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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 3785.2-2023

Replacing GB/T 3785.2-2010

Electroacoustics - Sound level meters - Part 2: Pattern evaluation tests

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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 part 2 of GB/T 3785 "Electroacoustic Sound Level Meter": GB/T 3785 has issued the following parts:

--- Part 1: Specifications;

--- Part 2: Type evaluation test;

--- Part 3: Periodic test:

This document replaces GB/T 3785:2-2010 "Electroacoustic Sound Level Meter Part 2: Type Evaluation Test", and GB/T 3785:2-

Compared with:2010, except for structural adjustment and editorial changes, the main technical changes are as follows:

a) Changed the requirements for C frequency weighting of Class 1 sound level meter (see 6:7, 6:7 of the:2010 edition);

b) Changed the requirements for the sound level meter capable of indicating the C-weighted peak sound level (see 6:8, 6:8 of the:2010 edition);

c) Change the compliance criterion (see 6:19, 6:19 of the:2010 edition);

d) Changed the statement about uncertainty (see 6:21 and 6:22, 6:21 and 6:22 of the:2010 edition);

e) Deleted the requirement on the maximum allowable error of legal metrology (see 6:23 of the:2010 edition);

f) Added the suggestion that the instruction manual should be adopted for the type evaluation test (see 6:23);

g) Changed the requirements for the sound calibrator used in the environmental test (see 7:1:4, 7:1:4 of the:2010 edition);

h) The provision that electrical signals can be used in the simplified test of the combined effects of air temperature and relative humidity has been added (see the third item in 7:6:6):

column item);

i) Added an alternative method for the immunity test (see 7:10:3:1);

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j) Changed the range of the carrier frequency in the radio frequency test (see 7:10:3:6, 7:10:3:6 of the:2010 edition);

k) Added the requirements for monitoring the stability of the sound field in the electroacoustic performance test (see 9:1:3);

l) Added the requirements for evaluating the measurement uncertainty in the free-field test device (see 9:1:8);

m) Added the requirement to verify calibration inspection frequency adjustment data (see 9:2:3);

n) The requirement to verify the frequency weighting of the sound level meter whose reference direction is not along the symmetry axis of the microphone is added (see 9:4:1:7);

o) Changed the content of the correction value of the test windshield (see 9:4:2, 9:4:1:7 and 9:6 of the:2010 edition);

p) Added the provision that the laboratory standard microphone can be replaced by the working standard microphone in the comparative coupler test (see 9:4:4:1);

q) Deleted content about flat (FLAT) frequency response (see 9:5:6~9:5:8 of the:2010 edition);

r) Added the content that the comparative coupler can be used in the verification of the free-field sound level correction value (see 9:7);

s) Added the content of random incident sound level correction value (see 9:7);

t) Changed the requirements for self-generated noise levels (see 9:10:5, 9:10:5 of the:2010 edition);

u) Added the requirement to report the self-generated noise level (see 10:2);

v) References added:

This document identically adopts IEC 61672-2:2013 "Electroacoustic Sound Level Meter Part 2: Type Evaluation Test":

This document has made the following minimal editorial changes:

---Incorporated the amendments of IEC 61672-2:2013/Amd:1:2017, the outer margins of the terms involved are in vertical

Straight double lines (||) are marked:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

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Introduction

GB/T 3785 "Electroacoustic Sound Level Meter" aims to specify the performance specification of the sound level meter and the verification method for its compliance: It consists of three parts

constitute:

--- Part 1: Specifications: The purpose is to standardize the electroacoustic performance of sound level meters:

--- Part 2: Type evaluation test: The aim is to ensure that all laboratories perform type evaluation of sound level meters in a consistent manner:

price test:

--- Part 3: Periodic test: The aim is to ensure that all laboratories perform periodic testing of sound level meters in a consistent manner:

In order to verify compliance with the performance specification, this document uses different criteria from the:2010 edition:

The national standards for sound level meters issued between 1983 and:1997 did not provide information on measurement uncertainty when verifying compliance with specifications:

Any requests and suggestions:

Due to the lack of requirements and recommendations on measurement uncertainty, when the measured deviation from the design target is close to the allowable deviation limit, the specification

Conformity becomes blurred: If compliance is based on whether the measurement deviation exceeds or does not exceed the limit value, the end user of the sound level meter will

Risk of being exposed to actual deviations from design goals exceeding limits:

In order to eliminate this ambiguity, GB/T 3785-2010 adopts the principle of taking into account the uncertainty of measurement when evaluating conformity in international standards:

It provides two clear criteria for determining compliance with the specification: The two judging criteria are:

a) The measured deviation from the design target plus the expanded measurement uncertainty does not exceed the applicable tolerance limit;

b) The expanded measurement uncertainty does not exceed the specified maximum value:

For most performance specifications, GB/T 3785-1983 and GB/T 3785-1983 and

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