TI1301 Revised 1-00

EASTMAN Color Internegative II Film 5272, 7272
EASTMAN Color Internegative II Film 2272, 3272 / ESTAR Base

1) Description

EASTMAN Color Internegative II Film 5272 (35 mm), 7272 (16 mm) and EASTMAN Color Internegative II Film 2272 (35mm), 3272 (16 mm) / ESTAR Base are medium-speed films with excellent image structure characteristics and color-correction masking. They are intended for making 35 mm or 16 mm internegatives from reversal color originals. These films are balanced for printing with tungsten illumination with suitable filters in the light path. The internegatives can then be printed onto KODAK Color Print Film or EASTMAN EXR Color Print Film.

An alternative use for these products is making 35 mm or 16 mm restoration negatives from Kodak color print film when the original negative has been damaged. This internegative can then be cut in with other KODAK/EASTMAN Color Negatives, and then printed onto KODAK Color Print Film or EASTMAN EXR Color Print Film.

2) Base

EASTMAN Color Internegative II Film 5272 and 7272 have a clear acetate safety base with rem-jet backing.

EASTMAN Color Internegative II Film 2272 and 3272 have a clear ESTAR (polyester) base with rem-jet backing.

3) Darkroom Recommendations

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

4) Storage

Store unexposed film at 13°C (55° F) or lower. For extended storage, store at -18°C (0° F) or lower. Process exposed film promptly. Store processed film according to the recommendations in ANSI/PIMA IT9.11-1998: for medium-term storage (minimum of ten years), store at 10°C (50°F) or lower at a relative humidity of 20 to 30 percent; for extended-term storage (for preservation of material having permanent value), store at 2°C (35°F) or lower at a relative humidity of 20 to 30 percent. For active use, store at 25°C (77°F) or lower, at a relative humidity of 50 +/- 5 percent. This relates to optimized film handling rather than preservation; static, dust-attraction and curl-related problems are generally minimized at the higher relative humidity. After usage, the film should be returned to the appropriate medium- or long-term storage conditions as soon as possible.

For more information about medium- and long-term storage, see ANSI/PIMA IT9.11-1998, and KODAK Publications No. H-1, *KODAK Motion Picture Film* and No. H-23, *The Book of Film Care*.

5) Printer Conditions

All printer setups for printing onto this film should include heat-absorbing (infrared) filter such as a KODAK Heat Absorbing Glass No. 2043, and a KODAK WRATTEN Gelatin Filter No. 2B to absorb ultraviolet (UV) light. For high light output with very long bulb life, the printer bulb should be operated at approximately 80 percent of rated voltage. A well-regulated constant-current DC power supply is recommended. The reversal Laboratory Aim Density (LAD) control film should be printed at the center of the printer balance range, usually TAPE 25-25-25 on an additive printer. The other scenes in the original should be printed as determined by color timing relative to the reversal LAD control film. The printer speed and filtration should be chosen to normalize the TRIM settings near the center of their range to allow for slight variations in film and printer.

On subtractive printers, the filter pack and diaphragm chosen should allow for the removal and addition of filters for color correction.

On optical printers, the lens aperture should be set considering sharpness, depth of focus, and light transmittance characteristics. Ground glass or other diffusers may be used to improve uniformity of illumination, at a cost of printer light output. Printer optics should be cleaned and aligned for optimum light output and uniformity.

6) Reciprocity Characteristics

Exposure Time (sec)	1/1000	1/100	1/10	1	5
Exposure Increase	None	None	None	+1/2 stop	+1/2 stop
Filter Correction	None	None	None	CC10Y	CC10Y

7) Processing

Most commercial motion-picture laboratories provide a processing service for these films. See KODAK Publication No. H-24.07, *Manual for Processing EASTMAN Color Films, Process ECN-2 Specifications, Module 7*, for more information on the solution formulas and the procedure for machine processing these films. There are also pre-packaged kits available for preparing the processing solutions. For more information on the EASTMAN ECN-2 Kit Chemicals, check Kodak's *Professional Motion Imaging Price Catalog.*

8) Identification

After processing, the product code numbers 2272, 3272, 5272 or 7272, emulsion and roll number identification, KEYKODE numbers, and internal product symbol (S) are visible along the length of the film.

9) Laboratory Aim Density (LAD)

To maintain optimum quality and consistency in the final prints, the laboratory must carefully control the color timing, printing, and duplicating procedures. To aid in color timing and curve placement, negative originals should be timed relative to Laboratory Aim Density (LAD) Control Film supplied by Eastman Kodak Company. [2] The LAD Control Film provides both objective sensitometric control and subjective verification of the duplicating procedures used by the laboratory.

In the LAD Control Method, [3]the electronic color analyzer used for color timing is set-up with the LAD Control Film to produce a gray video display of the LAD patch, corresponding to 1.0 neutral density (gray) on the print. The reversal LAD control film may be made on EASTMAN EKTACHROME Film 5240, 7240 flashed and processed to Status M densities of: Red 1.10, Green 1.10, and Blue 1.10. The negative printing original is then scene-to-scene timed. There are specific LAD values for each type of print or duplicating film that the original can be printed on. For print films, the LAD patch is printed to a neutral gray of 1.0 visual density. For duplicating films, the specified aims are at the center of the usable straight-line portion of the sensitometric curve of the film.

Color-time all film in the printing original relative to LAD control film. The LAD control film is printed at the center of the printer range, usually TAPE 25-25-25. Printer setup (speed, bulb voltage, TRIM, filtration, etc) is determined by printing the large gray patch in the LAD control film to the specified LAD values on the internegative film, chosen to be

[2]Direct any inquiries to one of the regional sale offices.
[3]Use of the LAD Control Method is described in the paper, "A Simplified Motion-Picture Laboratory Control Method for Improved Color Duplication," by John P. Pytlak and Alfred W. Fleischer in the October 1976 SMPTE Journal.

at the center of the usable straight-line portion of the internegative film's characteristic curves. The status M LAD values for EASTMAN Color Internegative II Film are as follows:

	Status M Densities			Recommended Tolerance
	Red	Green	Blue	
Internegative LAD Aim	0.90	1.30	1.70	+-0.12 density

For making prints, time the processed internegative relative to a negative LAD control film supplied by Eastman Kodak Company, using densitometry or an electronic color analyzer. On-aim internegatives and duplicate negatives will normally time near TAPE 29-29-29 compared to the negative LAD control film printed at TAPE 25-25-25. The LAD on the print film is a neutral gray of 1.0 visual density.

The LAD control method assumes that the film and process sensitometry are within specification.

10) Image Structure

The modulation-transfer curves, the diffuse rms granularity, and the resolving-power data were generated from samples of 2272 Film exposed with tungsten light and processed as recommended in Process ECN-2 chemicals. For more information on image-structure characteristics, see KODAK Publication No. H-1, *KODAK Motion Picture Film.*

rms Granularity [4]
Less than 5.

Resolving Power [5]

ISO RPL	80 lines/mm	(TOC 1.6:1)
ISO RP	160 lines/mm	(TOC 1000:1)

11) Available Roll Lengths

For information on film roll lengths, check Kodak's *Professional Motion Imaging Price Catalog* or see a Kodak sales representative in your country.

12) Graphs[6]

MTF

e) 2272/3272 (1-00)

Note: These photographic modulation-transfer values were determined by using a method similar to the one described in ANSI Standard PH2.39-1977(R1990). The film was exposed with the specified illuminant to spatially

[4]Read at a net diffuse visual density of 1.0, using a 48-micrometre aperture.
[5]Determined according to a method similar to the one described in ISO 6328-1982, Photography—Photographic Materials-Determination of ISO Resolving Power.
[6]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 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.

varying sinusoidal test patterns having an aerial image modulation of a nominal 60 percent at the image plane, with processing as indicated. In most cases, the photographic modulation-transfer values are influenced by development-adjacency effects and are not equivalent to the true optical modulation-transfer curve of the emulsion layer in the particular photographic product.

Characteristic

b) (7-89)

Spectral Sensitivity

c) (9-80)

Spectral Dye Density

d) (9-80)

Note: The Kodak materials described in this publication for use with EASTMAN Color Internegative II Film 2272 and 3272 / ESTAR Base and EASTMAN Color Internegative II Film 5272 and 7272 are available from dealers who supply Kodak products. You can use other materials, but you may not obtain similar results.

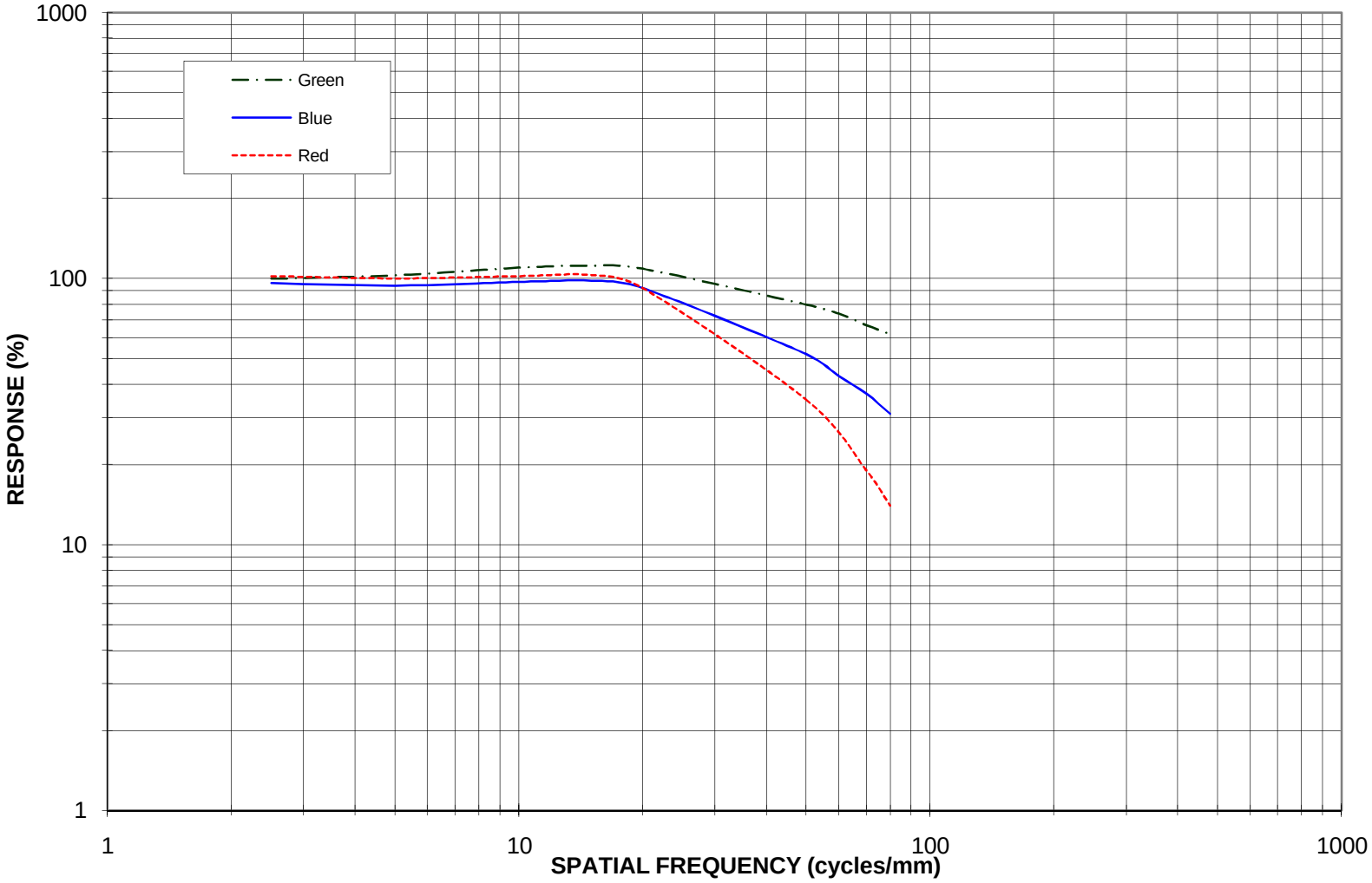
The contents of this publication are subject to change without notice.

Professional Motion Imaging
EASTMAN KODAK COMPANY - Rochester, NY 14650

End of Data Sheet

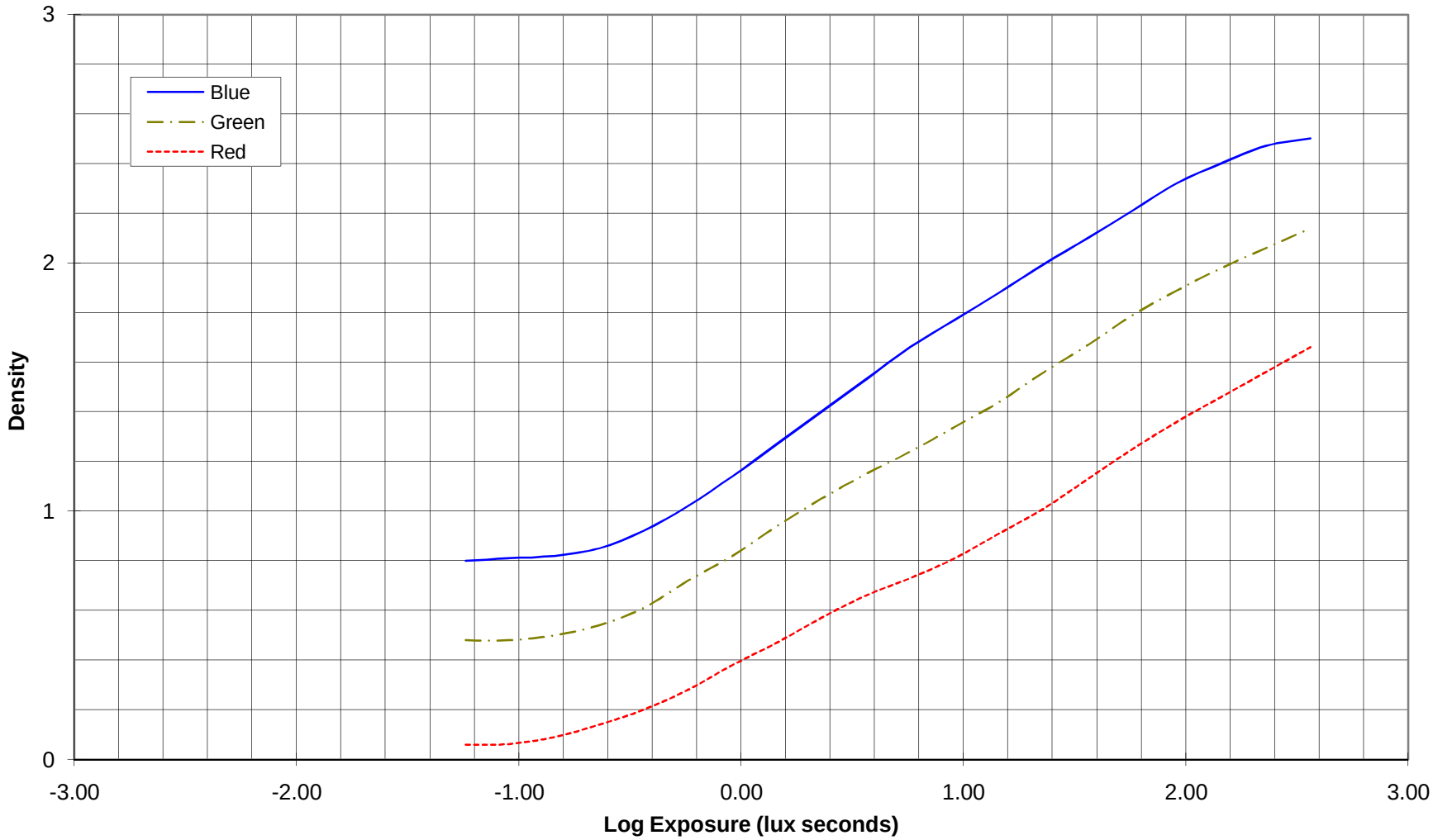
TI1301E 1-00
MTF, For Publication

EASTMAN Color Internegative II Film 5272/7272
EASTMAN Color Internegative II Film 2272/3272 (ESTAR Base)
Tungsten; Process ECN-2; Diffuse visual



TI1301B 7-89
CHARACTERISTIC, For Publication

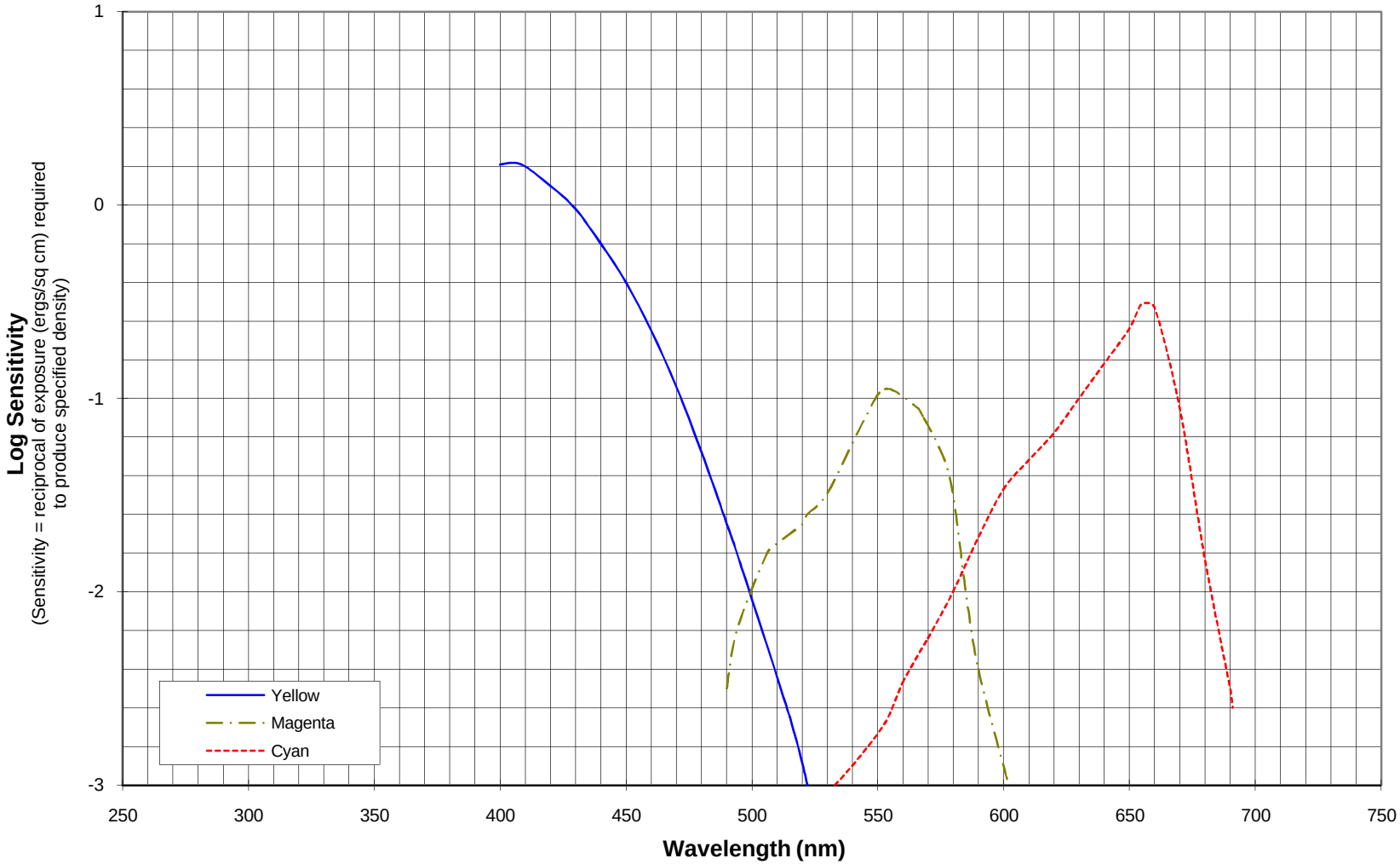
EASTMAN Color Internegative II Film 5272/7272
Tungsten (2850 K) KODAK Heat Absorbing Glass, No. 2043,
KODAK WRATTEN Gelatin Filter No. 2B, 1/100 sec;
Process ECN-2; Status M



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

TI1301C 9-80
SPECTRAL SENSITIVITY, For Publication

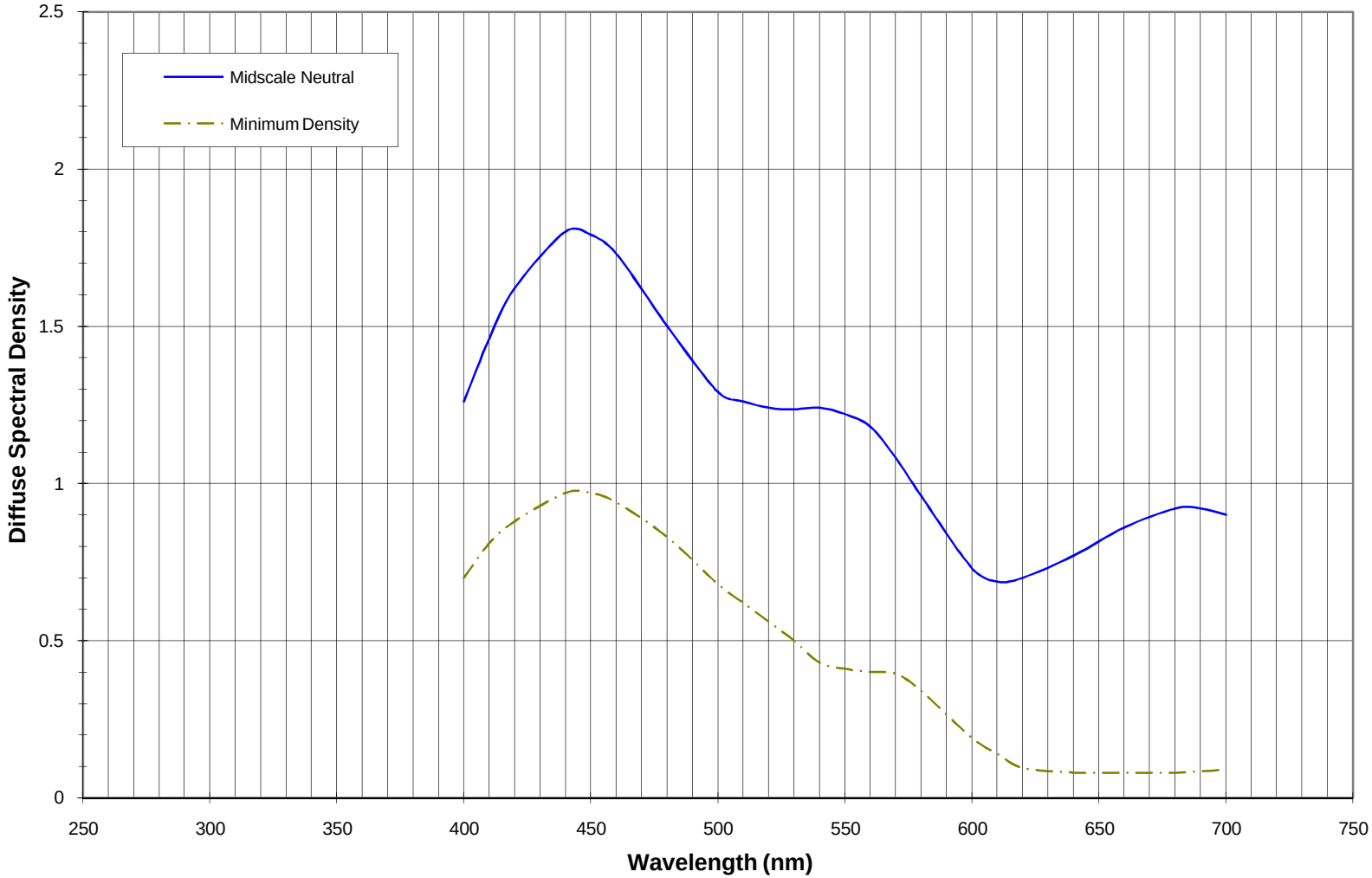
EASTMAN Color Internegative II Film 5272/7272
Effective exp 1.4 sec; Process ECN-2; Status M; D=1.0>D-min



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

TI1301D 9-80
SPECTRAL DYE DENSITY, For Publication

EASTMAN Color Internegative II Film 5272/7272
Typical densities for a midscale neutral subject and D-min.
Process ECN-2



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