BRITISH STANDARD

BS 7012 :
Part 8 : 1997
ISO 9344 : 1996

Light microscopes

Part 8. Graticules for eyepieces

ICS 37.020

National foreword

This Part of BS 7012 has been prepared by LBI/33. It is identical with ISO 9344 : 1996 *Optics and Optical Instruments — Microscopes — Graticules for eyepieces* published by the International Organization for Standardization (ISO). It supersedes BS 7012 : Part 8 : 1990 which is withdrawn.

A list of organizations represented on this committee can be obtained on request.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled 'International Standards Correspondence Index', or using the 'Find' facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, page ii, pages 1 to 3 and a back cover.

This British Standard, having been prepared under the direction of the Sector Board for Materials and Chemicals, was published under the authority of the Standards Board and comes into effect on
15 March 1997

ISBN 0 580 26594 3

Amendments issued since publication

Amd. No.	Date	Text affected

INTERNATIONAL STANDARD

ISO 9344

First edition
1996-12-15

Optics and optical instruments — Microscopes — Graticules for eyepieces

Optique et instruments d'optique — Microscopes — Réticules pour oculaires

Reference number
ISO 9344:1996(E)

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9344 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 5, *Microscopes and endoscopes*.

Descriptors: optics, optical equipment, microscopes, optical microscopes, eyepieces, graticules, specifications, materials specifications, dimensions, marking.

Optics and optical instruments — Microscopes — Graticules for eyepieces

1 Scope

This International Standard specifies dimensions and permissible material defects and processing faults of graticules with diameters of 19 mm, 21 mm and 26 mm to be used in microscope eyepieces for the purpose of measurement, assessment and comparison.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10110-1:1996, *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 1: General.*

ISO 10110-3:1996, *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 3: Material imperfections — Bubbles and inclusions.*

ISO 10110-4:—[1], *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 4: Material imperfections — Inhomogeneity and striae.*

ISO 10110-5:1996, *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 5: Surface form tolerances.*

ISO 10110-7:1996, *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 7: Surface imperfection tolerances.*

ISO 10110-8: :—[1], *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 8: Surface texture.*

1) To be published.

3 Requirements

3.1 Dimensions

See table 1.

Table 1 — Dimensions of graticule

Dimensions in millimetres

Diameter[1], *d*	$19\,^{0}_{-0,033}$ $21\,^{0}_{-0,033}$ $26\,^{0}_{-0,033}$
Thickness	1,0 ± 0,1 1,5 ± 0,2
Protective chamfer according to ISO 10110-1	0,1 to 0,3
1) Other diameters are also permitted if they comply with the specified thickness and the requirements listed in table 2.	

3.2 Permissible material defects and processing faults

See table 2.

4 Marking

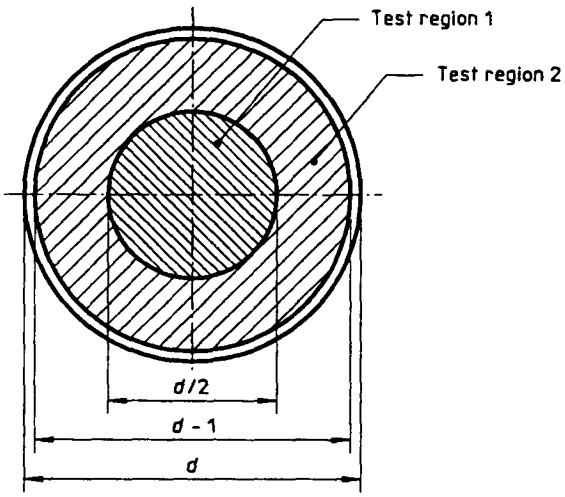
Graticules shall be marked with the words "Conforming to ISO 9344". The marking shall be placed on the graticule itself or on the graticule packaging.

Table 2 — Permissible material defects and processing faults

Dimensions in millimetres

Criterion	Reference for specification	Test region [1]	Minimum requirement
Bubbles	ISO 10110-3	1 2	1/2 x 0,016 [2] 1/2 x 0,025 [2]
Striae	ISO 10110-4	—	2/—; 3 [3]
Surface form errors	ISO 10110-5	—	3/6 (3) [4]
Surface imperfections for each side	ISO 10110-7	1 2	5/2 x 0,016 [2]; L2 x 0,002 5 [5] 5/2 x 0,025 [2]; L2 x 0,004 [5]
Surface quality	ISO 10110-8	—	P3/ [6]
Parallelism tolerance	—	—	≤ 10′

1) Test regions



2) Code for defect/permissible number of defects multiplied by the square root of the maximum area of the largest defect, in mm².
EXAMPLE: 1/2 x 0,1 indicates 2 bubble defects with a maximum area of 0,01 mm² per bubble.

3) The dash following the defect code indicates that the inhomogeneities are unspecified; the digit 3 indicates the class of striae, which may have the following effective area, in reference to the diameter of the graticule plate:

Diameter, mm	19	21	26
Striae class	3	3	3
Striae area, mm²	5	6	10

4) In accordance with ISO 10110-5, the first number after the defect code represents the number of interference fringes, whereas the number in brackets gives the permissible deviation from rotational symmetry (number of fringe spacings).

5) Two long scratches (L) of unspecified length and maximum width of 0,002 5 (0,004) mm are permissible.

6) Polished surface with less than 16 microdefects per 10 mm scan line.

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