SLOVENSKI STANDARD
SIST EN 60268-7:1999

01-april-1999

Sound system equipment -- Part 7: Headphones and earphones (IEC 60268-7:1996)

Sound system equipment -- Part 7: Headphones and earphones

Elektroakustische Geräte -- Teil 7: Kopfhörer und Ohrhörer

Equipements pour systèmes électroacoustiques -- Partie 7: Casques et écouteurs

Ta slovenski standard je istoveten z: **EN 60268-7:1996**

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English version

Sound system equipment
Part 7: Headphones and earphones
(IEC 268-7:1996)

Equipements pour systèmes électroacoustiques
Partie 7: Casques et écouteurs
(CEI 268-7:1996)

Elektroakustische Geräte
Teil 7: Kopfhörer und Ohrhörer
(IEC 268-7:1996)

This European Standard was approved by CENELEC on 1996-03-05. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 84/417/FDIS, future edition 2 of IEC 268-7, prepared by TC 84 (transformed into SC 100C, Equipment and systems in the field of audio, video and audiovisual engineering, of IEC TC 100, Audio, video and multimedia systems and equipment), was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60268-7 on 1996-03-05.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-12-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A and ZA are normative and annexes B, C, D and E are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 268-7:1996 was approved by CENELEC as a European Standard without any modification.

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

IEC 65	NOTE: Harmonized, together with its amendments 1:1987 + 2:1989 + 3:1992 as EN 60065:1993 (modified).
IEC 118-0	NOTE: Harmonized as EN 60118-0:1993 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 38 (mod)	1983	IEC standard voltages[1]	HD 472 S1	1989
IEC 50(801)	1994	International Electrotechnical Vocabulary (IEV) Chapter 801: Acoustics and electroacoustics	-	-
IEC 68	series	Environmental testing	HD 323 EN 60068	series series
IEC 86	series	Primary batteries	EN 60086 HD 211.2 S9 + Corr. March	series 1993 1992
IEC 263	1982	Scales and sizes for plotting frequency characteristics and polar diagrams	-	-
IEC 268-1	1985	Sound system equipment Part 1: General	HD 483.1 S2[2]	1989
IEC 268-2	1987	Part 2: Explanation of general terms and calculation methods	HD 483.2 S2[3]	1993
IEC 268-3	1988	Part 3: Amplifiers	HD 483.3 S2[4]	1992
IEC 268-11	1987	Part 11: Application of connectors for the interconnection of sound system components	HD 483.11 S3[5]	1993
IEC 268-12	1987	Part 12: Application of connectors for broadcast and similar use	EN 60268-12[6]	1995

1) The title of HD 472 S1 is: Nominal voltages for low voltage public electricity supply systems.

2) HD 483.1 S2 includes A1:1988 to IEC 268-1.

3) HD 483.2 S2 includes A1:1991 to IEC 268-2.

4) HD 483.3 S2 includes A1:1990 + A2:1991 to IEC 268-3.

5) HD 483.11 S3 includes A1:1989 + A2:1991 to IEC 268-11.

6) EN 60268-12 includes A1:1991 to IEC 268-12.

Publication	Year	Title	EN/HD	Year
IEC 268-15	1987	Part 15: Preferred matching values for the interconnection of sound system components	HD 483.15 S4[7)]	1992
IEC 711	1981	Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts	HD 443 S1	1983
IEC 914	1988	Conference systems - Electrical and audio requirements	HD 549 S1	1989
IEC 959	1990	Provisional head and torso simulator for acoustic measurements on air conduction hearing aids	-	-
IEC Guide 106	1989	Guide for specifying environmental conditions for equipment performance rating	-	-
ISO 3741	1988	Acoustics - Determination of sound power levels of noise sources - Precision methods for board-band sources in reverberation rooms	EN 23741	1991
ISO 4869-1	1990	Acoustics - Hearing protectors Part 1: Subjective method for the measurement of sound attenuation	EN 24869-1	1992
ISO TR 4869-3	1989	Acoustics - Hearing protectors Part 3: Simplified method for the measurement of insertion loss of ear-muff type protectors for quality inspection purposes	-	-

7) HD 483.15 S4 includes A1:1989 + A2:1990 + A3:1991 to IEC 268-15.

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Part 7:
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SYSTEM EQUIPMENT –
Part 7: Headphones and earphones

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 268-7 has been prepared by IEC technical committee 84: Equipment and systems in the field of audio, video and audiovisual engineering.

This second edition cancels and replaces the first edition published in 1984, and constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
84/417/FDIS	100C/4/RVD

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

Annex A forms an integral part of this standard.

Annexes B, C, D and E are for information only.

SOUND SYSTEM EQUIPMENT –

Part 7: Headphones and earphones

1 General

1.1 *Scope*

This part of IEC 268 applies to headphones, headsets, earphones 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.

It does not deal with:

– safety, for which reference should be made to IEC 65 [1]* or another appropriate standard;

– the characteristics of microphones of headsets, for which reference should be made to IEC 268-4 [2];

– earphones and other devices for hearing aids, for which reference should be made to IEC 118-0 [3];

– headphones for audiometry;

– headphones and other devices which form part of an active ear-defender system, although some of its provisions may be applicable.

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

1.2 *Normative references*

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 268. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 268 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 38: 1983, *IEC standard voltages*

IEC 50(801): 1994, *International Electrotechnical Vocabulary – Chapter 801: Acoustics and electroacoustics*

IEC 68: *Basic environmental testing procedures*

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* Figures in square brackets refer to the bibliography given in annex E.

IEC 86: *Primary batteries*

IEC Guide 106: 1989, *Guide for specifying environmental conditions for equipment performance rating*

IEC 263: 1982, *Scales and sizes for plotting frequency characteristics and polar diagrams*

IEC 268-1: 1985, *Sound system equipment – Part 1: General*

IEC 268-2: 1987, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 268-3: 1987, *Sound system equipment – Part 3: Amplifiers*

IEC 268-11: 1987, *Sound system equipment – Part 11: Applications of connectors for the interconnection of sound system components*

IEC 268-12: 1987, *Sound system equipment – Part 12: Applications of connectors for broadcast and similar use*

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ISO 4869-1: 1990, *Acoustics – Hearing protectors – Part 1: Subjective method for the measurement of sound attenuation*

ISO TR 4869-3: 1989, *Acoustics – Hearing protectors – Part 3: Simplified method for the measurement of insertion loss of ear-muff type protectors for quality inspection purposes*

1.3 *Definitions*

For the purpose of this part of IEC 268, the following definitions apply:

NOTE – Any device included between a transducer as defined in 1.3.1 to 1.3.15 and the connector(s) for electrical input should be regarded as part of the transducer.

1.3.1 **earphone**: Electroacoustic transducer by which acoustic oscillations are obtained from electric signals and intended to be closely coupled acoustically to the ear. [IEV 801-27-18]

1.3.2 **headphone**: Assembly of one or two earphones on a headband or chinband, the use of which may be optional (e.g. with intra-concha earphones).

1.3.3 **headset**: Headphones equipped with a microphone.

1.3.4 **earset**: Earphones equipped with a microphone.

NOTE – This definition is included because the term appears in the catalogue of IEC publications.

1.3.5 **insert earphone**: Small earphone that is attached directly to a connecting element, for example an earmould, inserted into the ear canal. [IEV 801-27-22, modified]

1.3.6 **intra-concha earphone**: Small earphone that fits in the concha cavity, with its acoustic exit close to the entrance of the ear canal.

NOTE – The definition of "insert earphone" is modified from that in IEC 50(801), and the definition of "intra-concha earphone" introduced, because the methods of measurement of the two types differ.

1.3.7 **supra-aural earphone**: Earphone applied externally to the outer ear and intended to rest on the pinna. [IEV 801-27-23, modified]

1.3.8 **supra-concha earphone**: Earphone intended to rest on the ridges of the concha cavity.

1.3.9 **circumaural earphone**: Earphone having a cavity large enough to cover the region of the head including the ear. [IEV 801-27-24]

1.3.10 **ear shell**: Circumaural type of earphone hanging on the ear. [IEC 914]

1.3.11 **stethoscopic headphone**: Insert headphone by which the earphone(s) is/are coupled to the ears by means of a pair of rigid tubes, so that the assembly resembles a stethoscope.

1.3.12 **acoustically open earphone**: Earphone which intentionally provides an acoustic path between the external environment and the ear canal.

1.3.13 **acoustically closed earphone**: Earphone which is intended to prevent acoustic coupling between the external environment and the ear canal.

1.3.14 **closed-back earphone**: Earphone which does not emit significant sound radiation from the back of the transducer to the external environment.

1.3.15 **open-back earphone**: Earphone which emits significant sound radiation from the back of the transducer to the external environment.