Cinematography — Sound motion-picture camera cartridge, 8 mm Type S Model II — Camera run length and end notches in film — Dimensions and specifications

1 Scope and field of application

This International Standard specifies the camera run length and end notches of film supplied in an 8 mm Type S Model II sound motion-picture film camera cartridge of 15 m nominal capacity and the length of film returned to the customer. The purpose of this International Standard is to provide a uniform basis for the operation of the film metering mechanisms in cameras.

2 Dimensions and specifications

2.1 Camera run length

The camera run length of film can vary between 3 688 perforation pitch intervals (15,61 m) and 3 728 perforation pitch intervals (15,78 m). The overall length of the film in the cartridge shall be determined by the manufacturer to provide for the camera run length specified.

NOTE — A nominal pitch, based on 72 perforation pitch intervals per foot, of 4,234 mm is assumed for all comparisons of the number of perforation pitch intervals in a given film length.

The processed film returned to the customer shall consist of at least 3 600 perforation pitch intervals (15,24 m), the customer return length. The customer return length shall be that portion of the camera run length available for subject matter. It shall commence following a leader of approximately 36 perforation pitch intervals, 152 mm measured from the frame in the camera aperture as the cartridge is supplied by the manufacturer, and end about 54 perforation pitch intervals, 229 mm, short of the final frame of the camera run length as limited by the end notch for claw (see the annex).

NOTE — The start of the film should have a suitable visual marking in the frame area.

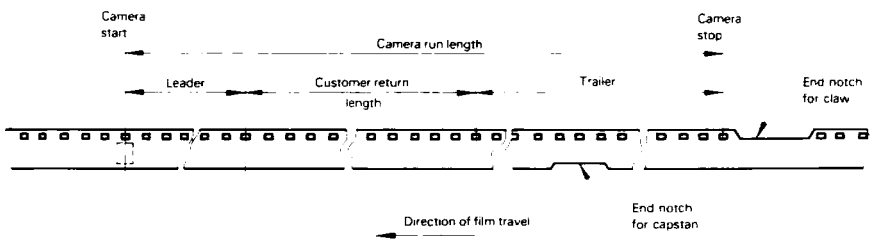

Figure 1 — Camera run length and notches

2.2 End notches

The final portion of the film has two kinds of notches. One is for camera claw and the other is for capstan. When they are engaged in these notches, the film is prevented from being wound into the cartridge. The notches also give the user a visual confirmation that all film has been exposed.

The notch dimensions shall be as shown in figure 2 and given in the tables.

NOTE — All dimensions given in imperial units are shown in the annex.

3 Bibliography

ISO 1700, *Cinematography — 8 mm Type S motion-picture raw stock film — Cutting and perforating dimensions.*

ISO 1787, *Cinematography — Camera usage of 8 mm motion-picture film perforated Type S.*

ISO 2863, *Cinematography — Motion-picture camera cartridge, 8 mm Type S Model II — Run length of film — Dimensions and specifications.*

ISO 7453, *Cinematography — Sound motion-picture camera cartridge, 8 mm Type S Model II — Cartridge-camera fit and take-up core drive — Dimensions and specifications.*

ISO 7455, *Cinematography — Sound motion-picture camera cartridge, 8 mm Type S Model II — Slots and projection for film speed, cartridge hole and projection for film identification and colour-balancing filter — Dimensions and positions.*

ISO 7456, *Cinematography — Sound motion-picture camera cartridge, 8 mm Type S Model II — Film load position.*

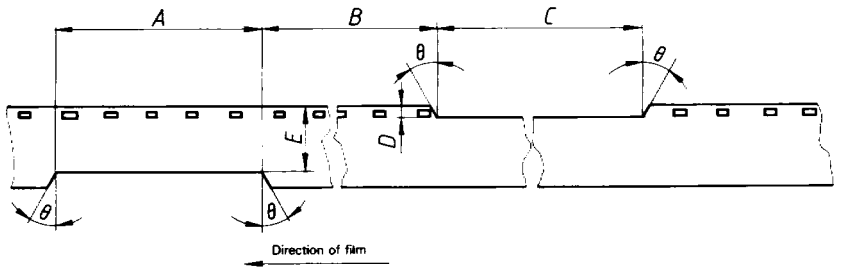

Figure 2 — Notch dimensions

Table 1 — Notch dimensions

Dimensions	mm
A nom.	20,0
B nom.	54,0
C nom.	50,0
D min.	1,5
E max.	7,5
θ nom.	30°

Annex

Additional data

(This annex does not form part of the standard.)

The lengths of leader and trailer described are necessary to ensure that the fog produced near the camera aperture is removed. The material removed also provides space for identification numbers, and allows for manufacturing variability in the length of the film.

Table 2 – Notch dimensions in inches
(see figure 2)

Dimensions	in
A nom.	0.79
B nom.	2.13
C nom.	1.97
D min.	0.06
E max.	0.30
θ nom.	30°

Cinematography – Recorded characteristic for magnetic sound on full-coat 16 mm motion-picture film – Specifications

1 Scope and field of application

This International Standard specifies the recorded characteristic for magnetic sound records on 16 mm full-coat perforated magnetic film when used at the nominal speed of 24 frames (18,3 cm (7.2 in)) per second, or 25 frames (19,05 cm (7.5 in)) per second.

2 Recorded characteristic

With constant sine-wave signal applied to the input of the recording system, the nominal characteristic in effective values of the short-circuit magnetic flux versus frequency should fall with increasing frequency in conformity with the impedance of a parallel combination of a capacitance and a resistance having a time constant t = 70 µs.

The characteristic defined above is represented by

$$N = -10 \lg (1 + 4\pi^2 f^2 t^2)$$

where

N is the recorded characteristic in decibels;

f is the frequency in hertz;

t is the time constant in seconds.

Numerical values are given in the table.

Table – Numerical values of the recorded characteristics

Frequency Hz	dB
40	0,13
50	0,13
63	0,13
80	0,13
100	0,12
125	0,12
160	0,11
200	0,10
250	0,08
315	0,05
400	0,00
500	– 0,07
630	– 0,19
800	– 0,37
1 000	– 0,64
1 250	– 1,01
1 600	– 1,61
2 000	– 2,36
2 500	– 3,31
3 150	– 4,52
4 000	– 5,99
5 000	– 7,53
6 300	– 9,25
8 000	– 11,13
10 000	– 12,95
12 500	– 14,81
16 000	– 16,90

NOTE – Numerical values of the recorded characteristic normalized to 400 Hz.

3 Tolerances

Magnetic sound records on films shall be recorded to the characteristic specified in clause 2 within the tolerances given in the figure.

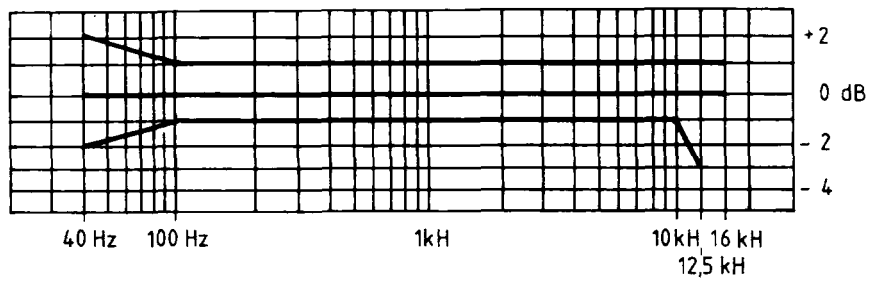

Figure – Tolerances on recorded level on 16 mm film