

Methods of measuring the characteristics of reproducing equipment for digital audio compact discs

The European Standard EN 61096 : 1993 has the status of a
British Standard

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Cooperating organizations

The European Committee for Electrotechnical Standardization (CENELEC), under whose supervision this European Standard was prepared, comprises the national committees of the following countries:

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Belgium	Luxembourg
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Finland	Norway
France	Portugal
Germany	Spain
Greece	Sweden
Iceland	Switzerland
Ireland	United Kingdom

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Summary of pages

The following table identifies the current issue of each page. Issue 1 indicates that a page has been introduced for the first time by amendment. Subsequent issue numbers indicate an updated page. Vertical sidelining on replacement pages indicates the most recent changes (amendment, addition, deletion).

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National foreword

This British Standard has been prepared under the direction of the Electronic Equipment Standards Policy Committee and is the English language version of EN 61096 *Methods of measuring the characteristics of reproducing equipment for digital audio compact discs* together with its amendment A1 : 1996, published by the European Committee for Electrotechnical Standardization (CENELEC). It is identical with IEC 1096 : 1992 together with its amendment 1 : 1996, published by the International Electrotechnical Commission (IEC).

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

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English version

Methods of measuring the characteristics of reproducing equipment for digital audio compact discs

(includes amendment A1 : 1996)

(IEC 1096 : 1992 + A1 : 1996)

Méthodes de mesure des caractéristiques des appareils de lecture pour les disques compacts audionumériques

(inclut l'amendement A1 : 1996)

(CEI 1096 : 1992 + A1 : 1996)

Meßverfahren für die Eigenschaften von Wiedergabegeräten für

Digital-Audio-Compactplatten

(enthält Änderung A1 : 1996)

(IEC 1096 : 1992 + A1 : 1996)

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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
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 **Documents**
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Foreword

The text of document 60A(CO)141, as prepared by subcommittee 6A : Sound recording, of IEC technical committee 60 : Recording, was submitted to the IEC-CENELEC parallel vote in July 1991.

The reference document was approved by CENELEC as EN 61096 on 24 March 1992

The following dates were fixed:

- latest date of publication
of an identical national
standard (dop) 1993-08-01
- latest date of withdrawal
of conflicting national
standards (dow) 1993-08-01

Foreword to amendment A1

The text of document 100B/28/FDIS, future amendment 1 to IEC 1096 : 1992, 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 A1 to EN 61096 : 1993 on 1996-10-01.

The following dates were fixed:

- latest date by which the
amendment has to be
implemented at national level
by publication of an identical
national standard or by
endorsement (dop) 1997-07-01
- latest date by which the
national standards conflicting
with the amendment have to
be withdrawn (dow) 1997-07-01

Annexes designated 'normative' are part of the body of the standard. Annexes designated 'informative' are given for information only. In this standard, annex ZA is normative and annexes A, B (EN 61096) and C (A1) are informative.

Annex ZA has been added by CENELEC.

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METHODS OF MEASURING THE CHARACTERISTICS OF REPRODUCING EQUIPMENT FOR DIGITAL AUDIO COMPACT DISCS

1 Scope and object

This International Standard applies to reproducing equipment for digital audio compact discs that conform to the specifications of IEC 908.

NOTES

- 1 For convenience, this reproducing equipment will be referred to as a "CD player" throughout the text of this standard.
- 2 This standard does not include specifications for listening tests (see IEC 268-13).

The object of this standard is to list and define the characteristics affecting the performance of CD players, to establish conditions and methods of measurement of those characteristics, and to standardize the presentation of results.

2 Normative references

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

IEC 38: 1983, *IEC standard voltages*.

IEC 65: 1985, *Safety requirements for mains operated electronic and related apparatus for household and similar general use*.

IEC 68-2-27: 1987, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 225: 1966, *Octave, half-octave and third-octave band filters intended for the analysis of sounds and vibrations*.

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 268-13: 1985, *Sound system equipment - Part 13: Listening tests on loudspeakers*.

IEC 268-15: 1987, *Sound system equipment - Part 15: Preferred matching values for the interconnection of sound system components*.
Amendment 2 (1990).

IEC 651: 1979, *Sound level meters*

IEC 721-3-5: 1985, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities. Ground vehicle installations*

IEC 908: 1987, *Compact disc digital audio system.*

IEC 958: 1989, *Digital audio interface.*

ISO 266: 1975, *Acoustics - Preferred frequencies for measurements.*

ISO 532: 1975, *Acoustics – Methods for calculating loudness levels*

ISO 1996: *Acoustics – Description and measurement of environmental noise*

ISO 3740: 1980, *Acoustics – Determination of sound power levels of noise sources – Guidelines for the use of basic standards and for the preparation of noise test codes*

ISO 3741: 1988, *Acoustics – Determination of sound power levels of noise sources – Precision methods for broad-band sources in reverberation rooms*

ISO 3742: 1988, *Acoustics – Determination of sound power levels of noise sources – Precision methods for discrete-frequency and narrow-band sources in reverberation rooms*

ISO 3743-1: 1994, *Acoustics – Determination of sound power levels of noise sources – Engineering methods for small, movable sources in reverberant fields – Part 1: Comparison method for hard-walled test rooms*

ISO 3743-2: 1994, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering methods for small, movable sources in reverberant fields – Part 2: Methods for special reverberation test rooms*

ISO 3744: 1994, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane*

ISO 3745: 1977, *Acoustics – Determination of sound power levels of noise sources – Precision methods for anechoic and semi-anechoic rooms*

3 Terminology

Each parameter to be measured is defined in the relevant clause pertaining to measurement (see clause 5). For this International Standard, the following definitions apply.

3.1 reference value: The specified value of any given parameter selected as a reference to which other values are compared.

3.2 reference recorded level: The level of a sinusoidal analogue signal, whose peak voltage corresponds to the full-scale digital coding level, represented by (7FFF)H and (8000)H in 2's complement form, is specified as 0 dB in this standard.

3.3 reference frequency: In this standard the reference frequency is 1 kHz.

3.4 reference output voltage: The voltage that appears across the rated load impedance when reproducing reference recorded level at reference frequency.

4 Information required from manufacturers of CD players

This information falls into two distinct categories:

- a) mandatory information which shall be clearly shown on the CD player. This requirement is indicated by the letter "A" on the right-hand side of the page;
- b) optional information which may be given separately, for example in an instruction manual relating to and supplied with the CD player.

It is essential that mandatory information outside the scope of this standard be also given in the correct location as specified in the relevant standard (e.g. for aspects of safety, see IEC 65).

4.1 Identification

- | | |
|--|---|
| 4.1.1 Name of manufacturer and/or trade mark | A |
| 4.1.2 Model or type and serial number (variants, if any, to be stated) | A |

4.1.3 Mechanical characteristics of CD-player

4.1.3.1 Dimensions (inclusively knobs, connectors and plugs at front and rear sides)

height	millimetres (mm)
width	millimetres (mm)
depth	millimetres (mm)

4.1.3.2 Total mass kilograms (kg)

4.1.3.3 Special facilities

Operating position horizontal, vertical or other

Systems single, multi disc player, combi player,
car, portable

Remote control

Programming

4.1.4 Electrical characteristics

4.1.4.1 Mains supply volts (V) A

4.1.4.2 Mains frequency hertz (Hz) A

4.1.4.3 Power consumption voltamperes, watts (VA, W) A

4.1.4.4 Output facilities (digital/analogue/optical or others)

4.1.5 Environment

4.1.5.1 Temperature range degrees Celsius (°C)

4.1.5.2 Relative humidity per cent (%)

4.1.5.3 Air pressure kilopascals (kPa)

4.2 Standard conditions for measurements

For convenience in specifying how CD players are to be set up for measurement or verification, it is necessary to define certain conditions under which the measurements shall be made. Furthermore, these conditions shall be related to specific test discs, chosen from the discs listed in annex A.

The following parameters are basic to the methods of measurement specified in this standard: