TECHNICAL REPORT

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Household high-fidelity audio equipment and systems– Methods of measuring and specifying the performance –

Part 6: Listening tests on loudspeakers – Single stimulus ratings and paired comparisons

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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IEC 61305-6, which is a technical report, has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
100/855/DTR	100/905/RVC

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

This technical report gives recommendations for establishing, conducting and evaluating listening tests.

The tests described in this report are to be performed in a room, the size and acoustical properties are similar to those of an average living room. Specific recommendations about the room size, acoustical properties, arrangement of loudspeakers and listeners, and environmental conditions are given.

This technical report describes experimental procedures, including recommendations on the choice of programme material and the processing and presentation of the final data. It may be useful to consider some of the recommendations in AES 20. It should be understood that the topics of experimental design, execution and statistical analysis are complex, and that only the most general guidelines can be given. It is recommended that professionals with expertise of experimental design and statistics should be consulted.

The use of multichannel formats, principally for domestic presentation of surround audio and cinema is becoming more usual. The procedures described in this report are applicable to any number of channels.

If the number of loudspeakers to be tested is high, the paired comparison listening test is lengthy because each loudspeaker has to be compared with the other. A shorter method is the single stimulus rating. With this method, each object is judged once. The rating is almost independent of the loudspeaker range in test. Each object is rated absolutely, whereas a paired comparison provides a relative ranking of the order of the loudspeakers in test.

Another technical report for listening test has been published as IEC 60268-13 and it is expected that the two technical reports should be combined in the maintenance work

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1 Scope

This technical report applies to loudspeakers conforming to IEC 61305-5 and intended for home use.

The purpose of this report is, in addition to objective testing according to IEC 60268-5, to establish standards for comparison of the sound characteristics of various loudspeakers with each other.

Two test procedures are described:

– single stimulus ratings;

– paired comparisons.

The procedures described in this report are applicable to any number of channels.

NOTE The test procedures are specified for stereo systems. They can be applied to multichannel systems accordingly.

2 Normative references

The following referenced documents are indispensable for the application 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 61305-5, *High fidelity audio equipment and systems; Minimum performance requirements – Part 5: Loudspeakers.*

IEC 60268-5*, Sound system equipment – Part 5: Loudspeakers.*

ISO 3382, *Acoustics – Measurement of the reverberation time of rooms with reference to other acoustical parameters.*