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 — Chargeur modèle I, pour caméra 8 mm, type S — Encoches de sensibilité du film, d'identification du film et de filtre correcteur de température de couleur — Dimensions et positions

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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 developed by Technical Committee ISO/TC 36, *Cinematography*.

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 3067-1975), which had been approved by the member bodies of the following countries :

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

No member body had expressed disapproval of the document.

Printed in Switzerland

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 positions of 8 mm Type S, sound and silent, 15 and 60 m motion-picture film camera cartridge notches intended to preset exposure devices automatically with respect to the film speed and colour-balancing filter.

This International Standard also specifies the dimensions and positions of cartridge notches intended for identification of the motion-picture film inside the cartridge.

2 Reference

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications.*

3 Dimensions

All measurements shall be carried out at the time of manufacture, in atmospheric conditions of 23 ± 2 °C and 50 ± 5 % relative humidity in accordance with ISO 554. However, manufacturers may indicate other nominal temperatures for the measurement of dimensions.

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

3.2 The datum planes used for dimensioning are mutually perpendicular.

3.3 Datum planes B, C and A are called, respectively primary, secondary and tertiary.

3.3.1 Datum plane A is coincident with the centre of a circle located by basic dimension T. This circle shall come into contact with the edges of the locating slot (defined by dimensions A, O, P and Q) and its diameter shall be such that it is in contact with the slot regardless of the size of the slot (see the annex, clause A.1).

3.3.2 Datum plane B is the unnotched, unlabelled surface of the cartridge.

3.3.3 Datum plane C is the front seating surface of the cartridge.

3.4 Dimension N applies to all film identification notch positions.

4 Assignment of codes[1)]

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

4.2 The 63 possible film identification notch combinations have been systematically arranged and identified with a notch combination code number as shown in table 6.

4.3 Assignment of a code for use with either silent or sound 8 mm Type S motion-picture film camera cartridges shall imply permission to utilize the same identification notch code for the same film offered in an alternative cartridge.

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

1) Assignment of specific combinations of notches can be made according to the manufacturer's needs by application to

Manager, Technical Services,
National Association of Photographic Manufacturers, Inc.,
600 Mamaroneck Avenue,
Harrison,
New York, N.Y. 10528,
USA

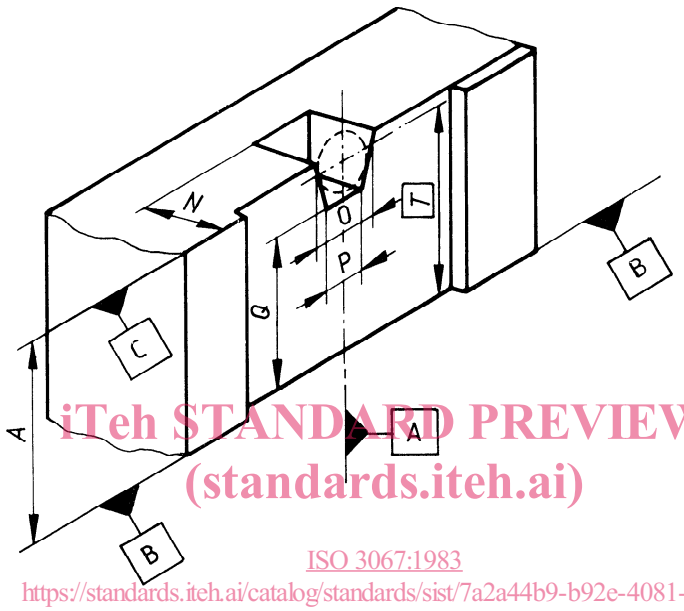

Figure 1 — Camera cartridge locating slot

Table 1 — Dimensions

Dimension	mm	in
A	24,43 ± 0,46	0.962 ± 0.018
O	3,91 ± 0,10	0.154 ± 0.004
P	3,61 ± 0,10	0.142 ± 0.004
Q	19,56 ± 0,25	0.770 ± 0.010
T basic	22,10	0.870
N min.	4,50	0.177

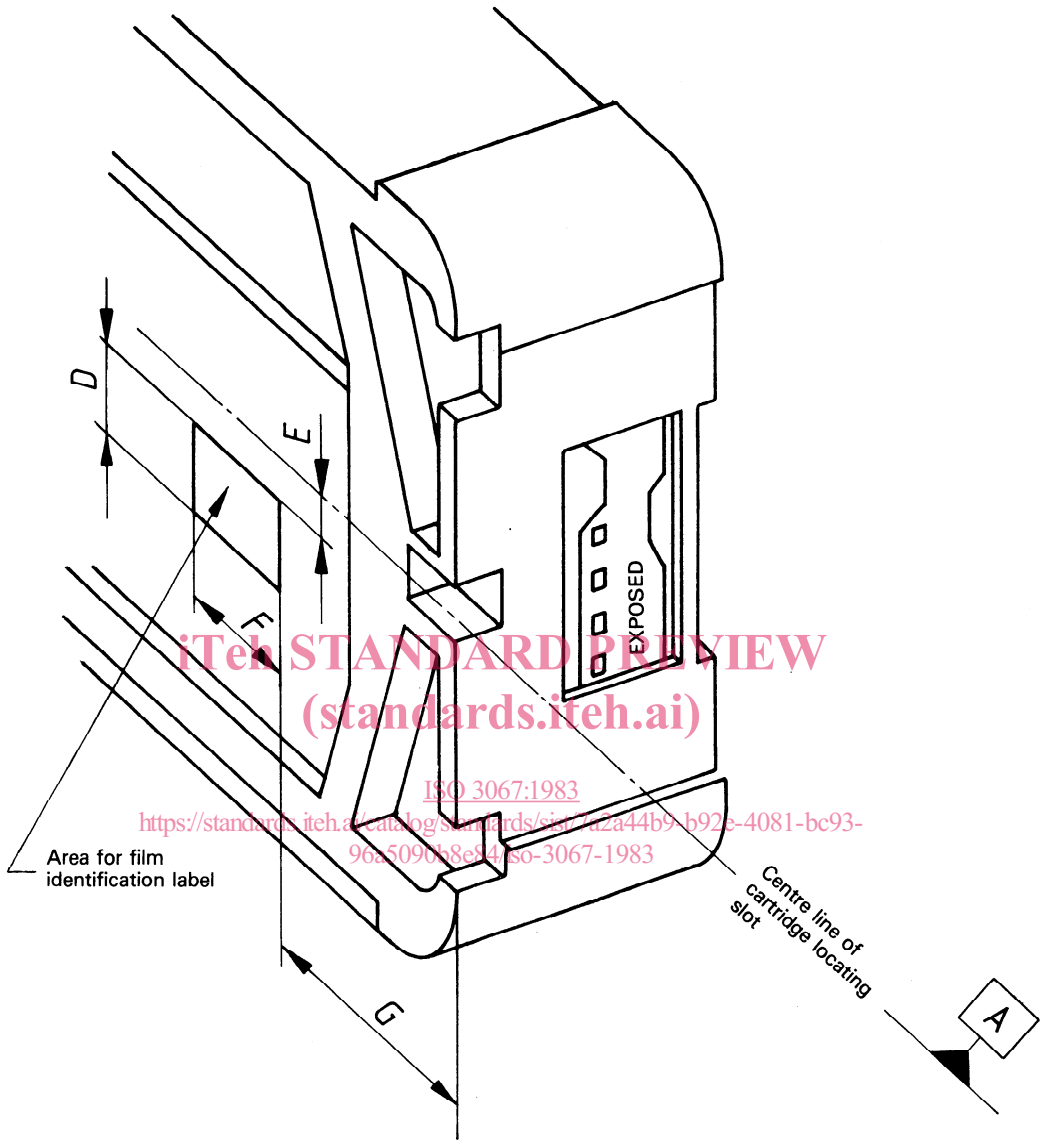

Figure 2 — External visual film identification area

Table 2 — Dimensions

Dimension	mm	in
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

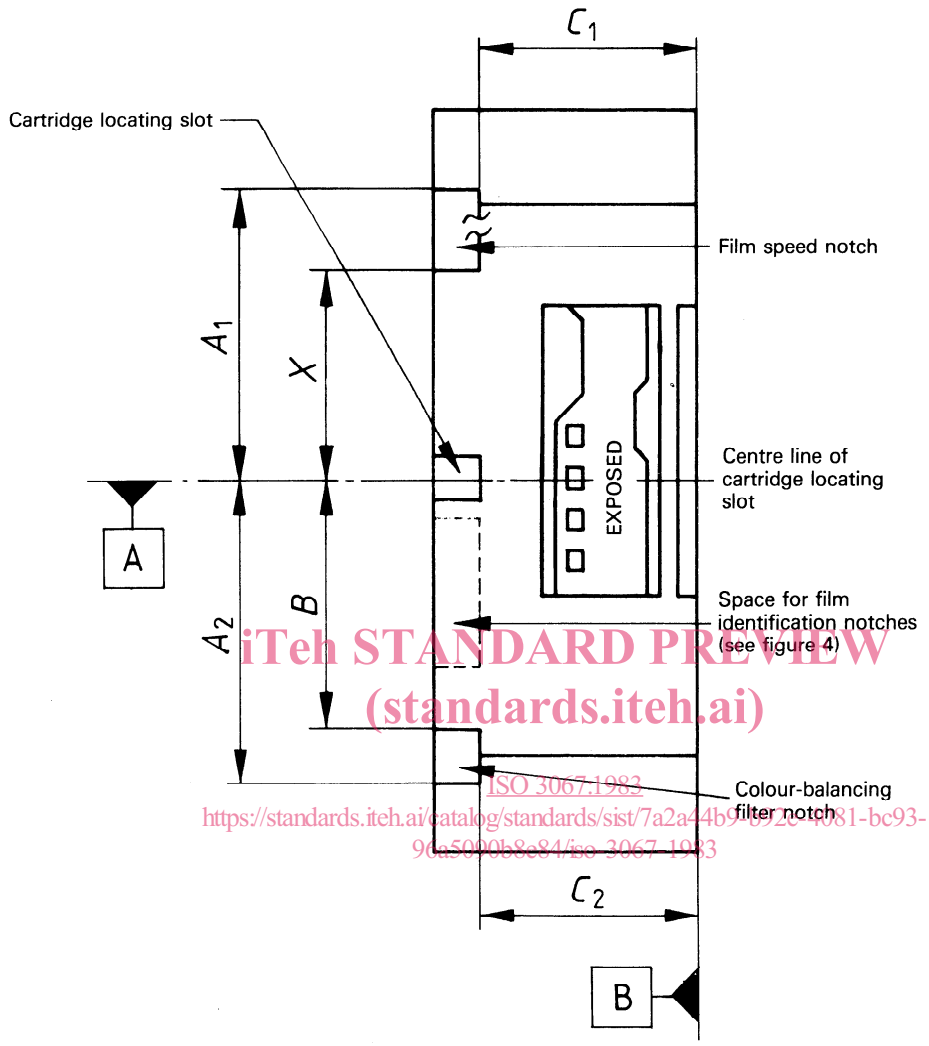

Figure 3 — Film speed and colour-balancing filter notch positions

Table 3[1] — Dimensions

Dimension	mm	in
A_1	27,94 ± 0,38	1.100 ± 0.015
A_2	27,94 ± 0,38	1.100 ± 0.015
B	23,19 ± 0,38	0.913 ± 0,015
C_1	20,32 ± 0,38	0.800 ± 0.015
C_2	20,32 ± 0,38	0.800 ± 0.015

1) Specifications for dimension X are given in table 4 according to film speed.

Table 4 — Dimension for film speed notch

Daylight film speed (cartridge without filter notch)	Tungsten light film speed (Cartridge with filter notch)	Dimension X[1]	
		mm	in
10	16	25,40	1.000
16	25	22,86	0.900
25	40	20,32	0.800
40	64	17,78	0.700
64	100	15,24	0.600
100	160	12,70	0.500
160	250	10,16	0.400
250	400	7,62	0.300
400	640	5,08	0.200

1) The tolerance on dimension X is ± 0,38 mm (0.015 in).

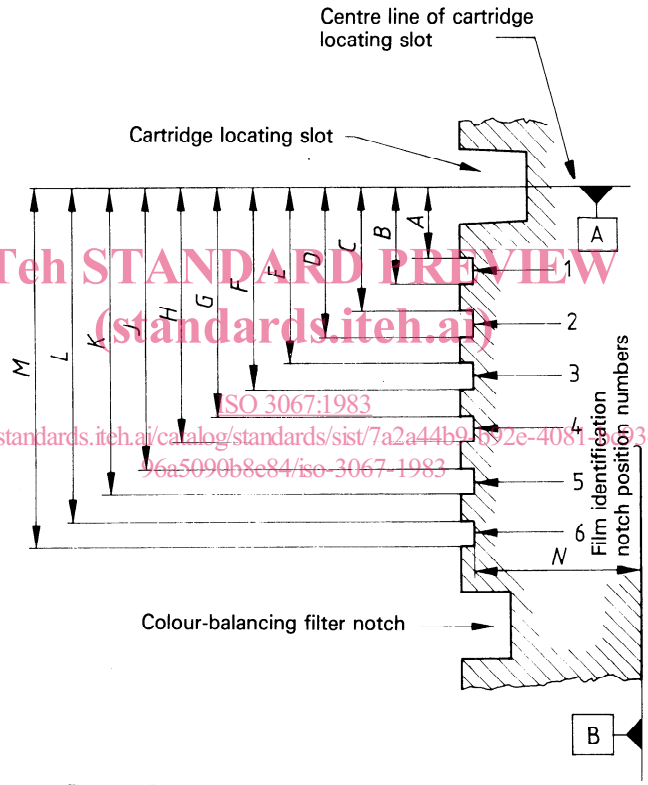

Figure 4 — Film identification notch positions

Table 5 — Dimensions

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	23,57	0.830	0.928
N	22,7 ± 0,51		0.894 ± 0.020	

Table 6 — Film identification codes

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		5	6	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 If data such as the film name and length of film load are to be provided on the cartridge, they should be inscribed within the area defined by dimensions D, E, F, and G to provide for visual film identification when the film is in the camera (see figure 2).

2 The dimensions given in table 4 permit the removal of material between adjacent identification notch positions, and between the number six identification notch position and the colour-balancing 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.

Annex

Additional data

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

A.1 To provide a consistent method of measurement, it is recommended that a cartridge gauging fixture be used which incorporates datum surfaces, a locating pin, and a means of exerting locating forces on appropriate surfaces of the cartridge.

A.2 The dimensions for the colour-balancing filter notch apply if the cartridge is loaded with film balanced for tungsten-light exposure and in some special cases, with black-and-white film, as specified in clause A.4. This area is not notched if the cartridge is loaded with colour film for daylight exposure and usually is not notched for black-and-white film.

A.3 To ensure proper identification of film products whose volume of production or market life does not warrant the assignment of film identification notches, the absence of a notch in the area specified will require the film product to be identified by its label. In addition, to provide for the possible correction of errors in notching by the manufacturer, the use of notch combination code number 63 (all notch positions) will also require the film product to be identified by its label.

A.4 The film speed notch is used to set the exposure of an automatic camera with 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 for daylight illumination to which the camera will expose these films (unless instructed otherwise) are based on the premise that a typical tungsten light-balanced colour camera original film will have a speed which is 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 colour film balanced for tungsten light 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 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.