Irish Standard
I.S. EN 60118-15:2012

Electroacoustics - Hearing aids -- Part 15: Methods for characterising signal processing in hearing aids with a speech-like signal (IEC 60118-15:2012 (EQV))

I.S. EN 60118-15:2012

Incorporating amendments/corrigenda issued since publication:

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English version

Electroacoustics - Hearing aids - Part 15: Methods for characterising signal processing in hearing aids with a speech-like signal

(IEC 60118-15:2012)

Electroacoustique -
Appareils de correction auditive -
Partie 15: Méthodes de caractérisation du traitement des signaux dans les appareils de correction auditive avec un signal de type parole
(CEI 60118-15:2012)

Akustik -
Hörgeräte -
Teil 15: Methoden zur Charakterisierung der Hörgeräte-Signalverarbeitung
(IEC 60118-15:2012)

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CENELEC

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

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Foreword

The text of document 29/719/CDV, future edition 1 of IEC 60118-15, prepared by IEC/TC 29 "Electroacoustics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60118-15:2012.

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)	2012-12-27
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-03-27

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 60118-15:2012 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 61669	NOTE	Harmonized as EN 61669.
IEC 60118-0:1983 + A1:1994	NOTE	Harmonized as EN 60118-0:1993 + A1:1994 (not 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60118-7	-	Electroacoustics - Hearing aids - Part 7: Measurement of the performance characteristics of hearing aids for production, supply and delivery quality assurance purposes	EN 60118-7	-
IEC 60118-8	2005	Electroacoustics - Hearing aids - Part 8: Methods of measurement of performance characteristics of hearing aids under simulated in situ working conditions	EN 60118-8	2005
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 60318-5	-	Electroacoustics - Simulators of human head and ear - Part 5: 2 cm³ coupler for the measurement of hearing aids and earphones coupled to the ear by means of ear inserts	EN 60318-5	-
IEC 61260	-	Electroacoustics - Octave-band and fractional-octave-band filters	EN 61260	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROACOUSTICS – HEARING AIDS –

Part 15: Methods for characterising signal processing in hearing aids with a speech-like signal

FOREWORD

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International Standard IEC 60118-15 has been prepared by IEC technical committee 29: Electroacoustics.

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

CDV	Report on voting
29/719/CDV	29/730A/RVC

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

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

A list of all parts of IEC 60118 series, published under the general title *Electroacoustics – Hearing aids*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication 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.

INTRODUCTION

The characterisation of hearing aids in actual use can differ significantly from those determined in accordance with standards such as IEC 60118-0 and IEC 60118-7. These standards use non speech-like test signals with the hearing aid set to specific settings which are, in general, not comparable with typical user settings.

This standard describes a recommended speech-like test signal, the International Speech Test Signal (ISTS), and a method for the characterisation of hearing aids using this signal with the hearing aid set to actual user settings or to the manufacturers' recommended settings for one of a range of audiograms. For the purposes of this standard the hearing aid is considered to be a combination of the physical hearing aid and the fitting software which accompanies it.

ELECTROACOUSTICS – HEARING AIDS –

Part 15: Methods for characterising signal processing in hearing aids with a speech-like signal

1 Scope

This part of IEC 60118 specifies a test signal designed to represent normal speech, the International Speech Test Signal (ISTS), together with the procedures and the requirements for measuring the characteristics of signal processing in air-conduction hearing aids. The measurements are used to derive the estimated insertion gain (EIG). For the purposes of characterizing a hearing aid for production, supply and delivery, the procedures and requirements to derive the coupler gain on a 2 cm^3 coupler as defined in IEC 60318-5 are also specified.

The procedure uses a speech-like test signal and the hearing aid settings are set to those programmed for an individual end-user or those recommended by the manufacturer for a typical end-user for a range of flat, moderately sloping or steep sloping audiograms, so that the measured characteristics are comparable to those which may be obtained by a wearer at typical user settings.

The purpose of this standard is to ensure that the same measurements made on a hearing aid following the procedures described, and using equipment complying with these requirements, give substantially the same results.

Measurements of the characteristics of signal processing in hearing aids which apply non-linear processing techniques are valid only for the test signal used. Measurements which require a different test signal or test conditions are outside the scope of this standard.

Conformance to the specifications in this standard is demonstrated only when the result of a measurement, extended by the actual expanded uncertainty of measurement of the testing laboratory, lies fully within the tolerances specified in this standard as given by the values given in 6.1.

Measurement methods that take into account the acoustic coupling of a hearing aid to the individual ear and the acoustic influence of the individual anatomical variations of an end-user on the acoustical performance of the hearing aid, known as real-ear measurements, are outside the scope of this particular standard.

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 60118-7, *Electroacoustics – Hearing aids – Part 7: Measurement of the performance characteristics of hearing aids for production, supply and delivery quality assurance purposes*

IEC 60118-8:2005, *Electroacoustics – Hearing aids – Part 8: Methods of measurement of performance characteristics of hearing aids under simulated in situ working conditions*