

SMPTE ENGINEERING GUIDELINE

Telecine Scanning for Film Transfer to Television



1 Scope

This guideline specifies the maximum film image area and minimum image size range that a telecine should be capable of scanning to transfer motion-picture images to television.

2 Film image area and size

2.1 The film to video transfer device must be capable of reproducing the total camera aperture area. Film scanning requirements for five film formats are listed in table 1.

2.2 The film to video transfer device must be capable of variable x size, y size, and zoom. The x and y sizes must be independently and continuously variable over a minimum 2:1 range.

2.3 If the film image area selected for video transfer is less than the full intended scene captured by the camera, it should be possible to reposition the scanned area for video transfer anywhere within the available original intended scene image area.

Table 1 – Film scanning requirements

Film format	Maximum height		Maximum width	
	mm	in	mm	in
Super 16	7.57	0.298	12.35	0.486
16 mm	7.59	0.299	10.26	0.404
35 mm	18.72	0.737	24.92	0.981
65 mm	23.52	0.926	52.48	2.066
70 mm*	23.52	0.926	52.48	2.066
*See annex A				

Annex A (informative)

Explanatory notes

It is recognized that for artistic or technical reasons, the variable x, y, and zoom may be independently variable over a greater than 2:1 range. The value given in 2.2 represents a minimum value only.

The maximum dimensions given in clause 2 represent the limiting areas within which the camera aperture may have been positioned. Each width dimension is the specified nominal value from the appropriate standard. Each height dimension is the sum of the specified image height plus the positive tolerance, from the appropriate standard.

For example, in the case of 35 mm

$$\begin{aligned}\text{width} &= 24.92 \text{ mm} \\ \text{height} &= 18.67 \text{ mm} + 0.05 \text{ mm} = 18.72 \text{ mm}\end{aligned}$$

Note that certain 70-mm elements may have images printed perforation to perforation. Therefore, the maximum film image area for 70 mm is the same as for 65 mm.

Annex B (informative)

Bibliography

ANSI/SMPTE 152-1994, Motion-Picture Film (70-mm) — Projectable Image Area

ANSI/SMPTE 201M-1996, Motion-Picture Film (16-mm) — Type W Camera Aperture Image

ANSI/SMPTE 215-1995, Motion-Picture Film (65-mm) — Camera Aperture Image

SMPTE 7-1999, Motion-Picture Film (16-mm) — Camera Aperture Images and Usage

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

SMPTE RP 187-1995, Center, Aspect Ratio and Blanking of Video Images