

SMPTE STANDARD

SMPTE 195-2000

Revision of
ANSI/SMPTE 195-1993

for Motion-Picture Film (35-mm) — Motion-Picture Prints — Projectable Image Area



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1 Scope

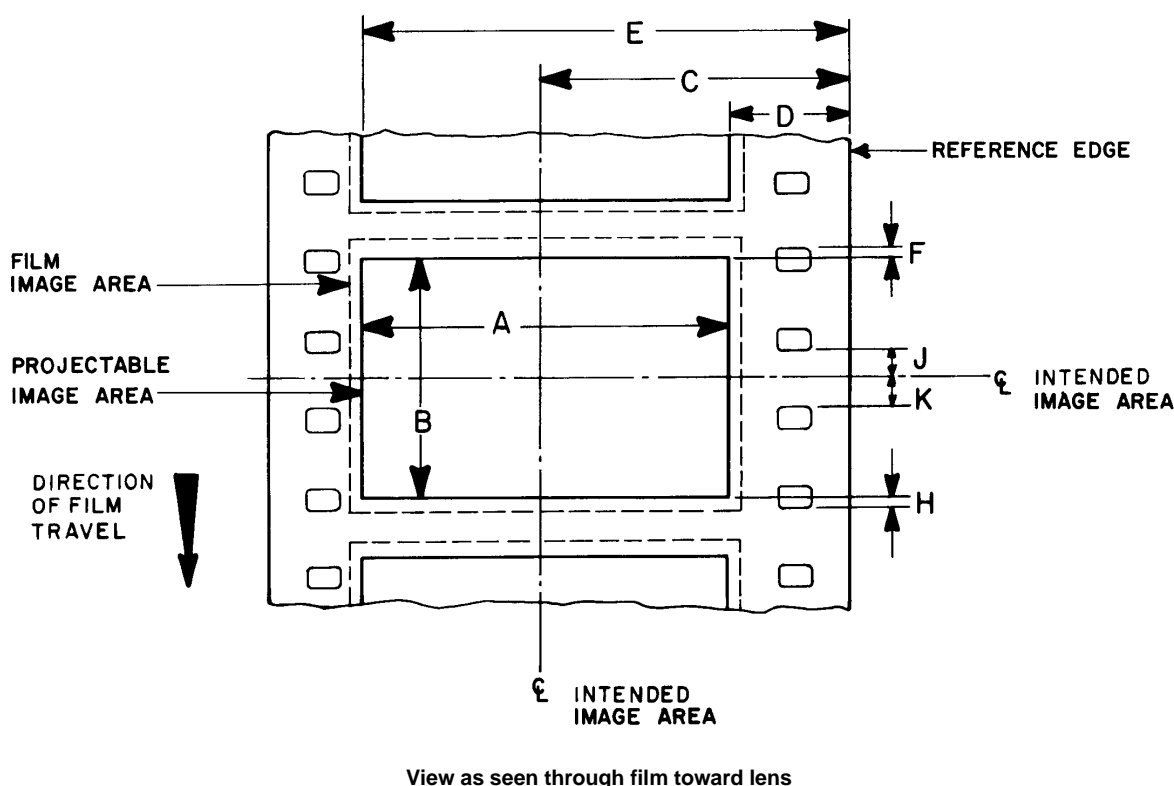
1.1 This standard specifies the maximum dimensions of the film image area intended for projection from a 35-mm motion-picture film and the placement of this area relative to the perforations and the reference edge of the film.

1.2 This standard specifies three types of image areas intended for theatrical projection (see A.4):

- Style A: General theatrical release prints commonly referred to as nonanamorphic or wide screen;
- Style B: Theatrical release prints with an anamorphic image;
- Style C: Classic theatrical prints.

2 Dimensions

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



View as seen through film toward lens

Figure 1 – Projectable image area

Table 1 – Dimensions

Dimensions	Inches	Millimeters
A	0.825 nom	20.96 nom
B (style A)	0.446 min 0.500 max	11.33 min 12.70 max
B (style B)	0.690 max	17.53 max
B (style C)	0.602 nom	15.29 nom
C*	0.738 ref	18.75 ref
D	0.324 min	8.23 min
E	1.151 max	29.24 max
F = H	within 0.012	within 0.30
J = K	nominally equal	nominally equal
*See A.1.		

NOTES

1 Projector aperture

Dimensions B, D, and E define the image area on the film that is available for projection. They do not define the opening in the projection aperture plate. The size of this opening may differ from dimensions A and B, for example, because of the physical separation necessary between the aperture plate and the film to avoid scratching the film, the slant of the marginal rays accepted by the projection lens, etc.

2 Actual projected area

It is recognized that, in many cases, the actual film image area that is projected may be smaller than the

projectable maximum and, in some cases, may be nonrectangular (for example, an irregular four-sided figure bound by either straight or curved lines). Such departures may result from equipment considerations, such as slight inconsistencies among lenses, screen sizes, etc.; from geometric limitations such as the screen surface being at an angle other than 90° from the projection axis, or being nonplanar or both; and from aesthetic considerations such as pictorial composition within more restrictive image limits. In the absence of specific instructions to the contrary, it is intended that the actual projected film image area be the largest appropriately-shaped figure that can be inscribed within the specified dimensions.

Annex A (informative)
General information

A.1 Centerlines

The centerlines of the image area are 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 projectable image area. Note that the centerline of the projectable image area is displaced from the centerline of the film by 0.050 in (1.27 mm) nominal.

A.2 Related standards

SMPTE 59 and ANSI/SMPTE 111 define image areas for other important phases of motion-picture operations and are

consistent with this standard and with one another under currently acceptable commercial practices.

A.3 Image area for television

It is recognized that home television receivers are adjusted to show a distribution of picture sizes ranging downward from the maximum. Guides to picture composition, based upon a statistical survey of receivers in use, are presented in SMPTE RP 27.3. Note that some portion of the audience will see the entire transmitted area, but for certainty in presentation of critical information over broadcast television, such information should be confined to a smaller, central area.

A.4 Typical aspect ratios for nonanamorphic theatrical projection

For aesthetic and practical reasons, theatrical projection may present 35-mm images in such a manner that the full width of the projectable area is shown but the projected height is less than maximum. Photography designed primarily for theatrical exhibition recognizes this and is composed for the more elongated rectangles. Several aspect ratios for the final projected picture are recognized through usage (see table A.1).

Table A.1 – Nonanamorphic aspect ratios

Style	Aspect ratio	Projectable image height			
		Inches		Millimeters	
A	1.85:1	0.446	min	11.33	min
A	1.66:1	0.497	ref	12.62	ref
C	1.37:1	0.602	nom	15.29	nom

In every case, it is intended that the projected area be located symmetrically about the horizontal centerline of the maximum projectable area.

To help ensure correct vertical centering (framing) of the projected image, hard-matte printing may be used in producing

the duplicate negative used for release printing of theatrical prints. A hard matte with an image height of at least 0.505 in (12.83 mm) may be used for all style A aspect ratios (1.66:1 or greater). Note that prints intended for a style C aspect ratio (1.37:1) will normally have an image height of at least 0.630 in (16.00 mm) as specified in SMPTE 59. In all cases, the framelines on the print shall essentially be opaque.

It is recommended that pictures designed to be shown at aspect ratios other than those specified in this standard be so marked in a conspicuous manner. The television leader (described in SMPTE 55) provides for aspect ratio identification on frames 6-10.

A.5 Image area on original negative

Use of camera aperture dimensions other than those stated in SMPTE 59 is discouraged. Film users are reminded that many features composed for wide-screen aspect ratio will be shown later on television. Use of a hard matte in the camera will require substantial cropping of the film horizontally when the film is transferred to television, and severely limits the use of a print made from the negative.

Good practice dictates using the 1.37:1 style A camera aperture of SMPTE 59, while composing for the desired theatrical projection aspect ratio. Care should be taken to exclude extraneous items or action from the photographed image area which may show in the television scanned area.

Annex B (informative)
Bibliography

ANSI/SMPTE 111-1996, Motion-Picture Film (35-mm) — Prints Made on Continuous Contact Printers — Exposed Areas for Picture and Audio

SMPTE 55-2000, Motion-Picture Film — 35 - and 16-mm Audio Release Prints — Leaders and Cue Marks

SMPTE 59-1998, Motion-Picture Film (35-mm) — Camera Aperture Images and Usage

SMPTE RP 27.3-1989, Specifications for Safe Action and Safe Title Areas Test Pattern for Television Systems