

STN	Audio-, video- a podobné zariadenia. Určenie spotreby energie. Časť 6: Zvukové zariadenia.	STN EN 62087-6 36 7004
------------	---	--

Audio, video and related equipment - Determination of power consumption - Part 6: Audio equipment

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. 01/16

Táto norma od 10.7.2018 čiastočne nahrádza STN EN 62087 z augusta 2012.

Obsahuje: EN 62087-6:2015, IEC 62087-6:2015

122108

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2016
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

EN 62087-6

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 33.160.10

Supersedes EN 62087:2012 (partially)

English Version

**Audio, video and related equipment - Determination of power consumption - Part 6: Audio equipment
(IEC 62087-6:2015)**

Matériels audio, vidéo et matériel connexe - Détermination de la consommation de puissance - Partie 6 : Matériel audio
(IEC 62087-6:2015)

Messverfahren für die Leistungsaufnahme von Audio-, Video- und verwandten Geräten - Teil 6: Audiogeräte
(IEC 62087-6:2015)

This European Standard was approved by CENELEC on 2015-07-10. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

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

EN 62087-6:2015**European foreword**

The text of document 100/2471/FDIS, future edition 1 of IEC 62087-6, prepared by Technical Area 12 "AV energy efficiency and smart grid applications" of IEC/TC 100 "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62087-6:2015.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-04-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-07-10

This document supersedes EN 62087:2012 (partially).

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

Endorsement notice

The text of the International Standard IEC 62087-6:2015 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 standards indicated:

IEC 60065:2014	NOTE	Harmonized as EN 60065:2014 (modified).
IEC 60268-1:1985+A1:1988	NOTE	Harmonized as HD 483.1 S2:1989 (not modified).
IEC 60268-2:1987+A1:1991	NOTE	Harmonized as HD 483.2 S2:1993 (not modified).
IEC 60268-3:2013	NOTE	Harmonized as EN 60268-3:2013 (not modified).
IEC 60958-1:2008	NOTE	Harmonized as EN 60958-1:2008 (not modified).
IEC 60958-1:2008/A1:2014	NOTE	Harmonized as EN 60958-1:2008/A1:2014 (not modified).
IEC 61672 Series	NOTE	Harmonized as EN 61672 Series.
IEC 61938:2013	NOTE	Harmonized as EN 61938:2013 (not modified).
IEC 62087 Series	NOTE	Harmonized as EN 62087 Series.
IEC 62301:2011	NOTE	Harmonized as EN 50564:2011 (modified).
IEC 62368-1:2014	NOTE	Harmonized as EN 62368-1:2014 (modified).
IEC 62542:2013	NOTE	Harmonized as EN 62542:2013 (modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When 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: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60268-5	2003	Sound system equipment - Part 5: Loudspeakers	EN 60268-5	2003
+A1	2007		+A1	2009
IEC 62087-1	2015	Audio, video, and related equipment - Determination of power consumption - Part 1: General	EN 62087-1 ¹⁾	-
IEC 62087-2	2015	Audio, video, and related equipment - Determination of power consumption - Part 2: Signals and media	EN 62087-2 ²⁾	-
IEC 62301 (mod)	2011	Household electrical appliances - Measurement of standby power	EN 50564	2011

¹⁾ At draft stage.

²⁾ To be published.



IEC 62087-6

Edition 1.0 2015-06

INTERNATIONAL STANDARD



**Audio, video and related equipment – Determination of power consumption –
Part 6: Audio equipment**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2015 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
 3, rue de Varembe
 CH-1211 Geneva 20
 Switzerland

Tel.: +41 22 919 02 11
 Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.



IEC 62087-6

Edition 1.0 2015-06

INTERNATIONAL STANDARD



**Audio, video and related equipment – Determination of power consumption –
Part 6: Audio equipment**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.10

ISBN 978-2-8322-2686-5

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms, definitions and abbreviations	7
3.1 Terms and definitions.....	7
3.2 Abbreviations.....	9
4 Specification of operating modes and functions	9
5 Measurement conditions.....	10
5.1 General.....	10
5.2 Power source.....	11
5.3 Environmental conditions	11
5.4 Acoustical environment.....	11
5.5 Adjustment of controls	11
5.6 Power measurement instrument.....	11
5.7 Signal generation.....	11
5.8 Quantities to be specified and their accuracy	11
5.9 Loading of terminals	11
5.10 Output level	11
5.10.1 General	11
5.10.2 Output level at 1 W	11
5.10.3 Output level at one-eighth of non-clipped power	11
5.11 Sound level adjustments	12
5.12 Sound pressure level meter	12
5.13 Additional functions.....	12
5.14 Operating modes	12
5.14.1 General	12
5.14.2 On modes.....	12
5.14.3 Partial On modes.....	12
5.14.4 Off mode	13
5.14.5 Auto power down function.....	13
6 Measurement procedure.....	13
6.1 Order of measurements	13
6.2 Setup.....	14
6.2.1 General	14
6.2.2 Audio equipment terminals and settings.....	15
6.2.3 Compact audio system including loudspeaker.....	16
6.3 Power measurement	16
6.3.1 General	16
6.3.2 Off and Partial On modes	16
6.3.3 On modes.....	17
6.3.4 Auto power down.....	18
Annex A (informative) Location for sound pressure test	19
A.1 General.....	19
A.2 Example test locations	19

Bibliography.....	21
Figure 1 – Order of measurements.....	14
Figure 2 – Separate components	14
Figure 3 – Audio systems (non separable components)	15
Figure 4 – Audio systems (separable components)	15
Figure 5 – Compact audio system including loudspeaker	15
Figure 6 – Auto power down function	18
Figure A.1 – Top view	19
Figure A.2 – Top and front view	20
Figure A.3 – Side view	20
Table 1 – Operating modes and functions	10

INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUDIO, VIDEO AND RELATED EQUIPMENT – DETERMINATION OF POWER CONSUMPTION –

Part 6: Audio equipment

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.
- 2) 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) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62087-6 has been prepared by technical area 12: AV energy efficiency and smart grid applications, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This first edition of IEC 62087-6 cancels and replaces Clause 9 of IEC 62087:2011. This standard together with IEC 62087-1 to IEC 62087-5 cancels and replaces IEC 62087:2011. This International Standard constitutes a technical revision.

This edition includes the following significant technical changes with respect to Clause 9 of IEC 62087:2011.

- The definition of the input signal is changed.
- The output power measurement of amplifiers is changed.
- The measurement method for compact audio systems including loudspeakers is added.

- Methods for measuring On-decoding, idle and auto power down functions are added.
- Portions of the document related to general measuring conditions and procedures are now contained in IEC 62087-1:2015.
- Portions of the document related to signals and media are now in IEC 62087-2:2015.
- The titles have changed in order to comply with the current directives and to accommodate the new multipart structure of IEC 62087.

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

FDIS	Report on voting
100/2471/FDIS	100/2501/RVD

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

A list of all parts in the IEC 62087 series, published under the general title *Audio, video, and related equipment – Determination of power consumption*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

This part of IEC 62087 specifies methods of measurements for the power consumption of audio equipment for consumer use. It is used in conjunction with IEC 62087-2, which specifies signals and media. This International Standard includes measurements in the On mode (operation), which was previously identified as “On (average) mode” and adds methods for measuring power consumption in the On-play, On-decoding, and idle sub-modes. These methods consider the effects of the auto power down function. Additionally, this standard includes determination of power consumption in the Partial On mode.

This standard has been divided into multiple parts. At the time of publication of this part, the following parts are planned or published.

- Part 1: General
- Part 2: Signals and media
- Part 3: Television sets
- Part 4: Video recording equipment
- Part 5: Set-top boxes (STB)
- Part 6: Audio equipment

AUDIO, VIDEO AND RELATED EQUIPMENT – DETERMINATION OF POWER CONSUMPTION –

Part 6: Audio equipment

1 Scope

This part of IEC 62087 specifies the determination of the power consumption of audio equipment for consumer use.

The various modes of operation which are relevant for measuring power consumption are defined.

This standard is limited to audio equipment which can be connected to the mains. Audio equipment that includes a non-removable, main battery is not covered by this standard. Audio equipment may include any number of auxiliary batteries.

The measuring conditions in this standard represent the normal use of the equipment and may differ from other specific conditions, for example as specified in safety standards.

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.

IEC 60268-5:2003, *Sound system equipment – Part 5: Loudspeakers*
IEC 60268-5:2003/AMD1:2007

IEC 62087-1:2015, *Audio, video, and related equipment – Determination of power consumption – Part 1: General*

IEC 62087-2:2015, *Audio, video, and related equipment – Determination of power consumption – Part 2: Signals and media*

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN