Acoustics - Determination of high-frequency sound power levels emitted by machinery and equipment (ISO 9295:2015)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 9295:2015 sisaldab Euroopa standardi EN ISO 9295:2015 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 9295:2015 consists of the English text of the European standard EN ISO 9295:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.05.2015.	Date of Availability of the European standard is 20.05.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9295

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English Version

Acoustics - Determination of high-frequency sound power levels emitted by machinery and equipment (ISO 9295:2015)

Acoustique - Détermination des niveaux de puissance acoustique à haute fréquence émis par les machines et équipements (ISO 9295:2015)

Akustik - Bestimmung der hochfrequenten Schallleistungspegel von Maschinen und Geräten (ISO 9295:2015)

This European Standard was approved by CEN on 21 February 2015.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 9295:2015) has been prepared by Technical Committee ISO/TC 43 “Acoustics” in collaboration with Technical Committee CEN/TC 211 “Acoustics” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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

This document supersedes EN 29295:1991.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 9295:2015 has been approved by CEN as EN ISO 9295:2015 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition cancels and replaces the first edition (ISO 9295:1988), which has been technically revised.

Introduction

Some machinery and equipment emit high-frequency noise which might be broad-band noise (e.g. paper noise of high-speed printing) or narrow-band noise and discrete tones (e.g. noise of switching power supplies and video display units or medical devices).

This International Standard specifies methods for the determination of the sound power levels in the frequency range covered by the octave band centred at 16 kHz. The measured levels are not frequency-weighted. The principal objective of this International Standard is to prescribe methods for determining the sound power levels and frequencies of tones which are contained within the 16 kHz octave band.

Acoustics — Determination of high-frequency sound power levels emitted by machinery and equipment

1 Scope

This International Standard specifies four methods for the determination of the sound power levels of high-frequency noise emitted by machinery and equipment in the frequency range covered by the octave band centred at 16 kHz, which includes frequencies between 11,2 kHz and 22,4 kHz. They are complementary to the methods described in ISO 3741 and ISO 3744. The first three methods are based on the reverberation test room technique. The fourth method makes use of a free field over a reflecting plane.

The test conditions which prescribe the installation and operation of the equipment are those specified in ISO 3741 or ISO 3744 as applicable.

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.

ISO 3741, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Precision methods for reverberation test rooms*

ISO 3744, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 6926, *Acoustics — Requirements for the performance and calibration of reference sound sources used for the determination of sound power levels*

ISO 9613-1, *Acoustics — Attenuation of sound during propagation outdoors — Part 1: Calculation of the absorption of sound by the atmosphere*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 3741 and ISO 3744 apply.

4 Conformity requirements

A method for the measurement of high-frequency noise is in conformance with this International Standard if it satisfies all the mandatory requirements of one of the four methods described herein specified in Clauses 6 to 9, and if the information recorded and reported is as specified in Clauses 12 and 13, respectively.

5 Requirements for measurements in a reverberation test room

5.1 General

This International Standard describes three methods using the reverberation test room technique of ISO 3741. The first and the second methods are usually called “direct methods” because they use directly measured or calculated reverberation times. The third method is a so-called “comparison method”. A calibrated reference sound source is used from which the sound power levels of the equipment are determined by comparison.