Approved American Standards

Published here for your information are four revisions of American Standards approved on June 9, 1964, by the American Standards Association:

American Standard Dimensions of 16mm Motion-Picture Camera Aperture Image, PH22.7-1964 (Revision of Z22.7-1950)

American Standard Dimensions of 8mm Motion-Picture Camera Aperture Image, PH22.19-1964 (Revision of Z22.19-1950)

American Standard Dimensions of Projection Lamps Double-Contact Medium Ring Base-Up Type, PH22.84-1964 (Revision of PH22.84-1953)

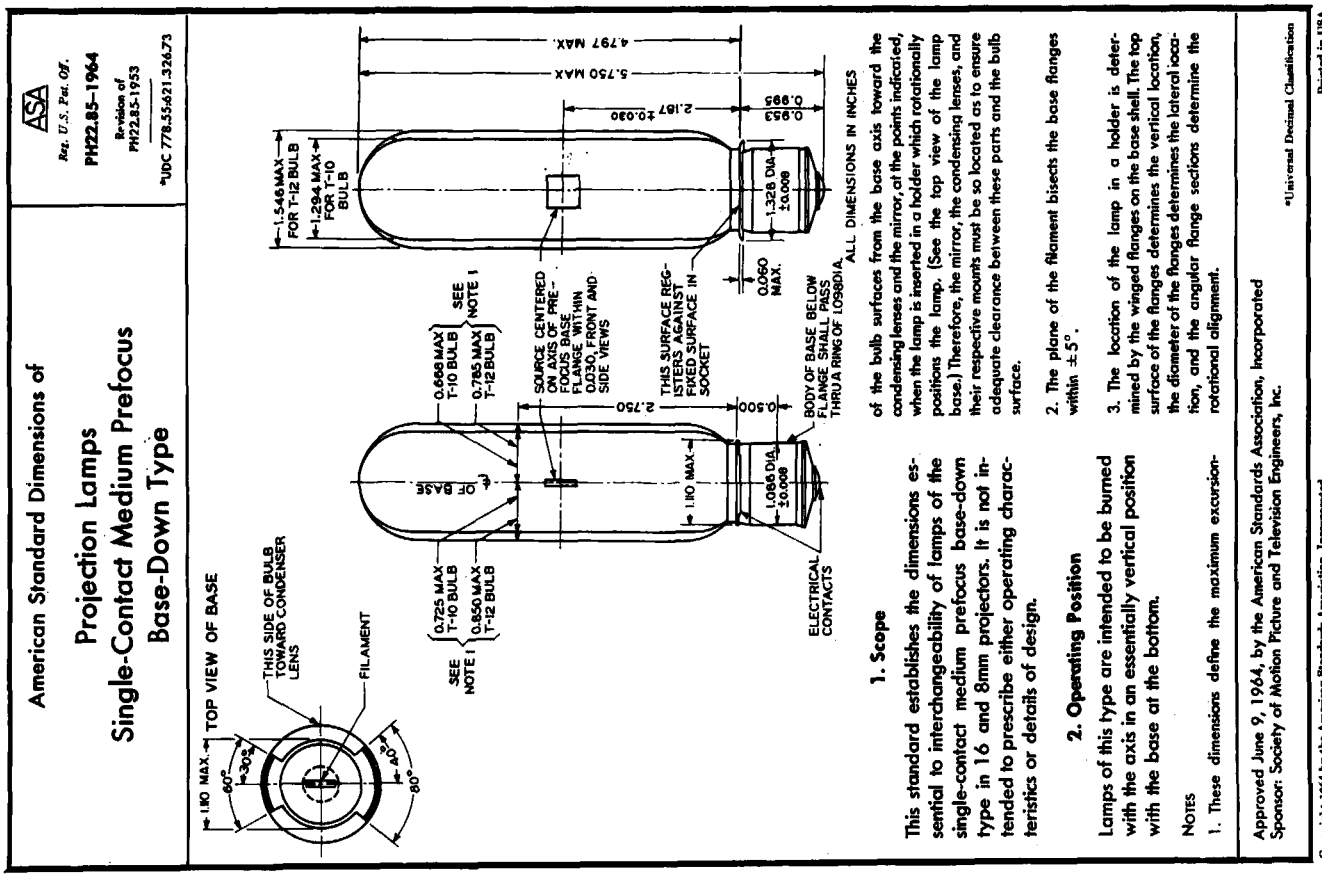
American Standard Dimensions of Projection Lamps Single-Contact Medium Prefocus Base-Down Type, PH22.85-1964 (Revision of PH22.85-1953)

Inasmuch as compliance with American Standards is purely voluntary, these standards will become truly effective if very broad publicity is given to their existence. The ASA and the SMPTE would appreciate any personal influence to promote the use of these standards where such action is appropriate and proper. Copies of the standards may be obtained for a nominal fee from the American Standards Association, 10 East 40 St., New York, N. Y. 10016.

Withdrawl of American Standard

On June 9, 1964, the American Standards Association approved the withdrawal of American Standard Screen Brightness for 35mm Motion Pictures, PH22.39–1953.

The withdrawal of the document does not constitute the elimination of a screen brightness standard. American Standard Screen Luminance for Indoor Theaters, PH22.124–1961, covers the same information and is more inclusive.—*A. E. A.*



American Standard Dimensions of

16mm Motion-Picture Camera Aperture Image

ASA
Reg. U.S. Pat. Off
PH22.7-1964
Revision of
Z22.7-1950
*UDC 778.533.2

1. Scope

This standard specifies the dimensions of the camera aperture image and its relative position to the reference edge and the perforations of 16mm motion-picture film. The location of the perforations is based on dimensions given in the following American Standards: Dimensions for 16mm Film, Perforated Two Edges, PH22.5-1953; Dimensions for 16mm Film, Perforated One Edge, PH22.12-1953; Dimensions for 16mm Motion-Picture Film, 1R-2994, PH22.109-1958 and Dimensions for 16mm Motion-Picture Film, 2R-2994, PH22.110-1958.

2. Dimensions

2.1 The dimensions shall be as given in the figure and table and shall apply to measurements of the aperture image as formed on freshly exposed and processed film.

2.2 The angle between the vertical edges of the aperture image and the edges of normally positioned film shall be 0° ± ½°.

2.3 The angle between the horizontal edges of the aperture image and the edges of normally positioned film shall be 90° ± ½°.

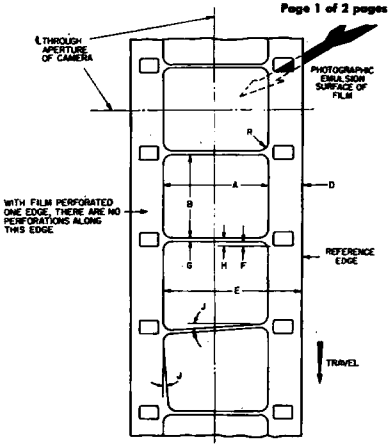


FIGURE SHOWS FILM AS SEEN FROM INSIDE OF CAMERA LOOKING TOWARD CAMERA LENS

Dimensions*	Inches		Millimeters	
A	0.404	nom	10.26	nom
B	0.295	+ 0.004 − 0.003	7.49	+ 0.10 − 0.08
D	0.116	max	2.95	max
E	0.512	min	13.00	min
F	0.018	min	0.46	min
G	0.001 0.008	min max	0.03 0.20	min max
H	0.032	max	0.81	max
J		± ½°		± ½°
R	0.015	max	0.38	max

* See Notes.

NOTES

1. Dimension B, vertical height of aperture, must be maintained in order to ensure a real (unexposed) frameline in the projector. Close control of the tolerances given for Dimension B is necessary to enable Dimensions F and H to be held within satisfactory limits. These are the distances from the lower edge of the perforation and the horizontal edges of the framelines. Dimensions F and H represent the maximum conditions which can be tolerated due to misalignment of the horizontal centerline of the aperture opening and the optical centerline of the photographic lens. Dimensions B, F, G, and H shall be measured to lines that are at right angles to the reference edge of the film and through a point where the radius (Dimension R) is tangent to the horizontal framelines (see figure).

2. The centerlines of the aperture image are normally on the optical center of the camera. The "optical axis of the camera" is defined as the mechanical axis or centerline of the sleeve or other device for holding the camera lens. Except for manufacturing tolerances, it coincides with the optical axis of the lens.

3. Dimension J shows the limits by which the frameline may be out of square with the reference edge of the film but, at all times, this should be confined within the area designated by Dimension G.

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Sponsor: Society of Motion Picture and Television Engineers, Inc.

*Universal Decimal Classification

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APPENDIX

(This Appendix is not a part of American Standard Dimensions of 16mm Motion-Picture Camera Aperture Image, PH22.7–1964, but is included to facilitate its use.)

A1. If the aperture plate is not in the plane of the emulsion, the physical dimensions of the aperture in the camera will be slightly different from the dimensions given in the figure. The exact amount of this difference will depend upon the f/value and focal length of the camera lenses used and upon the distance between the emulsion and the physical aperture. This separation should be no greater than is necessary to prevent scratching of the film.

A2. It is the intent of this standard to provide a camera image such that the exposed area will always be larger than the area of the projector aperture. This standard meets this objective without causing double exposure of the area between frames.

A3. Dimension G, the distance between adjacent framelines, has been limited carefully so as to make it possible to keep both framelines masked simultaneously by the projector aperture. In addition, Dimensions F and H have been established to limit the distance that any part of the frameline can depart from the bottom edge of the perforations. This is to minimize the necessity for frequent adjustment of the framing device on the projector.

American Standard Dimensions of

8mm Motion-Picture Camera Aperture Image

ASA
Reg. U.S. Pat. Off.
PH22.19–1964
Revision of
Z22.19-1950
*UDC 778.533.2

1. Scope

This standard specifies the dimensions of the camera aperture image and its relative position to the reference edge and the perforations of 8mm motion-picture film. The location of the perforations is based on dimensions given in American Standard Dimensions for 8mm Motion-Picture Film, PH22.17-1954.

2. Dimensions

2.1 The dimensions shall be as given in the figure and table and shall apply to measurements of the aperture image as formed on freshly exposed and processed film.

2.2 The angle between the vertical edges of the aperture image and the edges of normally positioned film shall be $0^\circ \pm {}^1/_2{}^\circ$.

2.3 The angle between the horizontal edges of the aperture image and the edges of normally positioned film shall be $90^\circ \pm {}^1/_2{}^\circ$.

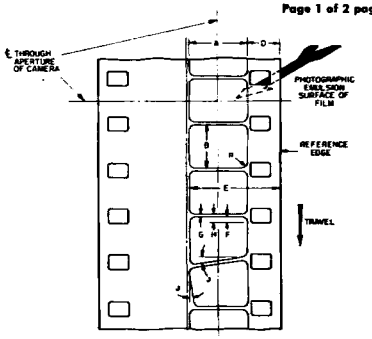

FIGURE SHOWS FILM AS SEEN FROM INSIDE OF CAMERA LOOKING TOWARD CAMERA LENS

Dimensions*	Inches		Millimeters	
A	0.192	nom	4.88	nom
B	0.145	$+0.003$ -0.002	3.68	$+0.08$ -0.05
D	0.113	max	2.87	max
E	0.297	min	7.54	min
F	0.018	min	0.46	min
G	0.002	min	0.05	min
	0.007	max	0.18	max
H	0.032	max	0.81	max
J		$\pm {}^1/_2{}^\circ$		$\pm {}^1/_2{}^\circ$
R	0.010	max	0.25	max

* See Notes.

NOTES

1. Dimension B, vertical height of aperture, must be maintained in order to ensure a real (unexposed) frameline in the projector. Close control of the tolerances given for Dimension B is necessary to enable Dimensions F and H to be held within satisfactory limits. These are the distances from the lower edge of the perforation and the horizontal edges of the framelines. Dimensions F and H represent the maximum conditions which can be tolerated due to misalignment of the horizontal centerline of the aperture opening and the optical centerline of the photographic lens. Dimensions B, F, G, and H shall be measured to lines that are at right angles to the reference edge of the film and through a point where the radius (Dimension R) is tangent to the horizontal framelines (see figure).

2. The centerlines of the aperture image are normally on the optical center of the camera. The "optical axis of the camera" is defined as the mechanical axis or centerline of the sleeve or other device for holding the camera lens. Except for manufacturing tolerances, it coincides with the optical axis of the lens.

3. Dimension J shows the limits by which the frameline may be out of square with the reference edge of the film but, at all times, this should be confined within the area designated by Dimension G.

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APPENDIX

(This Appendix is not a part of American Standard Dimensions of 8mm Motion-Picture Camera Aperture Image, PH22.19–1964, but is included to facilitate its use.)

A1. If the aperture plate is not in the plane of the emulsion, the physical dimensions of the aperture in the camera will be slightly different from the dimensions given in the figure. The exact amount of this difference will depend upon the f/value and focal length of the camera lenses used and upon the distance between the emulsion and the physical aperture. This separation should be no greater than is necessary to prevent scratching of the film.

A2. It is the intent of this standard to provide a camera image such that the exposed area will always be larger than the area of the projector aperture. This standard meets this objective without causing double exposure of the area between frames.

A3. Dimension G, the distance between adjacent framelines, has been limited carefully so as to make it possible to keep both framelines masked simultaneously by the projector aperture. In addition, Dimensions F and H have been established to limit the distance that any part of the frameline can depart from the bottom edge of the perforations. This is to minimize the necessity for frequent adjustment of the framing device on the projector.

American Standard Dimensions of

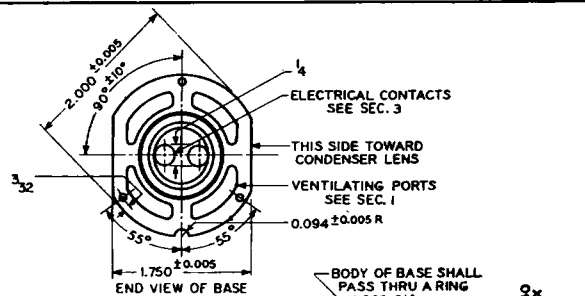
Projection Lamps Double-Contact Medium Ring Base-Up Type

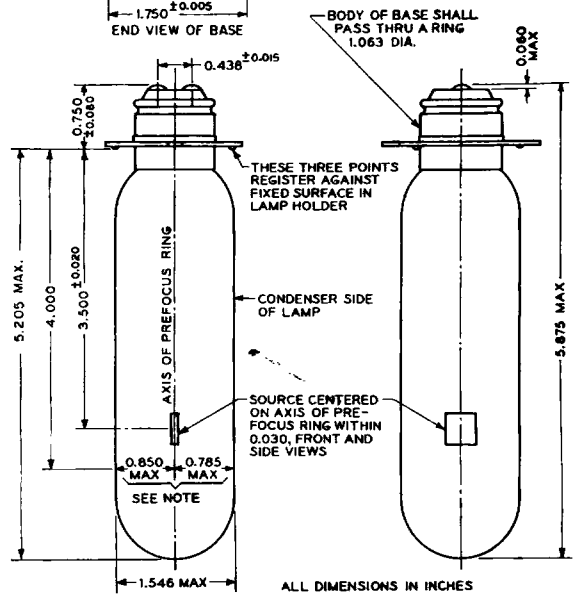
ASA
Reg. U.S. Pat. Off.

PH22.84–1964

Revision of PH22.84-1953

*UDC 778.55:621.326.73





1. Scope

This standard establishes the dimensions essential to the interchangeability of lamps of the double-contact medium ring base-up type in 16 and 8mm projectors. It is not intended to prescribe either operating characteristics or details of design, such as the shape of the ventilation ports or the method of attachment of the prefocus ring to the base.

2. Operating Position

Lamps of this type are intended to be burned with the axis in an essentially vertical position with the base at the top.

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3. Electrical Contacts

The figure indicates the area where electrical members of the lamp holder should contact. It is not intended to dictate the shape of the terminals on the lamp; however, the terminals should not exceed boat-shaped areas 0.250 in. wide by 0.410 in. long with the long axes parallel to the flats on the ring. With lamps of this type, the prefocus ring is not an electrical contact.

NOTE: These dimensions define the maximum excursion of the bulb surfaces from the base axis toward the condensing lenses and the mirror, at the points indicated when the lamp is inserted in a holder which rotationally positions the lamp. (See the end view of the lamp base.) Therefore, the mirror, condensing lenses, and their respective mounts must be so located as to ensure adequate clearance between these parts and the bulb surface.