

Electroacoustics — Sound level meters —

Part 3: Periodic tests

The European Standard EN 61672-3:2006 has the status of a
British Standard

ICS 17.140.50

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 61672-3:2006. It is identical with IEC 61672-3:2006.

The UK participation in its preparation was entrusted to Technical Committee EPL/29, Electroacoustics.

A list of organizations represented on EPL/29 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2007

© BSI 2007

ISBN 978 0 580 50049 7

Amendments issued since publication

Amd. No.	Date	Comments

**Electroacoustics -
Sound level meters
Part 3: Periodic tests
(IEC 61672-3:2006)**

Electroacoustique -
Sonomètres
Partie 3: Essais périodiques
(CEI 61672-3:2006)

Elektroakustik -
Schallpegelmesser
Teil 3: Periodische Einzelprüfung
(IEC 61672-3:2006)

This European Standard was approved by CENELEC on 2006-11-01. 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 29/607/FDIS, future edition 1 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 was approved by CENELEC as EN 61672-3 on 2006-11-01.

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) 2007-08-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-11-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61672-3:2006 was approved by CENELEC as a European Standard without any modification.

CONTENTS

1	Scope	4
2	Normative references.....	4
3	Submission for testing	5
4	Conformance	6
5	Preliminary inspection.....	6
6	Power supply	7
7	Environmental conditions	7
8	General test requirements.....	7
9	Indication at the calibration check frequency	7
10	Self-generated noise.....	8
11	Acoustical signal tests of a frequency weighting	9
12	Electrical signal tests of frequency weightings	11
13	Frequency and time weightings at 1 kHz	12
14	Level linearity on the reference level range	12
15	Level linearity including the level range control	13
16	Toneburst response	13
17	Peak C sound level	14
18	Overload indication	15
19	Documentation	15
Annex ZA (normative) Normative references to international publications with their corresponding European publications		18

ELECTROACOUSTICS – SOUND LEVEL METERS –

Part 3: Periodic tests

1 Scope

1.1 This part of IEC 61672 describes procedures for periodic testing of conventional, integrating-averaging, and integrating sound level meters conforming to the class 1 or class 2 requirements of IEC 61672-1:2002. The aim of the standard is to ensure that periodic testing is performed in a consistent manner by all testing laboratories.

1.2 The purpose of periodic testing is to assure the user that the performance of a sound level meter conforms to the requirements of IEC 61672-1:2002 for a limited set of key tests and for the environmental conditions under which the tests were performed.

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

1.4 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 and in accordance with the test procedures of IEC 61672-2:2003. Periodic tests described in this part of IEC 61672 also apply to sound level meters for which the manufacturer claims conformance to the requirements of IEC 61672-1. 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 requirements of IEC 61672-1:2002 can be made, even if the results of the periodic tests conform to all applicable requirements of this part of IEC 61672.

2 Normative references

The following referenced documents are indispensable for 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 61094-6, *Measurement microphones – Part 6: Electrostatic actuators for determination of frequency response*

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

IEC 61672-2:2003, *Electroacoustics – Sound level meters – Part 2: Pattern evaluation tests*

BIPM, IEC, IFCC, ISO, IUPAC, IUPAP and OIML:1995, *Guide to the expression of uncertainty in measurement (GUM)*

BIPM, IEC, IFCC, ISO, IUPAC, IUPAP and OIML:1993, *International vocabulary of basic and general terms in metrology*. ISBN 92-67-01075-1

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 for a sound level meter. If an applicable instruction manual is not submitted along with the sound level meter, nor available at the testing 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 with which the sound level meter is required to be tested shall accompany the sound level meter that 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 testing 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 61672-1:2002 or there is evidence that the sound level meter was originally so marked. At least the model designation and serial number 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 by the laboratory. The data shall include all relevant information required by Clause 9 of IEC 61672-1:2002.

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 testing laboratory, or shall be supplied by the testing laboratory itself. If a sound calibrator is supplied by the user, it shall be used by the testing laboratory to establish the acoustical sensitivity of the sound level meter.

3.7 The sound calibrator shall either be a model specified in the instruction manual for use with the sound level meter, or a sound calibrator producing the same nominal sound pressure level and frequency as a model specified in the instruction manual. In this latter case, any adjustments to be applied when that model of calibrator is coupled to the model of microphone supplied on the sound level meter shall be known and agreed by the manufacturer of the sound level meter.

3.8 An instruction manual for the sound calibrator also shall be available. If an appropriate sound calibrator and its instruction manual are not available, no periodic tests shall be performed.

3.9 For periodic testing of a class 1 sound level meter, the sound calibrator shall be shown by calibration to conform to the requirements of IEC 60942 within class 1 tolerance limits. For periodic testing of a class 2 sound level meter, the sound calibrator shall be shown by calibration to conform to the requirements of IEC 60942 within class 1 or class 2 tolerance limits. Conformance shall be demonstrated for sound pressure level, frequency, and total distortion using the methods given in IEC 60942 for periodic testing.

NOTE Evidence that the sound calibrator conforms to the applicable requirements of IEC 60942 may be provided by documentation from a periodic test performed in accordance with the procedures given in IEC 60942. If such evidence is not available, the testing laboratory may offer to perform a calibration for the sound calibrator. The uncertainty of measurement associated with use of the sound calibrator may increase with the time that has elapsed since the last calibration of the sound calibrator.