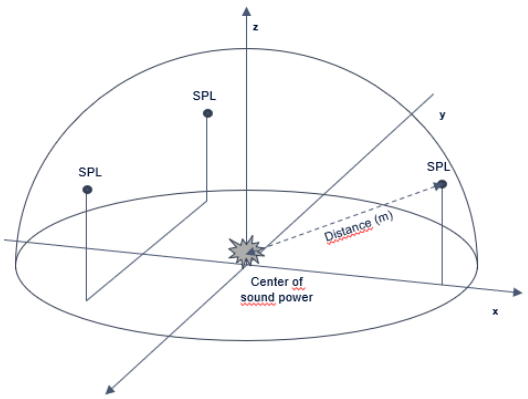
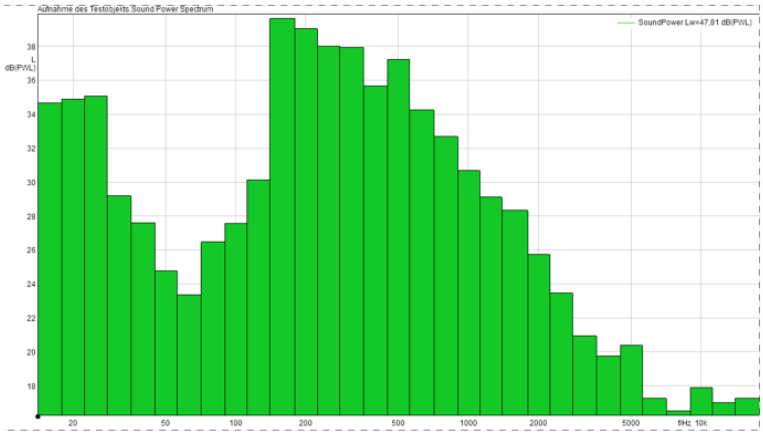
HEAD acoustics

DATA SHEET





ArtemiS SUITE
Signal Processing

Code 51203

ASP 203
Sound Power Analysis

Sound Power Analysis of ArtemiS SUITE provides a user-friendly analysis solution for standard-compliant determining the sound power using manual or automated work-flows.

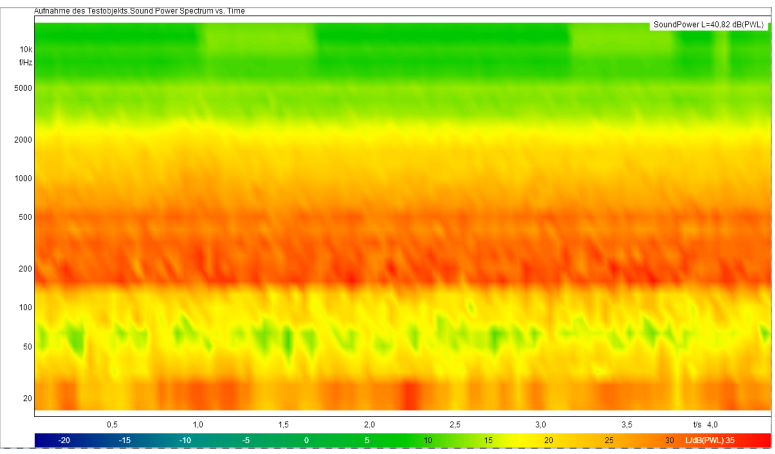
OVERVIEW

ASP 203 Sound Power Analysis

Code 51203

Sound Power Analysis enables the determination of the sound power according to the relevant standards from the ISO 3740 series. Users are guided through the standard procedures, so they can fulfill the legal requirements quickly and smoothly. Sound Power Analysis also enables user-specific variations from the standardized solutions.

In addition, Sound Power Analysis provides analyses for the K1 background noise correction and the K2 environmental correction. This enables these correction steps in sound power determination to be automated directly during measurement and to increase the efficiency and quality of the measurement results.



KEY FEATURES

Sound Power Analysis includes several sound power analyses:

- Sound Power vs. Time, Sound Power vs. RPM
- Sound Power K1 Background Noise Spectrum, Sound Power K2 Environmental Correction Spectrum
- Sound Power Spectrum, Sound Power Spectrum vs. RPM, Sound Power Spectrum vs. Time

ISO Standards

- 3741, 3743-1, 3743-2, 3744, 3745, 3746

Manual workflow (Pool Project) or automated workflow (e.g., Automation Project)

Avoiding redundant inputs by using variables

The analyses Sound Power K1 Background Noise Spectrum and Sound Power K2 Environmental Correction Spectrum can be performed interactively and automatically (these analyses are not available in a Metric Project)

The analyses can be used in Pool Projects (APR 010 is required), Automation Projects (APR 050 is required), Standardized Test Projects (APR 220 is required), and Metric Projects (APR 570 is required)

APPLICATIONS

Standards-compliant determination of sound power even for unexperienced users

Usable for daily measurement tasks and test bench operation

DETAILS

Standards for sound power measurements

- ISO 3741 Direct: Precision method for reverberation test rooms using the equivalent sound absorption area of the reverberation test room
- ISO 3741 Reference: Reverberation room method with consideration of a correction spectrum that is determined before the actual measurement using a reference sound source with a known sound power
- ISO 3743-1: Comparison method in a test room with sound-reflecting walls with accuracy class 2 for small portable sources in reverberant fields
- ISO 3743-2 Reference: Comparison method for custom reverberation rooms with accuracy class 2 for small portable sources in reverberant fields
- ISO 3744: Enveloping surface method of engineering method for an essentially free sound field above a reflective plane
- ISO 3745: Precision method for anechoic rooms and semianechoic rooms
- ISO 3746: Enveloping surface method of accuracy class 3 above a reflective plane

User-Defined: This mode is designed for the determination of the sound power with settings deviating from the standards

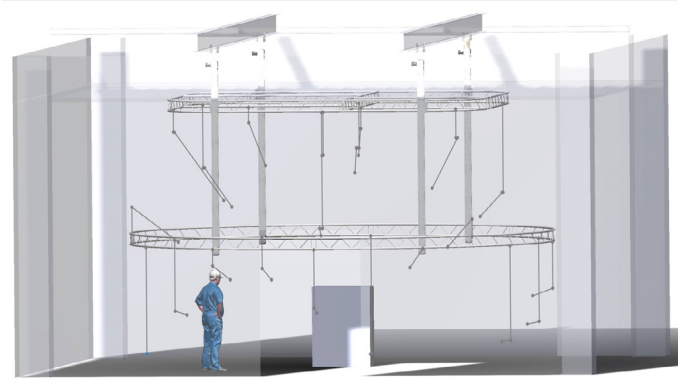
Sound Power vs. Time

The Sound Power vs. Time analysis calculates the sound power of an input signal over time.

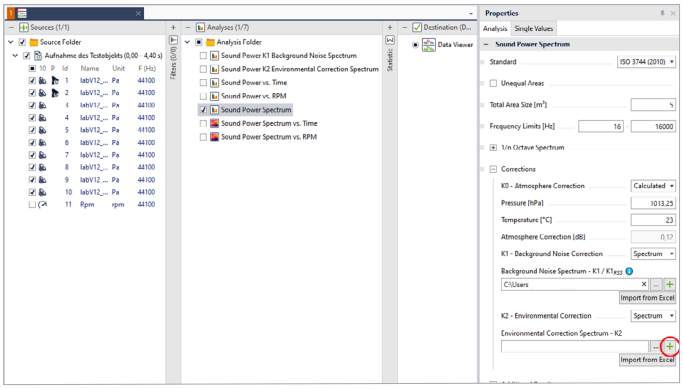
With this and the other sound power analyses, users are assisted in selecting the correct parameterization. If non-standard settings are selected, a corresponding warning is displayed.

Sound Power vs. RPM

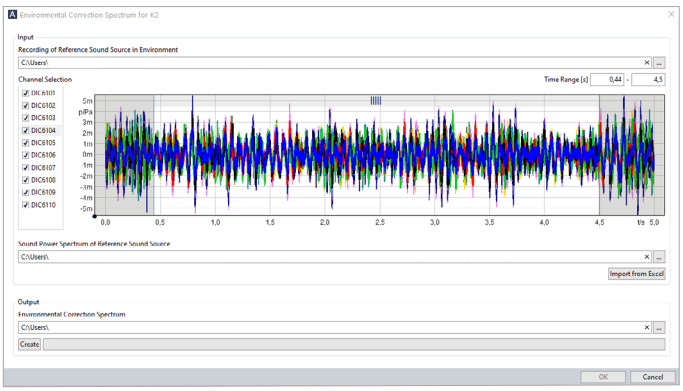
The Sound Power vs. RPM analysis calculates the sound power of an input signal versus a reference quantity.



Hemisphere with large measuring area.



Adjustments for using the K2 Environmental Correction Spectrum.



Dialog for the calculation of the K2 Environmental Correction Spectrum.

Sound Power Spectrum

The Sound Power Spectrum analysis calculates the sound power spectrum of an input signal.

Sound Power Spectrum vs. Time

The Sound Power Spectrum vs. Time analysis calculates the sound power spectrum of an input signal over time.

Sound Power Spectrum vs. RPM

The Sound Power Spectrum vs. Time analysis calculates the sound power spectrum of an input signal versus a reference quantity.

Sound Power K1 Background Noise Spectrum

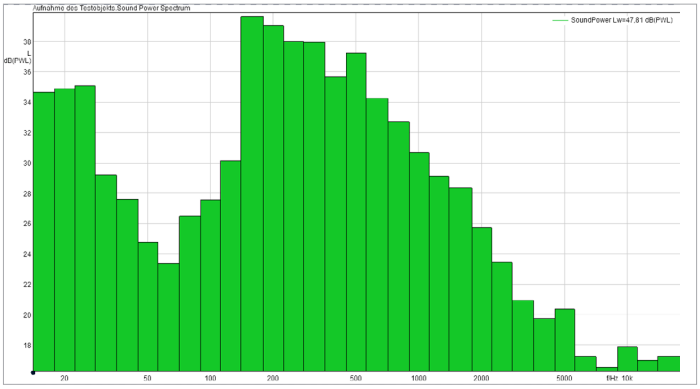
The analysis enables a measurement at rest to determine the back-ground noise or extraneous noise level. The extraneous noise can be composed of airborne noise, structure-borne noise, and electrical noise of the measuring device.

Sound Power K2 Environmental Correction Spectrum

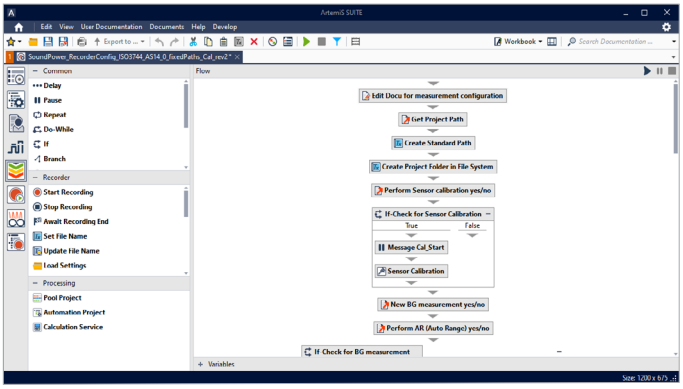
The frequency-dependent correction factor K2 considers ambient influences that falsify the sound pressure measurement (e.g., undesired room influences such as reflections and absorptions).

Performing the K1/K2 correction factors interactively and automatically

To eliminate external influences, the correction factors can be embedded interactively into the calculation, for example, in the context of a Pool Project (APR 010 is required), whereby users can also draw on different wizards. However, for an automated procedure, the K1 and K2 processes are available in the Automation Project (APR 050 is required). Using a Flow Control (APR 040 is required), users can realize a procedure, which automatically performs the required measurements for K1 and K2.



Sound Power Spectrum



Example: Flow Control (APR 040 is required) for an automatically performing of the required measurements.

Required: APR Framework (Code 50000)

and/or: HEAD System Integration and Extension (ASX) programming interfaces

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