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

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Microscopes?Minimum requirements for binocular tubes

显微镜 双目镜筒最低要求

(English Translation)

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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 of Standardization Documents" drafted.

This document is modified to adopt ISO 19055:2015 "Minimum Requirements for Microscope Binocular Tubes".

Compared with ISO 19055:2015, this document has the following structural adjustments.

- Added 3.4, and the subsequent item numbers will be extended in turn;
- Chapter 4 has added article numbers, 4.1~4.6 correspond to the paragraphs in Chapter 4 of ISO 19055:2015 in turn;
- Added A.6, and subsequent item numbers will be extended in turn.

The technical differences between this document and ISO 19055:2015 and their reasons are as follows.

--- Replace ISO 15227:2000 with the normatively cited GB/T 19863-2005, and the degree of consistency between the two documents is Modified to adapt to our country's technical conditions and improve operability;

--- Added the term and definition of "divergence" (see 3.4) to facilitate a correct understanding of the meaning of divergence in Table 1;

---In the characteristic "direction difference of the optical axis of the left and right optical systems" in Table 1, change the convergence requirement of the general-purpose lens barrel " $\leq 45^\circ$ " to " $\leq 60^\circ$ ", the divergence requirement " $\leq 10^\circ$ " was changed to " $\leq 30^\circ$ ", and the divergence requirement " $\leq 3^\circ$ " of the high-performance lens barrel was changed to " $\leq 10^\circ$ ", so as to In line with the production level of Chinese enterprises and improve the economy;

- Change the test method "ISO 15227.20006.3.13" in Table 2 to "A.6";
- Increased the test method for the minimum range of diopter adjustment (see A.6).

1 Scope

This document specifies the requirements for compound microscope binocular tubes.

This document applies to the design, manufacture and quality assessment of compound microscope binocular tubes.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 19863-2005 Stereo microscope test method (ISO 15227:2000, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

The distance between the exit pupils of the left and right optical systems

3.2 Optical axis

The axis determined by the central ray emitted from the central object point of the object plane and exiting through the eyepiece.

3.3 Convergence

The phenomenon in which the intersection of the optical axes of the left and right optical systems is farther from the eye than the eyepiece.

3.4 Divergence

The phenomenon in which the intersection of the optical axes of the left and right optical systems is closer to the eye than the eyepiece.

3.5 Like curl imagingrotation

The image rotation orientation with the optical axis as the rotation axis.

3.6 Relative brightness

The ratio of the brightness of the darker to the brighter of two optical systems.

Note 1: The relative brightness requirements specified in Table 3 apply to any polarization state.

Note 2: Expressed in percentage (%).

4 Requirements

4.1

Tables 1, 2 and 3 specify the minimum requirements for the optomechanical and radiometric characteristics of the binocular tube.