SVENSK STANDARD

SS-EN IEC 60118-0, utg 3:2024

| Fastställd | Sida | Ansvarig kommitté |
|---|---|---|
| 2024-10-23 | 1 (77) | SEK TK 29 |



# 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

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **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.

Tidigare fastställd svensk standard SS-EN 60118-0, utg 2:2015 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2027-05-10.

ICS 17.140.50

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: Box 1042, 172 21 Sundbyberg
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## Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

## SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

## Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

## Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.


## SEK Svensk Elstandard

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN IEC 60118-0

May 2024

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Supersedes EN 60118-0:2015

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)



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**



Ref. No. EN IEC 60118-0:2024 E

SEK Svensk Elstandard

SS-EN IEC 60118-0, utg 3:2024

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

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.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| 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 cm3 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 | | |

IEC 60118-0

Edition 4.0 2022-08

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## 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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# 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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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.

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 cm$^3$ 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*