INTERNATIONAL STANDARD ISO 3067

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model I — Notches for film speed, film identification and colour-balancing filter — Dimensions and positions

Cinématographie — Chargeurs, modèle I, pour caméras 8 mm type S — Encoches de sensibilité du film, d'identification du film et filtre de correction de couleur — Dimensions et positions

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3067 was drawn up by Technical Committee ISO/TC 36, *Cinematography,* and circulated to the Member Bodies in April 1973.

It has been approved by the Member Bodies of the following countries:

Australia	Germany	Spain
Austria	India	Sweden
Belgium	Italy	Switzerland
Bulgaria	Japan	Thailand
Canada	Mexico	United Kingdom
Czechoslovakia	Netherlands	U.S.A.
Egypt, Arab Rep. of	Romania	
France	South Africa, Rep. of	

No Member Body expressed disapproval of the document.

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Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model I — Notches for film speed, film identification and colour-balancing filter — Dimensions and positions

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the dimensions and location of notches for the Model I 8 mm Type S film camera cartridge which, when included by the manufacturer, automatically preset some cameras in accordance with the effective film speed, insert or exclude a colour-balancing filter, and provide a means which can be used by film processors to identify film for processing. The notch combinations which are possible and the method of their assignment to film products, together with the area available for visible film identification, are also described.

2 REFERENCES

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

ISO 1780, *Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model I — Aperture opening, pressure pad and film load — Positions and dimensions.*[1)]

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

ISO 3024, *Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model I — Camera run length, perforation cut-out and end-of-run notch in film — Specifications.*

ISO 3654, *Cinematography — Motion-picture camera cartridge, 8 mm Type S, Model I — Camera fit and take-up core drive — Dimensions and specifications.*[1)]

3 DIMENSIONS AND CHARACTERISTICS

3.1 The location of the notches for effective film speeds and for film identification shall be as given in the figures and tables.

3.2 The dimensions for the filter notch apply if the cartridge is loaded with a colour film balanced for tungsten-light exposure. This area is not notched if the cartridge is loaded with colour film for daylight exposure. If the cartridge is loaded with a black-and-white film, the film manufacturer will determine if a filter notch is to be included, depending on the intended use of the film.

3.3 Because the vertical position of the cartridge in the camera depends on the camera locating pin, the dimensions of the notches are measured from the centre line of the cartridge locating slot, datum plane **A**.

3.4 Dimension *N* (figure 3) applies to all film-identification notch locations.

1) At present at the stage of draft.

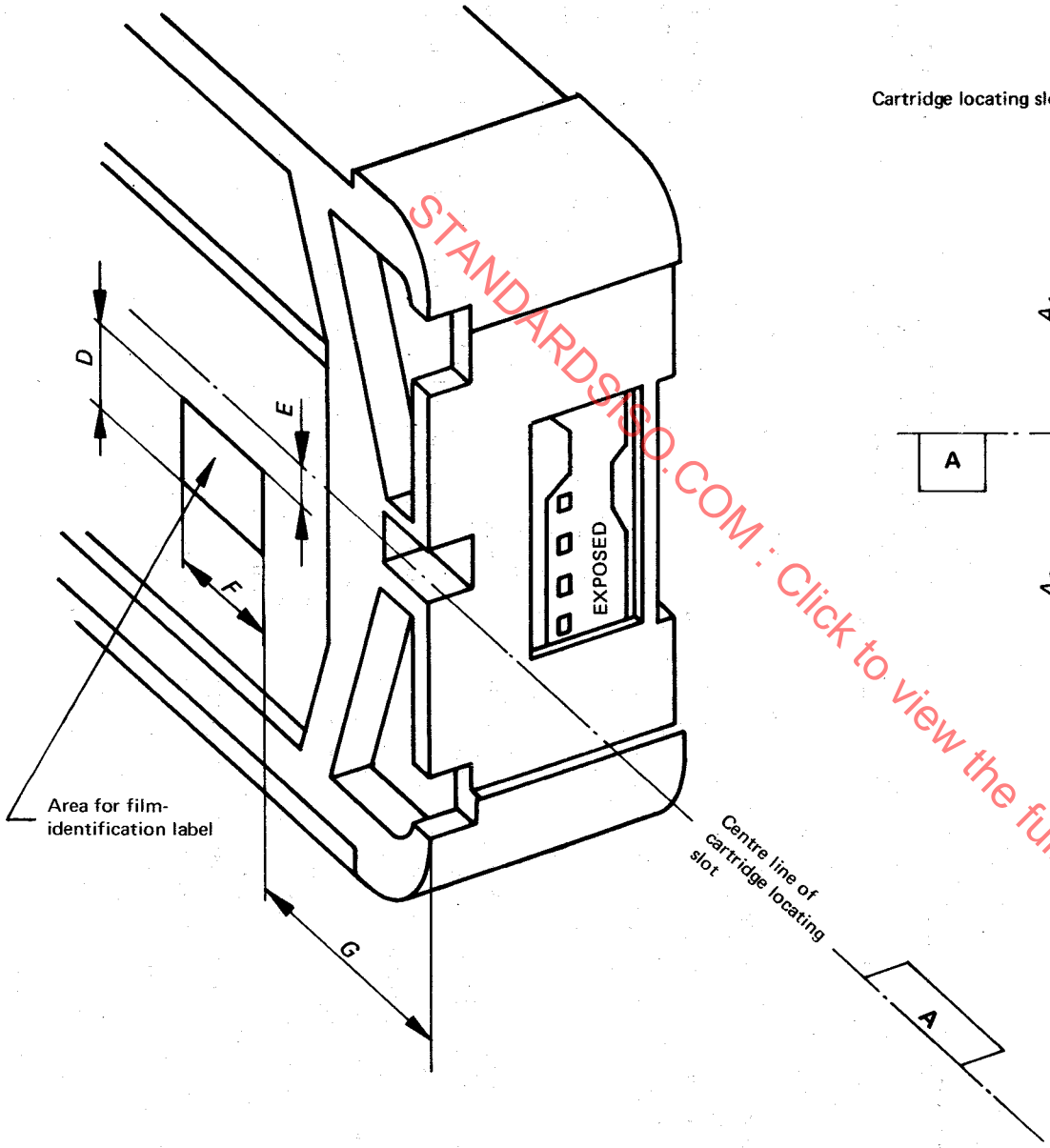

FIGURE 1 — **External visual film-identification area**

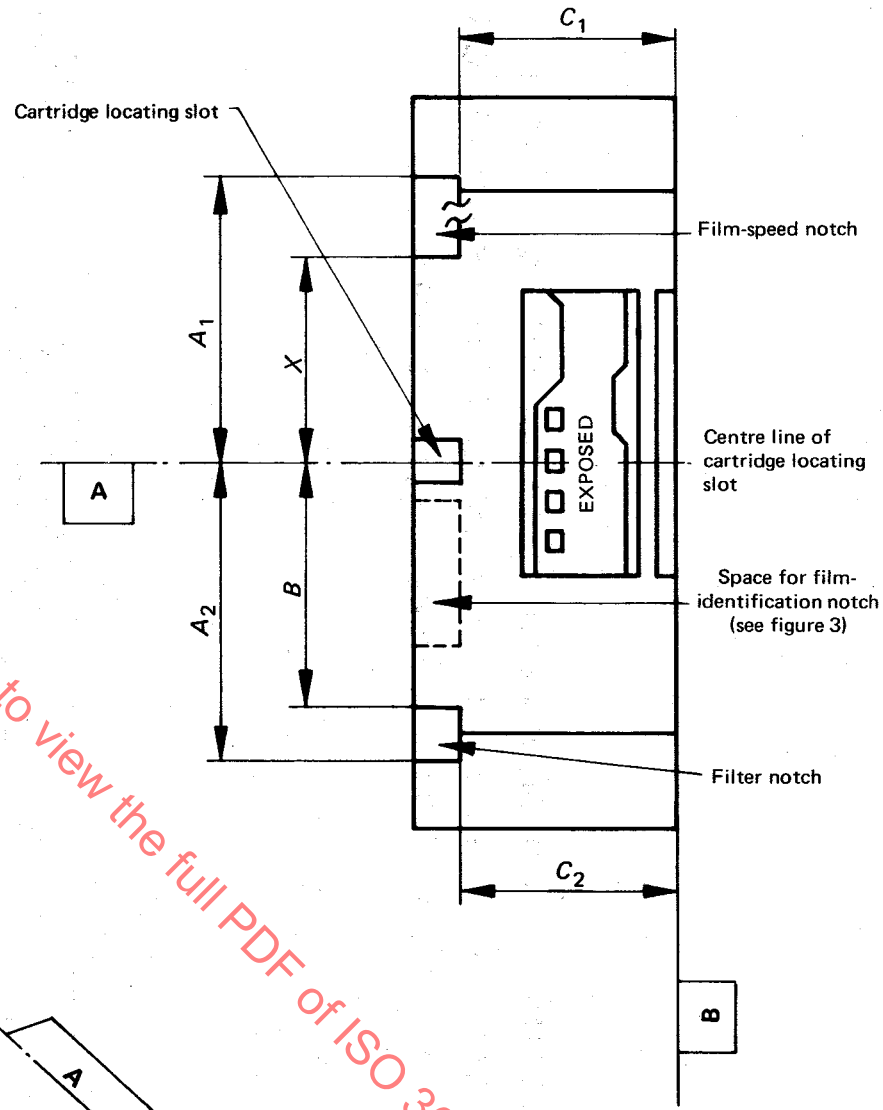

FIGURE 2 — **Film-speed and filter notch locations**

TABLE 1

Dimension	mm	in
A_1 and A_2	27,94 ± 0,38	1.100 ± 0.015
B	23,19 ± 0,38	0.913 ± 0.015
C_1 and C_2	20,32 ± 0,38	0.800 ± 0.015
D	6,35 ± 0,38	0.250 ± 0.015
E	1,32 ± 0,38	0.052 ± 0.015
F	14,30 ± 0,38	0.563 ± 0.015
G	26,97 ± 0,38	1.062 ± 0.015
X	(See table 2)	

TABLE 2

X Dimension[1]		Black-and-white and daylight colour film speed (cartridge has no filter notch)		Black-and-white and tungsten-light colour film speed[3] (cartridge has a filter notch)	
mm	in	DIN[2]	ASA[2]	DIN[2]	ASA[2]
25,40	1.000	11°	10	13°	16
22,86	0.900	13°	16	15°	25
20,32	0.800	15°	25	17°	40
17,78	0.700	17°	40	19°	64
15,24	0.600	19°	64	21°	100
12,70	0.500	21°	100	23°	160
10,16	0.400	23°	160	25°	250
7,62	0.300	25°	250	27°	400
5,08	0.200	27°	400	29°	640

1) Tolerances for X dimension ± 0,38 mm (0.015 in).

2) Manufacturer's film speed rating may apply where DIN or ASA measurements are not applicable (see annex, A.1).

3) See note 3, page 5.

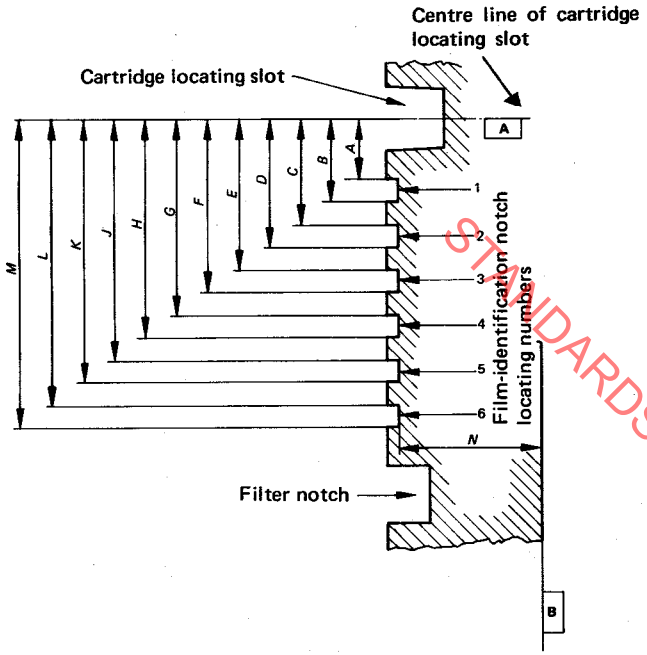

FIGURE 3 — **Film-identification notch locations**

TABLE 3

Dimension	mm		in	
	min.	max.	min.	max.
A	3,81	4,32	0.150	0.170
B	5,59	6,50	0.220	0.256
C	6,50	7,42	0.256	0.292
D	8,69	9,60	0.342	0.378
E	9,60	10,52	0.378	0.414
F	11,79	12,70	0.464	0.500
G	12,70	13,61	0.500	0.536
H	14,88	15,80	0.586	0.622
J	15,80	16,71	0.622	0.658
K	17,98	18,90	0.708	0.744
L	18,90	19,81	0.744	0.780
M	21,08	21,59	0.830	0.850
N	22,7 ± 0,51		0.894 ± 0.020	

TABLE 4 — **Film-identification code**

Notch-combination code number	Location number						Notch-combination code number	Location number					
	1	2	3	4	5	6		1	2	3	4	5	6
1	1						35	1		3		5	
2		2					36		2		4		6
3			3										
4				4			37	1		3			6
5					5								
6						6	38	1			4	5	
							39		2			5	6
7	1	2											
8		2	3				40	1			4		6
9			3	4			41	1				5	6
10				4	5								
11					5	6	42	1	2	3	4		
							43		2	3	4	5	
12	1		3				44			3	4	5	6
13		2		4									
14			3		5		45	1	2	3		5	
15				4		6	46		2	3	4		6
16	1			4			47	1	2	3			6
17		2			5								
18			3			6	48	1	2		4	5	
							49		2	3		5	6
19	1				5								
20		2				6	50	1	2		4		6
21	1					6	51	1	2			5	6
22	1	2	3				52	1		3	4	5	
23		2	3	4			53		2		4	5	6
24			3	4	5								
25				4	5	6	54	1		3	4		6
							55	1		3		5	6
26	1	2		4			56	1			4	5	6
27		2	3		5								
28			3	4		6	57	1	2	3	4	5	
							58		2	3	4	5	6
29	1	2			5								
30		2	3			6	59	1	2	3	4		6
							60	1	2	3		5	6
31	1	2				6	61	1	2		4	5	6
							62	1		3	4	5	6
32	1		3	4									
33		2		4	5		63	1	2	3	4	5	6
34			3		5	6							

NOTES

1 The film-identification notch positions shown in figure 3 have been numbered from the cartridge locating slot for convenience in assigning combinations of notches. (See table 4.)

2 The dimensions for film-identification notch locations shown in table 3 permit the material between adjacent notch locations to be retained or removed whenever two or more adjacent notch locations are used. When notch location number 6 is used, the material between it and the filter notch may be removed. When material is retained, caution should be exercised to ensure that it is of sufficient width to withstand normal handling without breaking off.

3 The film-speed notch is used to set the exposure of an automatic camera with the daylight or equivalent daylight 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 an automatic camera will set its exposure-sensing device (unless instructed otherwise) are based on the premise that a typical tungsten-light-balanced camera colour orginal film will have two-thirds (2/3) of a lens stop less speed 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, figure 2, must therefore be used when the cartridge is loaded with colour film balanced for tungsten illumination because this notch may activate the camera to position a tungsten-to-daylight illumination correction filter in the exposing light path. Black-and-white films are usually notched according to their daylight speed; however, a manufacturer may notch a black-and-white film according to its speed to tungsten light, depending on the intended use of the film. If this is done, the film would be exposed to daylight illumination through a daylight-to-tungsten light correction filter as described above. (See annex, A.2.)

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* of table 1 to provide for film-identification label while the cartridge is in the camera.

5 The International Organization for Standardization has been advised that Eastman Kodak Company owns :

a) U.S. Patent No. 3 444 795 Nerwin and corresponding patents in other countries relating to a film cartridge with a notch arrangement for film identification and Claims 9, 10, 11 of U.S. Patent No. 3 176 599 Anwyl relating to a film cartridge with a notch to control the insertion or exclusion of a colour-balancing filter, and

b) in addition to other claims of the Anwyl patent, patents relating to camera features cooperating with cartridges so notched, patents relating to preferred interior structure for cartridges and patents relating to improved methods of forming notches in cartridges after the cartridges are moulded.

ISO takes no position with respect to the scope and validity of these patents. With respect to patents identified in a), Eastman Kodak Company has assured ISO that it will not assert any claim for infringement of such patents based on the manufacture, sale or use of cartridges in compliance with this International Standard.

Noting that compliance with this International Standard does not require the use of the inventions covered by the patents identified in b), Eastman Kodak Company has nevertheless assured ISO that it is willing to grant licences under these patents in group b) on reasonable terms and conditions that are free of any unfair discrimination.

The terms have been declared in a letter dated March 1968 to ISO/TC 36 Secretariat by Eastman Kodak Company, in order to clarify the range of the patent holder's assurance in accordance with Resolution 51, Council 1966. Licence details can be obtained from :

Eastman Kodak Company
Patent Department
343 State Street

Rochester, New York 14650, U.S.A.

No representation or warranty is made or implied that this is the only licence that may be required to avoid infringement in the use of this International Standard.

6 The 63 possible film-identification notch combinations have been systematically arranged and identified with a notch-combination code number as shown in table 4. Except for notch combinations identified by notch-combination code numbers 1 and 63 as noted below, the assignment of specific combinations of notches to manufacturer's needs is made by the U.S.A. Member Body of the International Organization for Standardization. Application for assignments should be made to :

Manager, Technical Services
National Association of Photographic Manufacturers, Inc.
600 Mamaroneck Avenue

Harrison, New York 10528, U.S.A.

7 Many general-purpose black-and-white reversal films from various manufacturers 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 and may be used by all film manufacturers.

8 To ensure proper identification of a film product 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.

9 To provide for the possible correction of errors in notching by the manufacturer, the use of notch-combination code number 63 (all notch locations) will also require the film product to be identified by its label.