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

GB/T 4130.1-2025

Replacing GB/T 3223-1994

**Acoustics - Calibration of hydrophones - Part 1: Procedures for
free-field calibration**

声学 水听器校准 第1部分：自由场校准方法
(English Translation)

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G.1 Overview

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 1 of GB/T 4130 "Calibration of acoustic hydrophones". GB/T 4130 has been published in the following parts.

- Part 1: Free-field calibration method;
- Part 2: Low frequency sound pressure field calibration method.

This document replaces GB/T 3223-1994 "Acoustics - Free-field calibration method for underwater acoustic transducers" and is consistent with GB/T 3223-1994.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Added symbols (see Chapter 4);
- Added universal calibration steps (see Chapter 5);
- Added electrical measurements (see Chapter 6);
- Added transducer preparation (see Chapter 7);
- Added the report of calibration results (see Chapter 10);
- Increased recalibration cycle (see Chapter 11);
- Deleted the determination of hydrophone voltage coupling loss (see Appendix B of the 1994 edition).

This document is equivalent to IEC 60565-1:2020 "Underwater acoustics - Hydrophone calibration - Part 1: Free-field calibration of hydrophones" method".

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

- To coordinate with the existing standard, the name of the standard is changed to "Calibration of Acoustic Hydrophones Part 1: Free-field Calibration Method".

Introduction

Hydrophones are used to convert underwater acoustic signals into electrical signals and are the core of sonar, underwater noise measurement systems, marine acoustic instruments and other equipment.

To ensure the accuracy and reliability of their measurement results, they need to be calibrated before use.

GB/T 4130 "Calibration of Acoustic Hydrophones" describes the calibration method of hydrophones, which aims to standardize and guide the calibration of hydrophones.

It consists of parts.