

SLOVENSKI STANDARD SIST EN IEC 60268-24:2024

01-julij-2024

Oprema zvokovnega sistema - 24. del: Naglavne in ušesne slušalke -Karakteristike aktivnega odpravljanja šumov (IEC 60268-24:2023)

Sound system equipment - Part 24: Headphones and earphones - Active acoustic noise cancelling characteristics (IEC 60268-24:2023)

Elektroakustische Geräte - Teil 24: Kopfhörer und Ohrhörer - Eigenschaften zur aktiven Geräuschunterdrückung (IEC 60268-24:2023)

Equipements pour systèmes électroacoustiques - Partie 24: Casques et écouteurs -Caractéristiques d'annulation active du bruit acoustique (IEC 60268-24:2023)

Ta slovenski standard je istoveten z: EN IEC 60268-24:2024 SIST EN IEC 60268-24:2024

ICS: 33.160.50 Pribor

Accessories

SIST EN IEC 60268-24:2024

en,fr,de

SIST EN IEC 60268-24:2024

iTeh Standards (https://standards.iteh.ai) Document Preview

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN IEC 60268-24

January 2024

ICS 33.160.01

English Version

Sound system equipment - Part 24: Headphones and earphones - Active acoustic noise cancelling characteristics (IEC 60268-24:2023)

Équipements pour systèmes électroacoustiques - Partie 24: Casques et écouteurs - Caractéristiques d'annulation active du bruit acoustique (IEC 60268-24:2023) Elektroakustische Geräte - Teil 24: Kopfhörer und Ohrhörer - Eigenschaften zur aktiven Geräuschunterdrückung (IEC 60268-24:2023)

This European Standard was approved by CENELEC on 2024-01-04. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

<u>SIST EN IEC 60268-24:2024</u>

https://standards.iteh.ai/catalog/standards/sist/b8020e5d-52b2-4004-b972-e907c255914f/sist-en-iec-60268-24-2024



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2024 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

European foreword

The text of document 100/3880/CDV, future edition 1 of IEC 60268-24, prepared by Technical Area 20 Analogue and digital audio, of IEC technical committee 100: Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60268-24:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-10-04 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-01-04 document have to be withdrawn

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice



The text of the International Standard IEC 60268-24:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

ISO 4869-1:2018 NOTE Approved as EN ISO 4869-1:2018 (not modified)

https://st ISO 11904-1:2002 NOTE Approved as EN ISO 11904-1:2002 (not modified) 255914f/sist-en-iec-60268-24-2024

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: <u>www.cencenelec.eu</u>.

Publication	Year	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60268-7	-	Sound system equipment - Part 7: Headphones and earphones	EN 60268-7	-
IEC 60318-4	-	Electroacoustics - Simulators of human head and ear - Part 4: Occluded-ear simulator for the measurement of earphones coupled to the ear by means of ear inserts	EN 60318-4	-
IEC 60318-7	- (h	Electroacoustics - Simulators of human head and ear - Part 7: Head and torso simulator for the measurement of sound sources close to the ear	EN IEC 60318-7	-
IEC 61260-1	-	Electroacoustics - Octave-band and fractional-octave-band filters - Part 1: Specifications	EN 61260-1	-
IEC 61672-1 ai/cata	a <u>l</u> og/star	Electroacoustics - Sound level meters - Part 1: Specifications	EN 61672-1 //sist-o	en-iec-60268-24-2024
ISO 532-1	2017	Acoustics - Method for calculating loudness - Part 1: Zwicker method	-	-
ISO 3741	2010	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for reverberation test rooms	EN ISO 3741	2010
ANSI/ASA S12.42	2010	Methods for the Measurement of Insertion Loss of Hearing Protection Devices in Continuous or Impulsive Noise Using Microphone-in-Real-Ear or Acoustic Test Fixture Procedures	-	-
ITU-T Recommendation P.58	-	Head and torso simulator for telephonometry	-	-

SIST EN IEC 60268-24:2024

iTeh Standards (https://standards.iteh.ai) Document Preview



Edition 1.0 2023-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Sound system equipment – Part 24: Headphones and earphones – Active acoustic noise cancelling characteristics

Équipements pour systèmes électroacoustiques – Partie 24: Casques et écouteurs – Caractéristiques d'annulation active du bruit acoustique

SIST EN IEC 60268-24:2024

https://standards.iteh.ai/catalog/standards/sist/b8020e5d-52b2-4004-b972-e907c255914f/sist-en-iec-60268-24-2024

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 33.160.01

ISBN 978-2-8322-7882-6

Warning! Make sure that you obtained this publication from an authorized distributor. Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

 Registered trademark of the International Electrotechnical Commission Marque déposée de la Commission Electrotechnique Internationale

– 2 – IEC 60268-24:2023 © IEC 2023

CONTENTS

INTRODUCT	11ON	6		
1 Scope		7		
2 Normati	ve references	7		
3 Terms a	Terms and definitions			
4 Measur	ement method for noise cancelling characteristics	9		
4.1 CI	naracteristics to be specified	9		
4.2 Te	est signals	10		
4.2.1	Pink noise	10		
4.2.2	Simulated ambient noise	10		
4.3 No	ominal environmental conditions	13		
4.3.1	General	13		
4.3.2	Test site	13		
4.3.3	Background noise	13		
4.4 Te	est equipment	14		
4.4.1	Playback equipment for test signals	14		
4.4.2	Acoustic test equipment	14		
4.4.3	Analysis equipment	14		
4.5 Te	est procedure for measurement of noise suppression level	15		
4.5.1	Adjustment of sound pressure level of test signals	15		
4.5.2	Sound pressure level measurement at HP-OFF condition	15		
4.5.3	Sound pressure level measurement at ANC-OFF condition	15		
4.5.4	Sound pressure level measurement at ANC-ON condition	15		
4.6 Te	est procedure for measurement of noise suppression loudness	16		
4.6.1	Adjustment of loudness of test signals	16		
4.6.2	Loudness measurement at HP-OFF condition	16		
4.6.3	Loudness measurement at ANC-OFF condition	16		
4.6.4	Loudness measurement at ANC-ON condition	16		
4.7 Re	eporting of data	16		
4.7.1	Insertion Loss	16		
4.7.2	Noise suppression ratio	17		
Annex A (normative) Pseudo-diffuse sound field for measurement of ANC headphones				
Annex B (inf	ormative) Example of reporting of data	20		
Annex C (informative) Examples of filter circuits for making simulated ambient noise				
Annex D (informative) Procedure for real ear measurements				
Bibliography		25		
Figure 1 – T	olerance limit of power spectrum of simulated aircraft cabin noise	11		
Figure 2 – Tolerance limit of power spectrum of simulated train compartment noise				
Figure 3 – Tolerance limit of power spectrum of simulated cafeteria noise				
Figure 4 – Example of noise-cancelling characteristic measurement system				
Figure A.1 – Measurement reference point and sound pressure level confirmation point.				
Figure B 1 – Example of reporting of insertion loss performance				
Figure C 1	Example of filter circuit for making simulated aircraft cabin poise	20 ວວ		
	Example of filter singult for a chine chickle to the			
Figure C.2 –	Example of filter circuit for making simulated train compartment noise	23		

IEC 60268-24:2023 © IEC 2023 - 3 -

Table 1 – Power spectrum of simulated aircraft cabin noise	10
Table 2 – Power spectrum of simulated train compartment noise	11
Table 3 – Power spectrum of simulated cafeteria noise	12
Table B.1 – Example of reporting of insertion loss performance	21
Table B.2 – Example of reporting of noise suppression ratio performance	21

iTeh Standards (https://standards.iteh.ai) Document Preview

SIST EN IEC 60268-24:2024

- 4 -

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SYSTEM EQUIPMENT -

Part 24: Headphones and earphones – Active acoustic noise cancelling characteristics

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or
- other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
 - 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
 - 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60268-24 has been prepared by Technical Area 20 Analogue and digital audio, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
100/3880/CDV	100/3981/RVC

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

The language used for the development of this International Standard is English.

IEC 60268-24:2023 © IEC 2023

- 5 -

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 60268 series, published under the general title *Sound system equipment*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

iTeh Standards (https://standards.iteh.ai) Document Preview