



TI2424

Issued 8-98

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KODAK Simulation Film / 7157

1) Description

KODAK Simulation Film / 7157 is a high-speed, wide latitude, orthochromatic medical x-ray film for use with green emitting intensifying screens. It is intended for radiographic procedures where visualization of an extended dynamic range of radio-opacities is required. It is coated on a blue, 7-mil ESTAR Base support that has a base density of approximately 0.18, with improved static protection. 7157 Film features T-grain emulsion technology that reduces the amount of screen-light crossover, resulting in improved image sharpness. It is processable in existing automated processing cycles as well as Rapid Access process cycles.

2) Safelight

Use a KODAK GBX-2 Safelight Filter with a frosted 15-watt bulb located at least 4 feet from the film.

3) Storage and Handling

Handling -

Hands must be clean, dry and free of lotions, etc. Film should be handled carefully by the edges to avoid physical strains such as pressure, creasing, or buckling.

Storage -

Store unexposed film at 50 to 70°F (10 to 20°C), at 30 to 50 percent RH, and properly shielded from x-rays, gamma rays, or other penetrating radiation. Keep exposed film in a cool, dry place that is properly shielded from penetrating radiation. Process as soon as possible after exposure. Processed film should be stored at 60 to 80°F (16 to 27°C), at 30 to 50 percent RH.

4) Sensitometric Parameters

Relative Speed:	Measured at a density of 1.00 above gross fog.
Contrast:	Measured as slope of the line between densities of 0.25 and 2.00 above gross fog.
Gross Fog:	Density of film base plus processing fog.

5) Process Variations

Changes to speed, contrast, and fog as a result of temperature variation from normal are included in GRAPHS Section.

6) Intermix

This film can be processed with intermixes of common medical x-ray films.

Variations of bromide and iodide ions in KODAK RP X-OMAT Developer cause sensitometric speed effects that are significantly different for this film than for conventional films; included in GRAPH Section.

7) Automated Processing

Processing is recommended in KODAK X-OMAT and RP X-OMAT Processors, using KODAK RP X-OMAT and RA/30 Chemicals.

8) Emergency Manual Processing

(Not recommended for regular use, but can be used when automated processor fails)

Solution/Step	Temperature	Time	Agitation
KODAK RP X-OMAT Developer working solution	80°F (26.5°C)	1 min	No agitation. Tap hanger immediately after immersion to remove film surface air bubbles.
KODAK Indicator Stop Bath OR Running Water Rinse	80°F (26.5°C)	20 sec	Continuous, moderate
KODAK RP X-OMAT Fixer and Replenisher	80°F (26.5°C)	1 min	Vigorous at start
Running water wash ¹ (8 volume changes/hour)	80°F (26.5°C)	5 min	---
Dry	120°F (49°C)	---	---

¹ KODAK PHOTO-FLO Solution may be used after washing to minimize water spots and drying marks.

NOTICE! Observe precautionary information on product labels and on the Material Safety Data Sheets.

9) Emergency Manual Processing-Rack and Tank

Solution/Step	Temperature	Time	Agitation
KODAK GBX Developer and Replenisher	72°F (22°C) 80°F (26.5°C)	7 min 4 min	Tap sheet film hangers lightly on side of tank immediately after immersion to dislodge air bubbles.
NOTE: DO NOT agitate films during remainder of development step. Remove film and hanger 5 seconds before end of development. DO NOT allow films to drain excess developer back into the developer tank.			
KODAK Indicator Stop Bath OR Running Water Rinse	60 to 85°F (16 to 30°C)	30 sec	Immerse hanger rapidly; agitate continuously.
KODAK GBX Fixer and Replenisher OR KODAK RP X-OMAT Fixer and Replenisher	60 to 85°F (16 to 30°C)	2 to 4 min	Intermittent, 5 sec every 30 sec.
Running Water Wash ¹ (about 8 volume changes/hour)	60 to 85°F (16 to 30°C)	5 min	—
Dry in a dust-free area at room temperature or a suitable drying cabinet. Temperature not to exceed 120°F (49°C).			

¹ KODAK PHOTO-FLO Solution may be used after washing to minimize water spots and drying marks.

10) Image Structure

Diffuse rms Granularity -

GRAPH included; read at net diffuse visual densities from 0.5 to 2.0, 48-micrometre aperture.

11) Graphs¹

Characteristic:

- A) X-OMAT RA/30 Chemicals (8-98)
- B) GBX Developer (8-98)
- C) X-OMAT RA/30 Developer Temperature Series (8-98)
- M) RP X-OMAT Chemicals (8-98)
- N) RP X-OMAT Developer Temperature Series (8-98)

Reciprocity:

- D) (8-98)

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Process Variations from Normal Processing Temperature:

- E) Speed (8-98)
- F) Contrast (8-98)
- G) Fog (8-98)

rms Granularity:

- H) (8-98)

Safelight Sensitivity:

- I) (8-98)

Drying:

- J) (8-98)

Spectral Sensitivity:

- K) (8-98)

Bromide Effects:

- L) (8-98)

NOTE: The Kodak materials described in this publication for use with KODAK Simulation Film / 7157 are available from dealers who supply Kodak products. You can use other materials, but you may not obtain similar results.

The contents of this publication are subject to change without notice.

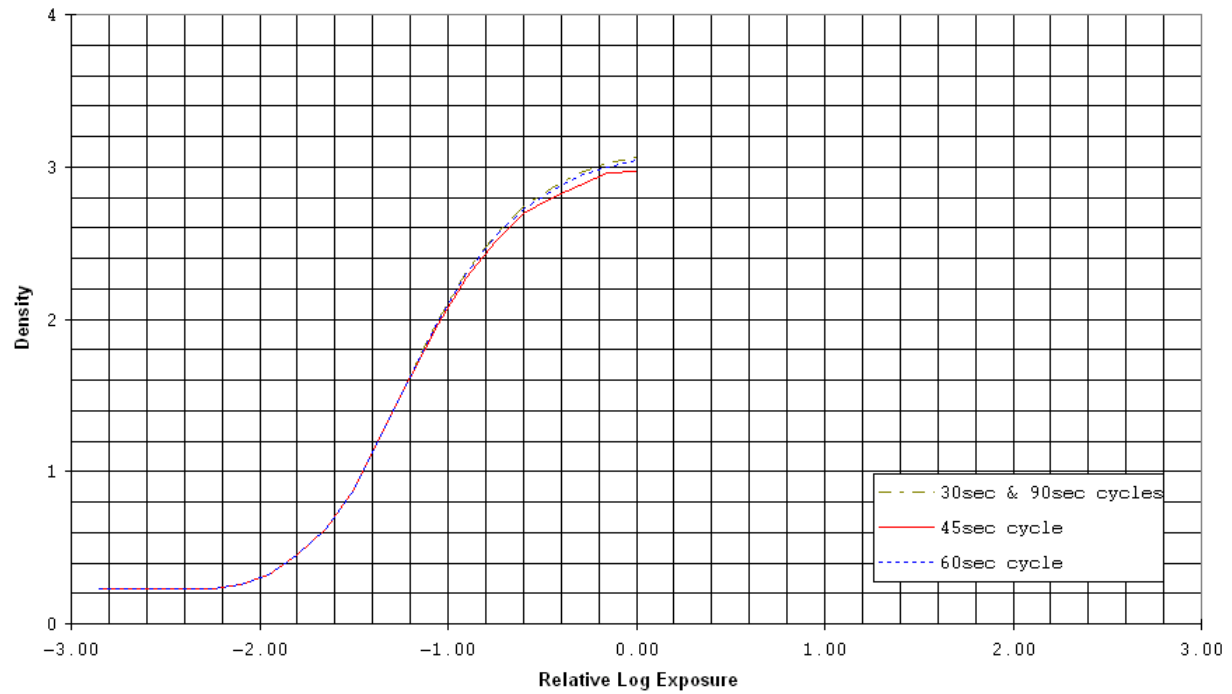
Kodak, Eastman, X-Omat, Photo-Flo, and Estar are trademarks.

Health Imaging
EASTMAN KODAK COMPANY - Rochester, NY 14650

End of Data Sheet

TI2424A 8-98
CHARACTERISTIC, For Publication

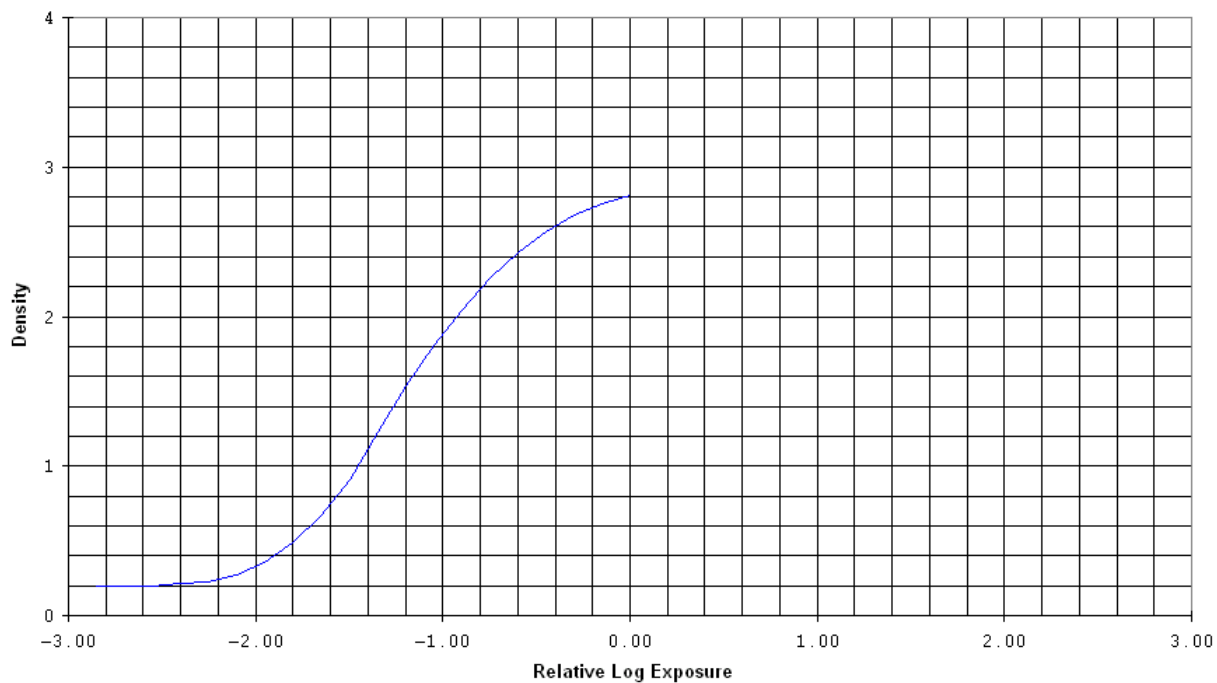
KODAK Simulation Film / 7157
Simulated Green Screen 1/50 sec; KODAK X-OMAT RA/30 Chemicals
KODAK RP X-OMAT Processor M6/RA, Diffuse Visual Densitometry



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TI2424B 8-98
CHARACTERISTIC, For Publication

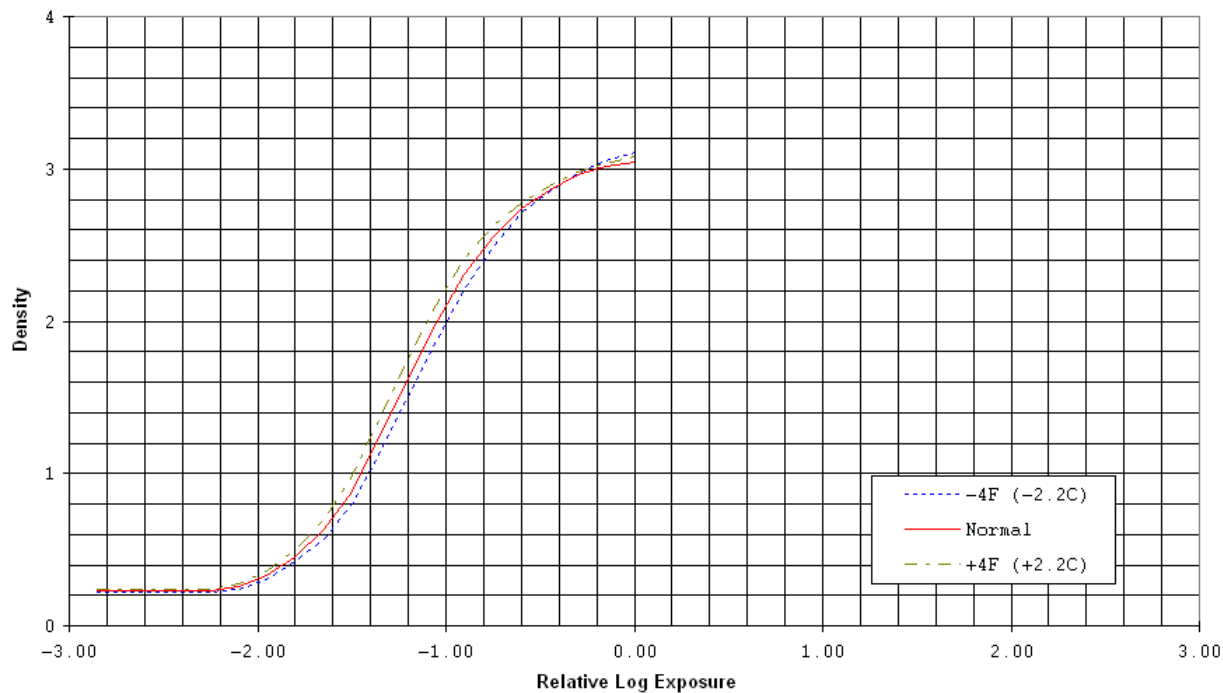
KODAK Simulation Film / 7157
1/50 second Simulated Green Screen Exposure
Seasoned KODAK GBX Developer and Replenisher, 7 min, 72F (22C) Manual Process;
Diffuse Visual Densitometry



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TI2424C 8-98
CHARACTERISTIC, For Publication

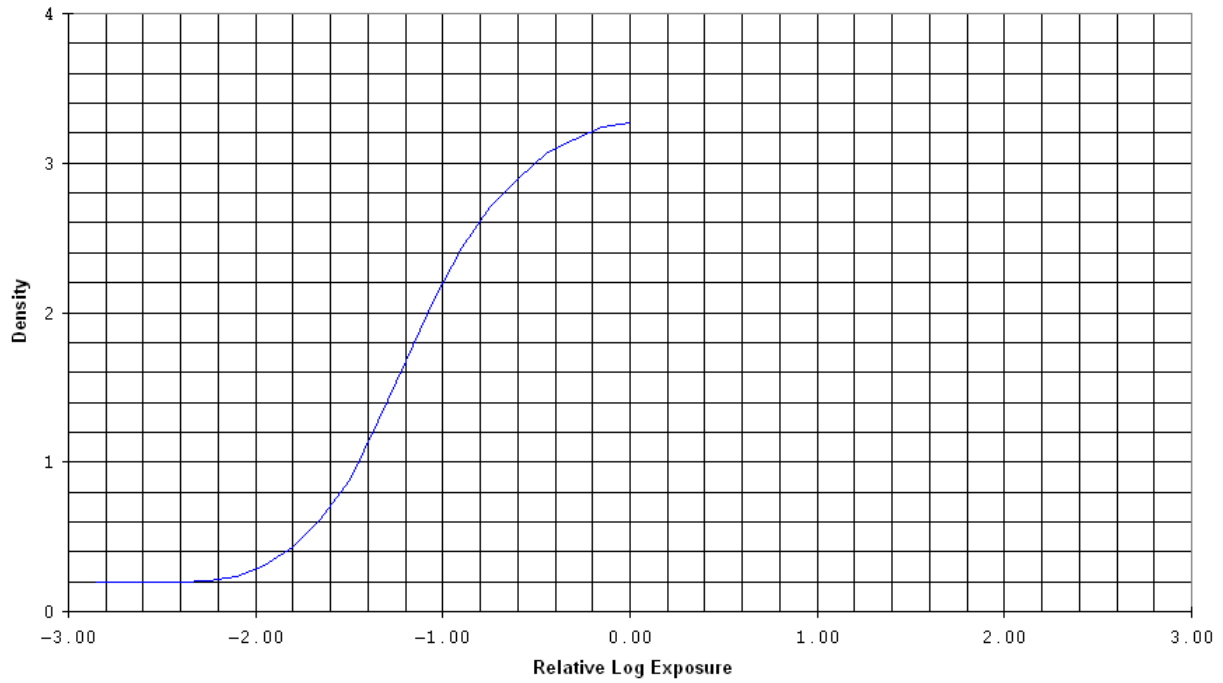
KODAK Simulation Film / 7157
Simulated Green Screen 1/50 sec; KODAK X-OMAT Chemicals RA/30,98 F(37 C)
KODAK RP X-OMAT Processor, Model M6/RA; Diffuse Visual Densitometry



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TI2424M 8-98
CHARACTERISTIC, For Publication

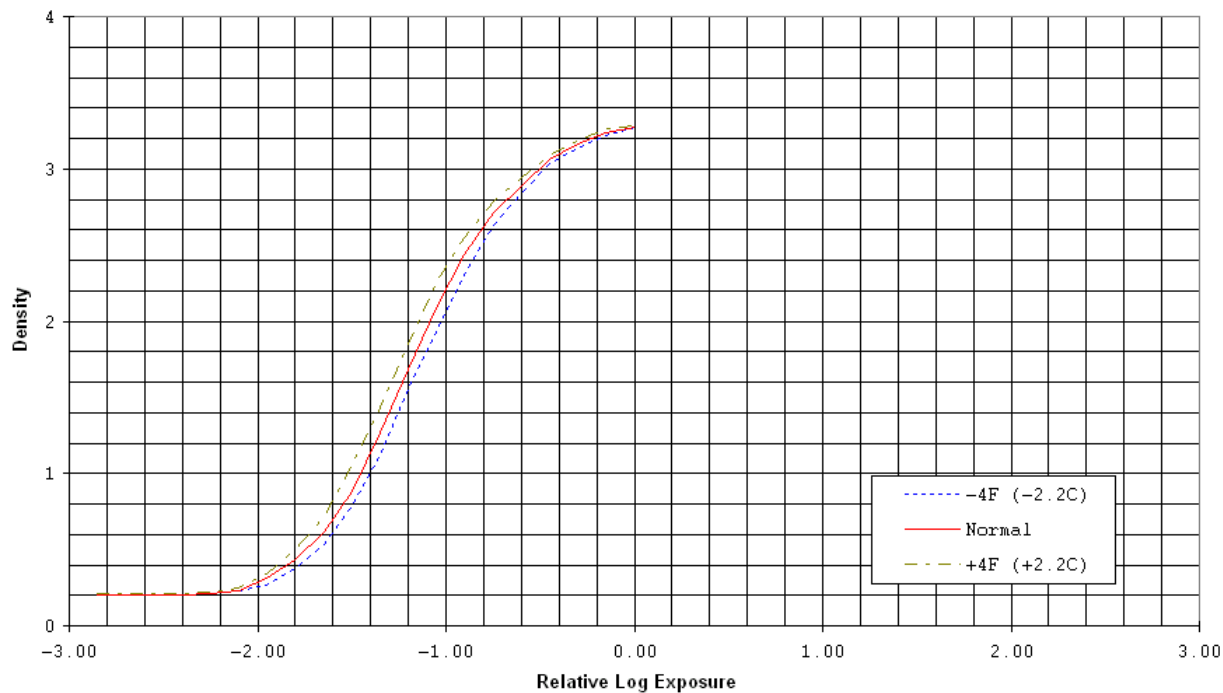
KODAK Simulation Film / 7157
Simulated Green Screen 1/50 sec; KODAK RP X-OMAT Chemicals, 95 F(35 C),
KODAK RP X-OMAT Processor M6, Diffuse Visual Densitometry



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TI2424I 8-98
CHARACTERISTIC, For Publication

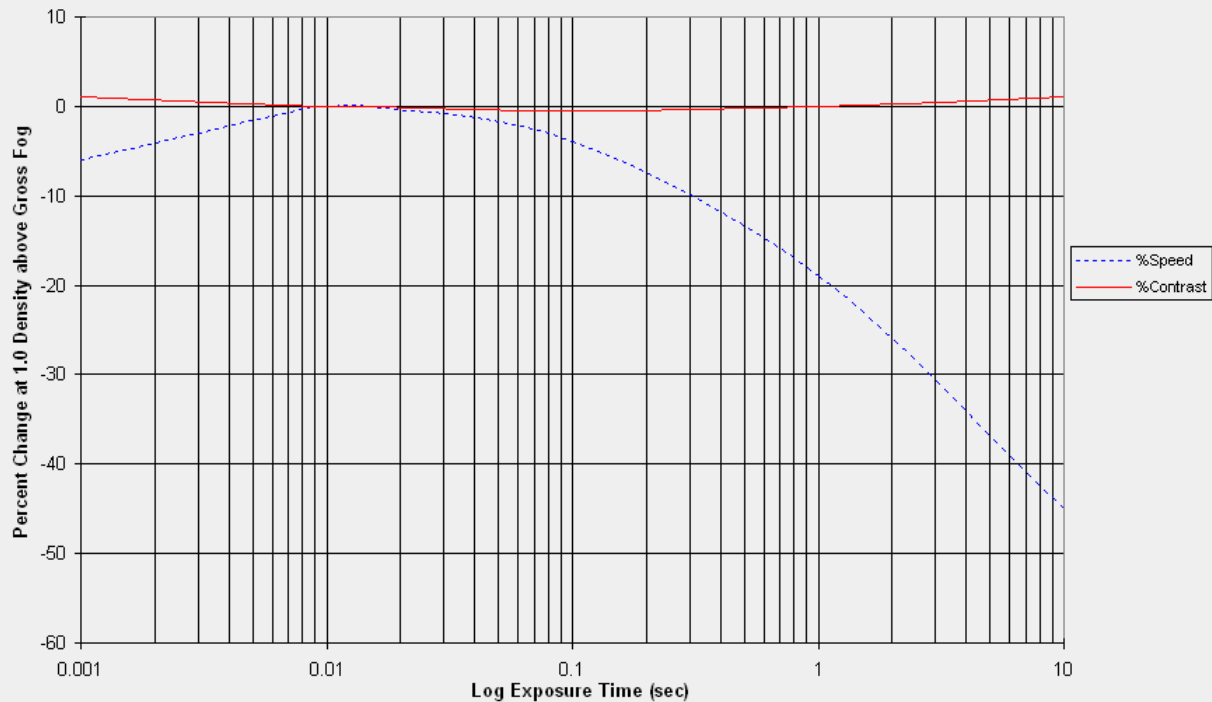
KODAK Simulation Film / 7157
Simulated Green Screen 1/50 sec; KODAK RP X-OMAT Chemicals, 95 F(35 C),
KODAK RP X-OMAT Processor, Model M6; Diffuse Visual Densitometry



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TI2424D 8-98
RECIPROCALITY, For Publication

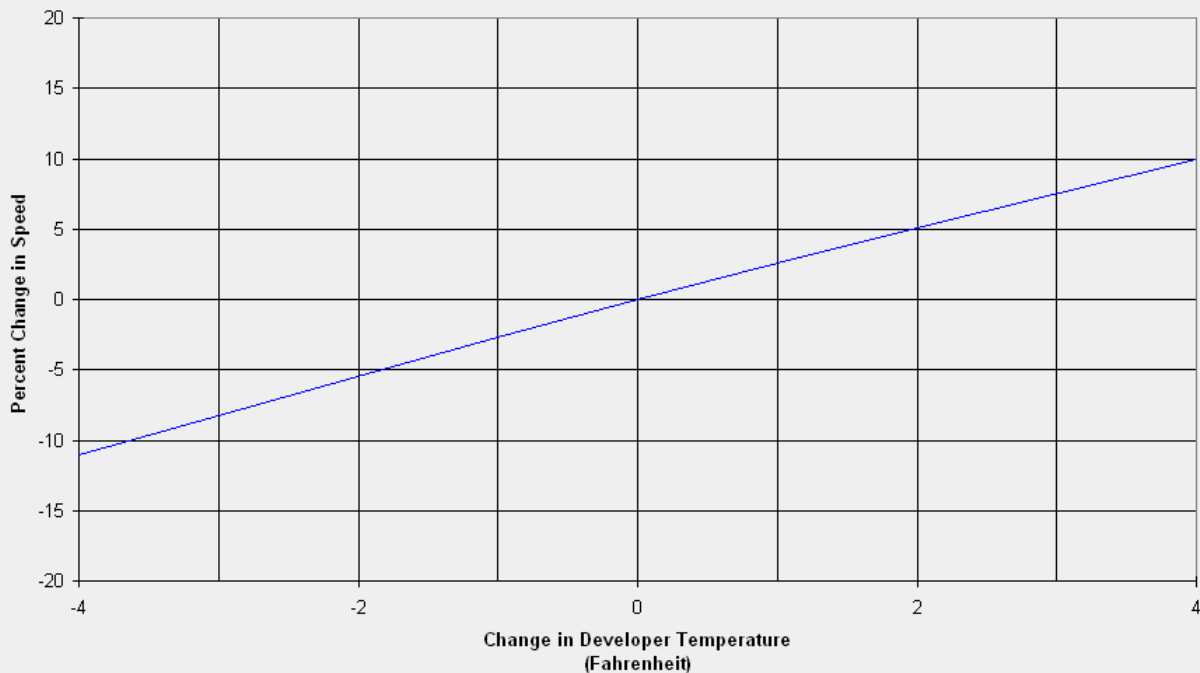
KODAK Simulation Film / 7157
KODAK X-OMAT RA/30 Chemicals, 98F;
KODAK RP X-OMAT Processor, Model M6/RA
(Reference: 1/100 second = 0%)



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TI2424E 8-98
TEMPERATURE VARIATION, For Publication

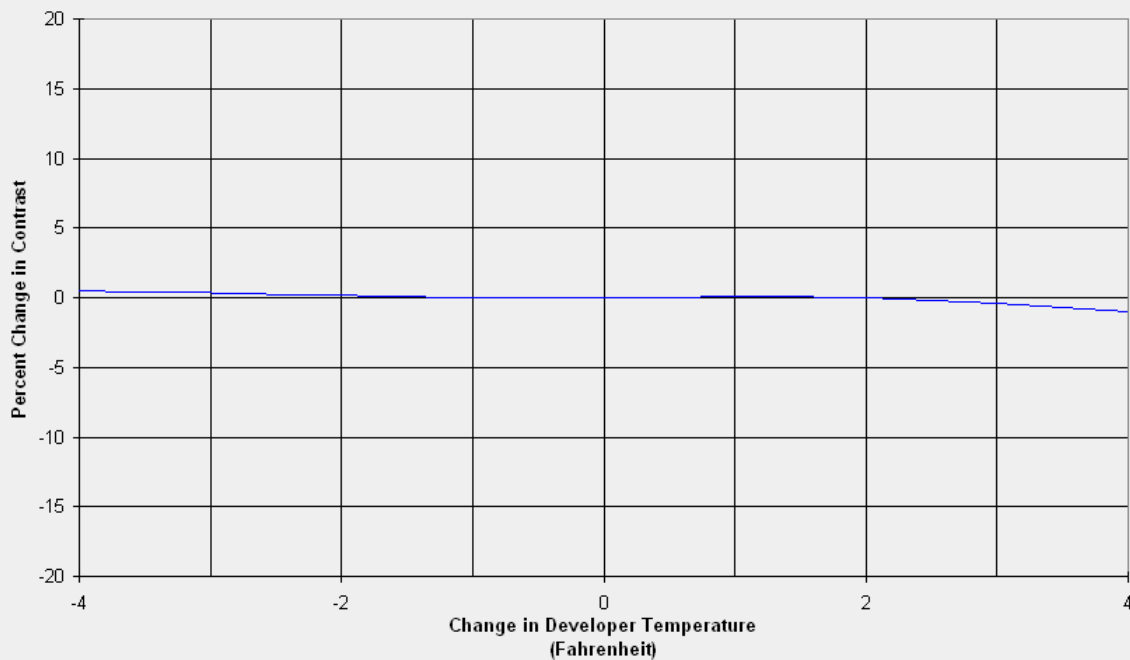
KODAK Simulation Film / 7157
Percent Change in Relative Speed
KODAK X-OMAT RA/30 Chemicals; KODAK RP X-OMAT Processor, Model M6/RA
(Reference: Normal Temp. = 0% Change)
(4 F = 2.2 C)



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TI2424F 8-98
TEMPERATURE VARIATION, For Publication

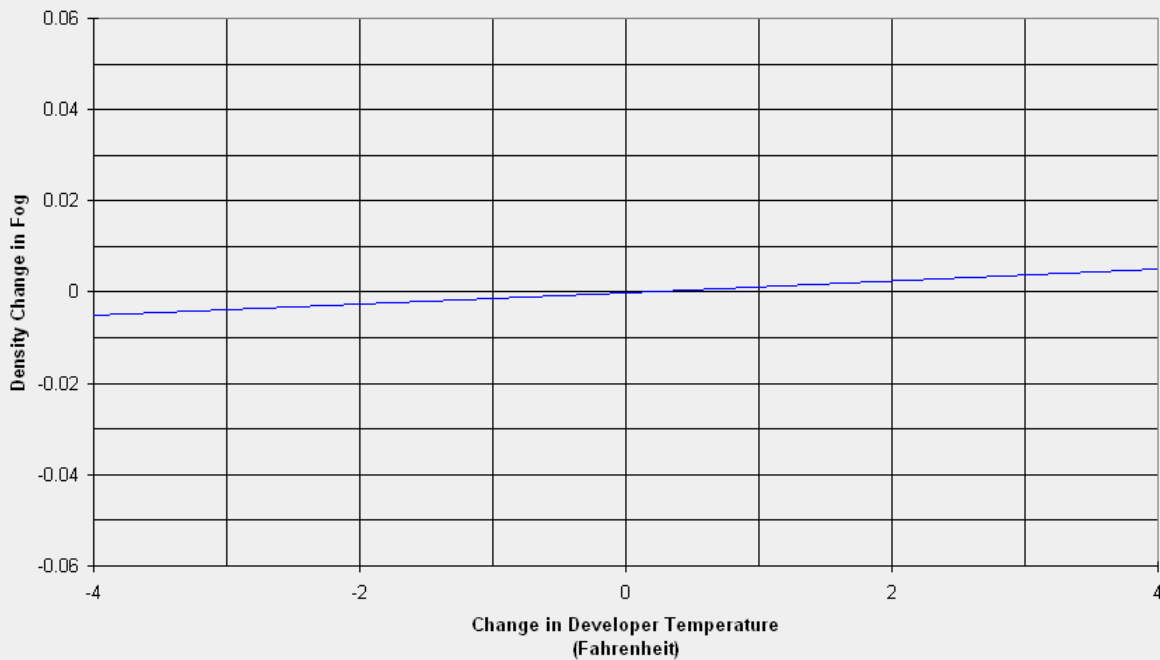
KODAK Simulation Film / 7157
Percent Change in Contrast
KODAK X-OMAT RA/30 Chemicals; KODAK RP X-OMAT Processor, Model M6/RA
(Reference: Normal Temp. = 0% Change)
(4 F= 2.2C)



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TI2424G 8-98
TEMPERATURE VARIATION, For Publication

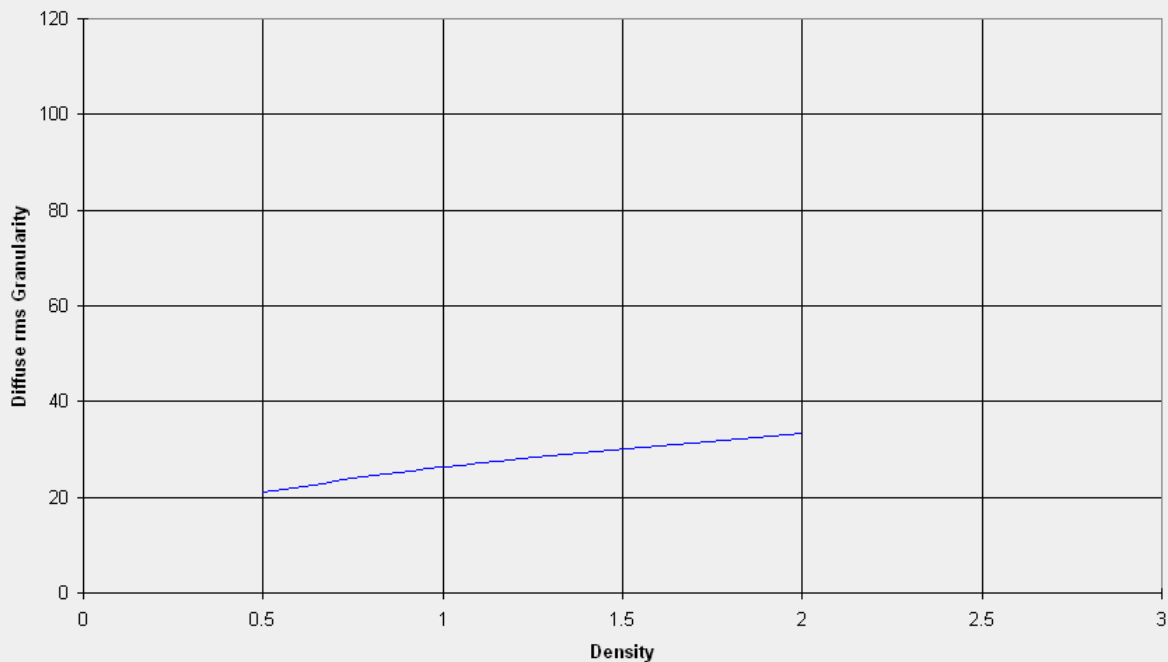
KODAK Simulation Film / 7157
Density Change in Fog
KODAK X-OMAT RA/30 Chemicals; KODAK RP X-OMAT Processor, Model M6/RA
(Reference: Normal Temp. = 0% Change)
(4 F = 2.2 C)



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TI2424H 8-98
GRANULARITY, For Publication

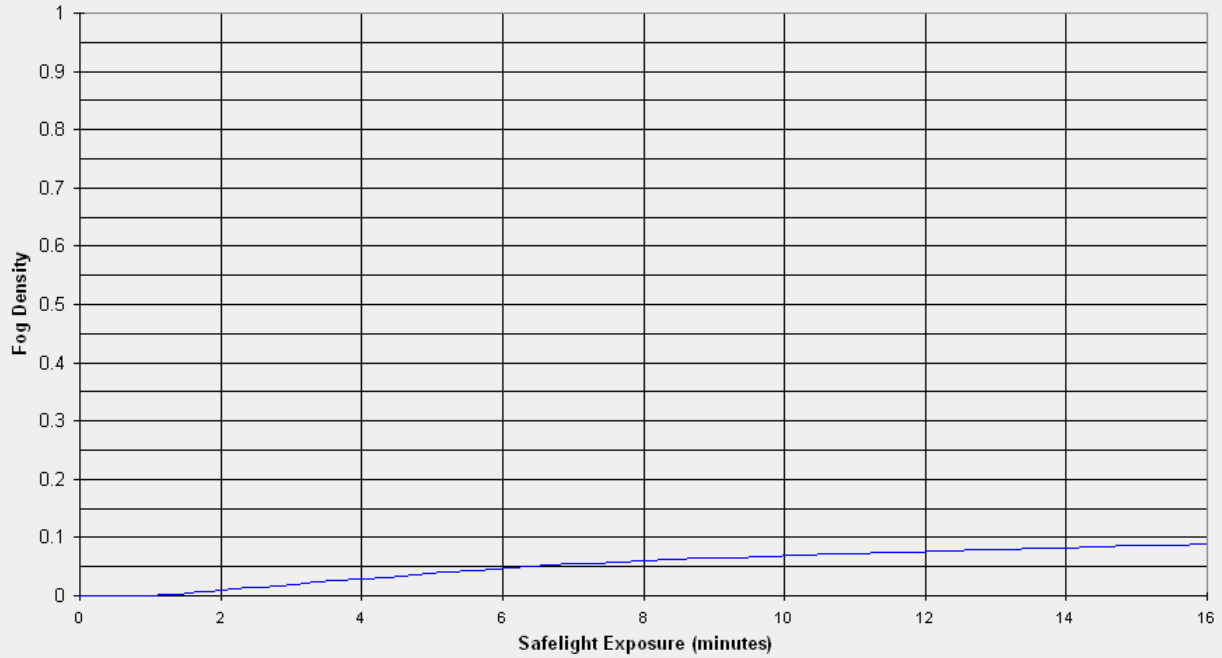
KODAK Simulation Film / 7157
KODAK X-OMAT RA/30 Chemicals, 98F
KODAK RP X-OMAT Processor, Model M6/RA



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TI2424 8-98
SAFELIGHT SENSITIVITY, For Publication

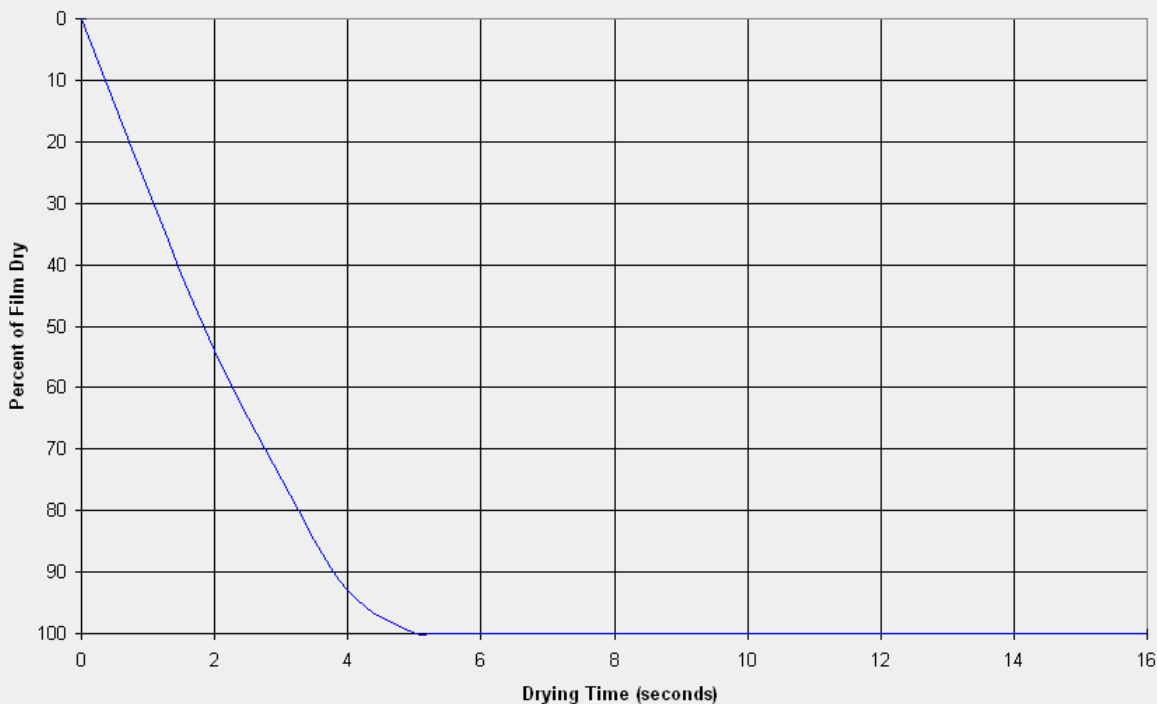
KODAK Simulation Film / 7157
KODAK GBX-2 Safelight Filter, 15 watt lamp, 48 inches
KODAK RP X-OMAT Processor, Model M6/RA;
KODAK X-OMAT RA/30 Chemicals, 98F(37C)
(Fog growth with increasing safelight exposure)



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TI2424J 8-98
DRYING, For Publication

KODAK Simulation Film / 7157
KODAK RP X-OMAT Processor, Model M6/RA
KODAK X-OMAT RA/30 Chemicals, 98 F
Dryer Capacity Used to Dry Film at 125 F



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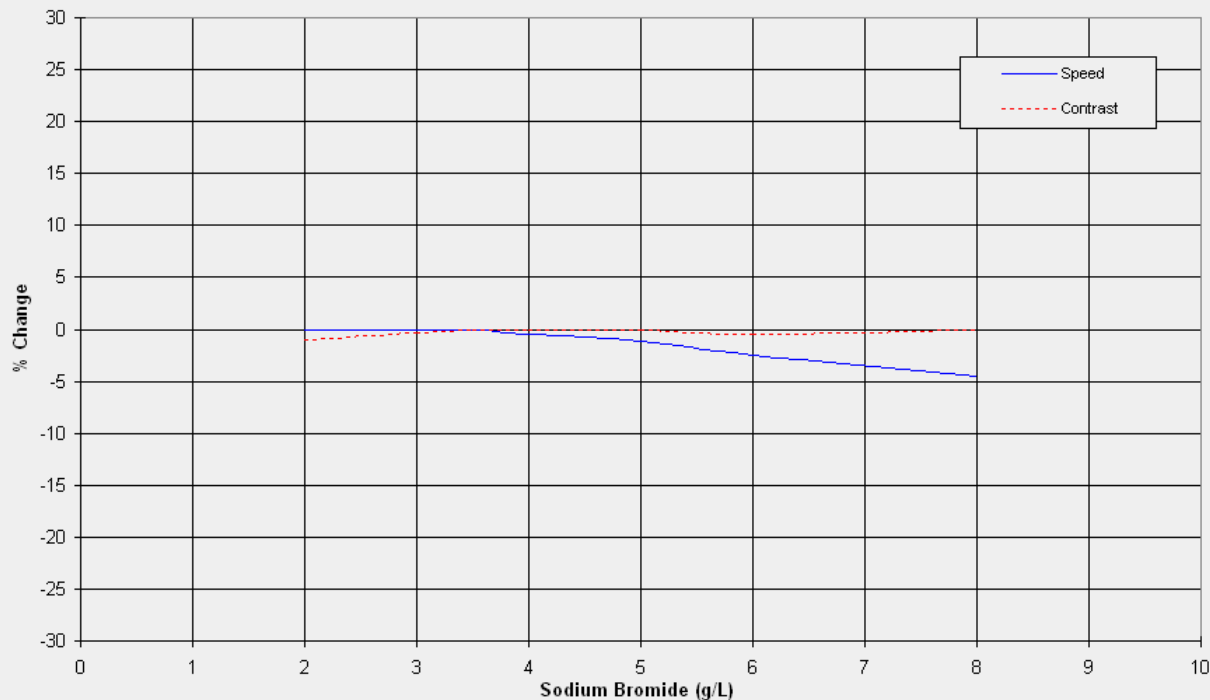
TI2424K 8-98
SPECTRAL SENSITIVITY, For Publication

KODAK Simulation Film / 7157
Effective Exposure 1.4 sec; Seasoned KODAK X-OMAT RA/30 Chemicals;
KODAK RP X-OMAT Processor, Model M6/RA;
Diffuse Visual Densitometry



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TI2424L 8-98
BROMIDE EFFECTS, For Publication
KODAK Simulation Film / 7157
KODAK RP X-OMAT Processor, Model M6/RA
Seasoned KODAK X-OMAT RA/30 Chemicals, 98 F(37 C)
Normal Level is 3.5 g/L



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