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SMPTE RECOMMENDED PRACTICE

RP 81-2004
Revision of RP 81-1999

Specifications for Scanning-Beam Uniformity Test Film for 16-mm Motion-Picture Photographic Audio Reproducers



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1 Scope

This practice describes a test film to determine the uniformity of scanning-beam illumination in 16-mm motion-picture photographic audio reproducers. (This test film is not intended to be used for the determination of the correct position of the scanning beam with respect to the reference edge of the film.)

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.

SMPTE 109-2003, Motion-Picture Film (16-mm) — Perforated 1R and 2R

SMPTE 223M-2001, Motion-Picture Film — Safety Film

3 Test film

3.1 The test film shall be a directly-recorded positive or a print made directly from an original negative.

3.2 The audio record on the film shall reproduce at a frequency of $1000 \text{ Hz} \pm 20 \text{ Hz}$ when the linear velocity of the film is 24 perforations per second or approximately 36 ft/min (7.2 in or 18.3 cm/s).

3.3 At full modulation, the test record shall have a width of $0.0050 \text{ in} \pm 0.0003 \text{ in}$ ($0.127 \text{ mm} \pm 0.008 \text{ mm}$), as measured between opposite amplitude peaks. The waveform shall be sinusoidal.

3.4 The test record shall move laterally at a uniform rate from one edge of the scanned area to the other, as specified in figure 1.

3.5 In any one test film, the combined effect of variation in modulation width and density of the exposed and unexposed areas shall result in a signal amplitude variation not exceeding $\pm 0.8 \text{ dB}$ with respect to the average signal amplitude.