



SLOVENSKI STANDARD
SIST EN 60908:2000
01-april-2000

Audio recording - Compact disc digital audio system (IEC 60908:1999)

Audio recording - Compact disc digital audio system

Tonaufzeichnung - Digital-Audio-System Compact Disc

Enregistrement audio - Système audionumérique à disque compact

Ta slovenski standard je istoveten z: EN 60908:1999

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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March 1999

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English version

Audio recording
Compact disc digital audio system
(IEC 60908:1999)

Enregistrement audio
Système audionumérique à disque
compact
(CEI 60908:1999)

Tonaufzeichnung
Digital-Audio-System Compact Disc
(IEC 60908:1999)



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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.

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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 100B/173/FDIS, future amendment to IEC 60908:1987, prepared by SC 100B, Recording, 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 amendment A2 to EN 60908:1992 on 1998-10-01.

The text of this document, together with that of IEC 60908:1987 and its amendment 1:1992, was published by IEC as the second edition of IEC 60908 in February 1999. According to a decision of principle taken by the Technical Board of CENELEC, the approval of EN 60908:1992/A2 has been converted into the approval of a new EN 60908.

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) 1999-11-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2001-11-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes B and ZA are normative and annexes A, C, D, E and F are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60908:1987 was approved by CENELEC as a European Standard without any modification.

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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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-2	1974	Basic environmental testing procedures Part 2: Tests - Test B: Dry heat	EN 60068-2-2 ¹⁾	1993
IEC 60068-2-30	1980	Part 2: Tests - Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)	HD 323.2.30 S3 ²⁾	1988
IEC 60721-3-5	1997	Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities Section 5: Ground vehicle installations	EN 60721-3-5	1997
IEC 61104	1992	Compact disc video system - 12 cm CD-V	EN 61104	1992
IEC 61866	1997	Audiovisual systems - Interactive text transmission system (ITTS)	EN 61866	1997
IEC 61938	1996	Audio, video and audiovisual systems Interconnections and matching values Preferred matching values of analogue signals	EN 61938 + corr. February	1997 1997
ISO/IEC 646	1991	Information technology - ISO 7-bit coded character set for information interchange	-	-
ISO 3901	1986	Documentation - International Standard Recording Code (ISRC)	-	-
ISO/IEC 8859-1	1998	Information technology - 8-bit single-byte coded graphic character sets Part 1: Latin alphabet No.1	-	-
EBU Tech 3258-E	1991	Specification of the systems of the MAC/packet family	-	-

1) EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

2) HD 323.2.30 S3 includes A1:1985 to IEC 60068-2-30.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
UPC/EAN	-	Universal product code/International article numbering association	-	-
RIAJ Document RS506	-	Music shift Kanji character set	-	-
CD EXTRA	-	Enhanced music CD specification, Version 1.0, December 1995, Sony/Philips	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AUDIO RECORDING –
COMPACT DISC DIGITAL AUDIO SYSTEM –**
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 co-operation 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.
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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. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60908 has been prepared by subcommittee 100B: Audio, video and multimedia information storage systems, of IEC technical committee 100: Audio, video and multimedia systems and equipments.

This second edition cancels and replaces the first edition published in 1987, amendment 1 (1992) and the corrigendum to amendment 1.

The text of this standard is based on the first edition, amendment 1, the corrigendum to amendment 1 and the following documents:

FDIS	Report on voting
100B/173/FDIS	100B/185/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 B forms an integral part of this international Standard.

Annexes A, C, D, E and F are for information only.

AUDIO RECORDING – COMPACT DISC DIGITAL AUDIO SYSTEM –

1 Scope and object

This standard is applicable to a prerecorded optical reflective digital audio disc system.

This standard defines those parameters of compact disc that affect interchangeability between discs and players. It is also intended as a reference for manufacturers wishing to produce discs and/or players that conform to the system described in this standard. It deals with discs of 80 mm in diameter as well as those of 120 mm in diameter.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60068-2-2:1974, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

IEC 60068-2-30:1980, *Environmental testing – Part 2: Tests – Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle)*

IEC 60721-3-5:1997, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 5: Ground vehicle installations*

IEC 61104:1992, *Compact disc video system – 12 cm CD-V*

IEC 61866:1997, *Audiovisual systems – Interactive text transmission system (ITTS)*

IEC 61938:1996, *Audio, video and audiovisual systems – Interconnections and matching values – Preferred matching values of analogue signals*

ISO/IEC 646:1991, *Information technology – ISO 7-bit coded character set for information interchange*

ISO 3901:1986, *Documentation – International Standard Recording Code (ISRC)*

ISO/IEC 8859-1:1998, *Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No.1*

EBU Tech 3258-E:1991, *Specification of the systems of the MAC/packet family*

UPC/EAN, *Universal product code/International article numbering association*

RIAJ Document RS506, *Music shift Kanji character set*

CD EXTRA, *Enhanced music CD specification, Version 1.0, December 1995, Sony/Philips*

3 Description of system

The information carrier is a transparent disc, the substrate, one side of which carries the information. This side, the encoded side, is covered in turn by a reflective and a protective layer.

The information of the disc is stored in a spiral-shaped track consisting of successive shallow depressions (pits). When the disc is playing and viewed from the read-out side, the spiral starts near the centre of the disc and finishes near its edge.

The lengths of the pits and the spaces between them can take discrete values only, and represent the encoded two-channel audio information.

The information is read out by means of a beam of light which passes through the plain, i.e. the non-encoded side of the transparent disc to the encoded side, where it is reflected and modulated by the recorded information (see figure 2b, detail B).

The information is followed by means of a servo-system for tracking and focusing.

4 Requirements for measurements

4.1 Conditions of measurement

Measurements and mechanical checks shall be carried out within the following limits unless otherwise specified:

- ambient temperature: 15 °C to 35 °C;
- relative humidity: 45 % to 75 %;
- air pressure: 86 kPa to 106 kPa.

4.2 Requirements for the measuring pick-up

The optical pick-up to be used for disc measurement shall comply with the following requirements:

- wavelength: 780 ± 10 nm;
- polarization: circular;
- numerical aperture (NA): 0,45 ± 0,01;
- intensity at the rim of the pupil of the objective lens: > 50 % of the maximum intensity value;
- diffraction limited performance of the optical system: within the Maréchal criterion, preferably equally divided between disc and player.

4.3 Requirements for the clamping of the disc

The disc shall be fixed between two equally sized concentric rings, having inner diameters of 29 mm and outer diameters of 31 mm, the clamping force being between 1 N and 2 N (see figure 2b).

Parameters to be specified		Requirements	Methods and/or conditions of measurement
5	Mechanical parameters	Figures 2a, 2b and 2c, specify the dimensions of the disc, including reflective layer, protective layer and label	
5.1	Outer dimensions of disc		
5.1.1	Outer diameter	120 ± 0,3 mm 80 ± 0,2 mm	To be measured at 23 ± 2 °C and (50 ± 5) % relative humidity
5.1.2	Radial run-out of outer edge	0,4 mm max.	Relative to the inscribed circle of centre hole
5.1.3	Edge shape	Edges shall be free from burrs; chamfer or radius is permitted on both sides	
5.2	Centre hole dimensions	For 8 cm-CD, see figures 2c and 2d.	
5.2.1	Diameter	15 ^{+0,1} ₀ mm	To be measured at 23 ± 2 °C and (50 ± 5) % relative humidity
5.2.2	Shape	Cylindrical	
5.2.3	Edge shape	Burrs are permitted on the label side, but not on the read-out side. Chamfer or radius is permitted (see figure 2b, detail C)	
5.3	Thickness of disc	1,2 ^{+0,3} _{-0,1} mm	Including protective layer and labelling
5.4	Labelling		
5.4.1	Label dimensions	Shall not project over edge of centre hole or outer edge of disc	May be applied by printing or by means of a label
5.4.2	Label information	At least the following information shall be given: a) Title of program b) Catalogue number of disc c) Sequence number of and total number of discs if complete program occupies more than one disc (e.g.: disc 2 of 4)	
5.5	Reference plane	Ring between diameters of 26 mm and 33 mm (see figures 2a and 2b)	On the read-out side
5.6	Clamping area		
5.6.1	Inner diameter of clamping area	26 mm max.*	
5.6.2	Outer diameter of clamping area	33 mm min.*	
5.6.3	Thickness of disc in clamping area	Within the requirements given in 5.3 and figure 2b	
5.6.4	Adaptor clamping area for 8 cm-CD	An outer ring with 1,5 mm in width	
5.6.5	Thickness in clamping area for 8 cm-CD adaptor	1,2 ± 0,1 mm	

* These dimensions ensure that the ring between 26 mm and 33 mm is available for clamping.