Fraunhofer
IWU

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Acoustic measurements for tablet deduster KD7010-750 of Krämer AG/Switzerland

Goal

Measurement of sound pressure levels and determination of sound power of a sound source using acoustic pressure measurements

Measuring method

Enveloping surface method in accuracy grade 2 for an essentially free sound field over a reflecting plane (ISO/DIS 3744:2006)

Basic conditions

Placebo tablets
Diameter: 10 mm, height: 5.3 mm, crown radius: 15 mm
Hardness: 80 N
Amount: 1 – 4 kg
Measurement with tablet recirculation

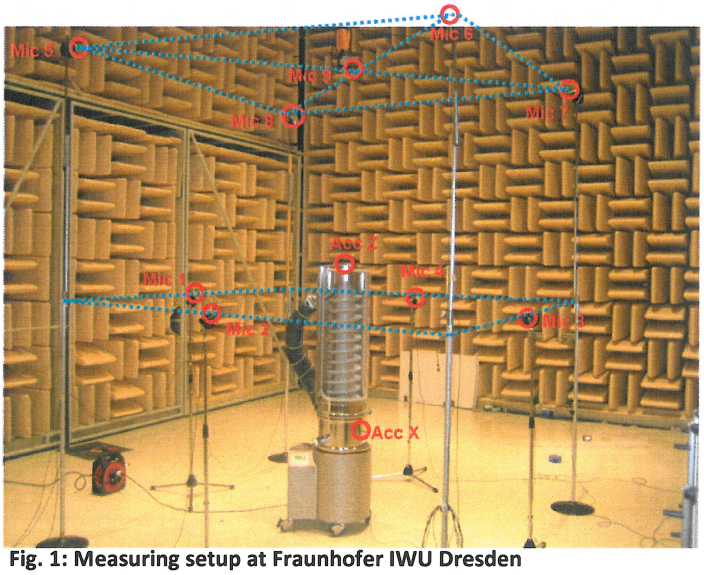

Fig. 1: Measuring setup at Fraunhofer IWU Dresden

Measuring results

The results of the time-averaged **sound pressure level** „L_p" of the tested sound source in a distance of 1 meter range between **61.1 and 67.9 dB(A).**

The first diagram (Fig. 2) shows the spectral distribution of the sound pressure levels recorded by 9 microphones with a quantity of 4 kg of tablets. This results in an averaged sound pressure level of 63.3 dB(A).The chart illustrates that the sound pressure is emitted almost equally from all sides.

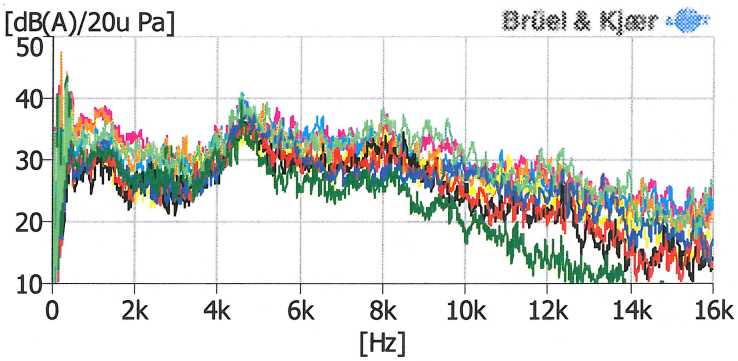

Fig. 2: Spectra of sound pressure levels of surrounding 9 microphones

The second diagram (Fig. 3) shows the difference of sound spectra with open window (blue) and closed window (red). This proves an excellent sound damping of the housing thanks to the design and materials utilized. The damping through the housing of the averaged sound level in this example is about 20 dB.

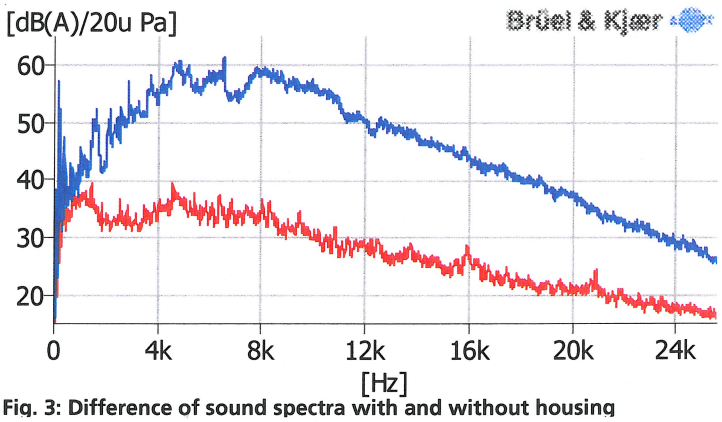

Fig. 3: Difference of sound spectra with and without housing

Dresden, 16. November 2010

Place, Date

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