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Revision of
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SMPTE STANDARD

for Motion-Picture Film (35-mm) — Manufacturer-Printed Latent-Image Identification Information

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Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Part XIII of its Administrative Practices. This SMPTE Engineering Document was prepared by Technology Committee F2.

Intellectual Property

At the time of publication no notice had been received by SMPTE claiming patent rights essential to the implementation of this Standard. However, attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. SMPTE shall not be held responsible for identifying any or all such patent rights.

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1 Scope

1.1 This standard specifies the position and dimensions of machine-readable identification numbers. These numbers are intended to be a machine-readable version of the latent image key number. This standard also specifies the encoding format to be used for these machine-readable numbers, as well as the area scanned and the spectral characteristics of the scanner.

1.2 This standard also specifies the position, dimensions, and content of human-readable identification (key) numbers for use on 35-mm motion-picture films intended for original photography or intermediate printing which also include the machine-readable key numbers described in 1.1. These numbers normally will be exposed onto the film at the time of manufacture.

1.3 This standard further specifies an area that may be used for optional manufacturer-specific film-type identification information.

1.4 This standard also specifies an area on the film which is not to be exposed by the film manufacturer, thus leaving it available for customer data recording.

1.5 Finally, this standard specifies an optional frameline index mark.

2 Conformance Notation

Normative text is text that describes elements of the design that are indispensable or contains the conformance language keywords: "shall", "should", or "may". Informative text is text that is potentially helpful to the user, but not indispensable, and can be removed, changed, or added editorially without affecting interoperability. Informative text does not contain any conformance keywords.

All text in this document is, by default, normative, except: the Introduction, any section explicitly labeled as "Informative" or individual paragraphs that start with "Note:"

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document.

The keyword “reserved” indicates a provision that is not defined at this time, shall not be used, and may be defined in the future. The keyword “forbidden” indicates “reserved” and in addition indicates that the provision will never be defined in the future.

A conformant implementation according to this document is one that includes all mandatory provisions ("shall") and, if implemented, all recommended provisions ("should") as described. A conformant implementation need not implement optional provisions ("may") and need not implement them as described.

3 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

ANSI/AIM BC4-1999, International Symbology Specification — Code 128

SMPTE 93-2005, Motion-Picture Film (35-mm) — Perforated BH

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4 Definition

key number: A number, sometimes referred to as an edge number or footage number, that is printed with ink or exposed onto the film at the time of manufacture. The numbers are placed at regular intervals, typically one foot. For the purposes of this standard, the key numbers are latent-image exposed.

5 General Format

5.1 Format

The general format of the latent-image identification information shall be as shown in Figure 1.

5.2 Use of the Other Edge

No latent information shall be placed along the upper edge of the film, as shown in Figure 1. This area is reserved for data recording at the time of photography.

5.3 Film

This identification information is intended to be printed onto film cut and perforated in accordance with SMPTE 93.

6 Human-Readable Key Numbers

6.1 Key Number

An incrementing, human-readable key number shall be printed onto the film at the time of manufacture. The film shall be supplied to the user with the lowest number at the outside of the roll.

6.2 Dimensions

The height and width of the human-readable key numbers shall be as specified in Figure 2 and Table 1.

6.3 Reference Mark

A zero frame reference mark shall be printed adjacent to the digit of the human-readable key number that is closest to the tail of the film as shown in Figure 1. The zero frame reference mark shall be a filled circle with a diameter of approximately 0.025 in to 0.030 in (0.64 mm to 0.76 mm).

6.4 Alignment with Respect to Perforations

The numbers shall be printed so that the centerline of the zero frame reference mark is aligned with the centerline of a perforation, within the tolerance shown in Table 1.

6.4.1 This alignment is intended to facilitate frame identification with a minimum of confusion, even though the picture frame may have one of several positions relative to the key number. The following rule shall be applied to frame identification:

The frame immediately above the zero frame reference mark is the one referenced by that key number. Other frames are specified by an offset which is written as an additional digit(s) separated from the key number by a plus sign. Figure 3 shows an example of this rule.

6.5 Repeat Frequency

The spacing from one key number to the next shall be 64 perforations.

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