

Electroacoustics - Sound level meters -- Part 3: Periodic tests

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NATIONAL FOREWORD

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English version

**Electroacoustics -
Sound level meters -
Part 3: Periodic tests
(IEC 61672-3:2013)**

Electroacoustique -
Sonomètres -
Partie 3: Essais périodiques
(CEI 61672-3:2013)

Elektroakustik -
Schallpegelmesser -
Teil 3: Periodische Einzelprüfung
(IEC 61672-3:2013)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 29/814/FDIS, future edition 2 of IEC 61672-3, prepared by IEC/TC 29 "Electroacoustics" in cooperation with the International Organization of Legal Metrology (OIML), was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61672-3:2013.

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) 2014-08-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-11-04

This document supersedes EN 61672-3:2003.

EN 61672-3:2013 includes the following significant technical changes with respect to EN 61672-3:2003.

In this second edition, conformance to specifications is demonstrated when

- a) measured deviations from design goals do not exceed the applicable acceptance limits, and
- b) the uncertainty of measurement does not exceed the corresponding maximum-permitted uncertainty, with both uncertainties determined for a coverage probability of 95 %.

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

Endorsement notice

The text of the International Standard IEC 61672-3:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 60942	-	Electroacoustics - Sound calibrators	EN 60942	-
IEC 61094-5	-	Measurement microphones Part 5: Methods for pressure calibration of working standard microphones by comparison	EN 61094-5	-
IEC 61094-6	-	Measurement microphones Part 6: Electrostatic actuators for determination of frequency response	EN 61094-6	-
IEC 61183	-	Electroacoustics - Random-incidence and diffuse-field calibration of sound level meters	EN 61183	-
IEC 61672-1	-	Electroacoustics - Sound level meters Part 1: Specifications	EN 61672-1	-
IEC 61672-2	-	Electroacoustics - Sound level meters Part 2: Pattern evaluation tests	EN 61672-2	-
IEC 62585	-	Electroacoustics - Methods to determine corrections to obtain the free-field response of a sound level meter	EN 62585	-
ISO/IEC Guide 98-3	-	Uncertainty of measurement Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-
ISO/IEC Guide 99	-	International vocabulary of metrology - Basic and general concepts and associated terms (VIM)	-	-

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ELECTROACOUSTICS – SOUND LEVEL METERS –

Part 3: Periodic tests

1 Scope

This second edition of IEC 61672-3 describes procedures for periodic testing of time-weighting, integrating-averaging, and integrating sound level meters that were designed to conform to the class 1 or class 2 specifications of the second edition of IEC 61672-1. The aim of the standard is to ensure that periodic testing is performed in a consistent manner by all laboratories.

NOTE 1 In this document, references to IEC 61672-1, IEC 61672-2, and IEC 61672-3 refer to the second editions unless stated otherwise.

NOTE 2 Procedures for the periodic testing of sound level meters designed to conform to the specifications of IEC 61672-1:2002 were given in IEC 61672-3:2006.

The purpose of periodic testing is to assure the user that the performance of a sound level meter conforms to the applicable specifications of IEC 61672-1 for a limited set of key tests and for the environmental conditions under which the tests were performed.

The extent of the tests in this part of IEC 61672 is deliberately restricted to the minimum considered necessary for periodic tests.

Periodic tests described in this edition of IEC 61672-3 apply to sound level meters for which the manufacturer claims conformance to the specifications of the second edition of IEC 61672-1. Periodic tests described in this part of IEC 61672 apply to sound level meters for which the model has been, or has not been, pattern approved by an independent testing organization responsible for pattern approvals in accordance with the test procedures of the second edition of IEC 61672-2.

Because of the limited extent of the periodic tests, if evidence of pattern approval is not publicly available, no general conclusion about conformance to the specifications of IEC 61672-1 can be made, even if the results of the periodic tests conform to all applicable requirements of this edition of IEC 61672-3.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 61094-5, *Measurement microphones – Part 5: Methods for pressure calibration of working standard microphones by comparison*

IEC 61094-6, *Measurement microphones – Part 6: Electrostatic actuators for determination of frequency response*

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

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

IEC 61672-2, *Electroacoustics – Sound level meters – Part 2: Pattern evaluation tests*

IEC 62585, *Electroacoustics – Methods to determine corrections to obtain the free-field response of a sound level meter*

ISO/IEC Guide 98-3, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

ISO/IEC Guide 99, *International vocabulary of metrology – Basic and general concepts and associated terms (VIM)*

3 Submission for testing

3.1 An instruction manual applicable to the model and version of the sound level meter shall be available in order to perform periodic tests of a sound level meter. If an applicable Instruction Manual is not submitted along with the sound level meter, nor available at the laboratory, nor publicly accessible from the Internet web site of the manufacturer or supplier of the sound level meter, then no periodic tests shall be performed.

3.2 The source for the instruction manual shall be described in the documentation for the periodic tests.

3.3 All items or accessories for the sound level meter that are necessary for periodic testing shall accompany the sound level meter when it is submitted for testing. A device specified in the instruction manual for inserting electrical signals equivalent to signals from the microphone shall also be submitted if requested by the laboratory.

3.4 Periodic tests as described in this part of IEC 61672 shall not be performed unless the markings on the sound level meter are as required by IEC 61672-1 or there is evidence that the sound level meter was originally so marked. The serial number and the model designation shall be visible on the sound level meter.

3.5 Data required to perform the periodic tests shall be available and the source of the data shall be recorded and reported by the laboratory. The data shall include all relevant information required by IEC 61672-1 and IEC 62585.

3.6 A sound calibrator shall be available. The sound calibrator shall be supplied with the sound level meter, if required by the user or if requested by the laboratory, or shall be supplied by the laboratory. If a suitable sound calibrator is supplied by the user, it shall be used by the laboratory to establish the acoustical sensitivity of the sound level meter.

4 Conformance

4.1 Conformance to a performance specification is demonstrated when the following criteria are both satisfied: (a) a measured deviation from a design goal does not exceed the applicable acceptance limit and (b) the corresponding uncertainty of measurement does not exceed the corresponding maximum-permitted uncertainty of measurement given in IEC 61672-1 for the same coverage probability of 95 %. IEC 61672-1 gives example assessments of conformance using these criteria.

4.2 For laboratories performing periodic tests, the uncertainties associated with all measurements shall be determined in accordance with the procedures of ISO/IEC Guide 98-3. Metrological terms shall be as defined in ISO/IEC Guide 99. Actual measurement uncertainties shall be calculated for a coverage probability of 95 %. Calculation of the uncertainty of