

KODASTAR Camera Film KCF4



KODASTAR Camera Film KCF4 is an extremely high contrast, orthochromatic film for line, halftone, and contact applications. It features a dimensionally stable ESTAR Base.

KCF4 Film is compatible with other Kodak products processed in KODAK ACCUMAX Rapid Access Developer and Replenisher and KODAK RA 2000 Developer and Replenisher (for machine or tray processing). This product *cannot* be processed in lith or KODAK ULTRALINE Developer and Replenisher.

SUPPORT

Dimensionally stable support:

KCF4	4-mil (0.004-in., 0.10 mm)	ESTAR Base
------	----------------------------	------------

SAFELIGHT

Use a KODAK 1A Safelight Filter / light red in a suitable safelight lamp equipped with a 15-watt bulb. Keep the film at least 4 feet (1.2 metres) from the safelight.

STORAGE

Keep unexposed film and processed film in a cool, dry place. Process film as soon as possible after exposure.

EXPOSURE

Relative Exposure Index

Exposure Orientation	System	Pulsed-Xenon	Tungsten or Quartz-Halogen
To emulsion	ISO (ASA/DIN)	20/14	20/14

These indexes are provided primarily as indicators of the relative speed of this film when compared with other Kodak graphic arts photographic materials. The pulsed-xenon value indicates the film's relative speed to pulsed-xenon illumination as measured by a light integrator. Index numbers for the other light sources can be used with photoelectric exposure meters to help establish trial exposures. A 2-times film-speed increase is indicated in the ASA system by doubling the index number and in the DIN system by increasing the number by 3.

Examples of Camera Exposures

- **Line Exposure:** For a same-size (1:1) line reproduction exposing with four 1500-watt pulsed-xenon lamps at 3 feet (0.9 metre) from the center of the copyboard, use a trial exposure of 8 seconds at f/22.
- **Halftone Exposure:** Make a trial exposure using a contact screen suitable for use with KODAK Camera Films.

Example of Contact Exposure

Exposing to the emulsion side with a variable voltage point-source lamp operated at 16 volts at a distance of 5 feet (1.5 metres) from the exposure plane (approximately 4 footcandles [43 lumens/square metre]), use a trial exposure of 6 to 11 seconds with a 1.0 neutral density filter.

Filter Factors

When a filter is used, multiply the amount of unfiltered exposure by the filter factor shown below. Because lighting conditions vary, these factors may require adjustments.

Light Source	KODAK WRATTEN Gelatin Filter			
	No. 8	No. 15	No. 47B	No. 58
Pulsed-Xenon	1.5	2.0	12.0	4.0
Quartz-Halogen	1.5	2.0	20.0	2.5

Note: Contact the manufacturer of the pulsed-xenon or quartz-halogen lamps for safety information pertaining to ultraviolet radiation and ventilation requirements due to ozone generation.

PROCESSING

Notice: Observe precautionary information on product labels and on the Material Safety Data Sheets.

Note: Contamination of the developer with small amounts of fixer may result in speed or density loss.

Tray Processing

1. Develop in KODAK RA 2000 Developer and Replenisher (1:2) with continuous agitation.

Temperature	Recommended Time (Minutes)	Useful Range* (Minutes)
65° F (18° C)	3 1/2	3 to 4
68° F (20° C)	3 1 4	2 3/4 to 3 3/4
70° F (21° C)	3	2 1/2 to 3 1/2
75° F (24° C)	2 1/4	1 1/2 to 2 1/2
80° F (27° C)	1 1/2	1 to 2

* Within this range of development times, satisfactory results can usually be obtained.

2. Rinse at 65 to 80° F (18 to 27° C) with agitation.

KODAK Indicator Stop Bath	about 10 seconds
or diluted 4% acetic acid solution	about 10 seconds

3. Fix at 65 to 80° F (18 to 27° C) with frequent agitation, for twice the amount of time that it takes the film to clear.

Note: A hardener may be used in the fixer.

KODAK RA 3000 Fixer and Replenisher	1 to 2 minutes
-------------------------------------	----------------

4. Wash at 65 to 80° F (18 to 27° C) in running water for about 10 minutes.
5. Dry in a dust-free place.

Mechanized Processing

KODAK ACCUMAX Rapid Access Developer and Replenisher (1:2 dilution)

KODAK ULTRALINE Fixer and Replenisher (1:3 dilution)

KODAK RA 3000 Fixer and Replenisher

KODAK RA 2000 Developer and Replenisher (1:2 dilution)

Recommended Starting Points for Development

ACCUMAX Rapid Access Developer	RA 2000 Developer
100° F (38° C), 30 seconds	95° F (35° C), 30 seconds
95° F (35° C), 45 seconds	90° F (32° C), 45 seconds
90° F (32° C), 60 seconds	85° F (29° C), 60 seconds

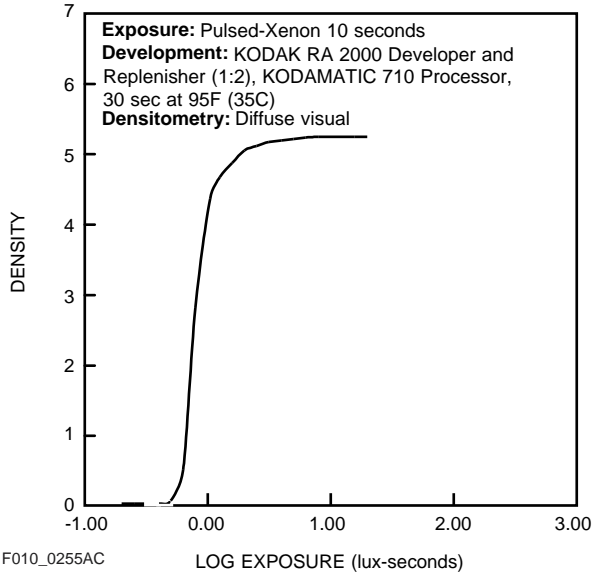
Replenishment Rates:

Tank Turnovers per Week	Percent Exposed Area	Basic Replenishment Rates
Minimum of 1	50%	0.30 mL/sq in. (564 mL/sq m)
Minimum of 1	90%	0.60 mL/sq in. (930 mL/sq m)

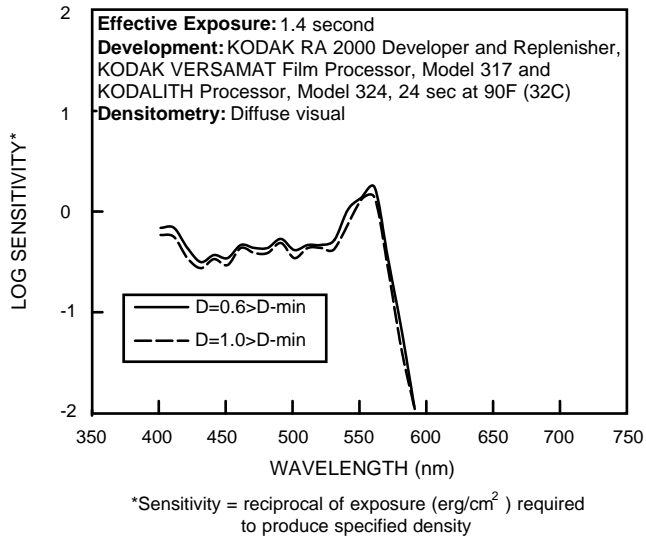
As a starting point, do not add hardener to the fixer. However, if abrasion or any other transport problems occur in processing, add 3.2 oz of KODAK RA 3000 Fixer and Replenisher Part B (hardener) per working-strength gallon of fixer. Add Part B following recommended instructions (slowly and mixing thoroughly).

CURVES

Characteristic Curve



Spectral Sensitivity



KODASTAR Camera Film KCF4

MORE INFORMATION

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

If you have questions about Kodak 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)

From outside the US/Canada: 1-716-724-4000

Note: The Kodak materials described in this publication for use with KODAK Camera Film KCF4 are available from dealers who supply Kodak products. You can use other materials, but you may not obtain similar results.

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.

Industrial Imaging
EASTMAN KODAK COMPANY • ROCHESTER, NY 14650

