

Sound system equipment —

Part 14: Guide for circular and elliptical loudspeakers; outer frame diameters and mounting dimensions

[IEC title: Sound system equipment Part 14: Circular and
elliptical loudspeakers; outer frame diameters and mounting
dimensions]

UDC [621.396 + 681.84]:621.395.623.37:621.3.08

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Electronic Equipment Standards Committee (EEL/-) to Technical Committee EEL/32, upon which the following bodies were represented:

Association of British Theatre Technicians
 Association of Sound and Communications Engineers Limited
 Audio Engineering Society
 British Educational Equipment Association
 British Kinematograph, Sound and Television Society
 British Radio and Electronic Equipment Manufacturers' Association
 British Telecommunications plc
 Cable Television Association of Great Britain
 Consumer Standards Advisory Committee of BSI
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 Radio Electrical and Television Retailers' Association
 Royal Institute of British Architects
 Royal National Institute for the Deaf
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 Training and Educational Systems Testing Bureau

This British Standard, having been prepared under the direction of the Electronic Equipment Standards Committee, was published under the authority of the Board of BSI and comes into effect on 30 October 1987

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The following BSI references relate to the work on this standard:
 Committee reference EEL/32
 Draft for comment 77/24381 DC

ISBN 0 580 16144 7

Amendments issued since publication

Amd. No.	Date of issue	Comments

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National foreword

This British Standard has been prepared under the direction of the Electronic Equipment Standards Committee and is identical with IEC 268-14:1980 “*Sound system equipment*” — Part 14 “*Circular and elliptical loudspeakers; outer frame diameters and mounting dimensions*” published by the International Electrotechnical Commission (IEC). The text of this Part of BS 6840 is unchanged from the text of BS 5428-5.1:1981 which is now withdrawn.

All Parts and Sections of BS 5428 will be published as Parts of BS 6840 in order to achieve consistency of numbering between the corresponding Parts of the IEC Publication and the British Standard, with harmonization in view.

BS 6840 consists of the following Parts:

- *Part 1: Methods for specifying and measuring general characteristics used for equipment performance* (Supersedes part of BS 5428-1.);
- *Part 2: Guide for explanation of general terms* (Supersedes part of BS 5428-1.)¹⁾;
- *Part 3: Methods for specifying and measuring the characteristics of sound system amplifiers* (Supersedes BS 5428-2.)¹⁾;
- *Part 4: Methods for specifying and measuring the characteristics of microphones* (Previously BS 5428-3.);
- *Part 5: Methods for specifying and measuring the characteristics of loudspeakers* (Supersedes BS 5428-11 and BS 5428-11: Supplement 1.)¹⁾;
- *Part 6: Methods for specifying and measuring the characteristics of auxiliary passive elements* (Previously BS 5428-4.);
- *Part 7: Methods for specifying and measuring the characteristics of headphones and headsets* (New.)¹⁾;
- *Part 8: Methods for specifying and measuring the characteristics of automatic gain control devices* (Previously BS 5428-7.);
- *Part 9: Methods for specifying and measuring the characteristics of artificial reverberation, time delay and frequency shift equipment* (Previously BS 5428-8.);
- *Part 10: Specification for programme level meters* (Supersedes BS 5428-9.)¹⁾;
- *Part 11: Specification for applications of connectors for the interconnection of sound system components* (Supersedes BS 5428-5.2.)¹⁾;
- *Part 12: Specification for applications of connectors for broadcast and similar use* (Supersedes BS 5428-5.3.)¹⁾;
- *Part 13: Guide for listening tests on loudspeakers* (New.);
- *Part 14: Guide for circular and elliptical loudspeakers: outer frame diameters and mounting dimensions* (Previously BS 5428-5.1.);
- *Part 15: Specification for matching values for the interconnection of sound system components* (Supersedes BS 5428-10.)¹⁾;
- *Part 16: Guide to the RASTI method for the objective rating of speech intelligibility in auditoria* (New.)¹⁾.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

¹⁾ In preparation.

References to page numbers in the text relate to the IEC page numbers given in brackets at the bottom of each page.

Cross-references

International Standard	Corresponding British Standard
	BS 5428 <i>Methods for specifying and measuring the characteristics of sound system equipment</i>
IEC 268-5:1972	Part 11:1977 <i>Loudspeakers</i> ^a (Identical)
IEC 268-15:1978	Part 10:1979 <i>Preferred matching values for the interconnection of sound system components</i> ^a (Identical)

^a These Parts of BS 5428 will be withdrawn when the IEC 268-5 and IEC 268-15 Part revisions, in preparation, are implemented as Parts of BS 6840.

Additional information. With reference to clause 3, the number of this British Standard, i.e. BS 6840-14 may be used as a designation in addition to, or instead of, IEC Publication 268, Part 14.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1

1 Scope

1.1 This standard applies to dimensional characteristics of single moving-coil (dynamic) loudspeakers of the direct radiator type.

This standard is limited to:

- a) outer dimensions of the frame;
- b) mounting dimensions, for example size and disposition of fixing holes.

1.2 This standard excludes:

- a) cone dimensions of loudspeakers;
- b) depth of loudspeakers.

The following items, outside the scope of this standard, are dealt with in other parts of IEC Publication 268:

- a) rated impedances, IEC Publication 268-15, Part 15: Preferred Matching Values for the Inter-connection of Sound System Components.
- b) characteristics to be specified and the relevant measuring methods, IEC Publication 268-5, Part 5: Loudspeakers.

2 Object

The object of this standard is to secure as great a measure of interchangeability as seems practicable, and to discourage unnecessary divergences.

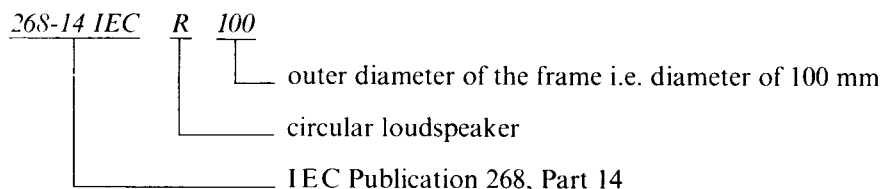
This standard is intended as a guide to manufacturers when introducing new types of loudspeakers.

The frames need not be identical with the shapes given, only the dimensions are to be observed as indicated. This allows the maximum liberty of choice in the design of loudspeakers, cabinets and enclosures.

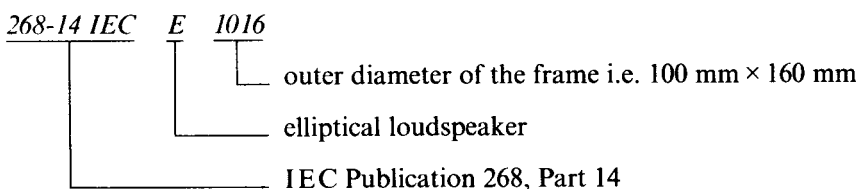
3 IEC type designation

Loudspeakers according to this standard shall be designated in the following way:

3.1 Circular loudspeakers



3.2 Elliptical loudspeakers



4 Sizes and mounting dimensions

4.1 The mounting dimensions of loudspeakers shall conform to Figure 1 and Figure 2, page 3 (circular loudspeakers) and to Figure 3, page 5 (elliptical loudspeakers).

4.2 Circular loudspeakers of small dimensions are normally fixed by clamps. Frames with eyelets with fixing holes may be used conforming to Figure 1. For that reason, the fixing hole distances for these types are given in brackets.

4.3 For circular loudspeakers of large dimensions of the round style, the dimensions should preferably conform to Figure 2.

4.4 The recommended range of loudspeakers and their dimensions are given in Table I and Table II.

4.5 According to present IEC practice, dimensions are given in millimetres only.

Table I — Circular loudspeakers Outer frame diameters and mounting dimensions

(Dimensions in millimetres)

Rated value	Outer diameter	Figure 1	Figure 2	Minimum fixing hole diameter	IEC type designation
		Fixing hole distances	Pitch circle diameter		
—	D	e	d_2	d_1	—
25 mm	$25 \begin{smallmatrix} 0 \\ -1 \end{smallmatrix}$	$(20 \pm 0,5)$	—	(3,2)	268-14 IEC R 25
31 mm	$31,5 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(25 \pm 0,5)$	—	(3,2)	268-14 IEC R 31
40 mm	$40 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(31,5 \pm 0,5)$	—	(3,2)	268-14 IEC R 40
50 mm	$50 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(40 \pm 0,5)$	—	(3,2)	268-14 IEC R 50
58 mm	$58 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(48 \pm 0,5)$	—	(3,2)	268-14 IEC R 58
63 mm	$63 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(50 \pm 0,5)$	—	(3,8)	268-14 IEC R 63
66 mm	$66 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(52 \pm 0,5)$	—	(3,8)	268-14 IEC R 66 ^a
80 mm	$80 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(63 \pm 0,5)$	—	(3,8)	268-14 IEC R 80
100 mm	$100 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$(80 \pm 0,5)$	—	(3,8)	268-14 IEC R 100
121 mm	$121 \begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	$94 \pm 0,5$	—	3,8	268-14 IEC R 121 ^a
125 mm	$125 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$100 \pm 0,5$	$114 \pm 0,5$	3,8	268-14 IEC R 125
131 mm	$131 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$102 \pm 0,5$	—	3,8	268-14 IEC R 131
160 mm	$160 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$125 \pm 0,5$	$148 \pm 0,5$	3,8	268-14 IEC R 160
176 mm	$176 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$135 \pm 0,5$	$165 \pm 0,5$	3,8	268-14 IEC R 176
200 mm	$200 \begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	160 ± 1	$184 \pm 0,5$	3,8	268-14 IEC R 200
204 mm	$204 \begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	155 ± 1	$194 \pm 0,5$	3,8	268-14 IEC R 204 ^a
250 mm	$250 \begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	200 ± 1	233 ± 1	4,5	268-14 IEC R 250
315 mm	$315 \begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	250 ± 1	295 ± 1	4,5	268-14 IEC R 315
400 mm	$400 \begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	—	375 ± 1	4,5	268-14 IEC R 400

^a The types indicated with an asterisk are in common use; it is expected that for future development these types will be deprecated.

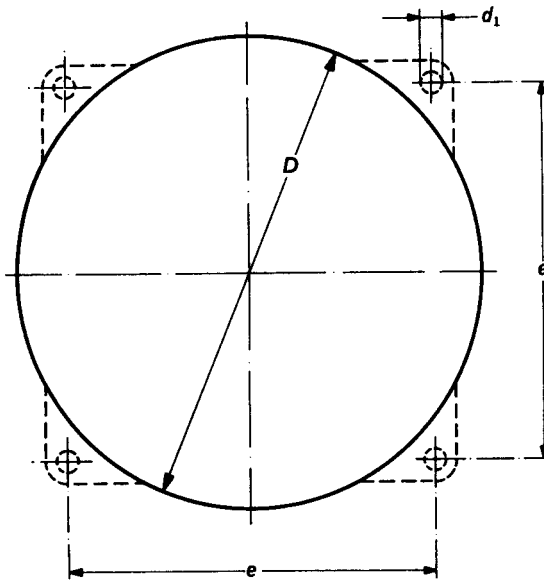


Figure 1 — Circular loudspeakers

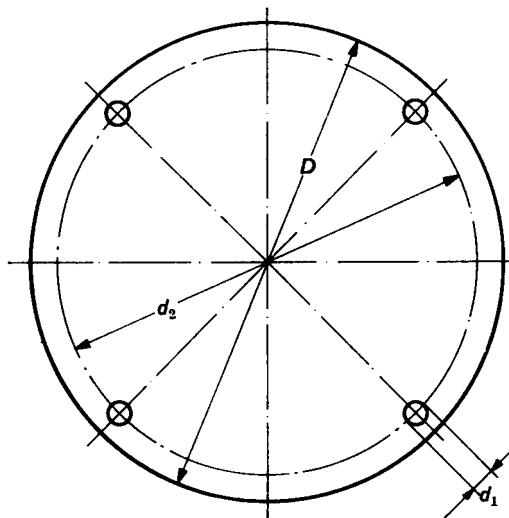


Figure 2 — Circular loudspeakers

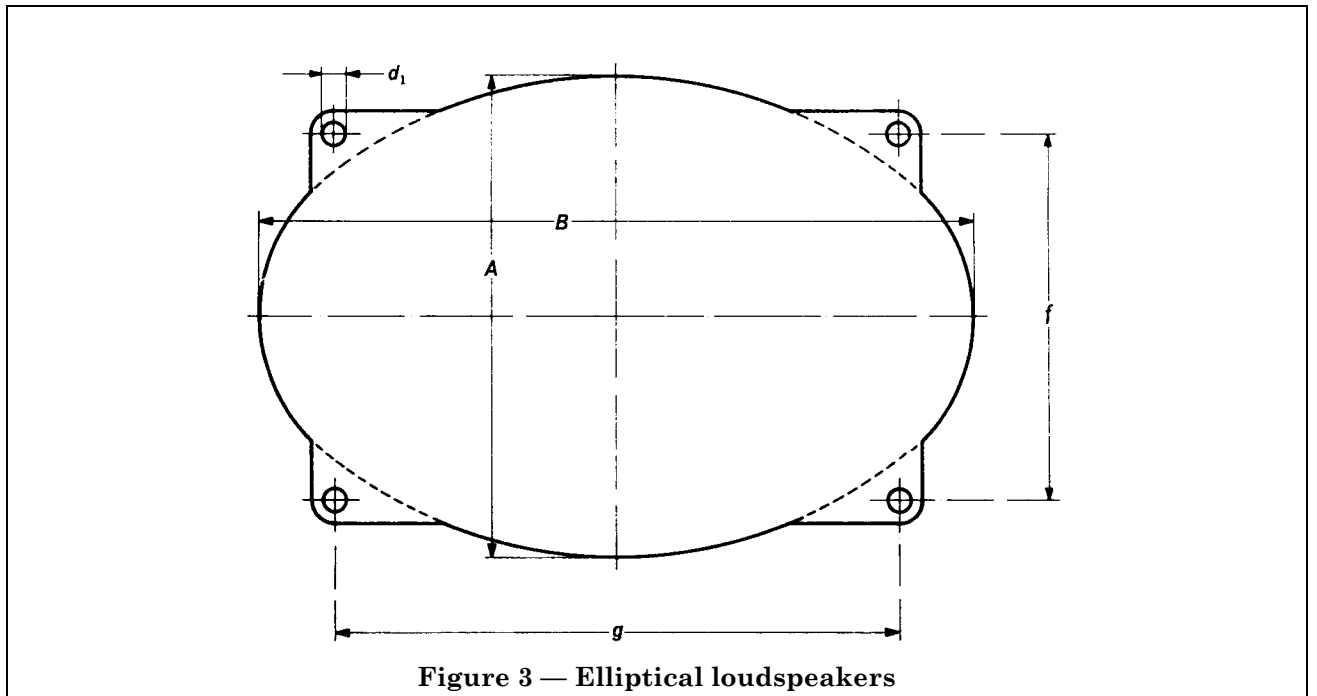
Table II — Elliptical loudspeakers Outer frame diameters and mounting dimensions

(Dimensions in millimetres)

Rated value	Outer diameter		Figure 3		Minimum fixing hole diameter	IEC type designation
			Fixing hole distances			
—	A	B	f	g	d ₁	—
40 × 63 mm	40 ⁰ ₋₂	63 ⁰ ₋₂	31,5 ± 0,5	50 ± 0,5	3,2	268-14 IEC E 463
50 × 80 mm	50 ⁰ ₋₂	80 ⁰ ₋₂	40 ± 0,5	63 ± 0,5	4,3	268-14 IEC E 58
63 × 100 mm	63 ⁰ ₋₂	100 ⁰ ₋₂	50 ± 0,5	80 ± 0,5	4,3	268-14 IEC E 610
76 × 131 mm	76 ⁰ ₋₂	131 ⁰ ₋₂	52 ± 0,5	107 ± 0,5	5,0	268-14 IEC E 713
80 × 125 mm	80 ⁰ ₋₂	125 ⁰ ₋₃	63 ± 0,5	100 ± 0,5	5,0	268-14 IEC E 812
80 × 160 mm	80 ⁰ ₋₂	160 ⁰ ₋₃	63 ± 0,5	125 ± 0,5	5,0	268-14 IEC E 816
80 × 183 mm	80 ⁰ ₋₂	183 ⁰ ₋₃	55 ± 0,5	155 ± 0,5	5,0	268-14 IEC E 818
100 × 160 mm	100 ⁰ ₋₅	160 ⁰ ₋₅	73 ± 0,5	123 ± 0,5	5,0	268-14 IEC E 1016 ^a
100 × 180 mm	100 ⁰ ₋₅	180 ⁰ ₋₄	90 ± 0,5	130 ± 0,5	5,0	268-14 IEC E 1018 ^a
100 × 210 mm	100 ⁰ ₋₅	210 ⁰ ₋₅	70 ± 0,5	170 ± 0,5	5,0	268-14 IEC E 1021 ^a
125 × 200 mm	125 ⁰ ₋₃	200 ⁰ ₋₅	100 ± 0,5	160 ± 0,5	5,0	268-14 IEC E 1220
132 × 183 mm	132 ⁰ ₋₃	183 ⁰ ₋₄	100 ± 0,5	150 ± 0,5	5,0	268-14 IEC E 1318
163 × 235 mm	163 ⁰ ₋₃	235 ⁰ ₋₅	117,5 ± 0,5	166,5 ± 0,5	5,0	268-14 IEC E 1623 ^b
160 × 250 mm	160 ⁰ ₋₃	250 ⁰ ₋₅	125 ± 1	200 ± 1	5,5	268-14 IEC E 1625
200 × 315 mm	200 ⁰ ₋₅	315 ⁰ ₋₅	160 ± 1	250 ± 1	5,5	268-14 IEC E 2031
250 × 400 mm	250 ⁰ ₋₅	400 ⁰ ₋₅	200 ± 1	315 ± 1	6,5	268-14 IEC E 2540

^a in order to cover loudspeakers in common use, the tolerances are increased for the time being. It is, however, expected that for future development the normal tolerances will be used.

^b This type is in common use; it is expected that for future development this type will be deprecated.



Publications referred to

See national foreword.

**BS 6840-14:
1987
IEC 268-14:
1980**

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