SVENSK STANDARD SS-EN IEC 61265

| Fastställd | Utgåva | Sida | Ansvarig kommitté |
|---|---|---|---|
| 2019-02-20 | 2 | 1 (1+26) | SEK TK 29 |




# Elektroakustik – Instrument för mätning av buller från flygplan – Prestandafordringar på system för mätning av ljudtryck i samband med certifiering av flygplan

*Electroacoustics – Instruments for measurement of aircraft noise – Performance requirements for systems to measure sound pressure levels in noise certification of aircraft*

Som svensk standard gäller europastandarden EN IEC 61265:2018. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61265:2018.

**Nationellt förord**

Europastandarden EN IEC 61265:2018

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61265, Second edition, 2018 - Electroacoustics - Instruments for measurement of aircraft noise - Performance requirements for systems to measure sound pressure levels in noise certification of aircraft**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61265, utgåva 1, 1996, gäller ej fr o m 2021-06-12.

ICS 17.140.50; 49.020.00

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: Box 1284, 164 29 KISTA
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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.

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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.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN IEC 61265

August 2018

ICS 17.140.50; 49.020

Supersedes EN 61265:1995

English Version

# Electroacoustics - Instruments for measurement of aircraft noise - Performance requirements for systems to measure sound pressure levels in noise certification of aircraft (IEC 61265:2018)

Électroacoustique - Instruments pour la mesure du bruit des aéronefs - Exigences relatives aux systèmes de mesure des niveaux de pression acoustique pour la certification acoustique des aéronefs
(IEC 61265:2018)

Elektroakustik - Geräte zur Messung des Geräuschs von Luftfahrzeugen - Anforderungen an die Eigenschaften von Systemen zur Messung von Schalldruckpegeln bei der Zertifizierung von Luftfahrzeugen
(IEC 61265:2018)

This European Standard was approved by CENELEC on 2018-06-12. 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, Serbia, 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: Rue de la Science 23, B-1040 Brussels**



Ref. No. EN IEC 61265:2018 E

SEK Svensk Elstandard

SS-EN IEC 61265, utg 2:2019

## European foreword

The text of document 29/958/CDV, future edition 2 of IEC 61265, prepared by IEC/TC 29 "Electroacoustics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61265:2018.

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) | 2019-03-12 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2021-06-12 |

This document supersedes EN 61265:1995.

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.

## Endorsement notice

The text of the International Standard IEC 61265:2018 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 61094-4 | NOTE | Harmonized as EN 61094-4. |
| IEC 61326-1:2012 | NOTE | Harmonized as EN 61326-1:2013 (not modified). |
| IEC 61000-4-2 | NOTE | Harmonized as EN 61000-4-2. |
| IEC 61000-4-3 | NOTE | Harmonized as EN 61000-4-3. |

# 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.cenelec.eu.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60942 | - | Electroacoustics - Sound calibrators | EN IEC 60942 | - |
| IEC 61260-1 | - | Electroacoustics - Octave-band and fractional-octave-band filters - Part 1: Specifications | EN 61260-1 | - |
| IEC 61672-1 | - | Electroacoustics - Sound level meters - Part 1: Specifications | EN 61672-1 | - |

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# ELECTROACOUSTICS – INSTRUMENTS FOR MEASUREMENT OF AIRCRAFT NOISE – PERFORMANCE REQUIREMENTS FOR SYSTEMS TO MEASURE SOUND PRESSURE LEVELS IN NOISE CERTIFICATION OF AIRCRAFT

## 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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International Standard IEC 61265 has been prepared by IEC technical committee 29: Electroacoustics.

This second edition cancels and replaces the first edition published in 1995. This edition constitutes a technical revision.

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

a) addition of guidance for measurements for aircraft other than large transport aeroplanes;
b) addition of microphones used in ground plane measurement systems;
c) addition of weighted sound level measurements other than one-third-octave band measurements, for certain aircraft types;
d) revision and clarification of requirements for digital audio recording;

e) addition of requirements for evaluation of measurement uncertainty.

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

| CDV | Report on voting |
|---|---|
| 29/958/CDV | 29/980A/RVC |

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

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

# INTRODUCTION

IEC 61265 provides requirements for the electroacoustical performance of instruments for measurement of the sound produced by aircraft in flight or on the ground, or by an aircraft engine installed on an outdoor test stand, for the purposes of demonstrating compliance with aircraft noise certification limits established by relevant national aviation authorities and for other comparisons among aircraft models. The instruments can be components of a complete measurement system. Methods are also indicated by which the performance of such instruments can be tested periodically.

Measurement and data-analysis procedures for aircraft noise certification are described in Volume I of Annex 16 to the Convention on International Civil Aviation, with further guidance and descriptions of acceptable "equivalent procedures" given in the *Environmental Technical Manual* prepared by the Committee on Aviation Environmental Protection (CAEP) of the International Civil Aviation Organization (ICAO). Together these documents are referred to in this document as "ICAO Annex 16". The procedures include measurement and analysis of the sound from aircraft in operation, and, in some circumstances, of the sound from static engines and engines under test, under given operating and atmospheric conditions.

Several of the requirements given in this document differ from the requirements of IEC 61672-1 for sound level meters, especially concerning the frequency and directional response, linear operating range and sensitivity to various environments. Many of these differences are due to the requirement for uniform response at a wide range of angles of sound arrival as an aircraft moves through the certification test flight. If the output signal from a measurement system conforming to this document is processed to yield an overall sound pressure level from all frequency bands, the level derived can differ from that obtained from a sound level meter conforming to IEC 61672-1.

Systems in accordance with this document are used to perform measurements meeting the requirements of ICAO Annex 16 or a certifying authority’s specific procedures to demonstrate that a given aircraft complies with the limits for noise level near the ground over the course of a test flight. Uncertainty of each measurement is considered when establishing the test procedures, and it is not the intent of this document to duplicate the confidence interval analysis inherent in the noise flight test procedure.

# ELECTROACOUSTICS – INSTRUMENTS FOR MEASUREMENT OF AIRCRAFT NOISE – PERFORMANCE REQUIREMENTS FOR SYSTEMS TO MEASURE SOUND PRESSURE LEVELS IN NOISE CERTIFICATION OF AIRCRAFT

## 1 Scope

This document specifies requirements for the electroacoustical performance of systems of instruments used to measure sound for the purposes of aircraft noise certification, and for other comparisons among aircraft models, and provides methods by which tests can be made periodically to verify that the performance continues to conform to the requirements within stated limits.

In general, a sound measurement system for this purpose comprises a combination of instruments extending from a microphone, including its windscreen and other accessories, through data recording and processing devices to a suitable output. Different measurement systems, regardless of their composition, perform the necessary functions in different ways and operate on either analogue or digital principles.

## 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 60942, *Electroacoustics – Sound calibrators*

IEC 61260-1, *Electroacoustics – Octave-band and fractional-octave-band filters – Part 1: Specifications*

IEC 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*