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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46044.2-2025

Replacing GB/T 6881.3-2002

**Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering methods for small, movable sources in reverberant fields
- Part 2: Methods for special reverberation test rooms**

声学 声压法测定噪声源声功率级 混响场中的小型可移动声源工程法 第2部分：专用混响测试室法

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is GB/T 46044 "Acoustics - Determination of the sound power level of noise

sources by sound pressure method - Engineering method for small movable sound sources in reverberant fields" Part 2, GB/T 46044 has published the following parts.

--- Part 2: Dedicated reverberation chamber method.

This document replaces GB/T 6881.3-2002 "Acoustics - Determination of sound power level of noise source by sound pressure method - Small and medium-sized movable sound sources in reverberant field" Compared with GB/T 6881.3-2002, in addition to structural adjustments and editorial changes, the main changes are the main technical changes are as follows.

--- Changed the scope (see Chapter 1, Chapter 1 of the 2002 edition);

--- Changed the content about measurement uncertainty (see Chapter 11, 1.4 of the 2002 edition).

This document is equivalent to ISO 3743-2:2018 "Acoustics - Determination of the sound power level of noise sources by sound pressure method - Small movable acoustic instruments in a reverberant field" Source engineering method Part 2: Special reverberation test chamber method.

The following minimal editorial changes have been made to this document.

--- Added the informative appendix "Degree of consistency between GB/T 6379 (all parts) and ISO 5725 (all parts)" (see Appendix NA).

Introduction

This document is one of the series of standards for the determination of sound power level (and sound energy level) of noise sources by sound pressure method. This series of standards is composed of GB/T 3767 "Sound Determination of sound power level and sound energy level of noise source by sound pressure method - Engineering method of approximate free field above reflecting surface" (corresponding to ISO 3744), GB/T 3768 "Acoustics - Determination of sound power level and sound energy level of noise sources by the sound pressure method - Simple method using an envelope measuring surface above a reflecting surface" (corresponding to ISO 3746), GB/T 6881 "Acoustics - Determination of sound power level and sound energy level of noise source by sound pressure method - Reverberation chamber precision method" (corresponding to ISO 3741), GB/T 6882 "Acoustics - Determination of sound power level and sound energy level of noise sources by sound pressure method - Anechoic chamber and semi-anechoic chamber precision method" (corresponding to ISO 3745), GB/T 16538 "Acoustics - Field comparison method for the determination of sound power levels of noise sources using the sound pressure method" (corresponding to ISO 3747) and GB/T 46044 "Acoustics - Determination of sound power level of noise source by sound pressure method - Engineering method for small movable sound sources in reverberant fields" ([corresponding to ISO 3743 (all parts)] This

series of standards specifies various methods for determining the sound power levels of machines, equipment and their components.

These basic standards specify the acoustic requirements for measurements in different test environments. For special types of machines or equipment, it is advisable to refer to their noise test specifications.

(if applicable), specify the installation and operating conditions in detail.

GB/T 46044 "Acoustics - Determination of sound power level of noise sources by sound pressure method - Engineering method for small movable sound sources in reverberant fields" is proposed to be published by two Partial composition.

--- Part 1: Hard-wall test chamber comparison method. The purpose is to specify the measurement of small Engineering methods for noise source sound power level and sound energy level of mobile sound sources.

--- Part 2: Special reverberation test chamber method. The purpose is to specify the measurement of small Engineering method for noise source sound power level of movable sound sources.

The method given in this document can be used to measure A-weighted and octave-band sound pressure levels at specified fixed microphone positions or along a specified path.

It allows the determination of A-weighted or other weighted sound power levels and octave band sound power levels. The quantities that cannot be determined are the directional characteristics of the sound source and Time domain characteristics of the noise radiated by a non-stationary emission noise source.

GB/T 46044 specifies the engineering methods for determining the A-weighted sound power level and octave band sound power level of small noise sources. These methods are applicable to it is particularly suitable for small machines, devices, components and accessories that can be installed in a dedicated reverberation test room or a hard-walled test room with specified acoustic characteristics.

This method is not suitable for small portable equipment that is difficult to transport to the test room and use normally due to restrictions on operation mode or installation requirements.

This method is designed to meet engineering-grade accuracy requirements without the need for specialized laboratory facilities.

GB/T 46044.1 uses the comparison method to determine the octave band sound power level of the sound source.

The sound pressure level is compared with the spatial average (octave band) sound pressure level produced by a standard sound source with known sound power output.

If the sound pressure levels are the same, the difference is equal to the difference in sound power levels. The A-weighted sound power level is then calculated from the octave band sound power levels.

The requirements for the dedicated reverberation test chamber used for measurement in GB/T 46044.2 are significantly stricter than those for the comparative method in GB/T 46044.1.

Hard-wall test chamber.

Acoustic sound pressure method to measure the sound power level of noise source
Engineering Method of Small Movable Sound Sources in Reverberant Fields Part 2:
Dedicated reverberation chamber method

1 Scope

This document specifies a relatively simple engineering method for determining the sound power level of small portable noise sources.

Measurement of all types of noise within a specified frequency range, except impulse noise consisting of isolated bursts of acoustic energy, as specified in ISO 3744 and ISO 3745 to be stipulated separately.

NOTE: The classification of different types of noise is given in ISO 12001.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

ISO 3741 Acoustics - Determining the sound power level and sound energy level of noise sources by sound pressure method - Reverberation chamber precision method Note. GB/T 6881-2023 Acoustics - Determination of sound power level and sound energy level of noise sources by sound pressure method - Reverberation chamber precision method (ISO 3741:2010, IDT) ISO 3743-1 Acoustics - Determination of sound power and energy levels of noise sources by sound pressure method - Engineering procedures for small, portable sound sources in reverberant fields Note. GB/T 6881.2-2017 Acoustics - Determination of sound power level and sound energy level of noise sources by sound pressure method - Engineering method for small movable sound sources in reverberant fields Part 1: Comparison method for hard-walled test chambers (ISO 3743-1:2010, IDT) ISO 3745 Acoustics - Determination of sound power and energy levels of noise sources by sound pressure method - Anechoic and semi-anechoic chamber precision method Note. GB/T