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SMPTE STANDARD

SMPTE 166-2004

 Revision of
SMPTE 166-1999

for Motion-Picture Film (8-mm Type S) — Exposure Control and Stock Identification — Sound and Silent Camera Cartridge Notches



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1 Scope

1.1 This standard specifies the dimensions and location of 8-mm type S sound and silent motion-picture film camera cartridge notches intended to preset exposure devices automatically with respect to the film speed and color-balancing filter.

1.2 This standard also specifies the dimensions and location of cartridge notches intended for identification of the motion-picture film inside the cartridge.

2 Dimensions

2.1 The dimensions of the cartridge notches shall be as specified in the figures and tables.

2.2 The datum planes used for dimensioning are mutually perpendicular.

2.3 Datum features B, C, and A are primary, secondary, and tertiary, respectively.

2.3.1 Datum plane A is coincident with the center of a circle located by basic dimension T. The circle is in contact with edges of the locating slot defined by dimensions A, O, P, and Q. The diameter of this circle is such that it applies regardless of feature size (RFS) of the locating slot (see annex A.3).

2.3.2 Datum feature B is the unnotched, unlabelled surface of the cartridge.

2.3.3 Datum feature C is the front seating surface of the cartridge.

2.4 Dimension U applies to all film identification notch locations.

3 Assignment code*

*Assignment of specific combinations of notches can be made according to the manufacturer's needs by application to the Director, Standards and Technology, Photographic and Imaging Manufacturers Association, 550 Mamaroneck Ave., Harrison, NY 10528-1612.

3.1 The film identification notch location positions are numbered 1 through 6 from the locating slot so that combinations of notches can be assigned (see figure 4).

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3.2 The 63 possible film identification notch combinations have been systematically arranged and identified with a notch combination code number, as shown in table 4.

3.3 Assignment of a code for use with either 50-ft (15-m) silent or sound 8-mm type S cartridges shall imply permission to utilize the same identification notch code for the same film offered in the alternate cartridge.

NOTES

1 The dimensions for the filter notch apply if the cartridge is loaded with film balanced for tungsten-light exposure and for some special cases with black-and-white film, as specified in note 6. This area is not notched if the cartridge is loaded with color film for daylight exposure and usually is not notched for black-and-white film.

2 The space available for notch-sensing devices is specified in SMPTE 159.1 and SMPTE 197.

3 The dimensions in table 3 permit the removal of material between adjacent identification notch positions, and between the number six identification notch position and the filter notch when adjacent notch positions are used. When material is retained, caution should be exercised to ensure that it is of sufficient strength to withstand normal handling without breakage.

4 If film data, such as film name and length of film load, are to be provided on the cartridge, they should be within the area shown by dimensions D, E, F, and G to provide for visual film identification in the camera (see figure 1).

5 Many general-purpose black-and-white reversal films can be processed satisfactorily in a universal process. Notch combination code number 1, therefore, has been reserved for such general-purpose black-and-white reversal films.

6 To ensure proper identification of film products whose production volume or market life does not warrant the assignment of a film identification notch, the absence of a notch in the area specified will require the film product to be identified by its label.

7 The film speed notch is used to set the exposure of an automatic camera with the daylight film speed. When the cartridge is loaded with film balanced for tungsten light, the tungsten light values are those at which the films are rated by the manufacturer. The effective speeds to daylight illumination for which the camera will expose these films (unless instructed otherwise) are based on the premise that a typical tungsten-light balanced color camera original film will have a speed two-thirds of a lens stop less when exposed through an appropriate filter to daylight illumination than it has when exposed unfiltered to tungsten light. The filter notch established by dimensions A_2 and B must, therefore, be used when the cartridge is loaded with color film balanced for tungsten illumination because this notch activates the camera to position a tungsten-to-daylight illumination correcting filter in the exposing light path. Black-and-white films are usually notched according to their daylight speed; however, a manufacturer may choose to speed notch a black-and-white film according to its speed to tungsten light, depending upon the intended use of the film. If this is done, the film would be exposed to daylight illumination through a tungsten-to-daylight correcting filter, as described above. A filter notch may also be used with black-and-white film if the manufacturer wishes to reduce the effective speed of a given film to daylight illumination by approximately two-thirds of a stop.