

SMPTE STANDARD

for Motion-Picture Film (16-mm) — Projectable Image Area and Projector Usage



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1 Scope

1.1 This standard specifies the maximum dimensions of the film image area intended for projection from a 16-mm motion-picture film perforated one or two edges as specified in ANSI/SMPTE 109, and the placement of this area relative to the perforations and the reference edge of the film.

1.2 This standard also specifies the position of the emulsion and the rate of projection for 16-mm motion-picture film perforated one or two edges, and the projector thread-up distance between audio and picture for 16-mm motion-picture film with audio.

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.

SMPTE 41-1999, Motion-Picture Film (16-mm) — Prints — Photographic Audio Records

SMPTE 112-1999, Motion-Picture Film (16-mm) — 100-Mil Magnetic Audio Record

3 Dimensions

3.1 The dimensions shall be as given in figure 1 and table 1.

3.2 The angle between the horizontal edges of the image area and the reference edge of the film shall be $90^\circ \pm 1/2^\circ$.

4 Relationship to other standards

4.1 This standard may be used as the basis for establishing picture areas from original photography for final viewing because it presents a description of the picture area on the projection print that is usable for the indicated purposes of the print (which is of primary importance because the projection print is the most commonly interchanged item). (See annex A.2.)

4.2 The following documents define image areas for other important phases of motion-picture operations, and are consistent with one another under currently acceptable commercial practice: SMPTE 7, ANSI/SMPTE 48, SMPTE 96, SMPTE RP 27.3, SMPTE RP 65.

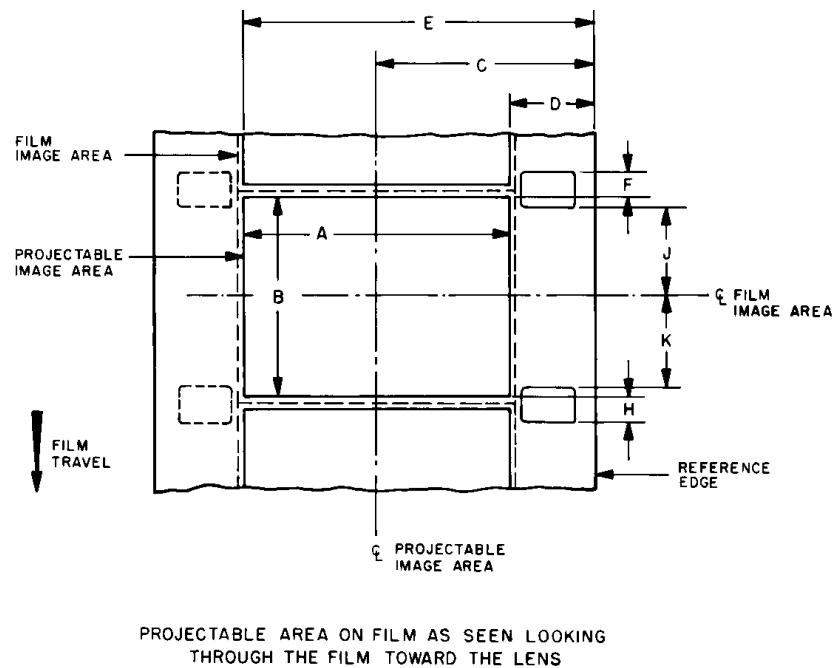


Figure 1 – Projectable image area on film as seen looking through the film toward the lens

Table 1 – Dimensions

Dimensions	Inches	Millimeters
A	0.380 ref	0.380 ref
B	0.286 max	0.286 max
C	0.314 ref	0.314 ref
D	0.122 min	0.122 min
E	0.506 max	0.506 max
F = H	within 0.014	within 0.014
J = K	nominally equal	nominally equal

5 Emulsion position

For original reversal film, the emulsion side shall be toward the projection lens. For prints, the emulsion position is dependent upon the process of preparation and either emulsion to light source or emulsion to projection lens orientation may be encountered. (See figure 2 and note 5.) The actual emulsion position should be indicated on the leader and the film container by notation or diagram.

6 Projection rate

The standard frame rate for motion-picture projection is 24 frames per second. However, it is recognized that nonstandard frame rates are sometimes used for specific applications. For example: 24, 25, or 30 frames/s may be used for motion pictures intended for television; higher or lower frame rates may be used for special effects and analysis, and nonstandard rates may be used for special motion-picture systems. A rate of 18 frames/s is often used for amateur silent films. The use of nonstandard frame rates requires notification and agreement of all parties concerned with the use of the particular film.