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JJF

NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE PEOPLE'S REPUBLIC OF CHINA

JJF 1894-2021

Calibration Specification for Calibrators of Semiconductor Curve Tracers

半导体管特性图示仪校准仪校准规范

(English Translation)

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Introduction

This specification is based on JJF 1071-2010 "Rules for the Compilation of National Metrology and Calibration Specifications" and JJF 1059.1-2012 "Evaluation and Expression

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of Measurement Uncertainty" was compiled.

This specification is revised on the basis of JJG838-1993 "Transistor Characteristic Graphic Instrument Calibrator". versus Compared with JJG838-1993, in addition to editorial changes, the main technical changes are as follows.

--- Modify the name of the specification to "Semiconductor Tube Characteristic Grapher Calibrator Calibration Specification";

---Revised the calibration items;

---Added the calibration method of the ladder voltmeter;

---Added the calibration method of the ladder ammeter;

---The calibration method of pulse ammeter has been added;

---The uncertainty evaluation method of level measurement is given in the appendix (see appendix C);

---The definition of the calibrator port of the semiconductor tube characteristic diagram instrument is given in the appendix (see appendix D).

The release status of previous versions of this specification.

---JJG838-1993.

Calibration specification for calibrator of semiconductor tube characteristic diagram instrument

1 Scope

This specification applies to the calibration of the calibrator of the semiconductor tube characteristic diagram instrument.

2 overview

The calibrator of the semiconductor tube characteristic graph instrument (hereinafter referred to as the graph instrument calibrator) is to provide standard voltage source, standard Standard signal such as quasi-current source is a special calibration instrument for calibrating the semiconductor tube characteristic graph instrument. There are currently two main types Type. Ladder normalization graph instrument calibrator and step sampling measurement graph instrument calibrator. Step normalization graph instrument calibration the internal stepped normalization comparison method is used to calibrate the graphical instrument, and the internal calibration instrument of the stepped sampling measurement graphical instrument is used.

The step sampling method is used to calibrate the graphic instrument.

3 Metrological characteristics

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3.1 Output section

3.1.1 DC voltage

a) Output range. 0.01V~5000V;

b) Maximum allowable error. ± (0.3%~3%).

3.1.2 DC current

a) Output range. 10nA~10A;

b) Maximum allowable error. ± (0.3%~3%).

3.2 Sampling resistance

a) Range. 0.005ohm~10Mohm;

b) Maximum allowable error. ± (0.3%~1%).

3.3 Measurement part

3.3.1 Step voltage normalization transformation

a) V0 voltage conversion range. 0.1V~20V;

b) Maximum allowable error. ±0.3%.

3.3.2 Step current normalization transformation

a) Is current conversion range. 10μA~20A;

b) Maximum allowable error. ±0.3%.

3.3.3 Deviation table

a) Measuring range. ± (3%~10%);

b) Maximum allowable error. ±0.5%.

3.3.4 Step voltage indication

a) V0 voltage conversion range. 0.01V/step~10V/step;

b) Maximum allowable error. ± (0.3%~1%).

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