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IEC 60268-3:2013

DRAFT TANZANIA STANDARD

(Draft for comments only)

Sound system equipment – Part 3: Amplifiers

TANZANIA BUREAU OF STANDARDS

Draft for stakeholders' comments only

1 National Foreword

This draft Tanzania Standard is being prepared by the Communication Equipment Technical Committee, under the supervision of the Electrotechnical Divisional Standards Committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **60268-3:2013** *Sound system equipment-Part 3: Amplifiers* which has been prepared by the International Electrotechnical Commission.

2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania Standards; attention is drawn especially to the following: -

- 1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- 2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

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IEC 60268-3

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**INTERNATIONAL
STANDARD**
NORME
INTERNATIONALE

**Sound system equipment –
Part 3: Amplifiers**

**Équipements pour systèmes électroacoustiques
– Partie 3: Amplificateurs**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SYSTEM EQUIPMENT –**Part 3: Amplifiers**

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 60268-3 has been prepared by IEC technical committee 100:
Audio, video and multimedia systems and equipment.

This fourth edition cancels and replaces the third edition published in 2000. This edition constitutes a technical revision.

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

- 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.

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

| | |
|---------------|------------------|
| FDIS | Report on voting |
| 100/2010A/CDV | 100/2066/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 parts in the IEC 60268 series, published under the general title *Sound system equipment*, can be found on the IEC website.

This part of IEC 60268 shall be used in conjunction with IEC 60268-1:1985 and IEC 60268-2:1987.

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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] ¹.

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

¹ Numbers in square brackets refer to the Bibliography.

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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: