BS EN IEC 60318-7:2022



BSI Standards Publication

Electroacoustics — Simulators of human head and ear

Part 7: Head and torso simulator for the measurement of sound sources close to the ear

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National foreword

This British Standard is the UK implementation of EN 60318-7:2022. It is identical to IEC 60318-7:2022.

The UK participation in its preparation was entrusted to Technical Committee EPL/29, Electroacoustics.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

Electroacoustics - Simulators of human head and ear - Part 7: Head and torso simulator for the measurement of sound sources close to the ear

Électroacoustique - Simulateurs de tête et d'oreille humaines - Partie 7: Simulateur de tête et de torse pour le mesurage des sources sonores à proximité de l'oreille

Akustik - Simulatoren des menschliches Kopfes und Ohres - Teil 7: Kopf- und Rumpfsimulator für Messungen an ohrnahen Schallquellen

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European foreword

The text of document 29/1118/FDIS, future edition 1 of IEC 60318-7, prepared by IEC/TC 29 "Electroacoustics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60318-7:2022.

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- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-04-19
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-07-19

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60268-7 NOTE Harmonized as EN 60268-7

ISO 11904-2 NOTE Harmonized as EN ISO 11904-2

IEC 61094-4 NOTE Harmonized as EN 61094-4

ISO 4869-1 NOTE Harmonized as EN ISO 4869-1

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60118-8	-	Electroacoustics - Hearing aids - Part 8: Methods of measurement of performance characteristics of hearing aids under simulated in situ working conditions	EN 60118-8	-
IEC 60318-4	-	Electroacoustics - Simulators of human head and ear - Part 4: Occluded-ear simulator for the measurement of earphones coupled to the ear by means of ear inserts	EN 60318-4	-
IEC 61260-1	-	Electroacoustics - Octave-band and fractional-octave-band filters - Part 1: Specifications	EN 61260-1	-
ISO 3	-	Preferred numbers - Series of preferred numbers	-	-

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Electroacoustics – Simulators of human head and ear – Part 7: Head and torso simulator for the measurement of sound sources close to the ear

Électroacoustique – Simulateurs de tête et d'oreille humaines – Partie 7: Simulateur de tête et de torse pour le mesurage des sources sonores à proximité de l'oreille

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTROACOUSTICS – SIMULATORS OF HUMAN HEAD AND EAR –

Part 7: Head and torso simulator for the measurement of sound sources close to the ear

FOREWORD

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IEC 60318-7 has been prepared by IEC technical committee 29: Electroacoustics. It is an International Standard.

This publication contains attached files in the form of 3D PDF files. These files are intended to be used as a complement and do not form an integral part of the publication.

This edition cancels and replaces IEC TS 60318-7:2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC TS 60318-7:2017:

a) changing the title;
b) extending the scope to sound sources close to the ear.

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The text of this International Standard is based on the following documents:

Draft	Report on voting
29/1118/FDIS	29/1121/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 60318 series, published under the general title *Electroacoustics – Simulators of human head and ear,* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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ELECTROACOUSTICS – SIMULATORS OF HUMAN HEAD AND EAR –

Part 7: Head and torso simulator for the measurement of sound sources close to the ear

1 Scope

This part of IEC 60318 describes a head and torso simulator, or manikin, intended for the measurement of sound sources placed close to the ear in the frequency range from 100 Hz to 16 000 Hz.

The manikin described in this document is intended for airborne acoustic measurements only. It is not suitable for measurements which depend upon vibration transmission paths such as bone conduction, or for measurements requiring the simulation of bone or tissue.

This document specifies the manikin in terms of both its geometrical dimensions and its acoustical properties. Only manikins compliant with both sets of specifications are in conformance with this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60118-8, *Electroacoustics – Hearing aids – Part 8: Methods of measurement of performance characteristics of hearing aids under simulated in situ working conditions*

IEC 60318-4, *Electroacoustics – Simulators of human head and ear – Part 4: Occluded-ear simulator for the measurement of earphones coupled to the ear by means of ear inserts*

IEC 61260-1, *Electroacoustics – Octave-band and fractional-octave-band filters – Part 1: Specifications*

ISO 3, *Preferred numbers – Series of preferred numbers*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org
- ISO Online browsing platform: available at http://www.iso.org/obp

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3.1
manikin
head and torso simulator
simulator of a median adult human head and part of the torso extending in total from the top of the head to the waist and designed to simulate the sound pick-up characteristics and acoustic diffraction

Note 1 to entry: The head and torso simulator includes two pinna simulators, and at least one occluded-ear simulator.

3.2
manikin type
designation of the manikin as either anatomical or geometrical in shape

3.3
pinna simulator
device which has the approximate shape and dimensions of a median adult human pinna

3.4
ear simulator
device for measuring the acoustic output of sound sources where the sound pressure is measured by a calibrated microphone coupled to the source so that the overall acoustic impedance of the device approximates that of the normal human ear at a given location and in a given frequency band

Note 1 to entry: In this document, an ear simulator comprises an ear canal extension and an occluded-ear simulator (see 4.2.4).

3.5
occluded-ear simulator
ear simulator which approximates the acoustic transfer impedance of the inner part of the ear canal, from the tip of an ear insert to the eardrum

Note 1 to entry: An occluded-ear simulator is standardised in IEC 60318-4.

3.6
ear canal extension
device that provides a connection between the occluded-ear simulator and the aperture of the device simulating the concha

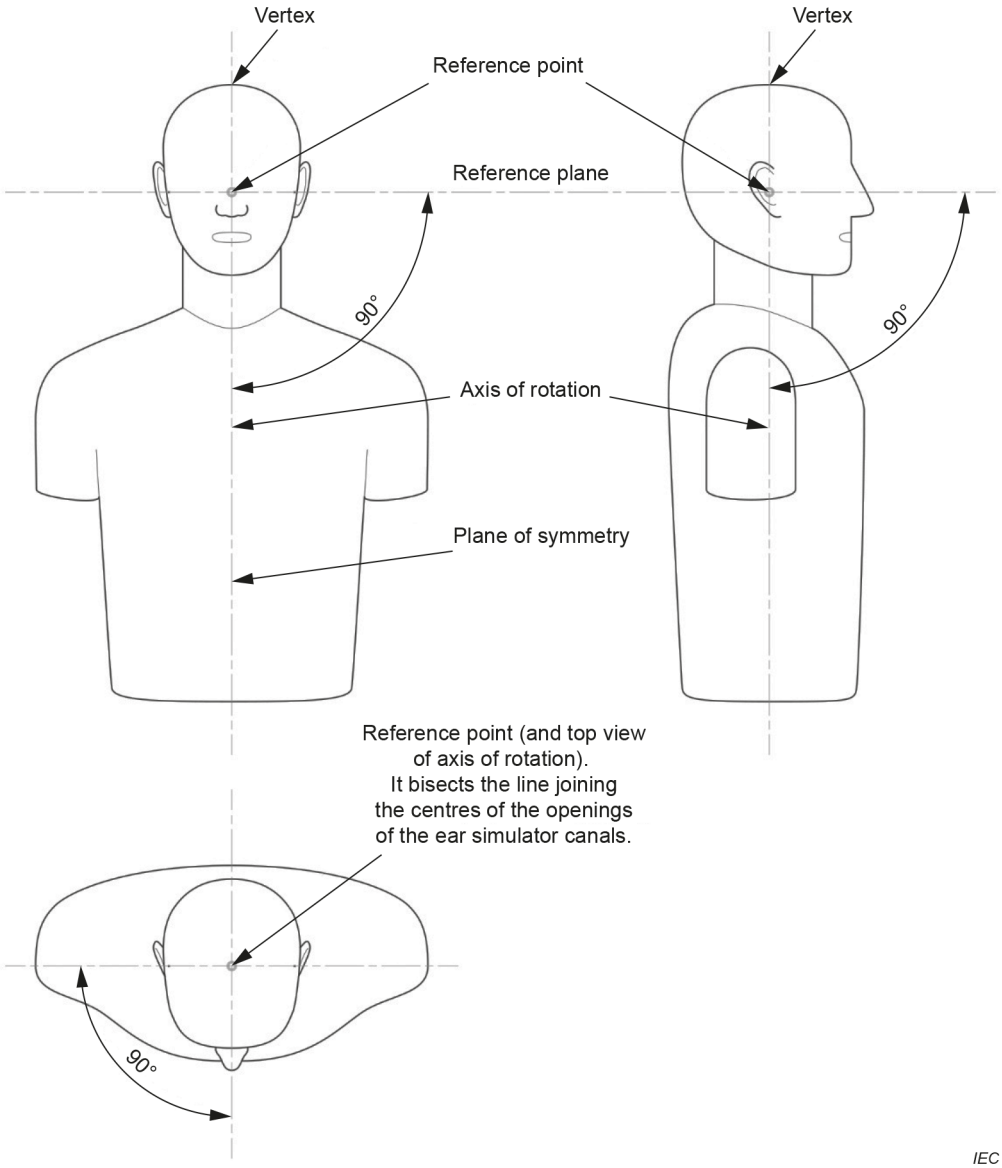
3.7
reference plane of the occluded-ear simulator
plane perpendicular to the axis of the cavity of the simulator, chosen to pass through the position normally occupied by the tip of an ear mould in a human ear canal

3.8
reference point of the manikin
point bisecting the line joining the right and left ear canal entrance points (EEP, 3.17)

3.9
plane of symmetry of the manikin
plane passing through the reference point of the manikin that divides the left and right portions of the manikin into symmetrical halves, within the allowed tolerances, where left and right is interpreted as for the human torso

Note 1 to entry: See Figure 1.

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NOTE The reference point of the manikin is situated within the head.

Figure 1 – Manikin geometrical references

3.10
axis of rotation of the manikin
straight line about which the manikin can be rotated, passing through the reference point of the manikin, lying in the plane of symmetry of the manikin, and having a direction that would be vertical if the manikin were mounted in a position corresponding to that of a standing person

SEE: Figure 1.

3.11
reference plane of the manikin
plane perpendicular to the axis of rotation that contains the reference point of the manikin

SEE: Figure 1.

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