

STN	Akustika. Určovanie vysokofrekvenčných hladín akustického výkonu emitovaného strojmi a zariadeniami (ISO 9295: 2015).	STN EN ISO 9295 01 1653
------------	--	---

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

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/15

Obsahuje: EN ISO 9295:2015, ISO 9295:2015

Oznámením tejto normy sa ruší
STN EN 29295 (01 1653) z októbra 1997

121196

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.

CEN 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 CEN-CENELEC Management Centre or to any CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

Foreword.....**3**

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.

STN EN ISO 9295: 2015

INTERNATIONAL STANDARD

ISO 9295

Second edition
2015-05-15

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

*Acoustique — Détermination des niveaux de puissance acoustique à
haute fréquence émis par les machines et équipements*



Reference number
ISO 9295:2015(E)

© ISO 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Conformity requirements	1
5 Requirements for measurements in a reverberation test room	1
5.1 General.....	1
5.2 Meteorological conditions.....	2
5.3 Instrumentation.....	2
5.4 Installation and orientation of microphone.....	2
5.5 Installation and orientation of equipment.....	3
5.6 Calibration of measurement system.....	3
5.7 Measurement of sound pressure level.....	3
6 Method using measured reverberation time	4
6.1 General.....	4
6.2 Measurement of reverberation time.....	5
6.3 Calculation of room absorption.....	5
6.4 Installation of microphone and equipment.....	5
6.5 Measurement of sound pressure level.....	5
6.6 Calculation of sound power level.....	6
7 Method using calculated air absorption	6
7.1 General.....	6
7.2 Calculation of room constant.....	6
7.3 Installation of microphone and equipment.....	6
7.4 Measurement of sound pressure level.....	6
7.5 Calculation of sound power level.....	7
8 Method using a reference sound source	8
8.1 Reference sound source.....	8
8.2 Installation of microphone and equipment.....	8
8.3 Installation of reference sound source.....	9
8.4 Measurement of sound pressure level.....	9
8.5 Calculation of sound power level.....	9
8.5.1 Equipment emitting broad-band noise.....	9
8.5.2 Equipment emitting discrete tone(s).....	10
9 Method using a free field over a reflecting plane	10
9.1 General.....	10
9.2 Meteorological conditions.....	10
9.3 Instrumentation.....	11
9.4 Installation and orientation of microphone.....	11
9.5 Installation of equipment.....	11
9.6 Calibration of measurement system.....	11
9.7 Measurement of sound pressure level.....	12
9.8 Calculation of surface sound pressure level and sound power level.....	12
10 Calculation of sound power level under reference meteorological conditions	13
10.1 Reverberation rooms.....	13
10.2 Hemi-anechoic rooms.....	13
11 Measurement uncertainty	13
12 Information to be recorded	13

12.1	General.....	13
12.2	Equipment under test.....	13
12.3	Acoustic environment.....	14
12.4	Instrumentation.....	14
12.5	Acoustical data.....	14
13	Information to be reported.....	14
Annex A (normative) Calculation of air absorption coefficient.....		16
Bibliography.....		18

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN