

ICS 17.140
CCS A 59

JJF

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

JJF 1340-2012

**Calibration Specification for Vector Hydrophones in Frequency
Range 20Hz to 2000 Hz
(English Translation)**

Issued on: January 1, 1970

Implemented on: January 1, 1970

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

Table of Contents

Introduction (II)

1 Scope (1)

2. References (1)

3 Terminology and units of measurement (1)

3.1 Hydrophone (1)

3.2 Vector hydrophone sound pressure sensitivity level (1)

3.3 Hydrophone velocity sensitivity level (1)

3.4 Vector acoustic pressure gradient hydrophone sensitivity level (2)

3.5 Axial sensitivity asymmetry (2)

3.6 Lateral inhibition ratio (2)

4 Overview (2)

5 Metrological characteristics (2)

5.1 Sound pressure sensitivity level (2)

5.2 Velocity sensitivity level (2)

5.3 Sound pressure gradient sensitivity level (2)

5.4 Vector - Sound pressure channel phase difference (2)

5.4 Vector - Sound pressure channel phase difference (2)

Directivity 5.5 (3)

6 Calibration conditions (3)

Environmental conditions 6.1 (3)

9 Recalibration interval (8)

Appendix A calibration certificate (9)

Appendix B wave tube design requirements (13)

Appendix C sound pressure sensitivity level measurements Uncertainty Evaluation
Example (14)

Introduction

This specification based JJF 1071-2010 "national measurement calibration specifications write rules" in preparation.

This specification reference to GB/T 4130-2000 "low-frequency acoustic hydrophone calibration method" prescribed acoustic hydrophone Pressure sensitivity secondary calibration methods.

20Hz ~ 2000Hz vector hydrophone calibration specification

1 Scope

This standard applies to atmospheric pressure, hydrophone within 20Hz ~ 2000Hz frequency range of the calibration.

2. References

This specification references the following documents.

JJF 1001-2011 common measurement terms and definitions JJF 1034-2005 acoustic measurement terminology and definitions JJF 1059-1999 Evaluation and Expression of Uncertainty in Measurement GB 3102.7-1993 Quantities and units of acoustics GB/T 3947-1996 Acoustics Terminology GB/T 4130-2000 low-frequency acoustic hydrophone calibration methods for dated references, only the dated edition applies to this specification; undated reference documents Member, the latest edition (including any amendments) applies to this specification.

3 terminology and units of measurement JJF 1001-2011, JJF 1034-2005, GB 3102.7-1993 and GB/T 3947-1996 defined and the following terms and definitions apply to this specification.

This specification uses quantities and units GB/T 3102.7-1993 requirements.

3.1 hydrophone vectorhydrophone Output voltage and particle velocity or sound pressure gradient hydrophone into a ratio, and its point of view of a cosine function similar Characteristic shape, and the frequency characteristics do not change with the change.

3.2 vector hydrophone sensitivity of sound pressure level (Mp)
pressuresensitivitylevelofvectorhydrophone Vector hydrophone pressure sensitivity Mp square with the reference sound pressure sensitivity to the base 10 of the ratio of the square Mpref Multiplied by 10.

Note:

1 in decibels (dB).

2 Mpref = 1V/μPa.

3.3 hydrophone velocity sensitivity level (Mv)

particle velocity sensitivity level of vector hydrophone Hydrophone sensitivity M_v square velocity and the reference velocity sensitivity M_{vref} than the square of the base 10 of Multiplied by 10.

Note:

1 in decibels (dB).

2 $M_{vref} = 1V/(m \cdot s^{-1})$.