

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electroacoustics – Octave-band and fractional-octave-band filters –
Part 2: Pattern-evaluation tests**

**Électroacoustique – Filtres de bande d'octave et de bande d'une fraction
d'octave –
Partie 2: Essais d'évaluation d'un modèle**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROACOUSTICS – OCTAVE-BAND
AND FRACTIONAL-OCTAVE-BAND FILTERS –****Part 2: Pattern-evaluation tests****FOREWORD**

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International Standard IEC 61260-2 has been prepared by IEC technical committee 29: Electroacoustics.

This first edition of IEC 61260-2 (together with IEC 61260-1:2014 and IEC 61260-3:2016), cancels and replaces the first edition of IEC 61260 published in 1995 and its Amendment 1 published in 2001. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61260.

- a) The single document in the first edition of IEC 61260:1995 is now separated into three parts of the IEC 61260 series covering: specifications, pattern-evaluation tests and periodic tests.
- b) IEC 61260:1995 specified three performance categories: class 0, 1 and 2 while the IEC 61260 series specifies requirements for class 1 and 2.
- c) In IEC 61260:1995, the design goals for the specification can be based on base-2 or base-10 design. In the IEC 61260 series only base-10 is specified.

- d) The reference environmental conditions have been changed from 20 °C/65 % RH to 23 °C/50 % RH;
- e) IEC 61260:1995 specified tolerance limits without considering the uncertainty of measurement for verification of the specifications. The IEC 61260 series specifies acceptance limits for the observed values and maximum-permitted uncertainty of measurements for laboratories testing conformance to specifications in the standard.

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

CDV	Report on voting
29/845/CDV	29/881A/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 the parts of the IEC 61260 series, published under the general title *Electroacoustics – Octave-band and fractional-octave-band filters* 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 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.

INTRODUCTION

IEC 61260:1995 and IEC 61260:1995/AMD 1:2001 are now separated into the following three parts of IEC 61260 series:

- Part 1: Specifications
- Part 2: Pattern-evaluation tests
- Part 3: Periodic tests

For assessments of conformance to performance specifications, IEC 61260-1 uses different criteria than were used for the IEC 61260:1995 edition.

IEC 61260:1995 did not provide any requirements or recommendations to account for the uncertainty of measurement in assessments of conformance to specifications. This absence of requirements or recommendations to account for uncertainty of measurement created ambiguity in determinations of conformance to specifications for situations where a measured deviation from a design goal was close to the limit of the allowed deviation. If conformance was determined based on whether a measured deviation did or did not exceed the limits, the end-user of the octave-band and fractional-octave-band filters incurred the risk that the true deviation from a design goal exceeded the limits.

To remove this ambiguity, IEC Technical Committee 29, at its meeting in 1996, adopted a policy to account for measurement uncertainty in assessments of conformance in International Standards that it prepares.

This edition of IEC 61260-2 uses an amended criterion for assessing conformance to a specification. Conformance is demonstrated when (a) measured deviations from design goals do not exceed the applicable *acceptance limits* and (b) the uncertainty of measurement does not exceed the corresponding maximum-permitted uncertainty. Acceptance limits are analogous to the tolerance limits allowances for design and manufacturing implied in the IEC 61260:1995.

Actual and maximum-permitted uncertainties of measurement are determined for a coverage probability of 95 %. Unless more specific information is available, the evaluation of the contribution of a specific filter or filter set to a total measurement uncertainty can be based on the acceptance limits and maximum-permitted uncertainties specified in this standard.

ELECTROACOUSTICS – OCTAVE-BAND AND FRACTIONAL-OCTAVE-BAND FILTERS –

Part 2: Pattern-evaluation tests

1 Scope

1.1 This part of IEC 61260 provides details of the tests necessary to verify conformance to all mandatory specifications given in IEC 61260-1:2014 for octave-band and fractional-octave-band filters.

1.2 Tests and test methods are applicable to class 1 and class 2 bandpass filters. The aim is to ensure that all testing laboratories use consistent methods to perform pattern-evaluation tests.

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 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-6-1, *Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments*

IEC 61000-6-2:2005, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*

IEC 61260-1:2014, *Electroacoustics – Octave-band and fractional-octave-band filters – Part 1: Specifications*

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

CISPR 16-1-1, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus*

CISPR 16-1-2, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-2: Radio disturbance and immunity measuring apparatus – Coupling devices for conducted disturbance measurements*

CISPR 16-2-1, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-1: Methods of measurement of disturbances and immunity – Conducted disturbance measurements*

CISPR 16-2-3, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-3: Methods of measurement of disturbances and immunity – Radiated disturbance measurements*

CISPR 22:2008, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*

ISO/IEC Guide 98-3, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

ISO/IEC Guide 98-4, *Uncertainty of measurement – Part 4: Role of measurement uncertainty in conformity assessment*

ISO/IEC Guide 99, *International vocabulary of metrology – Basic and general concepts and associated terms (VIM)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61260-1:2014, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-6-1, IEC 61000-6-2, and IEC 61000-6-3, ISO/IEC Guide 98-3, ISO/IEC Guide 98-4 and ISO/IEC Guide 99 apply.

4 Submission for testing

4.1 At least three specimens of the same pattern of bandpass filter shall be submitted for pattern-evaluation testing. As a minimum, the testing laboratory shall select two of the specimens for testing. At least one of the two specimens shall then be tested fully according to the procedures of this standard. The testing laboratory shall decide whether the full tests shall also be performed on the second specimen or whether limited testing is adequate to approve the pattern.

4.2 An instruction manual and all items or accessories that are identified in the instruction manual as integral components for the normal mode of operation shall be submitted along with the filters.

4.3 If the manufacturer of the filters supplies devices that are to be connected to the bandpass filter by cables for a typical mode of operation for the filter, then the devices and cables shall be submitted with the filter.

5 Marking of the filter and information in the instruction manual

5.1 It shall be verified that the filter is marked according to the requirements of IEC 61260-1:2014.

5.2 It shall be verified that the instruction manual contains all the information that is required by IEC 61260-1:2014 as relevant to the facilities provided by the filter.