



# **Electroacoustics — Octave-band and fractional-octave-band filters**

## **Part 2: Pattern evaluation tests**



AS IEC 61260.2:2019

This Australian Standard® was prepared by EV-010, Acoustics Community Noise. It was approved on behalf of the Council of Standards Australia on 27 February 2019.

This Standard was published on 2 May 2019.

The following are represented on Committee EV-010:

- Association of Australasian Acoustical Consultants
- Australian Acoustical Society
- Austroads
- Bureau of Steel Manufacturers of Australia
- Department of Defence (Australian Government)
- Engineers Australia
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This Standard was issued in draft form for comment as DR AS IEC 61260.2:2018.

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ISBN 978 1 76072 427 6



# **Electroacoustics — Octave-band and fractional-octave-band filters**

## **Part 2: Pattern evaluation tests**

Originated in Australia as AS Z41—1969.  
Originated in New Zealand as NZS 1499:1965.  
AS Z41—1969 and NZS 1499:1965 jointly revised, amalgamated and redesignated AS/NZS 4476:1997.  
This edition revised in part and redesignated as AS IEC 61260.2:2019.

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## Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EV-010, Acoustics Community Noise to supersede AS/NZS 4476:1997, *Acoustics — Octave-band and fractional-octave-band-filters*.

The objective of this Standard is to provide details of the tests necessary to verify conformance to all mandatory specifications given in AS IEC 61260.1:2019 for octave-band and fractional-octave-band filters.

This edition of AS 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.

This Standard is identical with, and has been reproduced from, IEC 61260-2:2016+AMD1:2017 (ED 1.1.) *Electroacoustics — Octave-band and fractional-octave-band filters — Part 2: Pattern-evaluation tests*.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

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The term “informative” is used in Standards to define the application of the annexes to which it applies. An “informative” annex is only for information and guidance.

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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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**This Consolidated version of IEC 61260-2 bears the edition number 1.1. It consists of the first edition (2016-03) [documents 29/845/CDV and 29/881A/RVC] and its amendment 1 (2017-04) [documents 29/912/CDV and 29/937/RVC]. The technical content is identical to the base edition and its amendment.**

**This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.**

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

This first edition of IEC 61260-2 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.

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 the base publication and its amendment 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.

## 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 61000-4-20:2010, *Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides*

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*