
Avdiometri - 2. del: Oprema za govorno avdiometrijo

Audiometers - Part 2: Equipment for speech audiometry

Audiometer - Teil 2: Geräte für die Sprachaudiometrie

Audiomètres - Partie 2: Appareils pour l'audiométrie vocale

Ta slovenski standard je istoveten z: EN 60645-2:1997

[SIST EN 60645-2:2000](https://standards.iteh.ai/catalog/standards/sist/2fab57cc-4ca0-4fc2-a58b-919698ccae7d/sist-en-60645-2-2000)

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ICS:

13.140	Vpliv hrupa na ljudi	Noise with respect to human beings
17.140.50	Elektroakustika	Electroacoustics

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en

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ICS 17.140.50

Descriptors: Acoustics, audiometry, audiometers, measurements, auditory perception, classification, testing conditions, calibration, sound pressure, marking, instruction manual

English version

Audiometers
Part 2: Equipment for speech audiometry
(IEC 645-2:1993)

Audiomètres
Partie 2: Appareils pour
l'audiométrie vocale
(CEI 645-2:1993)

Audiometer
Teil 2: Geräte für die
Sprachaudiometrie
(IEC 645-2:1993)

This European Standard was approved by CENELEC on 1996-10-01. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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 the International Standard IEC 645-2:1993, prepared by IEC TC 29, Electroacoustics, was submitted to the formal vote and was approved by CENELEC as EN 60645-2 on 1996-10-01 without any modification.

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) 1997-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-09-01

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

Endorsement notice

The text of the International Standard IEC 645-2:1993 was approved by CENELEC as a European Standard without any modification.

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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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 225	1966	Octave, half-octave and third-octave band filters intended for the analysis of sounds and vibrations	-	-
IEC 268-7	1984 ¹⁾	Sound system equipment Part 7: Headphones and headsets	-	-
IEC 268-17	1990	Part 17: Standard volume indicators	HD 483.17 S1 ²⁾	1992
IEC 303	1970	IEC provisional reference coupler for the calibration of earphones used in audiometry	-	-
IEC 318	1970	An IEC artificial ear, of the wide band type, for the calibration of earphones used in audiometry	-	-
IEC 373	1990	Mechanical coupler for measurements on bone vibrators	HD 590 S1	1991
IEC 645-1	1992	Audiometers Part 1: Pure-tone audiometers	EN 60645-1 ³⁾	1994
IEC 651	1979	Sound level meters	EN 60651	1994
ISO 266	1975	Acoustics - Preferred frequencies for measurements	-	-

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1) IEC 268-7:1996 is harmonized as EN 60268-7:1996.

2) HD 483.17 S1 includes the corrigendum September 1991 to IEC 268-17.

3) EN 60645-1 includes the corrigendum February 1993 to IEC 645-1.

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Audiomètres

Partie 2:
Appareils pour l'audiométrie vocale

Audiometers

Part 2:
Equipment for speech audiometry

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International Electrotechnical Commission
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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUDIOMETERS
Part 2: Equipment for speech audiometry**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 cooperation 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, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, 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.

International Standard IEC 645-2 has been prepared by IEC technical committee 29: Electroacoustics.

This part of IEC 645, together with IEC 645-1, cancels and replaces IEC 645, published in 1979.

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

DIS	Report on voting
29(CO)157	29(CO)202

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

[SIST EN 60645-2:2000](#)

IEC 645 consists of the following parts, under the general title: **Audiometers**.

- Part 1: Pure-tone audiometers
- Part 2: Equipment for speech audiometry
- Part 3: Methods for the specification of auditory test signals of short duration for audiometric and neuro-otological purposes
- Part 4: Equipment for extended high frequency audiometry

Annex A is for information only.

INTRODUCTION

Part 1 of IEC 645 details the requirements for pure-tone audiometers in terms of performance characteristics of component modules. Some of these modules are common to speech audiometers for example the output level control, transducers, etc. This part 2 of IEC 645 specifies the requirements for speech audiometers. However, to avoid duplication, it only makes reference to part 1 of IEC 645-1 where common elements are concerned.

Performance requirements are given for both live voice and recorded speech inputs. Although live voice speech audiometry may not be capable of meeting the object of this standard, it is widely practised, particularly with children, and therefore a specification is included in order to ensure as high a degree of reliability as possible.

This standard does not specify the speech material that is used for test purposes or the required acoustic properties of the test room.

Speech audiometers use earphones, bone vibrators or loudspeakers to present signals to the test subject. In order to relate earphone or bone vibrator listening to sound field listening, the concept of a free-field equivalent output level of an earphone or a bone vibrator as described in IEC 268-7 is used for specification and measurement purposes.

The free-field equivalent output method is fundamental in relating earphone or bone vibrator output level to sound-field measurements and for the comparison of different types of transducers. For audiometric purposes where only earphone measurements with one specific type are made, a requirement may not exist to maintain the free-field earphone relationship. Therefore, in this standard, specifications of the performance characteristics of speech audiometers and relevant calibration and test methods are given with respect to both a free-field equivalent output level method and an uncorrected coupler output level method.

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AUDIOMETERS

Part 2: Equipment for speech audiometry

1 Scope and object

This part of IEC 645 specifies requirements for audiometers or parts thereof designed to provide a means of presenting speech sounds to a subject in a standardized manner, for example for the measurement of speech recognition.

Audiometers are classified into four types: type A instruments provide a wide range of facilities, while type B provides only basic facilities. For both types, the audiometer may be calibrated in terms of a free-field equivalent output level of the earphones and then be designated as type A-E or B-E.

This standard excludes the requirements for speech audiometers provided with frequency response adjustments intended to determine an optimal intelligibility frequency response curve for each subject.

The purpose of this standard is to ensure that tests of hearing using speech as the test stimulus, on a given human ear performed with different audiometers which comply with this standard, shall give substantially the same results for a given calibration method. Two methods of specification, calibration and testing are given for the output levels generated by the earphones and the bone vibrator:

- a) a free-field equivalent output level method with audiometers of types A-E and B-E;
- b) an uncorrected coupler output level method with audiometers of types A and B.

NOTE - The results will also depend on factors other than the audiometer for example test material, test room, speakers, etc.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 645. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 645 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

IEC 268-7: 1984, *Sound system equipment – Part 7: Headphones and headsets*