

INTERNATIONAL
STANDARD

ISO
10550

First edition
1994-02-01

**Micrographics — Planetary camera
systems — Test target for checking
performance**

*Micrographie — Systèmes utilisant des caméras statiques — Cible de
contrôle de qualité*



Reference number
ISO 10550:1994(E)

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.

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 10550 was prepared by Technical Committee ISO/TC 171, *Micrographics and optical memories for document and image recording, storage and use*.

Annex A of this International Standard is for information only.

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Micrographics — Planetary camera systems — Test target for checking performance

1 Scope

This International Standard describes a test target for use in checking the performance of planetary camera systems. It specifies methods for

- a) checking the performance of the system;
- b) monitoring cameras in routine use.

It applies to systems used to produce first-generation microforms that comply with ISO 3272-1, ISO 3272-2, ISO 6199 or ISO 9923.

It does not apply to the production of duplicates or hard copy.

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 5-2:1991, *Photography — Density measurements — Part 2: Geometric conditions for transmission density*.

ISO 5-3:1984, *Photography — Density measurements — Part 3: Spectral conditions*.

ISO 5-4:1983, *Photography — Density measurements — Part 4: Geometric conditions for reflection density*.

ISO 446:1991, *Micrographics — ISO character and ISO test chart No. 1 — Description and use*.

ISO 2469:1977, *Paper, board and pulps — Measurement of diffuse reflectance factor*.

ISO 3272-1:1983, *Microfilming of technical drawings and other drawing office documents — Part 1: Operating procedures*.

ISO 3272-2:1994, *Microfilming of technical drawings and other drawing office documents — Part 2: Quality criteria and control of 35 mm silver gelatin microfilms*.

ISO 3334:1989, *Micrographics — ISO resolution test chart No. 2 — Description and use*.

ISO 6199:1991, *Micrographics — Microfilming of documents on 16 mm and 35 mm silver-gelatin type microfilm — Operating procedures*.

ISO 9923:—¹⁾, *Micrographics — Transparent A6 microfiche image arrangements*.

3 Creation and description of the test target

3.1 General

The test target shall be adapted to the microfilming application used; it shall comprise the features described hereafter arranged as shown on figure 1. The dimensions shall be in accordance with the maximum size of the document that can be microfilmed with a given system at a given reduction ratio.

ISO test charts No. 1 shall comply with ISO 446 and ISO test charts No. 2 shall comply with ISO 3334.

1) To be published.

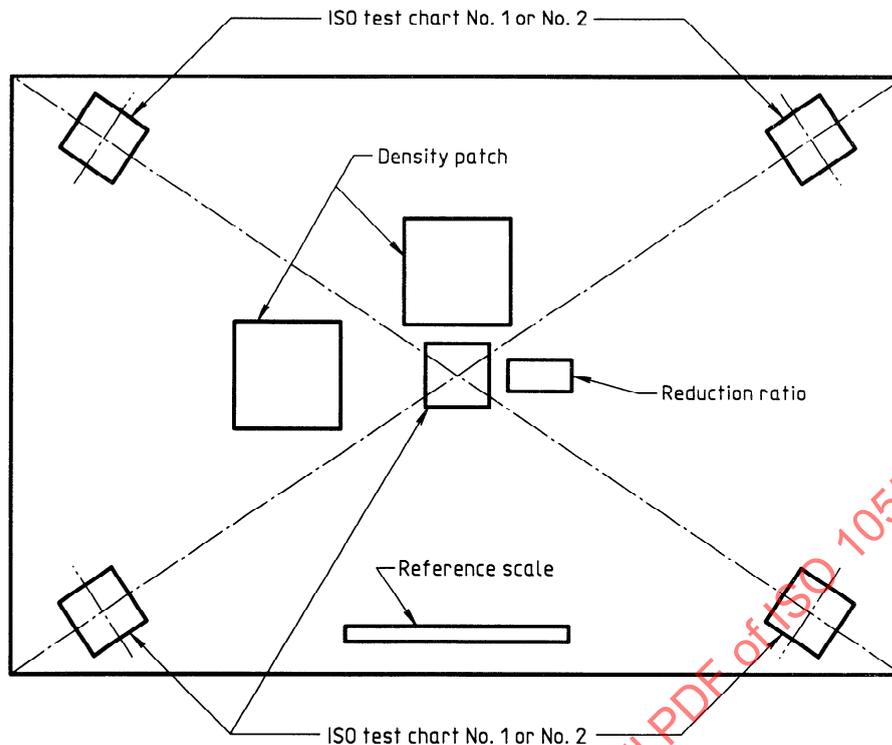


Figure 1 — Test target

3.2 Test target for reflected light exposure

The test target shall be on an opaque base having a maximum reflection density of 0,12 or having a minimum reflectance of 75 %.

It shall comprise the following features:

3.2.1 five test charts (ISO No. 1 or ISO No. 2) located as follows: one at the centre of the test target and one on each of the half-diagonals, at a distance from the corner equal to 10 % of the length of the diagonal;

3.2.2 an indication of the reduction ratio used for filming the test target;

3.2.3 at least two of the density measuring patches listed below, each large enough to generate an area not less than 2 mm × 2 mm on the micro-image:

- a spectrally neutral matt black patch with a reflection density within the range 1,25 to 1,19 (reflectance within the range 5,6 to 6,4 %), for all applications;
- a spectrally neutral matt grey patch with a reflection density within the range 0,33 to 0,28 (reflectance within the range 47 % to 53 %), for technical drawings;

a spectrally neutral matt white patch with a reflection density within the range of 0,10 to 0,07 (reflectance within the range 80 % to 85 %), for source documents;

3.2.4 a graduated metric scale, as long as the space available on the test target allows, of a width and contrast that permits easy measurement of the length of its microimage;

3.2.5 if necessary, lines, to check for possible optical distortions.

All reflection density measurements shall be made in accordance with ISO 5-3 and ISO 5-4 and all reflectance measurements shall be made in accordance with ISO 2469.

3.3 Test target for transmitted light exposure

The transparent test target shall be on a spectrally neutral base having a maximum transmission density of 0,12 or having a minimum transmittance of 75 %.

It shall comprise the following features:

3.3.1 five test charts (ISO No. 1 or ISO No. 2), one located at the centre of the test target and one on each of the half-diagonals, at a distance from the corner equal to 10 % of the length of the diagonal;

3.3.2 an indication of the reduction ratio used for filming the transparent test target;

3.3.3 at least two of the density measuring patches listed below, each large enough to generate an area not less than 2 mm × 2 mm on the micro-image:

- a spectrally neutral black area with a transmission density within the range 1,25 to 1,19 (transmittance within the range 5,6 % to 6,4 %), for all applications;
- a spectrally neutral grey area with a transmission density within the range 0,33 to 0,28 (transmittance within the range 47 % to 53 %), for technical drawings;
- a spectrally neutral clear area with a transmission density within the range of 0,10 to 0,07 (transmittance within the range 80 % to 85 %), for source documents;

3.3.4 graduated metric scale, as long as the space available on the transparent test target allows, of a width and contrast that permits easy measurement of the length of its microimage;

3.3.5 if necessary, lines, to check for possible optical distortions.

All transmission density measurement shall be made in accordance with ISO 5-2 and ISO 5-3.

4 Methods

4.1 Method for checking the system

Film the test target as specified in the appropriate International Standard, at each reduction ratio available, exposed so that density of the image of the grey test patch is $1 \pm 0,1$. Using a densitometer, check the density of the image of the nominated area. Measure the density of the image of the black patch to check minimum density on the microform.

To check legibility, evaluate the images of the test charts in accordance with ISO 446 or ISO 3334.

4.2 Method for monitoring cameras in routine use

Film the test target as specified in the appropriate International Standard, in the image frame allocated to it, at each reduction ratio to be used for filming documents, though not necessarily at the exposure the documents would require. Using a densitometer, check the density of the image of the grey area. Measure the density of the image of the black patch to check minimum density.

To check legibility, evaluate the images of the test charts in accordance with ISO 446 or ISO 3334.

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Annex A
(informative)

Examples of different types of original documents

A.1 Documents to be microfilmed by reflected light

All the documents and drawings, except those described in the last paragraph of A.2, which are intended to be read by reflected light.

A.2 Documents to be microfilmed by transmitted light

Documents to be microfilmed by transmitted light are, for example, the following:

- explanation printed on a translucent or transparent base to be read together with the underlaid figure or drawing, as those used in a medical or a geological book;
- transparency for overhead projectors;
- exposed and developed radiographic film intended to be used for medical diagnosis;
- drawing on a translucent or transparent base, intended to be read by transmitted light.

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