SMPTE RECOMMENDED PRACTICE

RP 51-1995
Revision of RP 51-1990

Screen Luminance and Viewing Conditions for 8-mm Review Rooms

1 Scope

This practice specifies the screen luminance level and characteristics of the projection screen and the viewing conditions for 8-mm review rooms.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this practice. At the time of publication, the edition indicated was 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 standard indicated below.

ANSI/SMPTE 196M-1993, Motion-Picture Film — Indoor Theater and Review Room Projection — Screen Luminance and Viewing Conditions

3 Viewing prints for general application

The luminance and conditions specified in ANSI/SMPTE 196M shall apply to the review room for 8-mm prints intended to be viewed in a conventional theatrical manner; i.e., front projection in a darkened room. This is essentially 16 footlamberts ± 2 fL (55 candelas per square meter ± 7 cd/m^2).

4 Viewing prints for special purposes

4.1 Because of the multitudinous applications of 8-mm prints, they are occasionally intended to be viewed under conditions quite different from those defined in ANSI/SMPTE 196M. The most common departures include the following:

a) Prints used as a background moving image in the design of a public place rather than as the focus of a viewer's attention as in a movie theater;

b) Prints used as a point of purchase (POP) selling tool in retail stores or trade expositions;

c) Prints used as a selling or instructional tool in compact, suitcase-style, rear-screen projectors;

d) Prints used in airplane cabins for entertainment of passengers;

e) Prints used in public locations for instruction or entertainment under high ambient-light levels;

f) Prints used in the home;

g) Prints used for photographic instrumentation data analysis.

Experience has shown that modifications to the viewing conditions such as those above usually introduce more stringent limitations upon print density, color balance, etc., such that some prints that would be accepted under the conditions specified in ANSI/SMPTE 196M become less satisfactory for those modified viewing conditions.

4.2 Prints intended for special applications should be judged in a review room with a screen that simulates the special purpose as closely as possible.

Approved January 5, 1995

Annex A (informative)
Additional data

Prints are judged best on the type of screen to be used by the end user. Among the types of flat screens commonly used for 8-mm prints are plastic or glass rear screens, matte white vinyl screens, and lenticular vinyl screens. Specially formed screens are also used. The rear support member of these screens will have a concave curvature from side to side only or be curved in two directions; i.e., from side to side and from top to bottom. These formed curved screens will have surfaces ranging from silver-colored lithographic foils to vinyl materials embossed with lenticules.

These screens have various gains. Gain is a measure of reflectance. A matte white screen is arbitrarily designated to have a gain of approximately 1 for reference. For accurate comparisons, it has been determined that matte white screens have an actual gain in the range of 0.95 to 0.98.

Gain screens (those with a gain above 1) are available as treated screens which are flat as well as those embossed with lenticules.

Flat lenticular screens have gains ranging from 2 to as high as 20, depending on the design of the lenticules and the screen material used. Flat gain screens which are not lenticular, such as the pearlescent surface, have gains from 1.2 to 2.5.

Special formed screens have gains ranging from 6 to 19 depending on the surface material used (flat or lenticular) and the spherical radius used in the rear support member.

Acceptable viewing angles of gain screens decrease inversely with increasing gain.