SMPTE STANDARD

ANSI/SMPTE 3-1992
Revision of
ANSI/SMPTE 3-1986

for Television Analog Recording —

Frequency Response and Operating Level of Recorders and Reproducers — Audio 1 Record on 2-in Tape Operating at 15 and 7.5 in/s

1 Scope

This standard specifies the frequency response and operating level for recorders and reproducers for audio 1 record for 2-in quadruplex video magnetic tape recording at 15 in/s and 7.5 in/s (381 mm/s and 190.5 mm/s), as defined in ANSI/SMPTE 6-1988. It also specifies the field method of calibration of recorders and reproducers, utilizing the test tapes as defined in ANSI/SMPTE 8-1989 and ANSI/SMPTE 11-1989.

2 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 indicate below.

ANSI/SMPTE 6-1988, Video Recording — Video, Audio and Tracking Control Records — 2-in Quadruplex Tape

ANSI/SMPTE 8-1989, Video Recording — Quadruplex Recorders Operating at 15 in/s — Audio Level and Multifrequency Test Tape

ANSI/SMPTE 11-1989, Video Recording — Quadruplex Recorders Operating at 7.5 in/s — Audio Level and Multifrequency Test Tape

IEC 268-17 (1990), Standard Volume Indicators

3 Operating level

3.1 Recording and reproducing level indicator

The audio recording and reproducing levels of a video magnetic tape recorder shall be monitored and adjusted with a standard volume indicator (vu meter), as specified in IEC 268-17 (1990).

3.2 Recorder operating level

When a tape record is recorded from a sinusoidal voltage having a frequency of 1000 Hz, such that the rms short circuit tape flux per unit track width on the record is 110 nanowebers per meter ± 3 nWb/m of track width, the recording volume indicator shall be adjusted to deflect to its reference level (0 dB) scale mark.

3.3 Reproducer operating level

When a tape record having an rms sinusoidal flux per width of 110 nWb/m and a frequency of 1000 Hz is reproduced, the reproducing volume indicator shall deflect to its reference level (0 dB) scale mark.

4 Frequency response

4.1 Recorder flux/frequency response

When a tape record is recorded from a constant voltage level applied to the input terminals of the recording system, the short circuit tape flux level on the record versus frequency, $L\phi$ (f), shall be as given by the following equation:

$$L\phi\ (f)\ \text{re}\ 110\ \text{nWb/m} = 0.2 + 10 \log_{10} \{[1 + (F_l/f)^2]/[1 + (f/F_h)^2]\}\ [\text{dB}]$$

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where f is the frequency at which the response is being computed; F_l is the low-frequency transition frequency, 80Hz; and F_h is the high-frequency transition frequency, 4500 Hz. A graph of this equation is shown in figure 1.

4.2 Reproducer flux/frequency response

When a tape record having a short circuit tape flux level versus frequency given in 4.1 is reproduced, the output voltage level of the reproducer versus frequency shall be constant.

5 Field method of calibrating recorders and reproducers

5.1 The practical calibration of a reproducer shall be performed by reproducing the audio level and multifrequency test tape defined in ANSI/SMPTE 8-1989 or ANSI/SMPTE 11-1989. The practical calibration of a recorder shall then be performed by recording on a medium representative of that to be used, and comparing the recording so made with the recording on the test tape.

5.2 The flux/frequency response of a reproducer shall be calibrated by reproducing the frequency response test section of the specified test tape. The reproducing equalizer is adjusted so that output voltage level versus frequency of the reproducer is constant.

5.3 The operating level of a reproducer shall be calibrated by reproducing the audio operating level test section of the specified test tape. The reproducing gain control is adjusted so that the reproducing volume indicator deflects to its reference level (0 dB) scale mark.

5.4 The flux/frequency response of a recorder shall be calibrated by comparing the tape flux recorded by the recorder (with constant input voltage level), to the flux recorded on the frequency response test section of the specified test tape. The recording equalizer is adjusted so that the tape flux level versus frequency of a recorder (including the tape) is the same as that on the test tape.

5.5 The operating level of a recorder shall be calibrated by comparing the tape flux recorded by the recorder when the recording volume indicator deflects to its reference level (0 dB) scale mark, to the recording of the audio operating level test section of the specified test tape. The recording gain control is adjusted so that, when the recording volume indicator deflects to its reference level (0 dB) scale mark, the recorded tape flux is the same as that on the test tape.

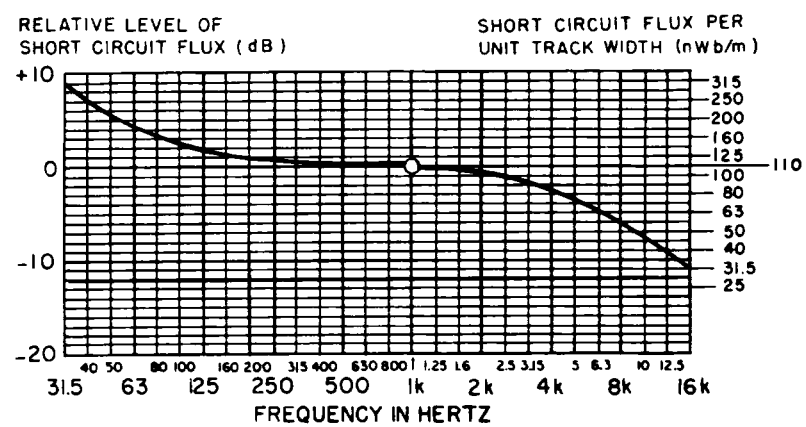

Figure 1 – Flux and flux level vs frequency

Annex A (informative)
Additional data

Previous frequency response standards for recorders and reproducers have been given in terms of a "standard reproducing system," having an "ideal" reproducing head followed by a standardized RC equalizing network whose time constant was given.

Because an adequate description of the "ideal" head and its interconnection to the following network is quite lengthy, it is simpler to specify the system responses in terms of the basic physical quantity for the recorded signal, the "short circuit tape flux." The concepts are explained in detail by J. G. McKnight in the paper "Flux and flux-frequency measurements and standardization in magnetic recording," J. SMPTE, 78: 457-472, June 1969.

Rather than specifying flux/frequency response in terms of admittances of electrical networks, the equation and graph of the response function have been specifically given. The equation does in fact describe the response of the previously specified RC equalizing network with "time constants" of 2000 microseconds and 35 μm.

SMPTE STANDARD

ANSI/SMPTE 201M-1992
Revision of
ANSI/SMPTE 201M-1988

for Motion-Picture Film (16-mm)—
Type W Camera Aperture Image

1 Scope

1.1 This standard specifies the dimensions of the image area produced by type W camera aperture on 16-mm motion-picture film intended for enlargment to 35-mm motion-picture film with an aspect ratio of 1.66:1. It also specifies the position of the image relative to the reference edge of the film and to the perforations.

1.2 This standard further specifies the dimensions and location of the image area on 35-mm duplicate negatives and the enlargement ratio in optical printing from 16-mm originals.

2 Dimensions

2.1 The dimensions shall be as given in the figures and tables, and shall apply to measurements of the aperture image as formed on freshly exposed and processed film.

2.2 The angle between the vertical edges of the aperture image and the reference edge of the film shall be $0^\circ \pm \frac{1}{2}^\circ$.

2.3 The angle between the horizontal edges of the aperture image and the reference edge of the film shall be $90^\circ \pm \frac{1}{2}^\circ$.

3 35-mm Internegative and duplicate negatives

The enlargement ratio for printing 35-mm internegatives and duplicate negatives shall be 1.78:1. The dimensions and location of the image area on 35-mm internegatives shall be as shown in figure 2 and table 2.

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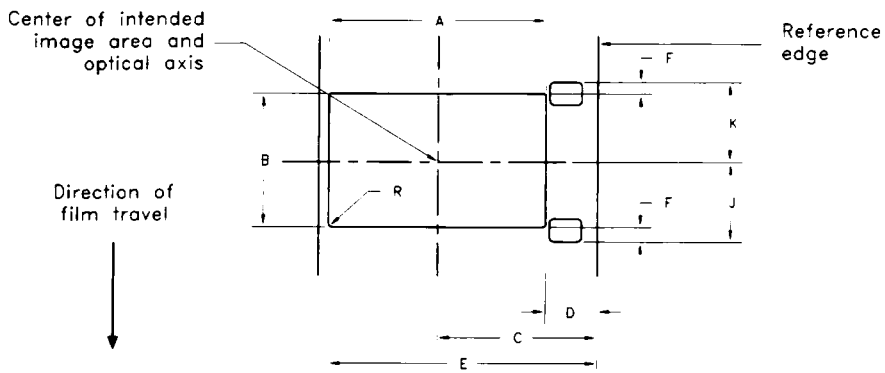
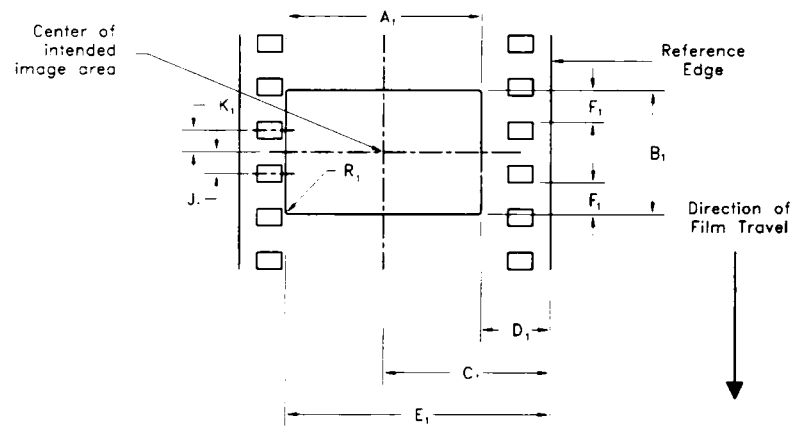


Film as seen from inside camera looking toward camera lens; emulsion away from observer.

Figure 1 – Image area on 16-mm type W negative or original

Table 1

Dimensions	Millimeters		Inches	
A	12.52	ref	0.493	ref
B	7.42	+ 0.15 − 0.00	0.292	+ 0.006 − 0.000
C	9.15	ref	0.360	ref
D	2.95	max	0.116	max
E	15.37	min	0.605	min
F	0.82	max	0.032	max
J=K		ref		ref
R	0.15	max	0.006	max



Film as seen from inside camera looking toward camera lens; emulsion away from observer.

Figure 2 – Image area on 35-mm internegative or duplicate negative

Table 2

Dimensions	Millimeters		Inches	
A_1	21.95	ref	0.864	ref
B_1	13.13 13.55	min max	0.517 0.533	min max
C_1	18.75	ref	0.738	ref
D_1	7.80	max	0.307	max
E_1	29.75	min	1.171	min
F_1	3.10	max	0.122	max
$J_1 = K_1$		ref		ref
R_1	0.25	max	0.010	max

Annex A (informative)
General Information

A.1 If the aperture plate is not in the plane of the emulsion, the physical dimensions of the aperture in the camera will be slightly different from the dimensions given in the figures. The exact amount of this difference will depend upon the *f* value and the focal length of the camera lens used, and upon the distance between the emulsion and the physical aperture. This separation should be no greater than is necessary to prevent scratching of the film.

A.2 It is the intent of this standard to provide a camera image such that the exposed area will always be larger than the area of the printer aperture.

A.3 The centerline of the intended type W camera image is given for convenience in interpreting the standard, facilitating such applications as the optical design of equipment and assisting in the understanding of suitable mechanical embodiments related to the camera aperture image area. Note that the centerline of the image area is displaced from the centerline of the film by 1.17 mm (0.046 in).

SMPTE STANDARD

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

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 number described in 1.1. These numbers will normally 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 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/SMPTE 93-1992, Motion-Picture Film (35-mm) — Perforated BH

USS 128, Uniform Symbology Specification, 1986 version (available from Automatic Identification Manufacturers, Inc., 1326 Freeport Road, Pittsburgh, PA 15283)

3 Definition

3.1 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.

4 General format

4.1 Format

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

4.2 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.

4.3 Film

This identification information is intended to be printed onto film cut and perforated in accordance with ANSI/SMPTE 93-1992.

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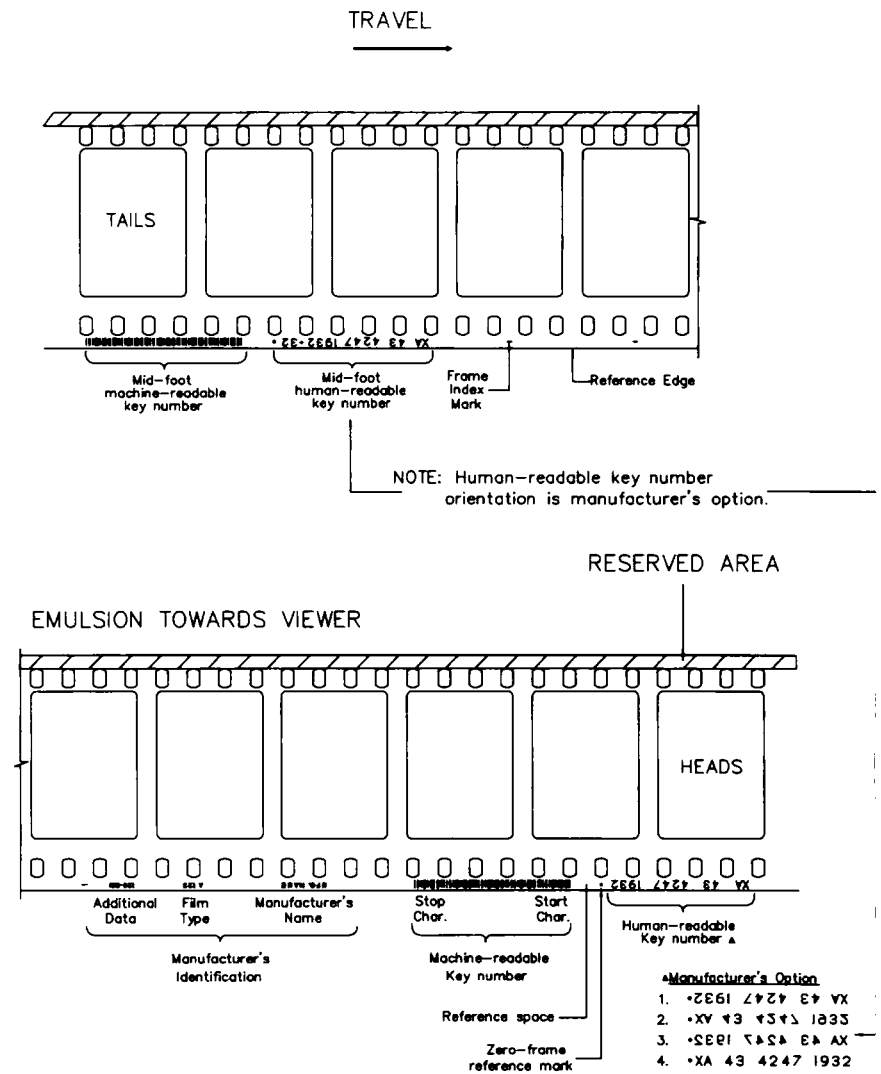


Figure 1 – General format

5 Human-readable key numbers

5.1 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.

5.2 Dimensions

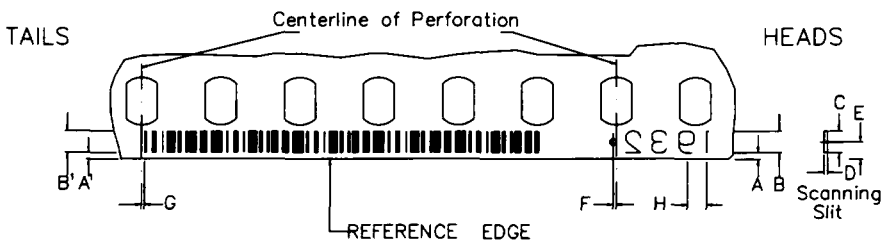
The height and width of the human-readable key numbers shall be as specified in figure 2 and table 1.

5.3 *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).

5.4 *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 figure 2.



NOTE: This drawing shows emulsion towards the viewer. Normal film travel is from left to right.

Figure 2 – Position and dimensions

Table 1

	Dimensions	Inches	Millimeters
A	Edge of film to bottom of characters	0.009 ± 0.005	0.23 ± 0.13
A'	Edge of film to top of bars	0.009 + 0.005 − 0.009	0.23 + 0.13 − 0.23
B	Height of characters	0.060 ± 0.004	1.52 ± 0.10
B'	Height of bars	0.060 + 0.010 − 0.004	1.52 + 0.25 − 0.10
C	Scanning slit length	0.038 max	0.97 max
D	Scanning slit width	0.005 max	0.13 max
E	Edge of film to centerline of scanning slit	0.035 ± 0.002	0.89 ± 0.05
F	Zero frame reference mark displacement	0.00 ± 0.04	0.0 ± 1.0
G	Bar code displacement	0.00 ± 0.04	0.0 ± 1.0
H	Character-to-character spacing	0.060 nom	1.52 nom

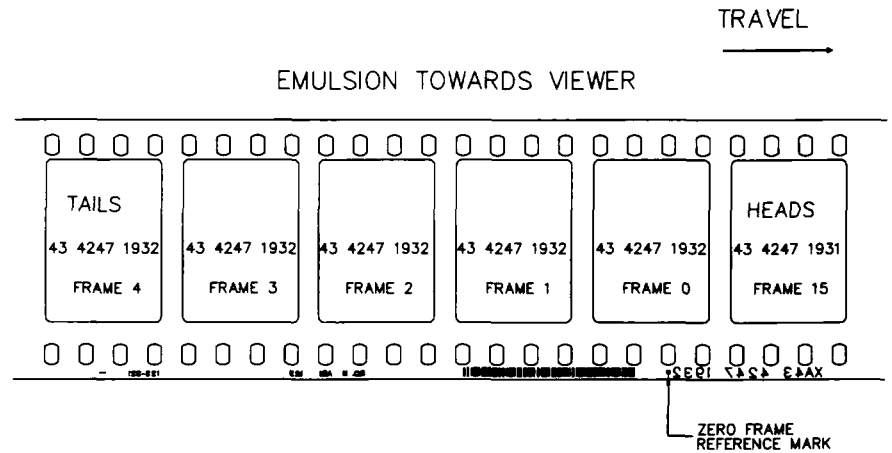


Figure 3 – Alignment of zero frame reference mark

5.4.1 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.

5.5 Repeat frequency

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

5.6 Format and orientation

5.6.1 Number and grouping of digits

The human-readable key number shall consist of 2 alphabetic characters and 10 digits. This alphanumeric code shall be separated into groups of 2 characters and 2, 4, and 4 digits, which in turn shall be separated by spaces (see figure 1). For the 10 digits, only the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 shall be used, and they shall be in normal counting sequence. It is recommended, although not required, that the ten thousandths place not be allowed to increment within a single roll of film.

5.6.2 Orientation

The number may be placed in one of several orientations at the discretion of the film manufacturer. When the original negative film is held with the emulsion toward the viewer and the head toward the right, the numbers may be in any one of the following orientations:

- Right side up, reading from head to tail
- Upside down, reading from head to tail
- Right side up, reading from tail to head
- Upside down, reading from tail to head

In all cases, regardless of the orientation, the dot is to the left (closer to the tail) and adjacent to the trailing (closest to the tail) character, as shown in figure 1. The key number shall precede the machine-readable key number; i.e., the human-readable key number shall be closer to the head of the roll.

5.6.3 Contents of the alphabetic characters

The first two 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 according to table 2. Other letters are reserved for future assignment by the SMPTE.

The second character shall be a film-type identifier. The character is chosen at the discretion of the film manufacturer.

Table 2 – Manufacturer alphabetic code

Manufacturer	Code
Agfa-Gevaert N.V.	A
Eastman Kodak Company	K
Fuji Photo Film Company	F
Other or nondesignated	(nothing)

6 Machine-readable key numbers

6.1 The machine-readable key numbers are intended to be a machine-readable version of the immediately adjacent human-readable key numbers.

6.2 Dimensions

6.2.1 The dimensions and lateral location of the machine-readable identification numbers shall be as specified in figure 2 and table 1.

6.2.2 The nominal width of the narrowest bar or space shall be 0.0075 in (0.190 mm). All other bars and spaces are to be integer multiples of the narrowest bar as specified in USS 128. The total bar code message, which consists of 123 elements (not counting the quiet zones), shall have a width of 0.9225 in ± 0.0400 in (23.432 mm ± 1.016 mm).

For measurement purposes, the width of the bar is the distance between two bar edges. A bar edge is defined as the point where the transmittance is halfway between the maximum adjacent space transmittance and the minimum adjacent bar transmittance.

6.2.3 The message shall be printed so that the trailing edge of the last character (the stop character) shall be longitudinally aligned with the centerline of a perforation, that perforation being six perforations displaced from the perforation specified in 5.3, within the tolerance shown in figure 2.

6.2.4 The recording shall be made so that the azimuth of the record is at an angle of $90^\circ \pm 1^\circ$ to the reference edge of the film.

6.2.5 The lateral location, length, and width of the scanned area shall be as specified in figure 2 and table 1.

6.2.6 The reproducing (scanning) slit image shall be positioned at an angle of $90^\circ \pm 1^\circ$ to the reference edge of the film.

6.3 Repeat frequency

The machine-readable message shall be immediately adjacent to the human-readable key number and shall repeat at the same frequency.

6.4 Format

6.4.1 The machine-readable numbers shall consist of a series of bars and spaces of varying width that meet the bar code specification of USS 128. Code subset C of this specification, which allows double density numeric digits, shall be used.

6.4.2 The data portion of the message shall be of fixed length and shall consist of 16 digits. Since code subset C encodes two digits per bar code character, this corresponds to 8 bar code characters. In addition, quiet zones, a start character (for code C), a checksum character, and a stop character shall be recorded. Including the start and stop characters, the entire message shall be 11 bar code characters.

6.4.3 The start character shall be nearest the head end of the film and the stop character shall be nearest the tail end of the film, regardless of the orientation of the human-readable characters; i.e., when the film is transported in the normal direction of travel past a fixed scanning position, the start character shall be read first.

6.4.4 The 8 bar code characters (16 data digits) are defined as follows:

6.4.4.1 The first character shall be encoded with a two-digit manufacturer code. These codes

shall be assigned as per table 3. Other codes are reserved for future assignment by the SMPTE.

Table 3 – Manufacturer codes

Manufacturer	Code
Agfa-Gevaert N.V.	01
Eastman Kodak Company	02
Fuji Photo Film Company	03
Other or nondesignated	00

6.4.4.2 The second character shall be a two-digit product specification code assigned at the discretion of the manufacturer. If the manufacturer does not wish to identify the product, the digits 00 shall be encoded.

6.4.4.3 The third through seventh characters shall be encoded with the 10 characters of key number information. These shall be the same information as in the immediately adjacent human-readable key number. The third character shall contain the most significant digits and the seventh character shall contain the least significant digits.

6.4.4.4 The eighth character shall be encoded with a two-digit offset in perforations from the preceding key number. This offset shall be 00 for the key numbers described above and 32 for the mid-foot key number described in 6.5.

6.4.5 The checksum is equal to the modulo 103 sum of the value of the start character and the weighted values of the eight data characters as specified in USS 128.

6.5 Mid-foot key number

A mid-foot key number, as shown in figure 1, shall be placed halfway between each key number. The mid-foot key number shall have two parts: a mid-foot human-readable key number and a mid-foot machine-readable key number.

6.5.1 Mid-foot human-readable key number

The mid-foot human-readable key number shall consist of a zero-frame reference mark, an adjacent key number that is to be nearer the head end of the roll, and an offset in perforations which is to be 32 always. The mid-foot key shall thus have the format "XA 12 3456 7890 + 32." The mid-foot key number shall have the same orientation as the standard human-readable key number (see 5.6.2). All characters are to be small in size (approximately ½ size).

6.5.2 Mid-foot machine-readable key number

The mid-foot machine-readable key number shall consist of a bar coded message in exactly the same format as specified in 6.4. The offset-in-perforations digits will be set to 32.

7 Optional-frame index mark

7.1 An optional-frame index mark may be placed on the film in the form of a hyphen placed every four perforations except where it would overlay some other edge information, as shown in figure 1. The index marks shall be aligned midway between the perforations coincident with a possible position of the frameline.

7.1.1 A "reference space" is defined as being the space between the perforation above the zero frame reference mark and the perforation immediately to its left (toward the tail of the film).

7.1.2 The frame index marks shall be printed at 4-perforation intervals and shall be aligned longitudinally such that, were it to be printed, a mark would fall on the reference space.

8 Optional manufacturer-identification information

8.1 Additional manufacturer information may be printed along the edge of the film as shown in figure 1. This information is to be printed in small size characters (approximately 1/2 size).

8.2 Recommended minimum information

8.2.1 Manufacturer's name

The first piece of information shall be the name of the manufacturer. This, in general, shall be an abbreviated name, rather than the full company name.

8.2.2 Film type

The second piece of information, separated from the manufacturer's name by a space, shall be the film

type. Its form, whether numeric, alphabetic, or mixed, shall be at the discretion of the manufacturer.

8.2.3 Optional information

The manufacturer may place additional information following the film type, if so desired. This may include batch numbers, for example. It is recommended that the length of this information be limited so the entire string of manufacturer-identification information is no more than 12 perforations long.

8.3 Repeat distance

The repeat distance of this information is at the discretion of the manufacturer, but the repeat distance shall be a multiple of 64 perforations, and a distance of no more than 192 perforations is recommended.

9 Bar code scanner and density specifications

9.1 Scanner spectral sensitivity

The peak or maximum response of the combination of the light source, filters, and photo receptor shall be at 680 nm ± 60 nm. In addition, the lower wavelength at which the response is down to 10% of peak response shall be equal to or greater than 600 nm and the upper wavelength at which the response is down to 10% of peak response shall be equal to or less than 760 nm. Notwithstanding these specifications, the spectral response of the scanning system must be designed for good differentiation between bars and spaces with existing conventional color and black-and-white films.

9.2 Density of machine-readable messages

The edge print applied by the manufacturer shall be exposed so that, when the film is processed through the manufacturer's recommended process, the bars have a status M red density of D_{min} + 0.75 ± 0.25 and the spaces have a nominal density no more than 0.05 greater than the minimum density of the film.

9.3 Density of printed machine-readable messages

When the machine-readable message is printed onto a conventional color print film, it is recommended that the edge lights on the printer be controlled to produce a status A red density of the bars of 2.00 ± 0.30.

When the machine-readable message is printed onto a conventional color intermediate film, it is recommended that the edge lights on the printer be controlled to produce a status M red density of the bars of D_{min} + 0.75 ± 0.10.

Annex A (informative)
Additional data

The orientation of the human-readable key numbers has been left to the manufacturer's discretion in this standard. However, it is suggested that in the next review of this standard, an effort be made to seek agreement on a single orientation.

SMPTE RECOMMENDED PRACTICE

RP 21-1992
Revision of RP 21-1987

Dimensions of 35- and 70-mm Motion-Picture Rewind Spindles

1 Scope

This practice specifies the dimensions of 5/16-in and 1/2-in spindles for both 35-mm and 70-mm motion-picture rewinds.

2 Dimensions

The dimensions shall be as given in figures 1 and 2 and table 1.

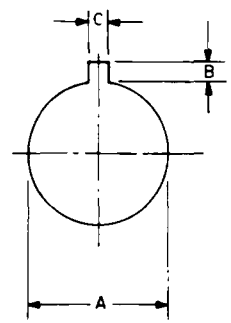


Figure 1 – 5/16-in spindle

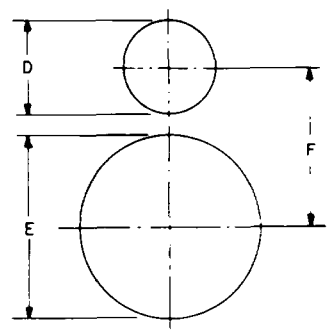


Figure 2 – 1/2-in spindle

Table 1 – Dimensions

Dimensions	Inches	Millimeters
A	0.315 $^{+\ 0.000}_{-\ 0.005}$	8.00 $^{+\ 0.00}_{-\ 0.13}$
B	0.120 ± 0.010	3.05 ± 0.25
C	0.120 ± 0.010	3.05 ± 0.25
D	0.250 ± 0.010	6.35 ± 0.25
E	0.500 $^{+\ 0.000}_{-\ 0.008}$	12.70 $^{+\ 0.00}_{-\ 0.20}$
F	0.782 ± 0.010	19.86 ± 0.25

Approved July 1, 1992

Annex A (informative)
Bibliography

Projection reels

ANSI/AIIM MS34-1990, Dimensions for Reels Used for 16-mm and 35-mm Microfilm

ANSI/SMPTE 235-1987 (R1992), Motion-Picture Equipment (16-mm) — Projection Reels — 200- to 2300-Ft Capacity

ANSI/SMPTE 241-1989, Motion-Picture Equipment — 35-and 70-mm Projection Reels

Shipping reels

ANSI/SMPTE 192-1991, Motion-Picture Equipment (35-mm) — Shipping Reels for Prints

Camera spools

ANSI PH1.33-1990, Photography (Film) — 16 mm, 35 mm, 70 mm and 105 mm Spools for Still-Picture Cameras — Dimensions

SMPTE RECOMMENDED PRACTICE

RP 68-1992
Revision of RP 68-1984

Specifications for Buzz-Track Test Film for 35-mm Motion-Picture Photographic Audio Reproducers

1 Scope

This practice specifies a test film for checking the lateral position of the audio scanning beam in 35-mm motion-picture photographic audio reproducers.

2 Normative references

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

ANSI/SMPTE 139-1986 (R1991), Motion-Picture Film (35-mm) — Perforated KS

ANSI/SMPTE 223M-1991, Motion-Picture Film — Safety Film

3 Test Film

3.1 The test film shall have originally recorded 300- and 1000-Hz signal tracks on opposite sides of the central exposed strip as shown in figure 1.

3.2 The position of the tracks shall be in accordance with the dimensions given in table 1.

3.3 The exposed portions of the signal track shall have a minimum density of 1.4 and the unexposed portions of the signal track shall be nominally clear.

4 Film stock

The film stock, preferably polyester, shall be splice-free, of the low-shrinkage, safety type in accordance with ANSI/SMPTE 223M-1991, and cut and perforated in accordance with long-pitch dimensions specified in ANSI/SMPTE 139-1986.

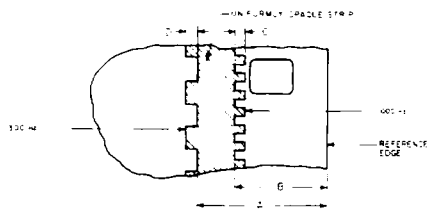


Figure 1 – Signal tracks

Table 1 – Dimensions

Dimensions	Inches		Millimeters	
A	0.286	+ 0.000 − 0.001	7.26	+ 0.00 − 0.03
B	0.200	+ 0.001 − 0.000	5.08	+ 0.03 − 0.00
C	0.012	min	0.30	min
D	0.012	min	0.30	min

5 Identification

Each test film shall be identified by a suitable marking printed lengthwise in the picture area. The spacing between consecutive marks shall be approximately 12 in (30 cm).

NOTE – A test film conforming to this practice is available from the Society of Motion Picture and Television Engineers.

Approved August 1, 1992