Kodak EL Camera Film

Technical Information Instruction Sheet – TI2104
August 2006

Features / Customer Product Specifications

- A high-contrast, stabilized gelatin, orthochromatic film for making camera-line or copy-dot negatives or positives.
- High maximum density.
- Can also be used for making contact negatives and positives.
- Matte level sufficient to permit quick and uniform vacuum drawdown.
- Good reciprocity and latent image keeping characteristics.
- Product can be used in most conventional rapid-access developers such as **Kodak** RA 2000 developer and replenisher.
- Dimensionally stable **Estar** base.

Safelight Recommendations

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

Orientation	System	Pulsed-Xenon	Tungsten or Quartz-Halogen
Emulsion exposure	ISO/ASA System	5	4
	ISO/DIN System	8	7
Exposed through base	ISO/ASA System	2	2
	ISO/DIN System	5	3

These indexes are provided primarily as indicators of the relative speed of this film when compared with other **Kodak** graphic arts materials when processed in lith developers.

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.

One camera stop increase is indicated in the ASA System by doubling the index number and in the DIN System by increasing the number by three.

Examples of Camera Exposures

Camera-Line- For lith developers

For a same-size (1:1) line reproduction with two 1500-watt pulsed-xenon lamps in reflectors about 3 feet (0.9 metre) from the center of the copyboard, expose for about:

15 seconds at f/22 (exposure to the emulsion)

30 seconds at f/22 (exposure to the base)

Contact- Processable in lith developers

Starting-point examples of exposure are given below when using a modified **Kodak** adjustable safelight lamp, or equivalent. Set the lamp at 16 volts at a distance of 5 feet (1.5 metres) from the exposure plane—approximately 4 footcandles (43 lumens per square metre).

To emulsion	5 to 15 seconds[1]
Through base	10 to 30 seconds[1]

[1] With a **Kodak Wratten** gelatin filter / neutral density filter No. 96 (0.9)

Filter Factors

When a filter is used, multiply the unfiltered exposure by the filter factor for the particular filter shown below. Since lighting conditions vary, these factors are only approximate:

Orientation	Light Source	**Kodak Wratten** Gelatin Filter			
		No. 8	No. 15	No. 47B	No. 58
To the emulsion	Pulsed-Xenon	2.0	3.5	12.0	4.0
	Quartz-Halogen	1.5	2.5	40.0	3.5

NOTE: It is recommended that the manufacturer of the pulsed-xenon or quartz-halogen lamps be consulted for safety information pertaining to ultraviolet radiation and ventilation requirements due to ozone generation.

Processing

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

Tray Processing

1. DEVELOP with continuous agitation at 68° F (20° C).

Developer	Recommended Time (Minutes)	Useful Range[1] (Minutes)
Rapid Access:		
Kodak Professional D-11 developer	1 ½	1 to 4
Kodak RA 2000 developer and replenisher (1:4)	1 ½	1 to 4 ½
Kodak RA 2001	1 ½	1 to 3
Lith:		
Kodalith Super RT developer	2 ½	1 ¾ to 2 ¾
Kodalith Liquid (1:3)	2	1 ½ to 2 ½

[1] With 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	10 seconds
or diliuted 4% acetic acid solutions	10 seconds

3. FIX at 65° to 80° F (18° to 27° C) with frequent agitation.

Kodak RA 3000 fixer and replenisher	1 to 2 minutes
Kodak rapid fixer	1 to 2 minutes
Kodak fixer	2 to 4 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

The recommended starting point for optimum results using **Kodalith** blender concentrates is:

Deep-Tank Processors 1 min 15 sec at 80° F (26.5°C)

The recommended starting point for optimum results using **Kodak** RA 2000 developer and replenisher (1:4) is:

Rapid Access Processors 30 seconds at 95°F (35°C)

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1. Support

Dimensionally Stable Support		
EL Camera film	4 mil (0.004 in., 0.10 mm)	**Estar** base

2. Dimensional Stability

Dimensional stability is an all-inclusive term. In photography, it applies to size changes caused by changes in humidity and in temperature, and by processing and aging. The absence of solvent in the **Estar** base is one of the reasons that **Estar** base films show excellent dimensional stability. The dimensional properties of the **Estar** base may vary slightly in different directions within a sheet; the differences that may exist, however, are not always equal in both the length and width directions.

Differences in size change between length and width should be within 10 percent of each other.

Determined in accordance with ISO Standard.

Thermal Coefficient of Linear Expansion	
Unprocessed or Processed	0.001% per °F (0.0018% per °C)

Humidity Coefficient of Linear Expansion	
Unprocessed	0.0016% per % RH
Processed	0.0014% per % RH

Processing Dimensional Change
Dependent on drying conditions

3. Reciprocity

With recommended processing, the reciprocity speed change is negligible (1/3-photographic stop or less) within exposure range of 1/1000 second to 100 seconds; there is no change in contrast.

4. Graphs[1]

Characteristic

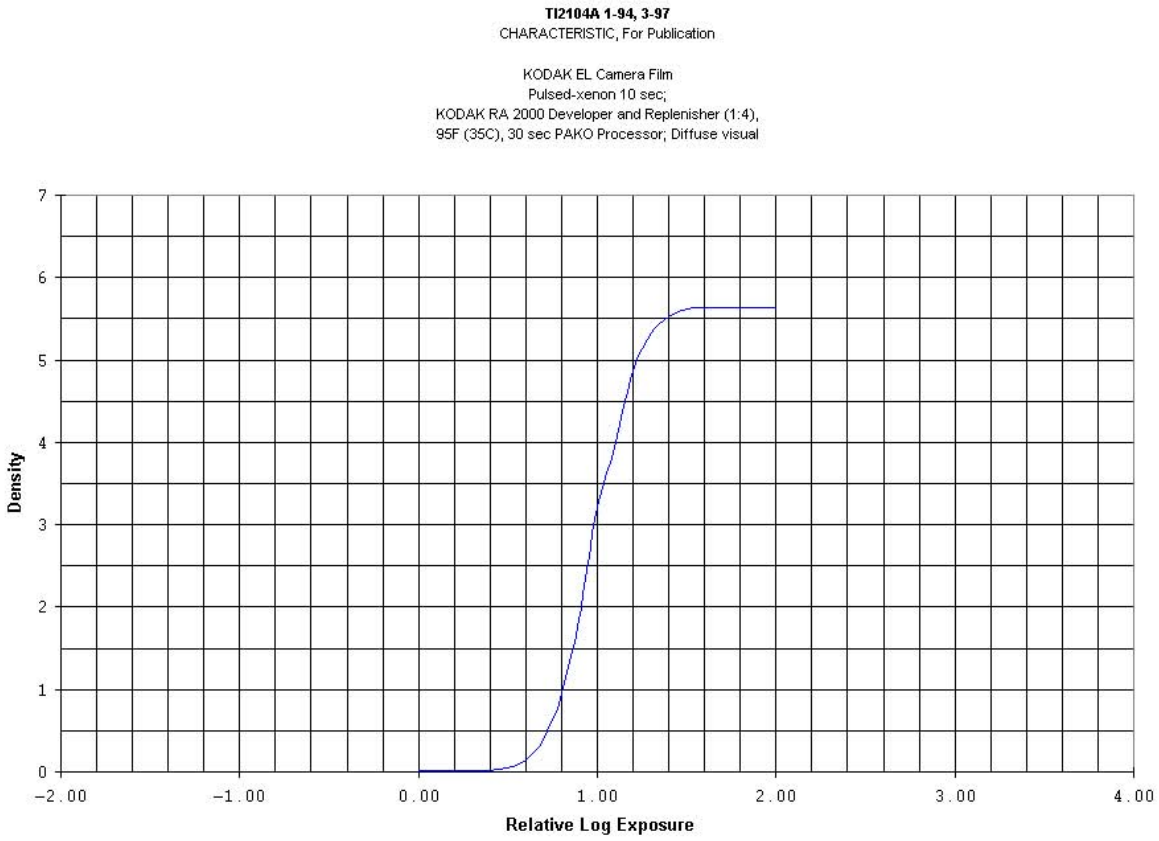
A. **Kodak** RA 2000 developer and replenisher, 1:4 (9-94)

B. **Kodalith** Super RT developer (9-94)

Spectral Sensitivity

B. **Kodak** RA 2000 developer and replenisher 1:4 (9-94)

[1] NOTICE: While the data presented are typical of production coatings, they do not represent standards that must be met by Kodak. Varying storage, exposure, and processing conditions will affect results. The company reserves the right to change and improve product characteristics at any time.



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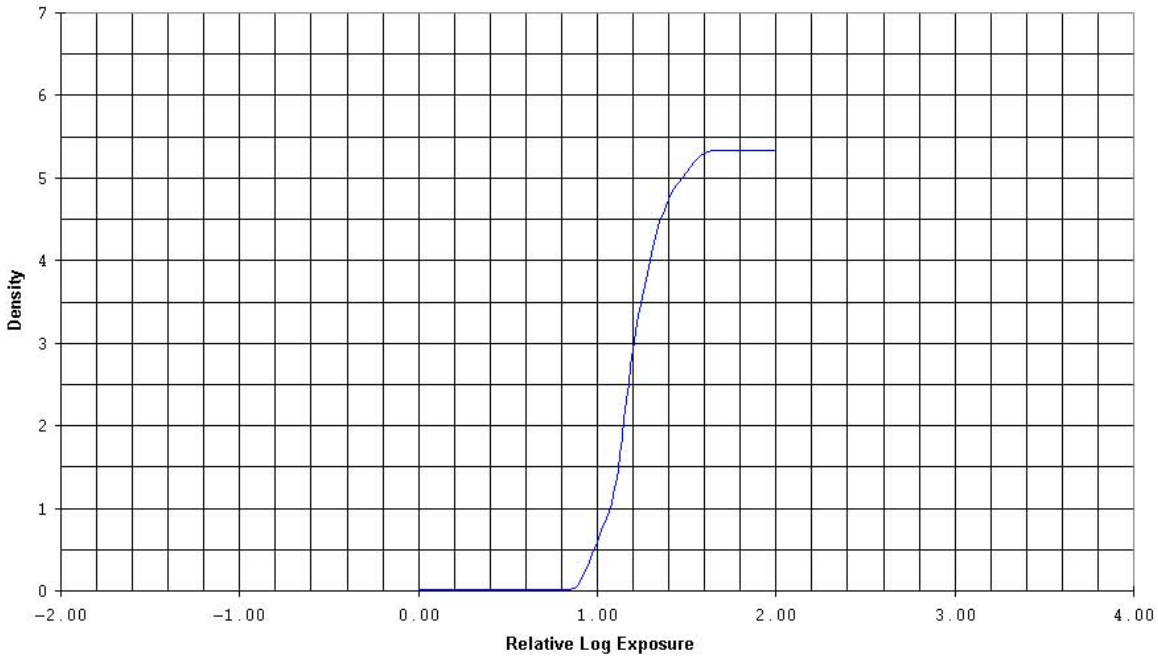
TI2104B 1-94, 9-94
CHARACTERISTIC, For Publication

KODAK Camera Film / 2606
Pulsed-xenon 10 sec; KODALITH Super RT Developer, 80F (26.7C), 1 min 28 sec,
PAKO Processor; Diffuse visual



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TI2104C 1-94, 9-94
SPECTRAL SENSITIVITY, For Publication

KODAK EL Camera Film
Effective Exp 1.4 sec;
KODAK RA 2000 Developer and Replenisher (1:4), 95 F (35 C), 30 sec,
PAKO Processor; Diffuse visual

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The **Kodak** products mentioned in this document may not all be available in all regions or countries. If you have questions or need assistance, contact your local Kodak representative or visit our website: http://graphics.kodak.com.

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