
**Microscopes — Designation of
microscope objectives —**

**Part 1:
Flatness of field/Plan**

*Microscopes — Désignation des objectifs de microscope —
Partie 1: Planéité du champ/Plan*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 172, *Optics and photonics*, Subcommittee SC 5, *Microscopes and endoscopes*.

This third edition cancels and replaces the second edition (ISO 19012-1:2011) by the addition of "Petzval curvature".

ISO 19012 consists of the following parts, under the general title *Microscopes — Designation of microscope objectives*:

- *Part 1: Flatness of field/Plan*
- *Part 2: Chromatic correction*

The following parts are under preparation:

- *Part 3: Spectral transmittance*

Microscopes — Designation of microscope objectives —

Part 1: Flatness of field/Plan

1 Scope

This part of ISO 19012 specifies the use of the marking “Plan” on microscope objectives, and defines the diameter of the sharp region of the primary image of a flat object surface. This part of ISO 19012 applies to visual observation using the combination of objective lens, tube lens and eyepiece, as specified by the manufacturer.

This marking is consistent with ISO 8578.

NOTE The flatness of the image field does not imply any degree of correction for other aberrations (ISO 10934-1).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10934-1, *Optics and optical instruments — Vocabulary for microscopy — Part 1: Light microscopy*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10934-1 and the following apply.

3.1

tangential structured object

object containing short lines perpendicular to the radii of the object field

3.2

tangential image surface

surface on which all tangential structured objects are focused and sharply imaged in the primary image space subject to no aberrations other than astigmatism and Petzval curvature

3.3

sagittal structured object

object containing short lines parallel to the radii of the object field

3.4

sagittal image surface

surface on which all sagittal structured objects are focused and sharply imaged in the primary image space subject to no aberrations other than astigmatism and Petzval curvature

3.5

astigmatic difference

dimensional difference along the optical axis in the tangential plane between the tangential and sagittal image surfaces