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JJF

NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1915-2021

Inclinometer calibration specification

倾角仪校准规范

(English Translation)

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Introduction

JJF 1071-2010 "Rules for the Compilation of National Metrology Calibration Standards", JJF 1001 "General Metrology Terms and Definitions," JJF 1059.1-2012 "Assessment and Representation of Measurement Uncertainty" together constitute the basis for the preparation of this specification A series of specifications, this specification refers to JB/T 11104-2011 "Electronic Digital Display Inclination Ruler", JB/T 9344-1999 "Optical Inclinometer", JG142-2002 "Electronic Level for Construction", SJ/T 11276-2002 "Digital Specification for Angle Measuring Instruments.

This specification replaces JJF 1119-2004 "Electronic Level Calibration Specification" and JJF 1083-2002 "Optical Tilt" Compared with JJF 1119-2004 and JJF 1083-2002, the main technical changes are as follows.

---Expanded the scope of application of the specification, adding type II rectangular electronic digital display inclinometer, type III square box electronic digital display Inclinometer related items;

--- Classify the electronic level into the type I type strip electronic digital display inclinometer;

---Increase the parallelism between the working faces of the multi-working face electronic digital display inclinometer;

---Increased the verticality between the working faces of the electronic digital display inclinometer with multiple working faces;

--- Increase the uncertainty evaluation of the measurement result of the optical inclinometer indication error;

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--- Revised the description of the calibration method for the zero value error of the electronic digital inclinometer;

--- Revised the description and calculation of the calibration method of the inclinometer indication value error;

--- Revised the description and calculation of the repeatability calibration method of the electronic digital inclinometer;

---Re-evaluated the uncertainty of the measurement result of the display value error of the electronic digital inclinometer;

--- Deleted the use of dodecahedron and autocollimator for indication error calibration in JJF 1083-2002 method;

--- Deleted the return error item in the measurement performance requirements of JJF 1119-2004;

--- Deleted the calculation examples of display error, repeatability of angle measurement, and return error in Appendix B of JJF 1119-2004;

--- Deleted the calculation example of the maximum indication error of the optical inclinometer in Appendix A of JJF 1083-2002.

The previous releases of JJF 1083-2002 are as follows.

---JJF 1083-2002;

---JJG104-1986.

The previous releases of JJF 1119-2004 are as follows.

---JJF 1119-2004.

Inclinometer Calibration Specifications

1 Scope

This specification applies to the calibration of electronic digital inclinometers and optical inclinometers.

2 Overview

Inclinometer is an instrument used to measure the inclination angle of the measured object relative to the horizontal plane or the angle between two measured objects.

Including electronic digital display inclinometer with electronic inclination sensor and optical inclinometer with mechanical inclination measuring mechanism. Inclinometer Widely used in machinery, automobiles, railways, construction, water conservancy and other related industries.

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Fig.1 Type I strip electronic digital display inclinometer

1-display;2-level bubble;3-working surface;4-function key

Figure 2 Type II rectangular electronic digital display inclinometer

1-side working surface; 2-upper working surface; 3-display screen; 4-bottom working surface; 5-function key

Figure 3 Type III square box electronic digital display inclinometer

1-side working surface; 2-upper working surface; 3-display screen; 4-function key; 5-bottom working surface

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