

# SMPTE STANDARD

## SMPTE 199-2003

Revision of  
ANSI/SMPTE 199-1992

# for Motion-Picture Film (8-mm Type S) — 50-Ft Model 1 Sound Camera Cartridge — Pressure Pad Flatness and Camera Aperture Profile



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## 1 Scope

This standard specifies the dimensions and characteristics necessary for the appropriate flatness of the cartridge pressure pads as well as the required clearances for the film in the aperture area in 8-mm type S 50-ft model 1 sound motion-picture film camera cartridges.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below.

SMPTE 197-2003, Motion-Picture Film (8-mm Type S) — 50-Ft Model 1 Sound Camera Cartridge — Cartridge, Cartridge-Camera Interface and Take-Up Core

## 3 Dimensions

**3.1** The dimensions shall be as given in figure 1 and tables 1 and 2 and shall apply to a cartridge that is fully assembled but does not contain film.

**3.2** Datum plane A, which is used for dimensioning, shall be established in accordance with SMPTE 197.

**3.3** Dimensions relative to the surface of the pressure pad are measured from a plane established through surfaces 1, 2, and 3, as defined by 0.060-in (1.52-mm) circles dimensionally centered (see figure 1).

**3.4** Dimension G specifies the clearance for film in the camera aperture area, based on dimension T, the thickness of the film in the center of the picture area.

**3.4.1** Dimension G' specifies the extension of the camera aperture plate boss points (corresponding to 1, 2, and 3) beyond the aperture plate plane at the aperture opening.

**3.5** The upper and lower pad areas extend from dimension C to the top and bottom of the cartridge pressure pad within dimension K.

**3.6** Dimension H is intended to apply from a plane as described by 3.3.

3.7 The plus values given for the pressure pad film surface flatness tolerances are to be directed toward the lens.

3.8 Surface 4 of the cartridge pressure pad and boss 4 of the camera aperture are established to aid in seating the cartridge pressure pad to the camera aperture plate. They serve no function once the pressure pad is in operating position.

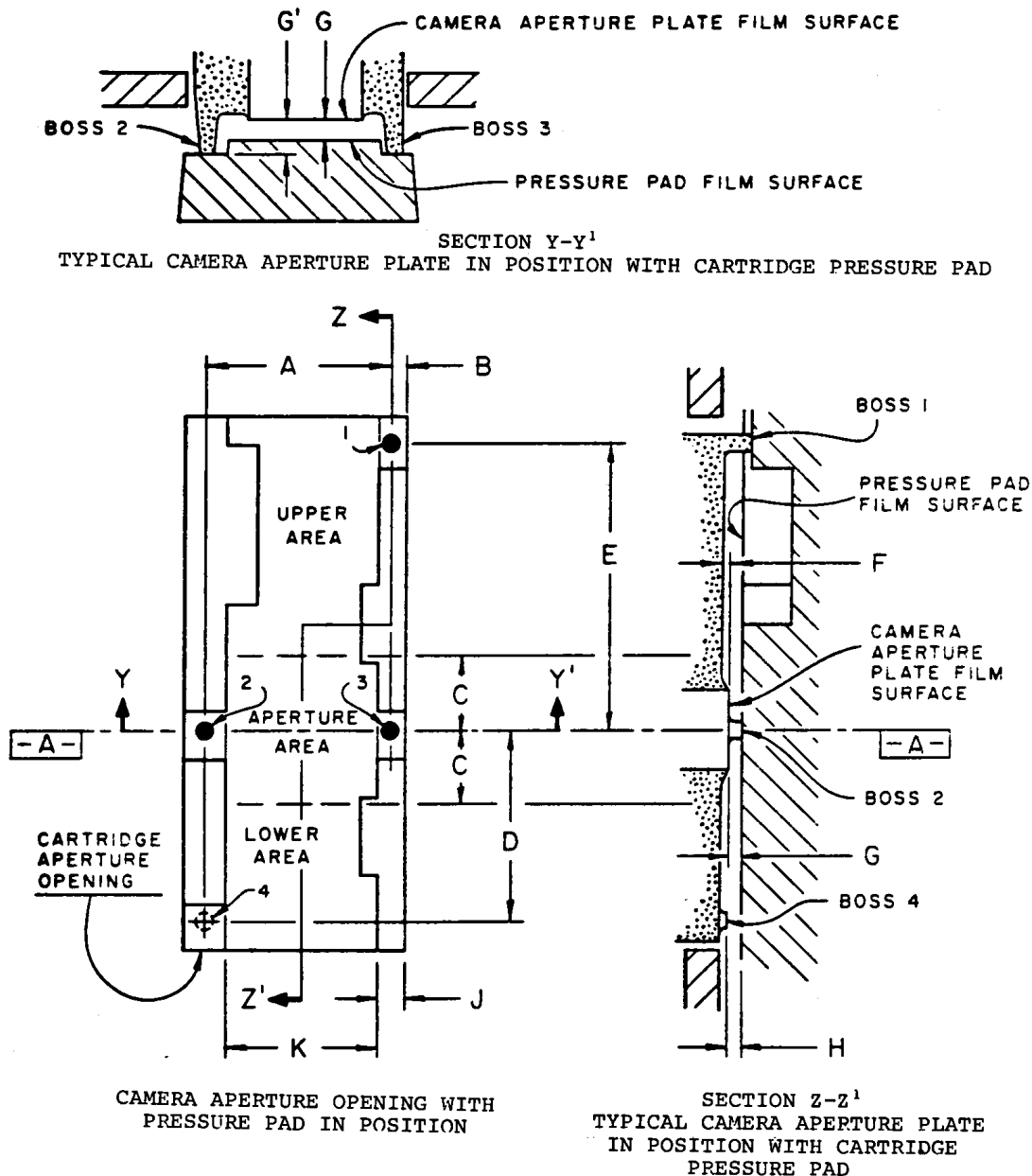


Figure 1 – Camera aperture

**Table 1 – Pressure pad dimensions**

Dimensions	Inches		Millimeters	
A	0.378	$\pm 0.001$	9.60	$\pm 0.3$
B	0.030	$+ 0.002$ $- 0.000$	0.76	$+ 0.05$ $- 0.00$
C	0.153	nom	3.89	nom
D	0.393	$\pm 0.001$	9.98	$\pm 0.03$
E	0.590	$\pm 0.001$	14.99	$\pm 0.03$
F	0.005	min	0.13	min
G	$T + 0.0007$ $T + 0.0012$	min max	$T + 0.018$ $T + 0.030$	min max
G'	0.0065 0.0070	min max	0.165 0.178	min max
H	0.004	min	0.10	min
J	0.055	min	1.40	min
K	0.310	max	7.87	max

**Table 2 – Flatness tolerances on pressure pad film surface**

Areas	Inches	Millimeters
Aperture area (within dimension C)	$+ 0.0058 - T$ $+ 0.0048 - T$	$+ 0.147 - T$ $+ 0.122 - T$
Upper area	$+ 0.0078 - T$ $+ 0.0038 - T$	$+ 0.198 - T$ $+ 0.097 - T$
Lower area	$+ 0.0078 - T$ $+ 0.0018 - T$	$+ 0.198 - T$ $+ 0.046 - T$
NOTE – Table dimensions are measured from the zero plane defined by surfaces 1, 2, and 3 (see figure 1 and notes 3 and 4).		

**NOTES**

1 It is considered good practice to relieve the camera aperture plate above and below the picture area to allow a clearance for film transport and minimize the possibility of film pinching. Dimension F specifies the amount of recess for this purpose.

2 Surfaces 1, 2, and 3, shown to establish the zero plane for purposes of measurement of the cartridge pressure pad film surface flatness, are circles having a diameter of 0.060 in (1.52 mm). The actual camera aperture plate bosses may deviate from this shape and size.

3 It is intended that the film surface of the cartridge pressure pad be flat, or be molded as a flat plane. Pits or depressions, however, which do not interfere with the film flatness are acceptable. Tolerances for the flatness on the cartridge pressure pad film surface are specified to account for slight warpage in molding if the pressure pad is made from a plastic material.

4 Relief in the pad surface equal to the sound stripe thickness may be provided beneath those areas of the film which are striped by adding material to the backing of the film.

**Annex A** (informative)

**Bibliography**

SMPTE 166-1999, Motion-Picture Film (8-mm Type S) — Exposure Control and Stock Identification — Sound and Silent Camera Cartridge Notches

SMPTE 198-2003, Motion-Picture Film (8-mm Type S) — 50-Ft Model 1 Sound Camera Cartridge — Aperture, Pressure Pad and Film Position

SMPTE 200M-2003, Motion-Picture Equipment (8-mm Type S) — Model 1 Camera Cartridge — Camera Run Length, Perforation Cutout and End-of-Run Notch