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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Sound system equipment – Part 23: TVs and monitors – Loudspeaker systems

Équipements pour systèmes électroacoustiques – Partie 23: Téléviseurs et moniteurs – Systèmes de haut-parleurs



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SOUND SYSTEM EQUIPMENT –

Part 23: TVs and monitors – Loudspeaker systems

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

Draft	Report on voting
100/3774/CDV	100/3831/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

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 document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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INTRODUCTION

IEC TC 100 has already standardized loudspeaker measurement methods. However, the locations of the loudspeakers of TVs and monitors vary (e.g. front, bottom, back, side), and TVs and monitors are used on stands or wall-mounted, and methods used for their installation continue to evolve. Since the sound characteristics change according to the installation type and position of the loudspeaker, it is necessary to develop new measurement methods for loudspeakers of TVs and monitors. This document provides measurement methods for the audio system of TVs and monitors that take into account the listening environment.

SOUND SYSTEM EQUIPMENT –

Part 23: TVs and monitors – Loudspeaker systems

1 Scope

This part of IEC 60268 specifies acoustical measurement methods that apply to TV sets, monitors with built-in loudspeakers, and other audio devices having similar acoustical properties (e.g. flat-panel loudspeakers). The acoustical measurements are performed under free-field conditions and in-situ.

This document does not assess the perception and cognitive evaluation of the reproduced sound, nor the impact of perceived sound quality.

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

IEC 60268-21:2018, *Sound system equipment – Part 21 Acoustical (output-based) measurements*

IEC 61094-4, *Measurement microphones – Part 4: Specifications for working standard microphones*

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

ISO 3744, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane*

ISO 3745, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Precision methods for anechoic rooms and hemi-anechoic rooms*.

ISO 80000-2, *Quantities and units – Part 2: Mathematics*

ANSI/CTA 2034-A:2015, *Standard Method of Measurement for In-Home Loudspeakers*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
equipment under test
EUT
equipment to be measured using the methods described in this document

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

COG	centre of gravity
dB	decibel
DEF	direct energy fraction
DNR	distortion-to-noise ratio
DSP	digital signal processor
EFR	effective frequency range
EITHD	equivalent input total harmonic distortion
ESP	equivalent sound power
ESPDI	equivalent sound power directivity index
EUT	equipment under test
FR	frequency response
Hz	hertz
m	metre
MD	absolute multi-tone distortion
MDS	multi-tone distortion spectrum
NBV	narrow band variation
NF	noise floor
ON	on-axis FR
Pa	pascal
POR	point of rotation
RFR	rated frequency range
RLD	regression line deviation
RMS	root mean square
RMD	relative multi-tone distortion
RNF	relative noise floor
SB	spectral balance
SNR	signal-to-noise ratio
SP	sound power
SPL	sound pressure level
TFA	time-frequency analysis
TH	total harmonic
THD	total harmonic distortion
TMDR	total multi-tone distortion ratio
W	watt