EG 3-1994
Revision of EG 3-1989

SMPTE ENGINEERING GUIDELINE

Projection for Technical Conferences

1 Scope

This guideline specifies the minimum condition and parameters for effective presentation of papers at technical conferences.

2 Auditorium

2.1 The ambient light shall meet the requirements specified in 3.1.

2.2 The room shall be of sufficient dimension to permit an image size large enough to meet the requirements specified in clause 5.

2.3 There shall be no obstruction to projection or viewing of the projected image as viewed from the normal seating area.

3 Projection

3.1 Ambient light

The ambient light level in the seating area during projection shall be in accord with local codes and, if needed for note-taking, approximately 54 lx (5 fc).

3.2 Stray light

There shall be no direct stray light from any source or reflection falling on the screen or in direct view to the point that it interferes with viewing the projected image. The ambient light on the screen shall be as low as practicable.

3.2.1 Entrance to the projection area shall be masked to prevent stray light from falling on the projection screen and other disturbances.

3.3 House lights

House lights shall be controllable by the projectionists.

4 Projected image

4.1 Luminance level

The luminance at the center of the screen shall be 55 $cd/m^2 \pm 7$ cd/m^2 (16 fL ± 2 fL) for all motion-picture formats.

4.1.1 The luminance of the projector shall not be increased to overcome ambient light to the point of objectionable flicker.

4.2 Luminance distribution

The image shall be free of hot spots. Illumination at the edges shall be within 75% of that specified in 4.1.

4.3 Slides

Slides shall be projected at an image light level (center) of at least 55 cd/m^2 (16 fL) or approximately 60 times the ambient light level on the screen, whichever is higher (see annex A.4).

4.4 Steadiness

The image shall have vertical and horizontal steadiness better than 0.25% of image height (see annex A.1), as per SMPTE RP 105.

4.5 Matched projection

In presentations requiring matched projection for product comparisons, the brightness shall be matched to within ± 7 cd/m^2 (± 2 fL) and color to within

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an 05 CC color-correcting filter. Distributions of light for each projector shall be matched.

4.6 Color temperature

With no film or slide in the gate, the color temperature of the light reflected from the screen shall be 5400 K ± 400 K, the use of a xenon short-arc lamp being assumed.

4.7 Image quality

Using appropriate test films for evaluation, resolution shall be at least 56 lines per millimeter in the center and 48 lines per millimeter at the edges of the projected image for both slides and motion pictures. The image shall be essentially free of obvious optical defects such as color fringing,geometric distortion, etc. (see SMPTE RP 105).

5 Image size

5.1 Picture height shall be the same for all formats. For normal presentation, a 1.37:1 aspect ratio is preferred for motion pictures (see ANSI/SMPTE 195, style C; and ANSI/SMPTE 233).

5.2 Seating areas shall be within a distance of 5 picture heights ± 3 picture heights from the screen.

5.3 Slide projection shall be set up assuming horizontal slides (24 × 36-mm image area) is 2-in square mounts.

5.4 Keystone distortion shall be kept to a minimum and in no case shall the projection axes be more than 10^{o} off center.

5.5 The screen, when illuminated by white light from the projector, shall show no visible defect due to seams, wrinkles, scratches, discolorations, etc.

6 Equipment

6.1 Projection equipment shall be operable throughout the conference period.

6.2 The equipment shall not generate objectionable noise or interfere with the speaker (see 6.5).

6.3 Projection equipment shall be installed so as to block the least number of seats. Sufficient clearance shall be provided so that no shadows will be cast onto the screen.

6.4 Projection equipment preferably shall be installed in a permanent projection booth.

6.5 If installation in a permanent projection booth is impracticable, projection equipment shall be installed behind the rearmost seats. In such a case, the projection equipment and operators shall be shielded from the audience by a suitable sound and light baffler or heavy drapes. An overhead projector may be operated by the speaker in front of the audience.

6.6 Slide projectors shall be activated by remote control if requested by the speaker.

6.7 A projected-light pointer shall be available to the speaker.

6.8 Temporary wiring and installation for control, sound, or power service shall be installed in accordance with local codes, and shall be positioned and mechanically and electrically protected with regard to the safety of those in the room.

6.9 Prior to the papers session, all projection equipment shall be correctly aligned and checked using the appropriate test materials to ensure the correct sound levels, aperture plates, light levels, etc.

6.10 Signal lights shall be used by the chairman to notify the speaker two minutes before and at the end of his allotted time.

6.11 The number of the paper being given shall be displayed both inside and outside the auditorium.

6.12 Television monitors shall be located along the left- and right-hand sides of the seating area, and shall be positioned so they are not hidden by a standing person or block the speaker from view.

6.12.1 Color monitors capable of accepting a baseband video signal are preferred over rf-only receivers. Combinations monitor-receivers

are the most desirable choice. Color monitors shall be set up and matched according to applicable standards for color, brightness, etc.

6.13 Two-way communication by telephone or headset should be provided between the projectionist and the session chairman and speakers' lounge.

7 Projectionists

An appropriate number of qualified projectionists shall be available as may be needed for each technical session.

Annex A (informative)
Additional data

A.1 All specifications given in this guideline are in accordance with ANSI/SMPTE 196M and SMPTE RP 59.

A.2 The presentation of papers at conferences should be considered as a remote production. The responsibility for the overall production should be assigned to a director or producer to ensure that a professionally coordinated presentation is realized. In addition, it is recommended that a qualified technical supervisor be assigned to assemble a professional crew to undertake the setup, testing, and operation of the audio-visual facilities.

A.3 Test films suitable for checking the parameters specified in this guideline are available from the Society of Motion Picture and Television Engineers.

A.4 By maintaining the same brightness for all formats, including slides, photography of the screen by the audience is simplified and adaption is less of a problem.

A.5 Slide projectors in the speakers' lounge shall represent the exact type being used in the projection area to prevent incompatibility with trays or other slide carriers.

Annex B (informative)
Bibliography

ANSI/SMPTE 195-1993, Motion-Picture Film (35-mm) — Motion-Picture Prints — Projectable Image Area

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

ANSI/SMPTE 233-1992, Motion-Picture Film (16-mm) — Projectable Image Area and Projector Usage

SMPTE RP 59-1986 (R1990), Color and Luminance of Review Room Screens for Viewing Motion-Picture Materials Intended for Slides or Film Strips

SMPTE RP 105-1994, Method for Determining the Degree of Jump and Weave in 70-, 35- and 16-mm Motion-Picture Projected Images