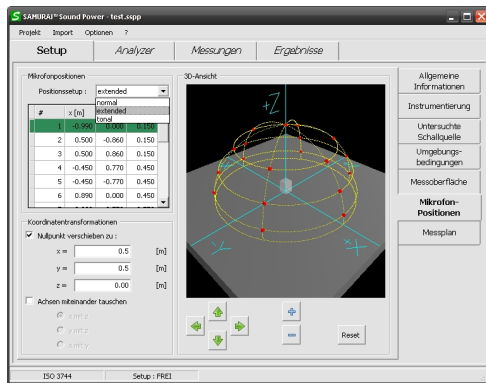


SAMURAI option: SOUND POWER

(Sound power level of noise sources from sound pressure measurements according to DIN EN ISO 3744-46)



Field of Application:

In recent years, many new EU guidelines regarding noise emission from machinery have been enacted, e.g. guidelines 2006/42/EG for machines in general as well as 2000/14/EG for construction machinery and other machines operated outdoors. A sound power declaration is required in order to obtain a CE mark for machines falling within the scope of these guidelines.

The determination of the sound power by means of the sound pressure method according to EN ISO 3744-46 is the purpose of the SAMURAI option SOUND POWER.

Description:

This option enables the sound power measurement according to ISO 3744-46 with the aid of a 3D diagram which shows the positions of the microphones in relation to the sound source. Depending on the number of available measurement channels, the measurements can be performed simultaneously or sequentially. The software can access several measurement devices in order to increase the number of available measurement channels. Either hemispherical or cuboid microphone deployment geometry may be selected.

The sound power declaration is made in third-octave or octave bands. A clearly laid-out graphical program interface guides the user through the whole measurement procedure.

Technical Data

Standards implemented	DIN EN ISO 3744, 3745, 3746
Measurement range	12.5 Hz to 20 kHz
Features	<ul style="list-style-type: none"> • Hemispherical or cuboid measurement surface • Calculation of microphone positions and display in a 3D diagram • Freely selectable measurement sequence • Reflecting planes selectable • Allowance for reverberation time • Evaluation of the K1 and K2 criteria • Sound power level declaration in third-octave or octave bands • Remote control via network possible • Standards implemented: ISO 3744:1994 (Acoustics -- Determination of sound power levels of noise sources using sound pressure -- Engineering method in an essentially free field over a reflecting plane) ISO 3745:2003 (Acoustics -- Determination of sound power levels of noise sources using sound pressure -- Precision methods for anechoic and hemi-anechoic rooms) ISO 3746:1995 (Acoustics -- Determination of sound power levels of noise sources using sound pressure -- Survey method using an enveloping measurement surface over a reflecting plane)

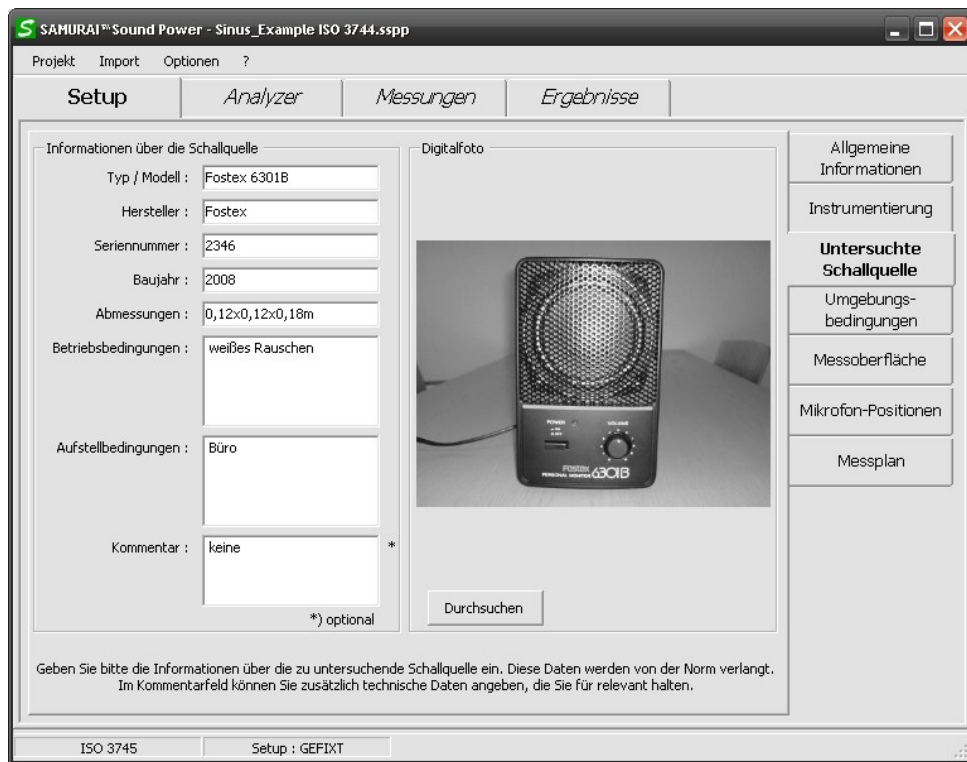


Figure 1: Digital photograph of the sound source

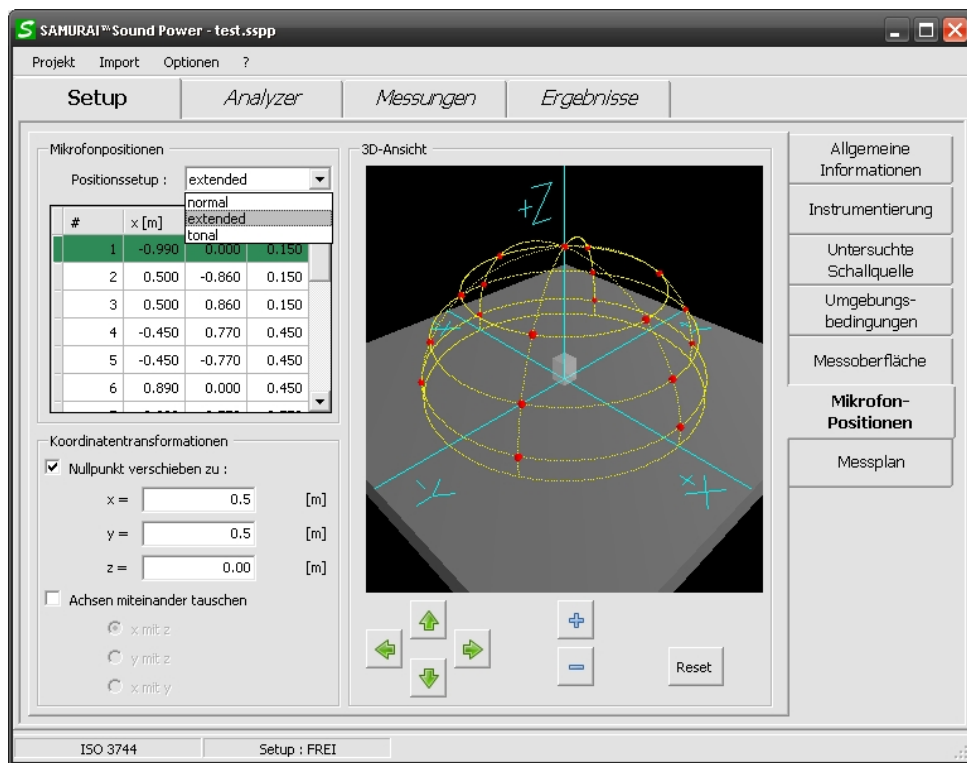


Figure 2: Microphone positions

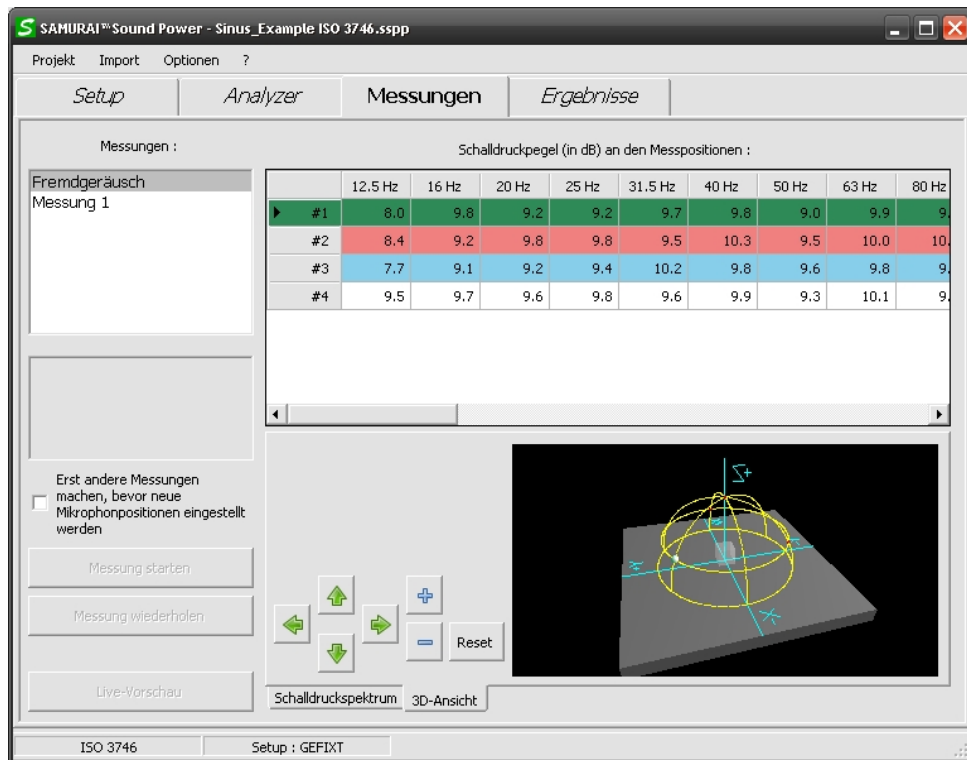


Figure 3: Measurement results from the individual microphone positions

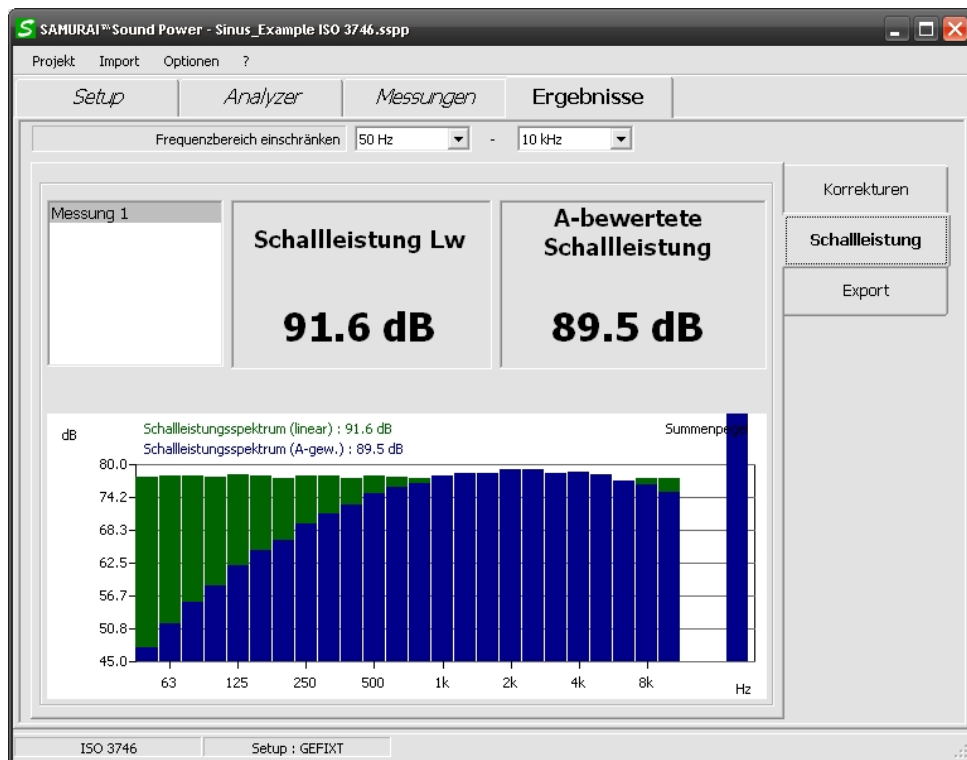


Figure 4: Display of the sound power in third-octave bands