

Sound system equipment —

**Part 1: Methods for specifying and
measuring general characteristics used
for equipment performance —**

**[IEC title: Sound system equipment.
Part 1: General] —**

**(Implementation of CENELEC
HD 483.1 S2)**

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Committees responsible for this British Standard

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- Association of British Theatre Technicians
- Association of Sound and Communications Engineers Ltd.
- Audio Engineering Society
- British Educational Equipment Association
- British Kinematograph, Sound and Television Society
- British Radio and Electronic Equipment Manufacturers' Association
- British Telecommunications plc.
- Cable Television Association of Great Britain
- Consumer Standards Advisory Committee of BSI
- Consumers' Association
- Council for Educational Technology for the United Kingdom
- Electronic Components Industry Federation
- Federation of British Audio
- Independent Television Companies' Association
- Industrial Council for Educational and Training Tech Ltd.
- Institution of Electronic and Radio Engineers
- Radio Electrical and Television Retailers' Association
- Royal Institute of British Architects
- Royal National Institute for the Deaf
- Society of Cable Television Engineers
- Telecommunication Engineering and Manufacturing Association (TEMA)
- Training and Educational Systems Testing Bureau

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National foreword

This Part of BS 6840 has been prepared under the direction of the Electronic Equipment Standards Policy Committee and is identical with IEC 268-1:1985 “*Sound system equipment*” — *Part 1: “General”* published by the International Electrotechnical Commission (IEC), as amended by Amendment No. 1 dated March 1988 and Amendment No. 2 dated June 1988. This British Standard is also in agreement with Harmonization Document HD 483.1 S2 published by the European Committee for Electrotechnical Standardization (CENELEC). This Part of BS 6840, together with Part 2, supersedes BS 5428-1:1977 which is withdrawn.

BS 6840 consists of the following Parts:

- *Part 1: Methods for specifying and measuring general characteristics used for equipment performance (supersedes part of BS 5428-1);*
- *Part 2: Glossary of general terms and calculation methods (supersedes part of BS 5428-1);*
- *Part 3: Methods for specifying and measuring the characteristics of sound system amplifiers (supersedes BS 5428-2);*
- *Part 4: Methods for specifying and measuring the characteristics of microphones (previously BS 5428-3);*
- *Part 5: Methods for specifying and measuring the characteristics of loudspeakers (supersedes BS 5428-11 and BS 5428-11: Supplement 1);*
- *Part 6: Methods for specifying and measuring the characteristics of auxiliary passive elements (previously BS 5428-4);*
- *Part 7: Methods for specifying and measuring the characteristics of headphones and headsets (new)¹⁾;*
- *Part 8: Methods for specifying and measuring the characteristics of automatic gain control devices (previously BS 5428-7);*
- *Part 9: Methods for specifying and measuring the characteristics of artificial reverberation, time delay and frequency shift equipment (previously BS 5428-8);*
- *Part 10: Methods for specifying and measuring the characteristics of peak programme level meters (supersedes BS 5428-9);*
- *Part 11: Specification for application of connectors for the interconnection of sound system components (supersedes BS 5428-5.2);*
- *Part 12: Specification for applications of connectors for broadcast and similar use (supersedes BS 5428-5.3);*
- *Part 13: Guide for listening test on loudspeakers (new);*
- *Part 14: Guide for circular and elliptical loudspeakers; outer frame diameters and mounting dimensions (previously BS 5428-5.1);*
- *Part 15: Specification for matching values for the interconnection of sound system components (supersedes BS 5428-10);*
- *Part 16: Guide to the “RASTI” method for the objective rating of speech intelligibility in auditoria (new);*
- *Part 17: Methods for specifying and measuring the characteristics of standard volume indicators.*

References to page numbers in the text relate to the IEC page numbers given in brackets at the bottom of each page.

¹⁾ In preparation.

Cross-references

International standard	Corresponding British Standard
IEC 68	BS 2011 Basic environmental testing procedures (Majority of individual Parts are identical)
IEC 225:1966	BS 2475:1964 Specification for octave and one third octave band-pass filters (Technically equivalent)
IEC 263:1982	BS 6397:1983 Specification for scales and sizes for plotting frequency characteristics and polar diagrams (Identical)
IEC 417:1973	BS 6217:1981 Guide to graphical symbols for use on electrical equipment (Identical)
IEC 617	BS 3939 Guide to graphical symbols for electrical power, telecommunications and electronics diagrams (Individual Parts are identical)
IEC 651:1979	BS 5969:1981 Specification for sound level meters (Identical)
ISO 266-1975	BS 3593:1963 Recommendation on preferred frequencies for acoustical measurements (Technically equivalent)

The Technical Committee has reviewed the provisions of IEC 27, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this British Standard. There is no British Standard corresponding to IEC 27. IEC 65:1985, to which reference is made in the text, has been harmonized by CENELEC under HD 195 and is implemented by BS 415:1990 which is a related standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This standard applies to sound systems of any kind, and to the parts of which they are composed or which are used as auxiliaries to such systems.

This standard deals with the determination of the performance of sound system equipment, the comparison of these types of equipment and the determination of their proper practical application, by listing the characteristics which are useful for their specification and laying down uniform methods of measurements for these characteristics.

The standard is confined to a description of the different characteristics and the relevant methods of measurement; it does not in general specify performance (except in Part 10).

The complete standard consists of the following parts, in which the characteristics of various parts of sound systems and their methods of measurement are specified; some parts include preferred values:

- *Part 1: General;*
(Uniform characteristics and methods of measurement);
- *Part 2: Explanation of General Terms;*
(Explanation of general terms and calculation methods);
- *Part 3: Sound System Amplifiers;*
(Amplifiers forming part of a sound system for professional and domestic applications);
- *Part 4: Microphones;*
(Microphones in professional and domestic applications);
- *Part 5: Loudspeakers;*
(Loudspeakers in professional and domestic applications, treated as entirely passive elements);
- *Part 6: Auxiliary Passive Elements;*
(Attenuators, transformers, filters and equalizers, applied as separate units to be combined with other separate sound system units);
- *Part 7: Headphones and Headsets;*
(Headphones and headsets intended to be used on the human ear);
- *Part 8: Automatic Gain Control Devices;*
(Limiters and compressors);
- *Part 9: Artificial Reverberation, Time Delay and Frequency Shift Equipment;*
(Devices commonly employed to achieve special effects in sound systems);
- *Part 10: Programme Level Meters;*
(Peak programme meters and vu-indicators);

— *Part 11: Connectors for the Interconnection of Sound System Components;*

(Application of connectors for the interconnection between parts of a sound system);

— *Part 12: Circular Connectors for Broadcast and Similar Use;*

(Application of connectors for the interconnection between parts of a broadcast or similar professional system);

— *Part 13: Listening Test on Loudspeakers;*

(Listening tests and objective methods for rating the quality of the transmission systems);

— *Part 14: Circular and Elliptical Loudspeakers; Outer Frame Diameters and Mounting Dimensions;*

(Dimensional characteristics of single moving-coil (dynamic) loudspeakers);

— *Part 15: Preferred Matching Values for the Interconnection of Sound System Components;*

(Preferred electrical values for the correct interconnection of sound system components).

2 Units and system of measurement

The International System of Units (SI units) as given in IEC Publication 27: Letter Symbols to be Used in Electrical Technology, is used exclusively in this standard.

3 Frequencies of measurement

If measurements are to be made at discrete frequencies, then these shall be the frequencies specified as preferred frequencies for acoustical measurements in ISO Standard 266, reproduced in Table I. If a measurement relates to a reference frequency, then, in the absence of a clear reason to the contrary, this shall be the standard reference frequency of 1 000 Hz.

If a measurement is to be made using only one signal frequency, the signal frequency shall be the chosen reference frequency. If measurements are to be made at a number of different frequencies, the chosen reference frequency shall be included, the other frequencies being so chosen that the results of the measurements give an adequate representation of the behaviour of the characteristics over the whole of the effective frequency range.

If measurements are to be made in frequency bands of constant relative bandwidth, preference shall be given to the one-octave and one-third octave bands mentioned in Sub-clause 6.2.3.