

FREQUENCY RESPONSE TEST DATA



As part of our continued commitment to provide accurate and meaningful test data for the whole of our product range, we have now embraced the loudspeaker testing requirements as laid out in British and European Standards. BSEN 60268-5:2003 (formally BS6840 – 5).

In addition Penton loudspeakers have been tested in such a way as to allow the use of commercially available software such as EASE, Ulysses and CATT to accurately predict their performance when used in any type of application.

BSEN 60268-5:2003 states that “the test signal used to determine loudspeaker sensitivity is to be pink noise in a stated frequency band”. The critical issue here is that the speakers are tested over a bandwidth of 100~10 KHz and not at just one frequency e.g. 1 KHz. By testing the speakers over a bandwidth a realistic picture is given of the speaker’s performance in a real life situation. Measurements at spot frequencies give no indication of their performance when used for speech and music systems.

In recognition of the way in which we now present our test data please see over the comments received from leading independent Acoustic Consultants.

Acknowledgements of Test Procedure on Data supplied



"Congratulations Penton. A loudspeaker manufacturer that has truly embraced IEC 60268-16 (formerly BS 6840-5). You have produced information that enables calculations to determine if a system will meet a specification target. As a specifier and incorporator of loudspeakers into systems, having loudspeaker data in its most useful form will be of enormous value."

- PHIL HUFFER

ACOUSTIC CONSULTANT OF ACOUSTICS PLUS LTD

and maximum sound pressure level data. Further, our tests are carried out in accordance with the relevant sections of the loudspeaker test standard BS60268-5. As a supplier of industrial loudspeakers to the Voice Alarm industry, it is comforting for us to know that Penton (UK) is giving their customers all the important information necessary to make an informed choice."

- TONY STACEY

ACOUSTIC CONSULTANT OF AMS ACOUSTICS

"Just a quick line to say congratulations for your new data sheets. At last, some really useful VA loudspeaker data and with believable numbers. I am fed up of having to down rate products to provide working design data. I wish more manufacturers would follow your approach."

- PETER MAPP

ACOUSTIC CONSULTANT OF PETER MAPP ASSOCIATES

"Our designs rely on good product performance data, most critically for loudspeakers. We have all known for some time that there are inconsistencies in the way that measured data is provided between manufacturers, despite the guidance given in IEC 60268. It is assumed that this is often the case because of commercial concerns and the tendency of purchasers to read all published data at face value. Penton have taken a bold step in improving the validity of the data they have published, especially with respect to sensitivity and acoustic radiation, bold because it will often make their products appear to be inferior when compared to other manufacturers who publish more favourable metrics. We have always specified these performance items in terms similar to how Penton are now publishing, but have rarely received data sheets compatible with direct comparisons. This has led us to make estimated corrections, which can only be at best conservative and at worst misleadingly inaccurate. We now have at least one manufacturer for which we do not need to do this."

- STEPHEN JONES

FORMER HEAD OF SOUND SYMONDS GROUP

- PAUL MALPAS

ASSOCIATE OF ARUP ACOUSTICS

"It is a refreshing change to see that your loudspeakers have been independently tested to the rigours of BS6840 (IEC 60268 – 5) even though this may at first glance, put your products at a disadvantage. We appreciate the increase of the data presented.

"At AMS Acoustics our primary concern is in predicting the compliance of voice alarm and/or public address systems with British and European intelligibility Standards and specifications. In general, manufacturers standard loudspeaker data sheets do not provide sufficient information to carry out those predictions. Our loudspeaker test reports provide data over the full STI frequency range of 125Hz to 8 kHz and include polar, sensitivity, power



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