

**Sound system equipment - Part 3: Amplifiers (IEC 60268-3:2013)**

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English version

**Sound system equipment -  
Part 3: Amplifiers  
(IEC 60268-3:2013)**

Equipements pour systèmes  
électroacoustiques -  
Partie 3: amplificateurs  
(CEI 60268-3:2013)

Elektroakustische Geräte -  
Teil 3: Verstärker  
(IEC 60268-3:2013)

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## Foreword

The text of document 100/2010A/CDV, future edition 4 of IEC 60268-3, prepared by IEC/TC 100 "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60268-3:2013.

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) 2014-02-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-05-28

This document supersedes EN 60268-3:2000.

EN 60268-3:2013 includes the following significant technical changes with respect to EN 60268-3:2000:

- rated condition of multi-channel amplifier is expanded;
- arrangement for the D-class amplifier is added;
- method of measurement for output power (distortion-limited) is expanded;
- Annex B is newly added.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

## Endorsement notice

The text of the International Standard IEC 60268-3:2013 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 60268-5:2003 | NOTE | Harmonised as EN 60268-5:2003 (not modified). |
| IEC 61606 series | NOTE | Harmonised in EN 61606 series.                |

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60065 (mod) + corr. August + A1 (mod) + A2 (mod)	2001 2002 2005 2010	Audio, video and similar electronic apparatus - Safety requirements	EN 60065 + corr. August + A1 + A2 + A11 + A12	2002 2007 2006 2010 2008 2011
IEC 60268-1 + A1 + A2	1985 1988 1988	Sound system equipment - Part 1: General	HD 483.1 S2	1989
IEC 60268-2 + A1	1987 1991	Sound system equipment - Part 2: Explanation of general terms and calculation methods	HD 483.2 S2	1993
IEC 60417	Data- base	Graphical symbols for use on equipment	-	-
IEC 61000-4-13 + A1	2002 2009	Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	EN 61000-4-13 + A1	2002 2009
IEC 61000-4-17 + A1 + A2	1999 2001 2008	Electromagnetic compatibility (EMC) - Part 4-17: Testing and measurement techniques - Ripple on d.c. input power port immunity test	EN 61000-4-17 + A1 + A2	1999 2004 2009
IEC 61000-4-29	2000	Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	EN 61000-4-29	2000
IEC 61938	1996	Audio, video and audiovisual systems - Interconnections and matching values - Preferred matching values of analogue signals	EN 61938 + corr. February	1997 1997

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## SOUND SYSTEM EQUIPMENT –

### Part 3: Amplifiers

#### 1 Scope

This part of IEC 60268 applies to analogue amplifiers, and the analogue parts of analogue/digital amplifiers, which form part of a sound system for professional or household applications. It specifies the characteristics which should be included in specifications of amplifiers and the corresponding methods of measurement.

NOTE The methods of measurement for digital amplifiers and similar equipment are given in IEC 61606 [4]<sup>1</sup>.

In general, the specified methods of measurement are those which are seen to be most directly related to the characteristics. This does not exclude the use of other methods which give equivalent results.

In general, the methods are based on the simplest measuring equipment which can provide useful results. This does not exclude the use of more complex equipment which can give higher accuracy and/or allow automatic measurement and recording of results.

Rated conditions and standard measuring conditions are specified in order to allow measurements to be reliably repeated.

#### 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 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*  
Amendment 1:2005  
Amendment 2:2010

IEC 60268-1:1985, *Sound system equipment – Part 1: General*  
Amendment 1:1988  
Amendment 2:1988

IEC 60268-2:1987, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*  
Amendment 1:1991

IEC 60417, *Graphical symbols for use on equipment*. Available from: <http://www.graphical-symbols.info/equipment>

IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests*  
Amendment 1:2009

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

IEC 61000-4-17:1999, *Electromagnetic Compatibility (EMC) – Part 4-17: Testing and measurement techniques – Ripple on d.c. input power port immunity test*  
Amendment 1:2001  
Amendment 2:2008

IEC 61000-4-29:2000, *Electromagnetic Compatibility (EMC) – Part 4-29: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations on d.c. input power ports immunity tests*

IEC 61938:1996, *Audio, video and audiovisual systems – Interconnections and matching values – Preferred matching values of analogue signals*

### 3 Conditions

#### 3.1 Rated conditions and standard measuring conditions

##### 3.1.1 Overview

For convenience in specifying how amplifiers shall be set up for measurement, sets of conditions are specified in this standard, under the titles of rated conditions and standard measuring conditions.

A full explanation of the term "rated" is given in IEC 60268-2.

The rated conditions for amplifiers are:

- rated power supply voltage;
- rated source impedance;
- rated source e.m.f.;
- rated load impedance;
- rated total harmonic distortion, or rated (distortion-limited) output voltage or power;
- rated mechanical and climatic conditions.

NOTE 1 Total harmonic distortion and (distortion-limited) output voltage or power are interdependent. Both cannot be taken as rated conditions simultaneously because normally a given sample amplifier produces less than rated total harmonic distortion at rated output voltage or power.

NOTE 2 If the power supply frequency is critical, it is also a rated condition.

To obtain the correct conditions for measurements, the values for the above-mentioned rated conditions shall be taken from the manufacturer's specification. These values themselves are not subject to measurement but they constitute the basis for measuring the other characteristics.

Methods of measurement for these other characteristics are given in this standard and the manufacturer is either required or permitted to state 'rated values' for these characteristics in the specification of the equipment. These include

- rated voltage gain;
- rated distortion limited output voltage or power (when not adopted as a rated condition);
- rated signal-to-noise ratio;
- rated equivalent noise source e.m.f.

##### 3.1.2 Rated conditions

An amplifier, considered as a four-terminal network with regard to a specified pair of input terminals and a specified pair of output terminals, shall be understood to be working under rated conditions when the following conditions are fulfilled: