A-13-09

ANSI/ASC C78.1407-1985
Revision of ANSI C78.1407-1980)

American National Standard

for electric lamps –

condenser-reflector, four-pin, prefocus-base projection lamps – dimensions

Approved February 8, 1985

Secretariat: National Electrical Manufacturers Association

1. Scope

1.1 This standard specifies the dimensions essential to the interchangeability of condenser-reflector lamps having four-pin prefocused bases, T12 or T14 bulbs, and used in 8mm motion-picture projectors.

1.2 It is not the intent of this standard to prescribe operating characteristics or details of design.

2. Referenced American National Standards

This standard is intended for use in conjunction with the following American National Standards. When these standards are superseded by a revision approved by the American National Standards Institute, Inc, the revision shall apply.

ANSI C78.370-1982, Method for the Designation of Photo Lamps

ANSI C81.30-1976, Specifications for Electric Lamp Bases and Holders – Bayonet and Prefocus Types

3. Lamp Designations

Incandescent projection lamps are usually identified by a three-letter code, as specified in ANSI C78.370-1982.

4. Dimensions

4.1 Base Dimensions. For detailed dimensions of the G17q and GX17q bases, see ANSI C81.30-1976.

4.2 Lamp Dimensions. Lamp dimensions shall be as specified in Figure 1.

4.2.1 The maximum diameter, dimension A, is defined as the diameter of a cylindrical volume, coaxial with the axis of the lamp base, into which the lamp shall fit. This dimension includes both bulb diameter and excursion.

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4.2.2 The bulb excursion limit, toward the aperture of the projector, is defined by dimension J. Dimension J is measured from the base reference axis.

4.2.3 The bulb dome excursion limit, at certain potential lamp housing interference points in the projector, is defined by dimension C. Measurement is made in plane X at a dimension H above the base reference plane and within the critical zone defined by angle B. Dimension C is measured from the base reference axis.

4.2.4 If an opaque top bulb is used, the opaque area shall not extend more than dimension G below the top of the bulb.

5. Lamp Group

The reflector-type lamps used in 8mm application are divided into three general groups:

Group I:	T12 bulb and 44.45 mm (1.75 in) working distance
Group II:	T12 bulb and 57.15 mm (2.25 in) working distance
Group IIa:	Same as Group II except designed for base horizontal instead of base down operation
Group III:	T14 bulb and 44.45 mm (1.75 in) working distance

Appendix

(This Appendix is not part of American National Standard ANSI/ASC C78.1407-1985, but is included for information only.)

A1. Low-voltage lamps are prefocused with respect to pins 2 and 4. Electrical contact is made through pins 1 and 2; however, pins 3 and 4 are not necessarily isolated from pins 1 and 4.

A2. Line-voltage lamps are prefocused with respect to pins 1 and 3. Electrical contact is made through pins 1 and 4; however, pins 2 and 3 are not necessarily isolated from pins 1 and 2.

A3. Both heat-reflecting and heat-transmitting mirrors are used with all groups of lamps. Although heat-transmitting-mirror (dichroic coated glass) lamps may frequently be substituted for heat-reflecting (opaque coated metal or glass) lamps, the reverse is not true and may cause damage to film and equipment.

Consult manufacturer's catalogs for permissible lamp substitutions.

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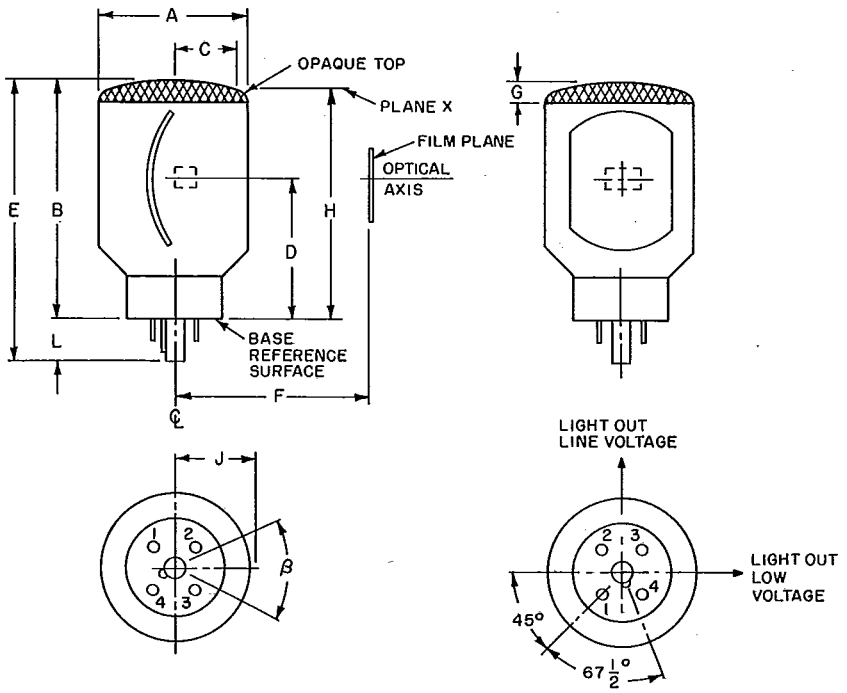

Reference	Lamp Group	Standard Dimensions (millimeters) Min	Nom	Max	Reference	Lamp Group	Standard Dimensions (millimeters) Min	Nom	Max
A[1]	I,II,IIa	–	–	47.62	D	All	–	39.67	–
A[1]	III	–	–	54.36	L	All	–	13.59 Ref	–
B	I,II	–	–	77.14	H	All	–	61.90	–
B	IIa	–	–	67.64	J[3]	I,II,IIa	–	–	20.96
B	III	–	–	72.39	J[3]	III	–	–	24.13
E	I,II	–	–	90.47	F[4]	I,III	–	44.45	–
E	IIa	–	–	80.98	F[4]	II,IIa	–	57.15	–
E	III	–	–	85.72	G[5]	All	–	–	16.00
C[2]	All	–	–	20.32	β[2]	All	–	52°	–

[1] Refer to 4.2.1.
[2] Refer to 4.2.3.
[3] Refer to 4.2.2.
[4] Dimension F is a recommended working distance from the lamp base axis to the film plane and is not necessarily the focal length of the mirror.
[5] Dimension G applies only to those lamps having an opaque top.

Figure 1
Dimensions of Internal Condensor-Reflector Four-Pin Lamp

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