BRITISH STANDARD

BS EN 60942:1998 IEC 60942:1997

Incorporating Amendment No. 1

Electroacoustics — Sound calibrators

The European Standard EN 60942:1998, with the incorporation of amendment A1:2001 has the status of a British Standard

ICS 17.140.50

National foreword

This British Standard is the English language version of EN 60942:1998 including amendment A1:2001. It is identical with IEC 60942:1997 including amendment 1:2000. It supersedes BS 7189:1989 which will be withdrawn on 1998-10-01.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] ⟨A1⟩. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by [A1] ⟨A1⟩.

The UK participation in its preparation was entrusted to Technical Committee EPL/29, Electroacoustics, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

From 1 January 1997, all IEC publications have the number 60000 added to the old number. For instance, IEC 27-1 has been renumbered as IEC 60027-1. For a period of time during the change over from one numbering system to the other, publications may contain identifiers from both systems.

Cross-references

The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 29 a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 April 1998

ISBN 0 580 29371 8

Amendments issued since publication

Amd. No.	Date	Comments
13115	31 August 2001	See national foreword

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60942

February 1998

+ A1

January 2001

ICS 17.140.50

Supersedes HD 556 S1:1991

English version

Electroacoustics — Sound calibrators

(includes amendment A1:2001)
(IEC 60942:1997 + A1:2000)

Electroacoustique — Calibreurs acoustiques
(inclut l'amendement A1:2001)
(CEI 60942:1997 + A1:2000)

Elektroakustik — Schallkalibratoren
(enthält Änderung A1:2001)
(IEC 60942:1997 + A1:2000)

This European Standard was approved by CENELEC on 1998-01-01. Amendment A1 was approved by CENELEC ON 2000-11-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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

Ref. No. EN 60942:1998 + A1:2001 E

Foreword

The text of document 29/371/FDIS, future edition 2 of IEC 60942, prepared by IEC TC 29, Electroacoustics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60942 on 1998-01-01.

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)	1998-10-01
— latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	1998-10-01

Annexes designated “normative” are part of the body of the standard.

In this standard, Annex A, Annex B and Annex ZA are normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60942:1997 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 29/456/FDIS, future amendment 1 to IEC 60942:1997, prepared by IEC TC 29, Electroacoustics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60942:1998 on 2000-11-01.

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)	2001-08-01
— latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2003-11-01

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 Annex C is informative. Annex ZA has been added by CENELEC.

Endorsement notice

The text of amendment 1:2000 to the International Standard IEC 60942:1997 was approved by CENELEC as an amendment to the European Standard without any modification.

Contents

Introduction

Sound calibrators are designed to produce a known sound pressure level or levels at a specified frequency or frequencies when coupled to specified models of microphone in specified configurations, for example, with or without protective grid. In practice, the sound pressure level generated by a sound calibrator may depend on ambient parameters such as atmospheric pressure, temperature and humidity.

Sound calibrators have two principal uses:

a) in the determination of the electroacoustical pressure sensitivity of specified models of microphone in specified configurations;
b) in the checking or adjustment of the overall sensitivity of acoustical measuring devices or systems employing specified models of microphone in specified configurations.

Free-field and diffuse-field sensitivity of a microphone mounted on a sound level meter is likely to have characteristics specific to the combination. Information applicable to specific microphone configurations with specific sound level meters is given in IEC 61672.

Sound calibrators of a given class will realize their stated specifications and tolerances only if they are used carefully in accordance with the instructions given in the instruction manual and in an environment where the ambient sound level reaching the microphone is significantly lower than the sound pressure level generated by the sound calibrator.

1 Scope

1.1 This International Standard specifies the performance requirements for three classes of sound calibrator: class 0, class 1, and class 2 in decreasing order of accuracy under specified conditions. Class 0 calibrators are normally used in the laboratory, whilst classes 1 and 2 are considered as calibrators for field use.

1.2 The tolerances in this standard do not include the associated expanded uncertainty of measurement, due to the scarcity of reliable data, particularly for some combinations of sound calibrator and model of microphone. However, maximum permitted expanded uncertainties of measurement are quoted separately in Annex A and Annex B. The dependence of the expanded uncertainty both on the frequency of the sound calibrator and on the method used to calibrate the microphone used for the measurements is reflected in the maximum permitted expanded uncertainties quoted. Refinement of these maximum permitted expanded uncertainties is expected as further experience is gained and further data become available. This will eventually enable the specification tolerances and maximum permitted expanded uncertainties of measurement to be combined in the main body of the standard.

1.3 Conformance to the specifications of this standard is demonstrated only when the result of a measurement, extended by the expanded uncertainty of measurement, lies fully within the specification tolerances given in this standard extended by the expanded uncertainty of measurement.

2 Normative references

A1 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 applies. Members of IEC and ISO maintain registers of currently valid International Standards. A1

IEC 60050(801):1994, *International Electrotechnical Vocabulary (IEV) — Chapter 801: Acoustics and electroacoustics*

A1 IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 2: Electrostatic discharge immunity test. Basic EMC publication*

IEC 61000-4-3:1995, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 3: Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-6-1:1997, *Electromagnetic compatibility (EMC) — Part 6: Generic standards — Section 1: Immunity for residential, commercial and light-industrial environments*

IEC 61000-6-2:1999, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments* A1