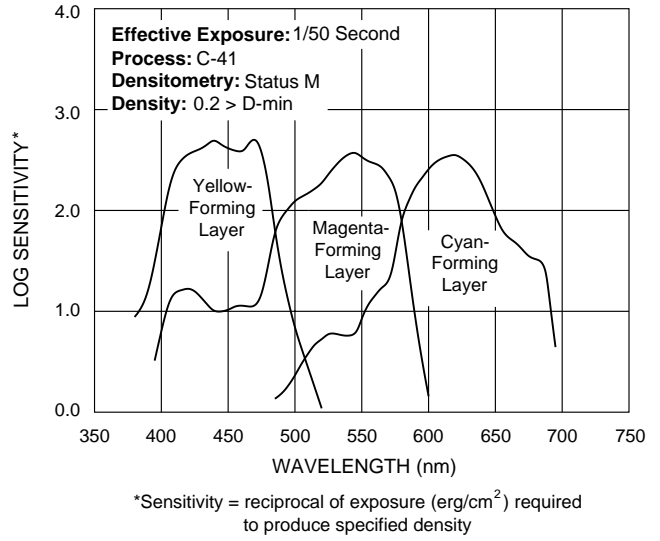
NOTICE: The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent 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.

**KODAK PROFESSIONAL ROYAL SUPRA 400
Film**

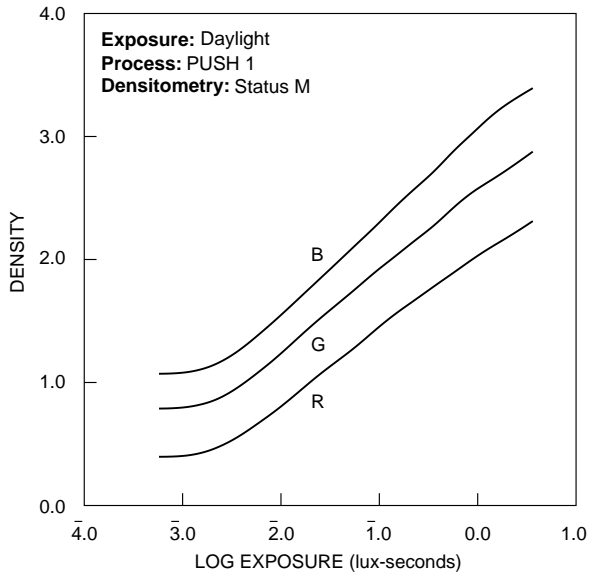
Characteristic Curves



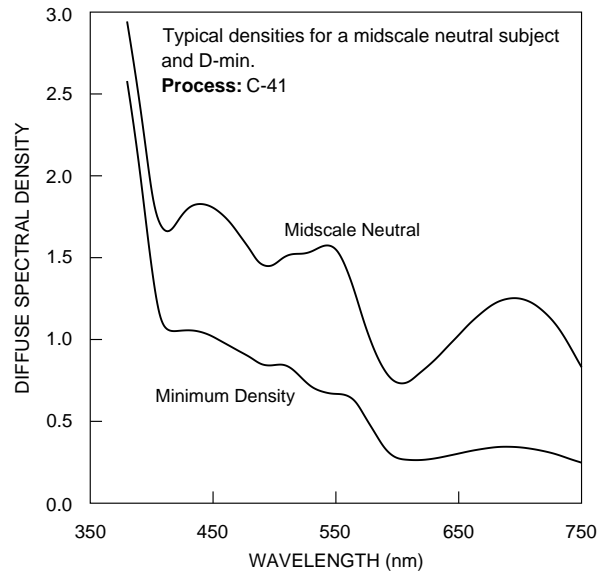
Spectral Sensitivity Curves



Characteristic Curves / Push 1

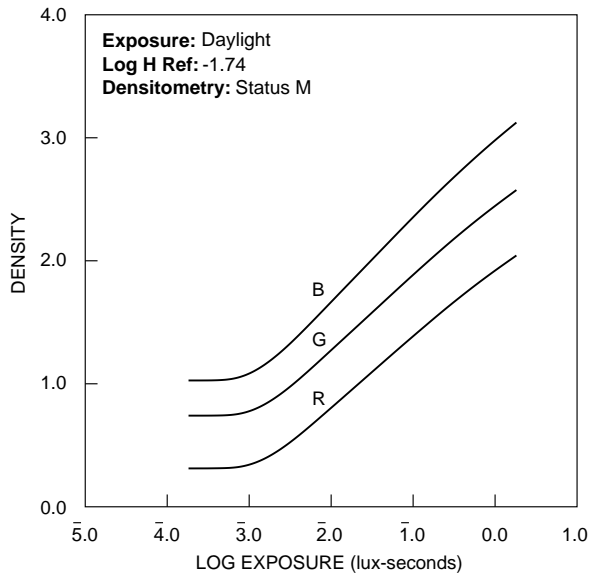


Spectral Dye Density Curves

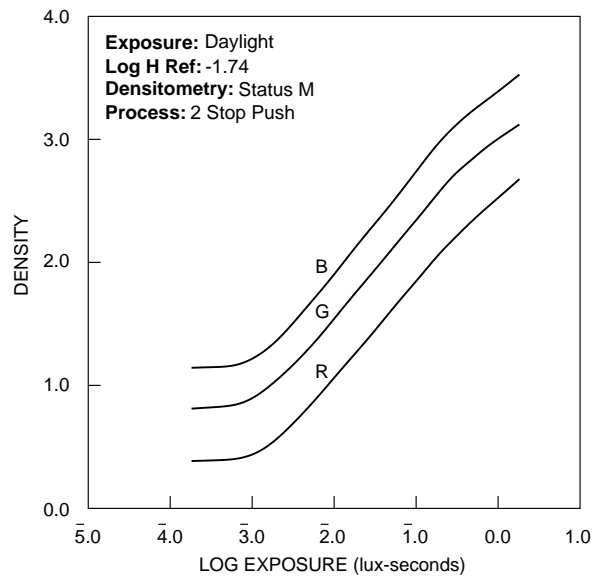


KODAK PROFESSIONAL ROYAL SUPRA 800 Film

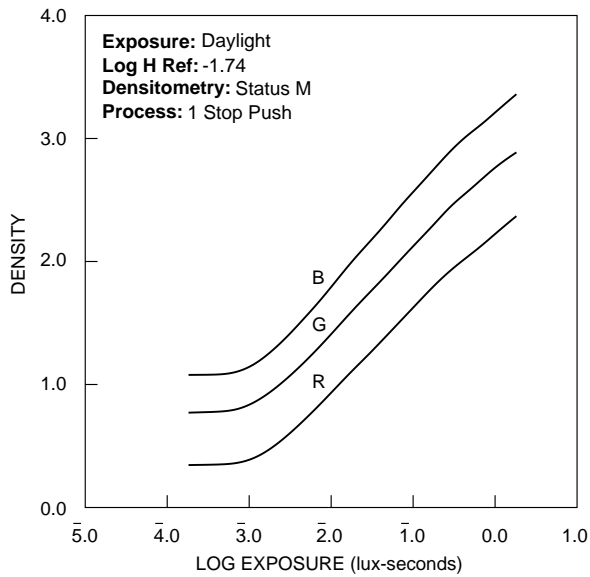
Characteristic Curves



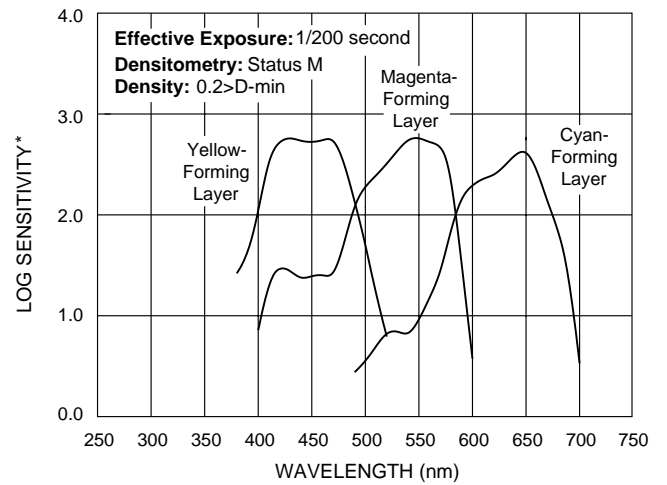
Characteristic Curves / Push 2



Characteristic Curves / Push 1



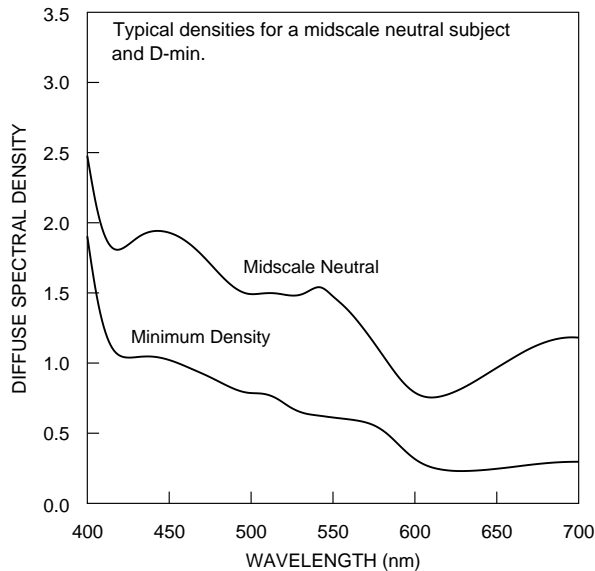
Spectral Sensitivity Curves



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

KODAK PROFESSIONAL ROYAL SUPRA Colour Negative Films

Spectral Dye Density Curves



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-30 *Storage and Care of KODAK Photographic Materials—Before and After Processing*
- E-58 *Print Grain Index—An Assessment of Print Graininess from Color Negative Films*
- E-71 *Retouching Color Negatives*
- E-140 *KODAK PROFESSIONAL PORTRA III Paper*
- E-141 *KODAK PROFESSIONAL SUPRA III Paper*
- E-142 *KODAK PROFESSIONAL ULTRA III Paper*
- E-143 *KODAK Display and Print Materials for Process RA-4*
- G-4006 *KODAK PROFESSIONAL PORTRA Black & White Paper*
- G-27 *KODAK PANALURE SELECT RC Paper*
- J-38 *Using KODAK FLEXICOLOR Chemicals in Sink-Line, Batch, and Rotary-Tube Processors*
- Z-131 *Using KODAK FLEXICOLOR Chemicals*

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 ROYAL SUPRA 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