
**Cinematography — Manufacturer-
printed, latent image identification
on 16 mm, 35 mm and 65 mm motion-
picture film — Specifications and
dimensions**

*Cinématographie — Identification d'image latente, imprimée par le
fabricant, sur films cinématographiques 16 mm, 35 mm et 65 mm —
Spécifications et dimensions*

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Contents

	Page
Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General format	2
5 Human-readable key numbers	3
5.1 Human-readable key number specifications applicable to 16 mm, 35 mm and 65 mm film.....	3
5.1.1 General.....	3
5.1.2 Alphabetic characters.....	3
5.1.3 Numerical characters.....	7
5.2 Human-readable key number specifications applicable to 16 mm film only.....	7
5.2.1 Dimensions.....	7
5.2.2 Reference mark.....	7
5.2.3 Alignment with respect to perforations.....	8
5.2.4 Frame identification.....	8
5.2.5 Repeat frequency.....	8
5.2.6 Orientation.....	8
5.3 Human-readable key number specifications applicable to 35 mm film only.....	9
5.3.1 Dimensions.....	9
5.3.2 Reference mark.....	9
5.3.3 Alignment with respect to perforations.....	9
5.3.4 Frame identification.....	10
5.3.5 Repeat frequency.....	10
5.3.6 Orientation.....	10
5.3.7 Mid-foot key number.....	11
5.4 Human-readable key number specifications applicable to 65 mm film only.....	11
5.4.1 Dimensions.....	11
5.4.2 Reference mark.....	12
5.4.3 Alignment with respect to perforations.....	12
5.4.4 Frame identification.....	12
5.4.5 Repeat frequency.....	12
5.4.6 Orientation.....	13
5.4.7 Mid-foot key number, format A.....	13
5.4.8 Mid-foot key number, format B.....	14
6 Machine-readable key numbers	14
6.1 Machine-readable key number specifications applicable to 16 mm, 35 mm and 65 mm film.....	14
6.1.1 General.....	14
6.1.2 Repeat frequency.....	14
6.1.3 Format.....	14
6.2 Machine-readable key number specifications applicable to 16 mm film only.....	15
6.3 Machine-readable key number specifications applicable to 35 mm film only.....	15
6.4 Machine-readable key number specifications applicable to 65 mm film only.....	16
7 Optional manufacturer information (applicable to 16 mm, 35 mm and 65 mm film)	17
7.1 Recommended minimum information.....	17
7.1.1 Manufacturer's name.....	17
7.1.2 Film type.....	17
7.2 Optional information.....	18
7.3 Repeat distance.....	18
8 Optional density measurement patch	18
8.1 General.....	18

8.2	Shape and size	18
8.3	Colour and density	18
8.4	Repeat frequency	18
9	Bar code scanner and density specifications	19
9.1	Scanner spectral sensitivity	19
9.2	Quality of machine-readable messages	19
	9.2.1 Measurement methodology	19
	9.2.2 Modulation specification	19
9.3	Density of printed machine-readable messages	19
10	Colour of edge print information	20

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 36, *Cinematography*.

This fourth edition ^{ISO 12222:2017} cancels and replaces the second edition (ISO 12222:1998), ^{ISO 12222:1998} subclauses 3.1, Clause 4, 5.1.1, 5.4.5, 5.4.6, 5.4.7, 6.1.3.3 b), 6.1.3.3 d), 6.4.7, 6.4.8 and 7.3, Figures 3, 6 and 8, and Tables 1, 4 and 5 of which have been technically revised. ^{ISO 12222:1998} Subclause 5.4.8 was added.

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Cinematography — Manufacturer-printed, latent image identification on 16 mm, 35 mm and 65 mm motion-picture film — Specifications and dimensions

1 Scope

1.1 This document specifies the position and dimensions of machine-readable identification numbers on 16 mm, 35 mm and 65 mm motion-picture film. These numbers are intended to be a machine-readable version of the latent image key number. This document 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 document also specifies the position, dimensions and content of human-readable identification (key) numbers for use on 16 mm, 35 mm and 65 mm motion-picture films intended for original photography or intermediate printing which also include the machine-readable key number described in 1.1.

NOTE These numbers normally are exposed onto the film at the time of manufacture.

1.3 This document further specifies an area that may be used for optional manufacturer-specific film-type identification information. (standards.iteh.ai)

1.4 This document 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 document specifies an optional frame line index mark for 35 mm and 65 mm film.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 69, *Cinematography — 16 mm motion-picture and magnetic film — Cutting and perforating dimensions*

ISO 491, *Cinematography — 35 mm motion-picture film and magnetic film — Cutting and perforating dimensions*

ISO 3023, *Cinematography — 65 mm and 70 mm unexposed motion-picture film — Cutting and perforating dimensions*

ANSI/AIM BC4-1995, *Uniform Symbology Specification — Code 128*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

key number

edge number

footage number

identification number that is printed with ink or exposed onto the film at the time of manufacture

Note 1 to entry: The numbers are placed at regular intervals, typically every 20 perforations for 16 mm film, 64 perforations for 35 mm film and 120 perforations for 65 mm film. For the purposes of this document, the key numbers are latent-image exposed.

3.2

bar edge

(bar code) that point where the transmittance is halfway between the maximum transmittance of the adjacent space and the minimum transmittance of the adjacent bar

3.3

scan transmittance profile

(bar code) record of the transmittance measured as a function of distance along the entire bar code symbol

3.4

symbol contrast

SC

(bar code) difference between the largest transmittance (T_{\max}) and smallest transmittance (T_{\min}) in a scan transmittance profile

3.5

minimum edge contrast

EC_{\min}

(bar code) minimum difference between a space transmittance (T_s) and the adjoining bar transmittance (T_b)

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3.6

modulation

MOD

(bar code) ratio of minimum edge contrast (EC_{\min}) to symbol contrast (SC)

4 General format

The general format of the latent-image identification information shall be as shown in [Figure 1](#) for 16 mm film, [Figure 2](#) for 35 mm film, and [Figures 3 a\)](#) and [3 b\)](#) for 65 mm film.

No latent information shall be placed along the upper edge of the film, as shown in [Figures 1, 2](#) and [3](#). This area is reserved for data recording at the time of photography.

This identification information is intended to be exposed onto film cut and perforated in accordance with ISO 69, ISO 491 or ISO 3023.

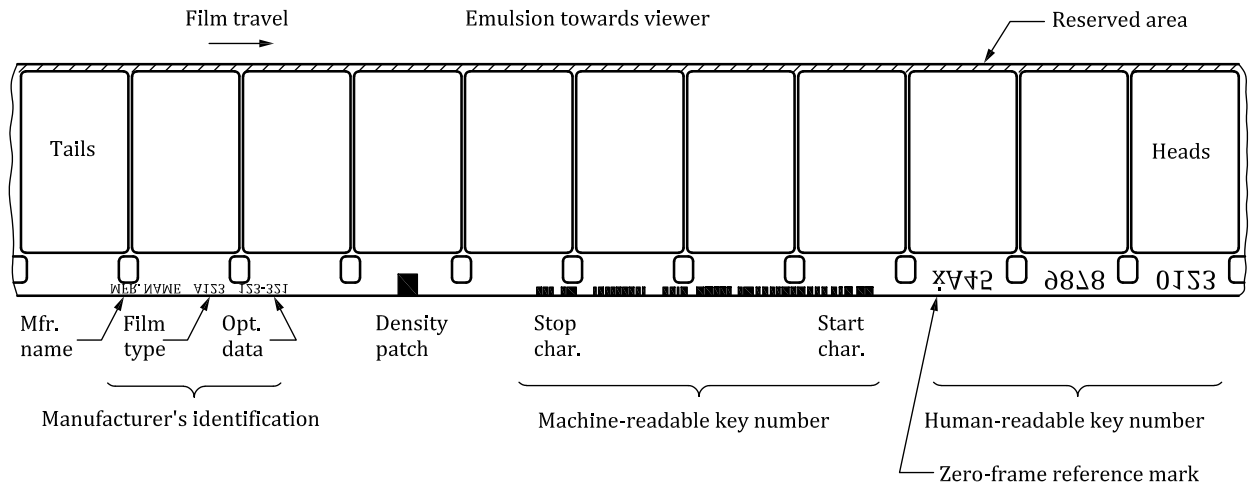


Figure 1 — General format on 16 mm film

5 Human-readable key numbers

5.1 Human-readable key number specifications applicable to 16 mm, 35 mm and 65 mm film

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5.1.1 General

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 unless the sales format of the unit shown states differently. The human-readable key number shall consist of two alphabetic characters and 10 numerical characters. For 16 mm film, this alphanumeric code shall be separated into three groups of four characters, as shown in Figure 1. For 35 mm and 65 mm film, this alphanumeric code shall be separated into groups of two alphabetic characters and two, four and four digits, separated by spaces, as shown in Figures 2, 3 a) and 3 b).

5.1.2 Alphabetic characters

The first two alphabetic characters of the key number identify the manufacturer and film type. The character set used shall be the normal upper-case letters A through Z.

- The first character shall identify the film manufacturer alphabetic code according to Table 1. Other letters are reserved for future assignment by ISO/TC 36.
- The second character shall be a film-type identifier. The film type identifier will be used in one of two ways per the manufacturer's preference.
- The second character is used alone to identify film type.
- The second character is used in conjunction with the first character as a two-character film type identifier.
- The second character is chosen at the discretion of the film manufacturer.

Table 1 — Manufacturer alphabetic codes

Manufacturer	Code
AGFA-GEVAERT, N.V.	A
EASTMAN KODAK CO.	E, K, V
FUJIFILM CO.	F
ILFORD LIMITED	I
Other or nondesignated	(as assigned or blank)

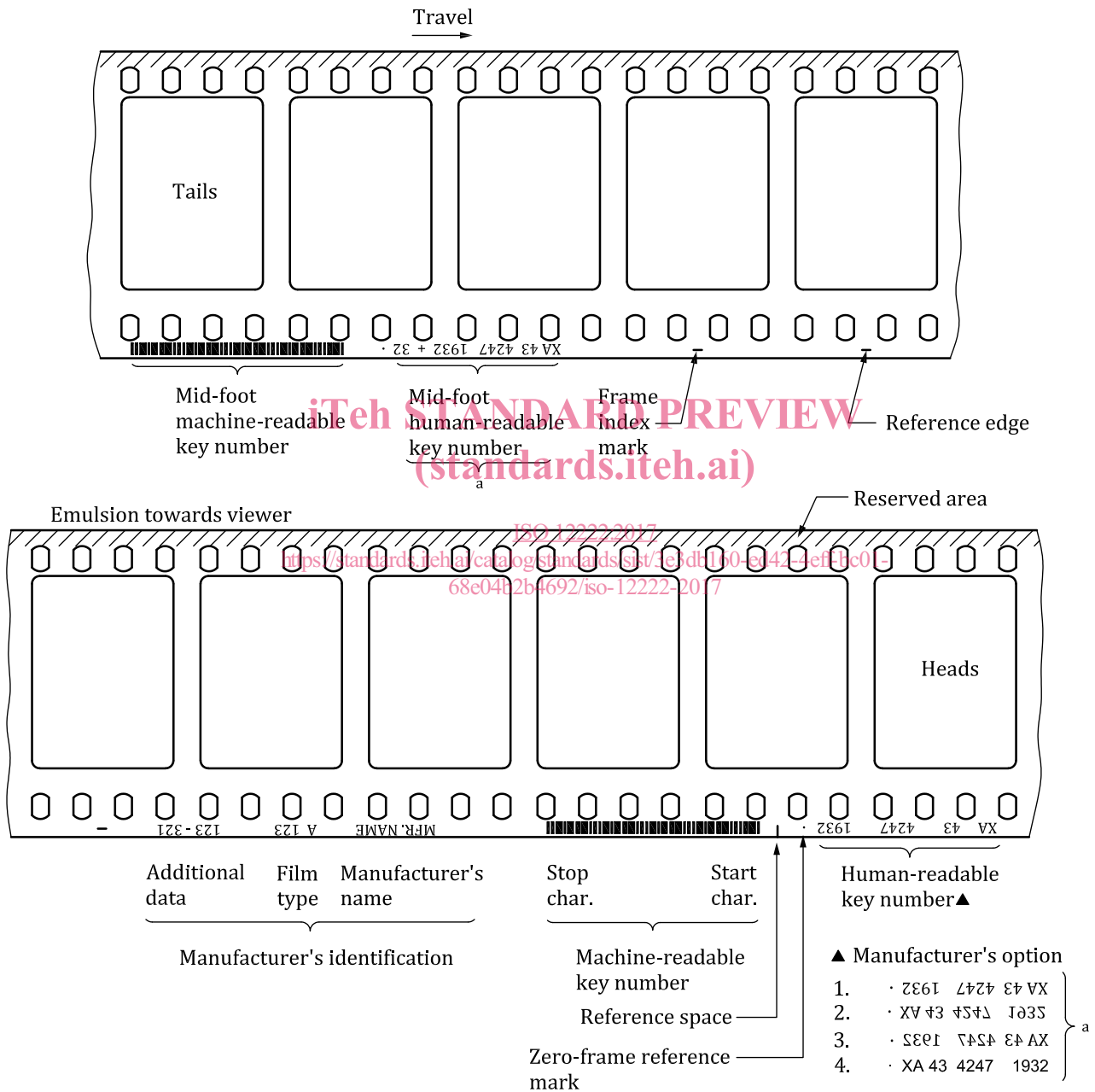
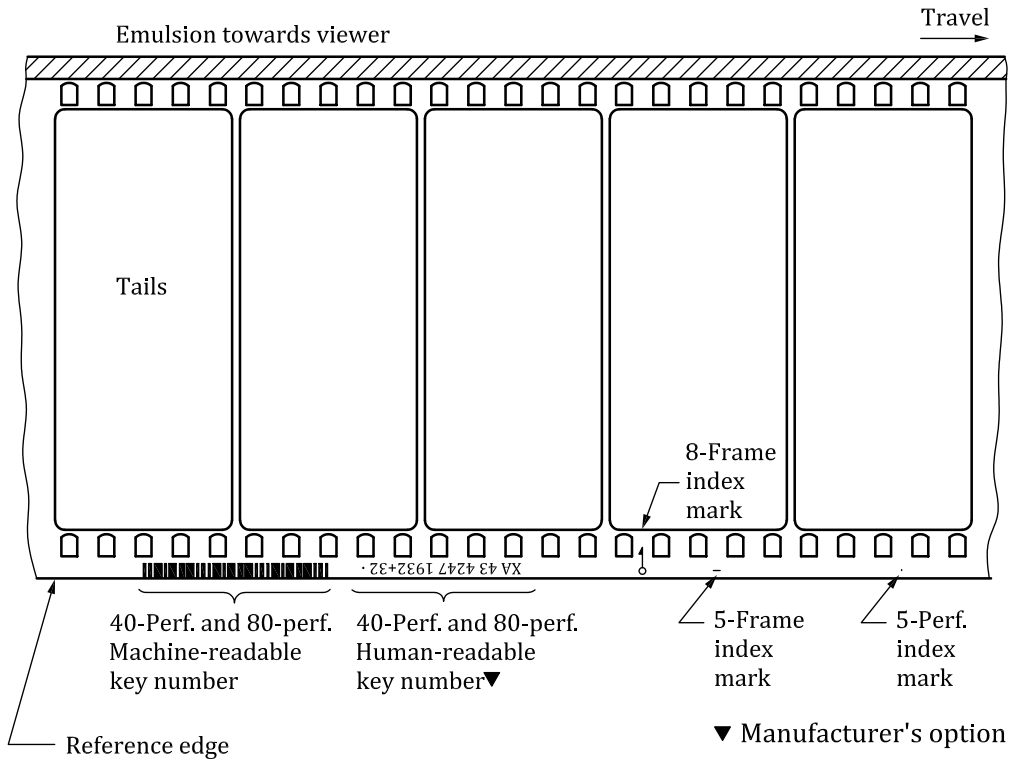


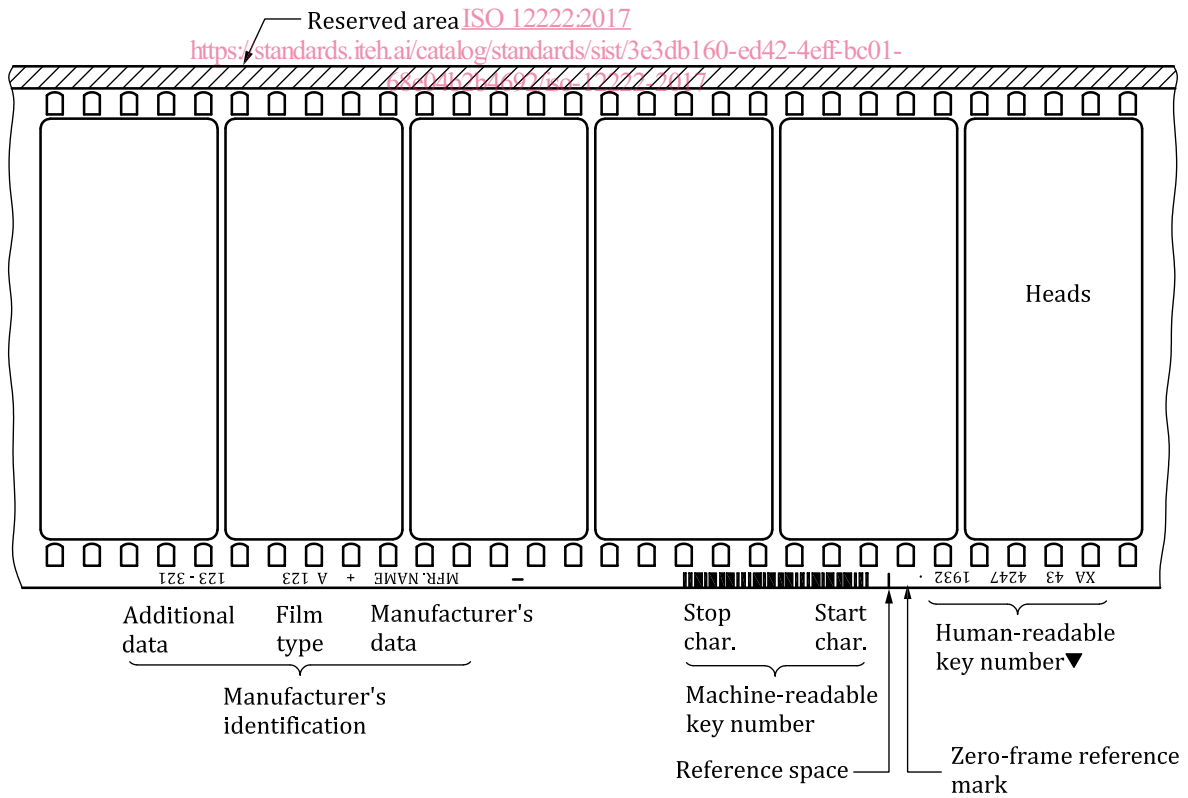
Figure 2 — General format on 35 mm film



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^a Human-readable key number orientation is the manufacturer's option.

1.	XA 43 4247 1932	} a
2.	· · XA 43 4247 1932	
3.	· · XA 43 4247 1932	
4.	· · XA 43 4247 1932	



a) General format on 65 mm film (format A)