SLOVENSKI STANDARD
SIST EN IEC 60268-7:2026

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Oprema zvokovnega sistema - 7. del: Naglavne in ušesne slušalke (IEC 60268-7:2025)

Sound system equipment - Part 7: Headphones and earphones (IEC 60268-7:2025)

Elektroakustische Geräte - Teil 7: Kopfhörer und Ohrhörer (IEC 60268-7:2025)

Equipements pour systèmes électroacoustiques - Partie 7: Casques et écouteurs (IEC 60268-7:2025)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60268-7

August 2025

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English Version

Sound system equipment - Part 7: Headphones and earphones (IEC 60268-7:2025)

Equipements pour systèmes électroacoustiques - Partie 7: Casques et écouteurs (IEC 60268-7:2025)

Elektroakustische Geräte - Teil 7: Kopfhörer und Ohrhörer (IEC 60268-7:2025)

This European Standard was approved by CENELEC on 2025-08-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 60268-7:2025 E

European foreword

The text of document 100/4304/FDIS, future edition 4 of IEC 60268-7, prepared by TC 100/Technical Area 20 "Analogue and digital audio" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60268-7:2025.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2026-08-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-08-31

This document supersedes EN 60268-7:2011 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60268-7:2025 was approved by CENELEC as a European Standard without any modification.

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

IEC 60068-1	NOTE	Approved as EN 60068-1
IEC 60118-0	NOTE	Approved as EN IEC 60118-0
IEC 60268-3	NOTE	Approved as EN IEC 60268-3
IEC 60268-4	NOTE	Approved as EN IEC 60268-4
IEC 60268-24	NOTE	Approved as EN IEC 60268-24
IEC 60318-1	NOTE	Approved as EN 60318-1
IEC 61786 (series)	NOTE	Approved as EN 61786 (series)
IEC 61938	NOTE	Approved as EN IEC 61938
IEC 62368-1	NOTE	Approved as EN IEC 62368-1
ISO 4869-1	NOTE	Approved as EN ISO 4869-1
ISO 7029	NOTE	Approved as EN ISO 7029
ISO 18233	NOTE	Approved as EN ISO 18233

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.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60038	-	IEC standard voltages	EN 60038	-
IEC 60050-801	-	International Electrotechnical Vocabulary - Chapter 801: Acoustics and electroacoustics	-	-
IEC 60086-1	-	Primary batteries - Part 1: General	EN IEC 60086-1	-
IEC 60263	-	Scales and sizes for plotting frequency characteristics and polar diagrams	EN IEC 60263	-
IEC 60268-1	-	Sound system equipment. Part 1: General	-	-
IEC 60268-2	-	Sound system equipment. Part 2: Explanation of general terms and calculation methods	-	-
IEC 60268-11	-	Sound system equipment. Part 11: Application of connectors for the interconnection of sound system components	-	-
IEC 60268-12	-	Sound system equipment. Part 12: Application of connectors for broadcast and similar use	EN 60268-12	-
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 60318-7	-	Electroacoustics - Simulators of human head and ear - Part 7: Head and torso simulator for the measurement of sound sources close to the ear	EN IEC 60318-7	-
IEC 61672-1	-	Electroacoustics - Sound level meters - Part 1: Specifications	EN 61672-1	-
ISO 266	1997	Acoustics - Preferred frequencies	EN ISO 266	-
ISO 48-4	2018	Rubber, vulcanized or thermoplastic - Determination of hardness - Part 4: Indentation hardness by durometer method (Shore hardness)	-	-

Publication	Year	Title	EN/HD	Year
ISO 3741	-	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for reverberation test rooms	EN ISO 3741	-
ISO 4869-3	-	Acoustics - Hearing protectors - Part 3: Measurement of insertion loss of ear-muff type protectors using an acoustic test fixture	EN ISO 4869-3	-

IEC 60268-7

Edition 4.0 2025-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Sound system equipment – Part 7: Headphones and earphones

Equipements pour systèmes électroacoustiques – Partie 7: Casques et écouteurs

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Sound system equipment - Part 7: Headphones and earphones

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60268-7 has been prepared by technical area 20: Analog and digital audio, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2010, and Amendment 1 of 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- consolidated with IEC 60268-7:2010/AMD1:2020;
- clause/subclause/annex reconstruction and renumbering;
- addition of effective frequency range of the free-field / diffuse-field compensated frequency response;

- update of measurement methods of modulation distortion and difference-frequency distortion;
- addition of details of two-tone distortion measurements, see Annex I;
- addition of details of left-right tracking response for stereo headphones, see Annex J.

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

Draft	Report on voting
100/4303/FDIS	100/4341/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.

A list of all parts in the IEC 60268 series, published under the general title *Sound system equipment*, can be found on the IEC website.

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/publications.

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, or
- revised.

1 Scope

This part of IEC 60268 is applicable to headphones, earphones, headsets and earsets, intended to be used on, or in, the human ear. It also applies to equipment, such as pre-amplifiers, passive networks and power supplies which form an integral part of the headphone system.

This document does not deal with:

a) safety, for which reference is made to IEC 62368-1 or another appropriate standard;

b) the characteristics of microphones of headsets, for which reference is made to IEC 60268-4;

c) earphones and other devices for hearing aids, for which reference is made to IEC 60118-0;

d) headphones for audiometry;

e) headphones and other devices which form part of an active ear-defender system, although some of the provisions of this document can be applicable;

f) active noise cancelation characteristics as covered by IEC 60268-24.

This document specifies the characteristics which are included by the manufacturer in specifications, and relevant methods of measurement. It includes a classification of the different types of earphones, mainly characterized by the way in which the transducer is coupled acoustically to the ear, and a classification code which can also be used for marking.

Rated conditions and characteristics in this document provided by the manufacturer are not generally intended for external verification. Measurement methods for rated characteristics are informative and are provided for the benefit of manufacturers for the purpose of test repeatability and data comparison. All other specifications and tests are provided for testing by the manufacturer and for external testing and verification.

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 60038, *IEC standard voltages*

IEC 60050-801, *International Electrotechnical Vocabulary – Part 801: Acoustics and electroacoustics*, available at https://www.electropedia.org

IEC 60086-1, *Primary batteries – Part 1: General*

IEC 60263, *Scales and sizes for plotting frequency characteristics and polar diagrams*

IEC 60268-1, *Sound system equipment – Part 1: General*

IEC 60268-2, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 60268-11, *Sound system equipment – Part 11: Application of connectors for the interconnection of sound system components*

IEC 60268-12, *Sound system equipment – Part 12: Application of connectors for broadcast and similar use*

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 60318-7, *Electroacoustics – Simulators of human head and ear – Part 7: Head and torso simulator for the measurement of sound sources close to the ear*

IEC 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*

ISO 266:1997, *Acoustics – Preferred frequencies*

ISO 48-4:2018, *Rubber, vulcanized or thermoplastic – Determination of hardness – Part 4: Indentation hardness by durometer method (Shore hardness)*

ISO 3741, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Precision methods for reverberation test rooms*

ISO 4869-3, *Acoustics – Hearing protectors – Part 3: Measurement of insertion loss of ear-muff type protectors using an acoustic test fixture*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-801 (IEV) and the following apply.

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

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

Any device defined in 3.1 to 3.15 and their connector(s) for electrical input should be regarded as part of the transducer.

3.1
earphone
electroacoustic transducer intended to be closely coupled to the ear

[SOURCE: IEC 60050-801:1994, 801-27-18, modified – Reference to acoustical oscillations has been omitted from the definition.]

3.2
headphone
assembly of one or two earphones on a headband

Note 1 to entry: The use of a headband (or chin-band) can be optional, e.g. in the case of intra-concha or insert devices.

[SOURCE: IEC 60050-801:1994, 801-27-20, modified – Note to entry added.]

3.3
headset
headphones equipped with a microphone

3.4
earset
earphones equipped with a microphone

3.5
insert earphone
small earphone that is attached directly to a connecting element, for example an earmould, inserted into the ear canal

[SOURCE: IEC 60050-801:1994, 801-27-22, modified – Reference to outer ear has been omitted from the definition.]

3.6
intra-concha earphone
small earphone that fits in the concha cavity, with its acoustic exit close to the entrance of the ear canal

3.7
supra-aural earphone
earphone applied externally to the outer ear and intended to rest on the pinna

[SOURCE: IEC 60050-801:1994, 801-27-23, modified – The wording "and intended to rest on the pinna" has been added to the definition.]

3.8
supra-concha earphone
earphone intended to rest on the ridges of the concha cavity

3.9
circumaural earphone
earphone having a cavity large enough to cover the region of the head including the ear

[SOURCE: IEC 60050-801:1994, 801-27-24]

3.10
ear shell
circumaural type of earphone hanging on the ear

3.11
stethoscopic headphone
insert headphone by which the earphone or earphones are coupled to the ears by means of a pair of rigid tubes, so that the assembly resembles a stethoscope

3.12
acoustically open earphone
earphone which intentionally provides an acoustic path between the external environment and the ear canal

3.13
acoustically closed earphone
earphone which is intended to prevent acoustic coupling between the external environment and the ear canal

3.14
closed-back earphone
earphone which does not emit significant sound radiation from the back of the transducer to the external environment

3.15
open-back earphone
earphone which emits significant sound radiation from the back of the transducer to the external environment