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Electroacoustics - Sound level meters - Part 2: Pattern evaluation tests (IEC 61672-2:2003)

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English version

Electroacoustics – Sound level meters Part 2: Pattern evaluation tests

(IEC 61672-2:2003)

Electroacoustique – Sonomètres Partie 2: Essais d'évaluation d'un modèle (CEI 61672-2:2003)

Elektroakustik – Schallpegelmesser Teil 2: Baumusterprüfungen (IEC 61672-2:2003)

This European Standard was approved by CENELEC on 2003-06-01. 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.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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

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Foreword

The text of document 29/532/FDIS, future edition 1 of IEC 61672-2, prepared by IEC TC 29, Electroacoustics, in cooperation with the International Organization of Legal Metrology (OILM), was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61672-2 on 2003-06-01.

This European Standard, in conjunction with EN 61672-1, supersedes EN 60651:1994 + A1:1994 + A2:2001 and EN 60804:2000.

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)	2004-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2006-06-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex A is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61672-2:2003 was approved by CENELEC as a European Standard without any modification.

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 60942	- [1]	Electroacoustics - Sound calibrators	EN 60942	2003 [2]
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC) Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
A1	1998		A1	1998
A2	2000		A2	2001
IEC 61000-4-3	2002	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002
IEC 61000-4-6	1996	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996
A1	2000		A1	2001
IEC 61000-6-2 (mod)	1999	Part 6-2: Generic standards - Immunity for industrial environments	EN 61000-6-2	2001
IEC 61094-1	- [1]	Measurement microphones Part 1: Specifications for laboratory standard microphones	EN 61094-1	2000 [2]
IEC 61183	- [1]	Electroacoustics - Random-incidence and diffuse-field calibration of sound level meters	EN 61183	1994 [2]
IEC 61672-1	2002	Electroacoustics - Sound level meters Part 1: Specifications	EN 61672-1	2003

[1] Undated reference.

[2] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
CISPR 16-1	1999	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	-	-
CISPR 22 (mod)	1997	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55022	1998
ISO/IEC Guide Expres	1995	Guide to the expression of uncertainty in measurement	-	-
ISO/IEC	1993	International vocabulary of basic and general terms in metrology	-	-

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Electroacoustique – Sonomètres –

Partie 2: Essais d'évaluation d'un modèle

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Part 2: Pattern evaluation tests

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROACOUSTICS – SOUND LEVEL METERS –

Part 2: Pattern evaluation tests

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 specifications, 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.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

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 61672-2 has been prepared by IEC technical committee 29: Electroacoustics, in cooperation with the International Organization of Legal Metrology (OIML).

This standard, in conjunction with IEC 61672-1, cancels and replaces IEC 60651 (1979) and IEC 60804 (2000).

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

FDIS	Report on voting
29/532/FDIS	29/538/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

At the time of publication of this standard, the IEC 61672 series was scheduled to consist at least of the following parts under the general title *Electroacoustics – Sound level meters:*

Part 1: Specifications

Part 2: Pattern evaluation tests

Part 3: Periodic tests

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

ELECTROACOUSTICS – SOUND LEVEL METERS –

Part 2: Pattern evaluation tests

1 Scope

This part of IEC 61672 provides details of the tests necessary to verify conformance to all mandatory specifications given in IEC 61672-1:2002 for conventional sound level meters, integrating-averaging sound level meters and integrating sound level meters. Pattern evaluation tests apply for each channel of a multi-channel sound level meter, as appropriate. Tests and test methods are applicable to class 1 and class 2 sound level meters. The aim is to ensure that all testing laboratories use consistent methods to perform pattern evaluation tests.

2 Normative references

The following referenced documents are indispensable for the application 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 60942, *Electroacoustics – Sound calibrators*

IEC 61000-4-2:2001, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test* – Basic EMC Publication[1]

IEC 61000-4-3:2002, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test* – Basic EMC Publication[2]

IEC 61000-4-6:2001, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields* – Basic EMC Publication[3]

IEC 61000-6-2:1999, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61094-1, *Measurement microphones – Part 1: Specifications for laboratory standard microphones*

IEC 61183, *Electroacoustics – Random-incidence and diffuse-field calibration of sound level meters*

IEC 61672-1:2002, *Electroacoustics – Sound level meters – Part 1: Specifications*

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[1] Edition 1.2 consisting of Edition 1:1995 consolidated with amendments 1:1998 and 2:2000.

[2] Edition 2.1 consisting of Edition 2:2002 consolidated with amendment 1:2002.

[3] Edition 1.1 consisting of Edition 1:1996 consolidated with amendment 1:2000.

CISPR 16-1:1999, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus* [4]

CISPR 22:1997, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*

ISO Express Guide*, Guide to the expression of uncertainty in measurement*

ISO/IEC*, International vocabulary of basic and general terms in metrology*

3 Terms and definitions

For the purposes of this standard, in addition to the terms and definitions given in IEC 61672-1, the terms and definitions given in IEC 61000-4-2:2001, IEC 61000-4-3:2002, IEC 61000-4-6:2001, the *Guide to the expression of uncertainty in measurement* and the *International vocabulary of basic and general terms in metrology* also apply.

4 Submission for testing

4.1 At least three specimens of the same pattern of sound level meter shall be submitted for pattern evaluation testing. As a minimum, the testing laboratory shall select two of the specimens for testing. At least one of the two specimens shall then be tested fully according to the procedures of this standard. The testing laboratory shall decide whether the full tests shall also be performed on the second specimen or whether limited testing is adequate to approve the pattern.

4.2 An instruction manual and all items or accessories that are identified in the instruction manual as integral components for the normal mode of operation shall be submitted along with the sound level meters. Examples of additional items or accessories include a microphone extension device or cable and peripheral equipment.

4.3 If the manufacturer of the sound level meter supplies devices that are to be connected to the sound level meter by cables, then the devices and cables shall be submitted with the sound level meter.

4.4 A calibrated sound calibrator of a model specified in the instruction manual for the sound level meter shall be supplied with the sound level meter. An instruction manual for the sound calibrator shall also be provided. The model of the calibrator shall conform to the specifications of IEC 60942 for the class, as required by 5.2.2 of IEC 61672-1:2002.

5 Marking of the sound level meter and information in the instruction manual

5.1 It shall be verified that the sound level meter is marked according to the requirements of Clause 8 of IEC 61672-1:2002.

5.2 Before conducting any tests, it shall be verified that the instruction manual contains all the information that is required by Clause 9 of IEC 61672-1:2002 as relevant to the facilities provided by the sound level meter.

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[4] In English, CISPR stands for International Special Committee on Radio Interference.