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Akustik – Hörapparater – Del 0: Mätning av elektroakustiska egenskaper hos hörapparater

Electroacoustics –

Hearing aids –

Part 0: Measurement of the performance characteristics of hearing aids

Som svensk standard gäller europastandarden EN IEC 60118-0:2024. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60118-0:2024.

Nationellt förord

Europastandarden EN IEC 60118-0:2024

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- **IEC 60118-0, Fourth edition, 2022 - Electroacoustics – Hearing aids – Part 0: Measurement of the performance characteristics of hearing aids**

utarbetad inom International Electrotechnical Commission, IEC.

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ICS 17.140.50

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English Version

**Electroacoustics - Hearing aids - Part 0: Measurement of the
performance characteristics of hearing aids
(IEC 60118-0:2022)**

Électroacoustique - Appareils de correction auditive - Partie
0: Mesure des caractéristiques fonctionnelles des appareils
de correction auditive
(IEC 60118-0:2022)

Akustik - Hörgeräte - Teil 0: Messung der
Leistungsmerkmale von Hörgeräten
(IEC 60118-0:2022)

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Comité Européen de Normalisation Electrotechnique
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 29/1126/FDIS, future edition 4 of IEC 60118-0, prepared by IEC/TC 29 "Electroacoustics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60118-0:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-11-10 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-05-10 document have to be withdrawn

This document supersedes EN 60118-0:2015 and all of its amendments and corrigenda (if any).

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.

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZZ, which is an integral part of this document.

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 60118-0:2022 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:

IEC 60068 (series)	NOTE	Approved as EN 60068 (series)
IEC 60118-7:2005	NOTE	Approved as EN 60118-7:2005 (not modified)
IEC 60118-8:2005	NOTE	Approved as EN 60118-8:2005 (not modified)
IEC 60118-15	NOTE	Approved as EN 60118-15
IEC 61094-8:2012	NOTE	Approved as EN 61094-8:2012 (not modified)

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: www.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60118-12	-	Hearing aids – Part 12: Dimensions of electrical connector systems	EN 60118-12	1996
IEC 60318-4	2010	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	2010
IEC 60318-5	-	Electroacoustics – Simulators of human head and ear – Part 5: 2 cm ³ coupler for the measurement of hearing aids and earphones coupled to the ear by means of ear inserts	EN 60318-5	2006
IEC 60318-8	-	Electroacoustics – Simulators of human head and ear – Part 8: Acoustic coupler for high-frequency measurements of hearing aids and earphones coupled to the ear by means of ear inserts	EN 60318-8	2022
IEC 60268-2	1987	Sound system equipment – Part 2: Explanation of general terms and calculation methods	-	-
+ AMD 1	1991		-	-
IEC 60263	-	Scales and sizes for plotting frequency characteristics and polar diagrams	EN IEC 60263	2020
IEC 61094-4	-	Measurement microphones – Part 4: Specifications for working standard microphones	EN 61094-4	1995
ISO 3	1973	Preferred numbers – Series of preferred numbers		



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INTERNATIONAL STANDARD

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**Electroacoustics – Hearing aids –
Part 0: Measurement of the performance characteristics of hearing aids**

**Électroacoustique – Appareils de correction auditive –
Partie 0: Mesure des caractéristiques fonctionnelles des appareils de correction
auditive**

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CONTENTS

FOREWORD.....	7
1 Scope.....	9
2 Normative references	9
3 Terms and definitions	10
4 General conditions.....	15
4.1 Acoustic measurement method	15
4.2 Acoustic couplers and occluded ear simulator.....	15
4.3 Input signals and frequency range	17
4.4 Reporting of data	17
5 Test equipment.....	17
5.1 General.....	17
5.2 Test enclosure	18
5.2.1 General	18
5.2.2 Type 1 "anechoic-chamber"	18
5.2.3 Type 2 "test-box"	19
5.3 Measurement configuration	19
5.3.1 General	19
5.3.2 Measurement configuration for non-directional hearing aids	19
5.3.3 Measurement configuration for directional hearing aids	22
5.4 Sequential measurement method.....	23
5.5 Other measurement methods	24
5.6 Acoustic response measurement.....	24
5.7 Sound source system.....	24
5.8 Measurement system for the sound pressure level and distortion produced by a hearing aid	25
5.9 Electrical input	26
5.10 Direct-current measurement system.....	26
5.11 Magnetic field source for SPLIV measurements	26
5.12 Magnetic field source for hearing aids having induction pick-up coil for use with a telephone.....	27
6 Normal operating conditions for a hearing aid.....	27
6.1 General.....	27
6.2 Battery or supply voltage	28
6.3 Settings of controls	28
6.3.1 General	28
6.3.2 Full-on setting (FOS)	28
6.3.3 Reference test setting (RTS)	28
6.4 Ambient conditions.....	29
6.5 Acoustical connection to the hearing aid	29
6.6 Accessories	29
7 Basic acoustic hearing aid measurements	29
7.1 General.....	29
7.2 Frequency response curves	29
7.3 OSPL90 frequency response curve	30
7.4 Full-on gain frequency response curve.....	30
7.5 Basic frequency response curve	31
7.5.1 Test procedure	31

7.5.2	Frequency range of amplification	31
7.5.3	Reference test gain (RTG)	32
7.6	Total harmonic distortion	32
8	Special hearing aid measurements	33
8.1	General	33
8.2	Difference frequency distortion	33
8.2.1	Difference frequency distortion products	33
8.2.2	Total difference frequency distortion	35
8.3	Equivalent input noise (EIN)	36
8.4	Equivalent input noise in one-third-octave bands (EIN-one-third-octave)	37
8.5	Measurements of AGC hearing aids	39
8.5.1	General	39
8.5.2	Steady-state input-output characteristics	39
8.5.3	AGC characteristics (attack and release time)	40
8.6	Effects of tone control and gain control	40
8.6.1	Basic frequency response: effect of tone control	40
8.6.2	Frequency response: effect of gain control position	40
8.6.3	Characteristics of the gain control	41
8.7	Battery related measurements	41
8.7.1	General	41
8.7.2	Battery current measurement	41
8.7.3	Effects of variation of battery or supply voltage and internal resistance	41
9	Special measurements for hearing aids having non-acoustical inputs	42
9.1	General	42
9.2	Equivalence of output levels for a non-acoustical input	43
9.3	Measurement setup for "Wireless" input (WL)	43
9.3.1	General	43
9.3.2	Measurement setup	43
9.3.3	Wireless basic frequency response SPLWL	44
9.3.4	HFA-SPLWL	44
9.3.5	Frequency response with full-on setting	44
9.3.6	Equivalent wireless input sensitivity level (EWLS)	44
9.4	Hearing aids with electrical input	45
9.4.1	General	45
9.4.2	Basic frequency response (SPLEI)	45
9.4.3	HFA-SPLEI	45
9.4.4	Frequency response with full-on setting	45
9.4.5	Equivalent electrical input sensitivity level (EEIS)	45
9.4.6	Connector system for electrical input	45
9.5	Hearing aids having induction pick-up coil in a vertical magnetic field	46
9.5.1	General	46
9.5.2	Basic frequency response in a vertical magnetic field (SPLIV)	46
9.5.3	Frequency response with full-on setting (full-on SPLIV)	46
9.5.4	Effect of gain control position on frequency response	46
9.5.5	Harmonic distortion	47
9.5.6	HFA-SPLIV	47
9.5.7	Equivalent test loop sensitivity level (ETLS)	47
9.5.8	Full-on HFA-SPLIV	47
9.6	Hearing aids having induction pick-up coil for use with a telephone	48

9.6.1	SPLITS response curve	48
9.6.2	HFA-SPLITS	48
9.6.3	Relative simulated equivalent telephone sensitivity level (RSETS).....	49
10	Measurement of performance characteristics for production, supply and delivery quality assurance purposes	49
10.1	General.....	49
10.2	Nominal characteristics	49
10.3	Reference test gain.....	50
10.4	OSPL90	50
10.5	Full-on gain.....	50
10.6	Frequency response curve.....	50
10.7	Bandwidth frequencies f_1 and f_2	51
10.8	Battery or supply voltage	52
10.9	Battery current	52
10.10	Total harmonic distortion.....	52
10.11	Equivalent input noise level	52
10.12	Full-on HFA-SPLIV	53
10.13	Equivalent test loop sensitivity level (ETLS).....	53
10.14	Relative simulated equivalent telephone sensitivity level (RSETS).....	53
10.15	HFA-SPLITS	53
10.16	Equivalent electrical input sensitivity level (EEIS)	53
10.17	Steady-state input-output AGC characteristics	54
10.18	Nominal attack time and release time.....	54
11	Maximum permitted expanded uncertainty of measurements	54
Annex A	(normative) Simultaneous measurement method.....	57
A.1	General.....	57
A.2	Measurement method	57
A.3	Comparison of the simultaneous method.....	57
Annex B	(normative) Substitution measurement method	58
B.1	General.....	58
B.2	Measurement method	58
B.3	Comparison of the substitution method	59
Annex C	(normative) Effect of MLE on non-acoustic input hearing aids	60
C.1	Acoustic and non-acoustic input equivalence	60
C.2	In situ equivalence measurement in the case of a known MLE	61
C.3	HFA equivalence of output levels for non-acoustical inputs	62
C.3.1	General	62
C.3.2	In situ output level equivalency of wireless input sensitivity level (EWLS).....	63
C.3.3	In situ output level equivalency of electrical input sensitivity level (EEIS).....	63
C.3.4	In situ output level equivalency of test loop sensitivity level (ETLS)	63
C.3.5	In situ output level equivalency of telephone sensitivity level (RSETS)	64
Annex D	(informative) Examples of uncertainty calculation	65
D.1	General.....	65
D.2	Uncertainty calculations	65
D.3	Sound source system for test-box	65
D.4	Sound source system for anechoic-chamber	66
D.5	Hearing aid measurement	67

Annex E (informative) Comparison of 2 cm ³ coupler and 0,4 cm ³ coupler	68
E.1 General.....	68
E.2 Influence of sound source impedance	68
E.3 Comparison of frequency responses of the 0,4 cm ³ , the 2 cm ³ coupler and the occluded ear simulator	70
Bibliography.....	72
Figure 1 – Example of test arrangement for behind the ear hearing aid.....	21
Figure 2 – Example of test arrangement for in the ear hearing aid	22
Figure 3 – Example of test arrangement for directional hearing aid	23
Figure 4 – Telephone magnetic field simulator (TMFS)	27
Figure 5 – Example of OSPL90 curve and basic frequency response curve.....	30
Figure 6 – Example of determination of frequency range from basic frequency response curve	32
Figure 7 – Example of fundamental and difference frequency distortion products.....	35
Figure 8 – Example of total difference frequency distortion	36
Figure 9 – Example of hearing aid acoustic gain	38
Figure 10 – Example of hearing aid output noise and test equipment noise.....	38
Figure 11 – Example of hearing aid equivalent input noise and ambient noise	39
Figure 12 – Example of a steady-state input-output characteristic.....	40
Figure 13 – Measurement setup for wireless input	44
Figure 14 – Example of hearing aids on TMFS for SPLITS test	48
Figure 15 – Example of tolerance limits and determination of frequency range from basic frequency response curve.....	51
Figure 16 – Manufacturer acceptance interval (a) and purchaser acceptance interval (b) with tolerance and maximum permitted uncertainty U_{\max}	56
Figure B.1 – Example of test arrangement for the substitution method	59
Figure C.1 – Acoustic a) and non-acoustic b) transmission paths.....	61
Figure C.2 – Example of SPLIV equivalence for ITC	62
Figure E.1 – Deviation from the normalized coupler volume ratio as function of the effective source volume V_s	69
Figure E.2 – Magnitude frequency responses of acoustic impedance of the 2 cm ³ , the 0,4 cm ³ coupler and various hearing aid types	70
Figure E.3 – Comparative measurement of the 0,4 cm ³ coupler, the 2 cm ³ coupler and the occluded ear simulator frequency responses.....	71
Table 1 – Overview on the use of acoustic couplers and occluded ear simulator	17
Table 2 – Resistors and open circuit voltages for zinc-air battery simulators	28
Table 3 – Distortion test frequencies and input sound pressure levels.....	33
Table 4 – OSPL90: Acceptable deviation from the nominal values:	50
Table 5 – Full-on gain: Acceptable deviation from the nominal value.....	50
Table 6 – Tolerances and acceptance intervals of the frequency response	51
Table 7 – Battery current: Acceptable deviation from the nominal value	52
Table 8 – Total harmonic distortion: Acceptable deviation from the nominal value.....	52

Table 9 – Equivalent input noise level: Acceptable deviation from the nominal value 52

Table 10 – Full-on HFA-SPLIV: Acceptable deviation from the nominal value..... 53

Table 11 – ETLs: Acceptable deviation from the nominal value 53

Table 12 – RSETS: Acceptable deviation from the nominal value..... 53

Table 13 – HFA-SPLITS: Acceptable deviation from the nominal value 53

Table 14 – EEIS: Acceptable deviation from the nominal value 54

Table 15 – Acceptable deviation from the nominal values at input levels of 50 dB and 90 dB 54

Table 16 – Values of U_{\max} for measurements 55

Table C.1 – HFA-MLE for various styles of hearing aids..... 63

Table D.1 – Uncertainty sound source system for test-box..... 66

Table D.2 – Uncertainty sound source system for anechoic-chamber..... 66

Table D.3 – Uncertainty hearing aid measurement..... 67

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROACOUSTICS –
HEARING AIDS –****Part 0: Measurement of the performance characteristics of hearing aids****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.
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IEC 60118-0 has been prepared by technical committee 29: Electroacoustics. It is an International Standard.

This fourth edition merges and updates the methods previously described in IEC 60118-0:2015 and IEC 60118-7:2005. It cancels and replaces the third edition of IEC 60118-0 published in 2015. This edition constitutes a technical revision.

Measurements for quality control as described in IEC 60118-7:2005 can be found in Clause 10 of this document.

This edition includes the following significant technical changes with respect to previous editions:

- a) the default use of an acoustic coupler according to IEC 60318-5,
- b) addition of the optional use of an occluded ear simulator according to IEC 60318-4,

- c) addition of the optional use of an acoustic coupler according to IEC 60318-8 (new standard based on IEC TS 62886) when information about the response above 8 kHz is needed, or the optional use of the acoustic coupler according to IEC 60318-8 for deep insert hearing aids,
- d) the addition of measurements of the performance of hearing aids for production, supply and delivery quality assurance purposes,
- e) corrected and updated measurement configuration and methods, adding the use of a sequential measurement as preferred configuration,
- f) updated and expanded measurement procedures for the non-acoustic inputs of the hearing aid.

NOTE The substitution method described in Annex B has no relation to the substitution method described in IEC 60118-0:2015.

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

Draft	Report on voting
29/1126/FDIS	29/1129/RVD

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.

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/standardsdev/publications.

A list of all parts in the 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 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,
- replaced by a revised edition, or
- amended.

ELECTROACOUSTICS – HEARING AIDS –

Part 0: Measurement of the performance characteristics of hearing aids

1 Scope

This part of IEC 60118 gives recommendations for the measurement of the performance characteristics of air conduction hearing aids measured with an acoustic coupler or occluded ear simulator.

This document is applicable to the measurement and evaluation of the electroacoustical characteristics of hearing aids, for example for type testing and manufacturer data sheets.

This document is also applicable for the measurement of the performance characteristics of hearing aids for production, supply and delivery quality-assurance purposes.

The measurement results obtained by the methods specified in this document will express the performance under conditions of the measurement and can deviate substantially from the performance of the hearing aid under actual conditions of use.

This document primarily uses an acoustic coupler according to IEC 60318-5 which is only intended for loading a hearing aid with specified acoustic impedance and is not intended to reproduce the sound pressure in a person's ear. For measurements reflecting the output level in the normal human ear the occluded ear simulator according to IEC 60318-4 can be used. For extended high-frequency measurements and for deep insert hearing aids, the acoustic coupler according to IEC 60318-8 can be used.

This document also covers measurement of hearing aids with non-acoustic inputs, such as wireless, inductive or electrical input.

This document does not cover the measurement of hearing aids for simulated in situ working conditions, for which IEC 60118-8 can be applied.

This document does not cover the measurement of hearing aids under typical user settings and using a speech-like signal, for which IEC 60118-15 can be applied.

2 Normative references

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.

IEC 60118-12, *Hearing aids – Part 12: Dimensions of electrical connector systems*

IEC 60318-4:2010, *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*

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*

IEC 60318-8, *Electroacoustics – Simulators of human head and ear – Part 8: Acoustic coupler for high-frequency measurements of hearing aids and earphones coupled to the ear by means of ear inserts*

IEC 60268-2, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 60263, *Scales and sizes for plotting frequency characteristics and polar diagrams*

IEC 61094-4, *Measurement microphones – Part 4: Specifications for working standard microphones*

ISO 3, *Preferred numbers – Series of preferred numbers*