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JJF

NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1917-2021

Microscopic ruler calibration specification

显微标尺校准规范

(English Translation)

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Introduction

JJF 1071 "Rules for the Compilation of National Metrology Calibration Specifications", JJF 1001 "General Metrology Terms and Definitions" and JJF 1059.1 "Assessment and Representation of Measurement Uncertainty" together constitute the basic series

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supporting the formulation of this specification.

The purpose of formulating this specification is mainly to solve GB/T 2985-2008 "Biological Microscope", JB/T 10077-1999 "Metallographic Microscope" in line grain ruler and JJG571-2004 "Reading and measuring microscope", JJF 1402-2013 "Biological Microscope Calibration Specification", JJF 1914-2021 "Metallographic Microscope Calibration Specification" in line standard calibration.

The line rulers, line standards, etc. in the above standards, regulations and calibration specifications are collectively referred to as microscopic standards in this specification.

Ruler, classified in JJF 1022-2014 "Measuring Standard Nomenclature and Classification Code" "Microscopic Ruler Standard Device" (code.

01213300).

This specification is published for the first time.

Microscale Calibration Specifications

1 Scope

This specification applies to the calibration of one-dimensional or two-dimensional microscopic rulers with a reticle width of 0.3 μm and above.

2 Overview

Micro rulers are used to calibrate optical microscopes such as biological microscopes, metallographic microscopes, reading microscopes and their accessories.

A set of one-dimensional or two-dimensional standard instruments for technical parameters such as software indication and magnification, also refers to such instruments used to observe and measure microscopic Image of eyepiece ruler. Microscopic rulers contain one or more geometric patterns such as dots, lines, circles, rectangles, crosses, etc.

Contains information such as width, spacing, diameter, area, and angle. Microscopic rulers are usually made of transparent glass or metal Substrate; according to the manufacturing method, it is divided into groove, photocopying and etching process manufacturing; according to the pattern presentation method, it is divided into transparent According to the application, it is divided into stage micrometer, eyepiece micrometer, etc.

Stage micrometers are glass slides that contain various geometric patterns. The usual stage micrometer has a long center (1~2)mm micrometer, reticle interval (100~600) lines/mm. Indication error for calibrating microscopes, Resolution, magnification, eyepiece reticle accuracy and microscopic measurement software accuracy.

The eyepiece micrometer is a circular glass slide with central lines, crosses, grids, circles, etc., which is installed in the microscope eyepiece.

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The imaging surface of the object is used to measure or calibrate the size of the microscopic image.

The geometric pattern of a typical microscale is shown in Figure 1.

(a) Combined micrometer

Figure 1 Schematic diagram of the microscopic ruler

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