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SMPTE STANDARD

for Motion-Picture Film (8-mm Type R) — Camera Aperture Image and Usage



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1 Scope

1.1 This standard specifies the dimensions of the camera aperture image and its relative position to the reference edge and the perforations of 8-mm type R motion-picture film. The location of the perforations is based on dimensions given in SMPTE 239.

1.2 This standard also specifies the position of the emulsion, the frame rate, and the orientation of the area being exposed for 8-mm type R film as used in a motion-picture camera.

2 Dimensions

2.1 The dimensions shall be as given in figure 1 and table 1 and shall apply to measurements of the aperture image as formed on fresh film, properly exposed and processed.

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

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

3 Camera usage

3.1 Emulsion position

Except for special processes, the emulsion shall be toward the camera lens as shown in figure 1.

3.2 Frame rate

The standard frame rate for motion-picture photography 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 per second 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. The use of nonstandard frame rates requires notification and agreement of all parties concerned with the use of the particular film.

NOTES

1 Dimension B, vertical height of aperture, must be maintained in order to ensure a real (unexposed) frameline in the projector. Close control of the tolerances given for dimension B is necessary to enable dimensions F and H to be held within satisfactory limits. These are the distances from the lower edge of the perforation and the horizontal edges of the framelines. Dimensions F and H represent the maximum conditions which can be tolerated due to misalignment of the horizontal centerline of the aperture opening and the optical centerline of the photographic lens. Dimensions B, F, G, and