INTERNATIONAL STANDARD

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Micrographics — First generation silver-gelatin microforms of source documents —Density specifications and method of measurement

Micrographie — Microformes documentaires gélatino-argentiques de première génération — Spécifications des densités et méthode de mesurage

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Reference number
ISO 6200:1999(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 6200 was prepared by Technical Committee ISO/TC 171, *Document imaging applications*, Subcommittee SC 1, *Quantification of quality levels and control procedures.*

This third edition cancels and replaces the second edition (ISO 6200:1990) which has been technically revised.

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Introduction

Microforms should be of such quality that the information contained is clearly legible, and suitable for its intended use. It is therefore important that documents for microfilming conform to microfilming criteria.

Controlling microimage density helps to ensure that good results are obtained.

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Micrographics — First generation silver-gelatin microforms of source documents — Density specifications and method of measurement

1 Scope

This International Standard specifies a method for measuring densities of first generation silver-gelatin microforms. It specifies density values for different qualities of documents.

It applies to source document negative-appearing microforms.

It does not apply to microforms for technical drawings which are dealt with in ISO 3272-2, or to diazo and vesicular films which are the subject of ISO 8126, or to COM microforms which are dealt with in ISO 8514.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5-1:1984, *Photography — Density measurements — Part 1: Terms, symbols and notations*.

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

ISO 5-3:1995, *Photography — Density Measurements — Part 3: Spectral conditions*.

ISO 6196-1:1993, *Micrographics — Vocabulary — Part 1: General terms*.

ISO 6196-4:1998, *Micrographics — Vocabulary — Part 4: Materials and packaging.*

ISO 6196-5:1987, *Micrographics — Vocabulary — Part 5: Quality of images, legibility, inspection.*

ISO 6196-6:1992, *Micrographics — Vocabulary — Part 6: Equipment.*

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 5-1 and ISO 6196 apply.

4 Method of measurement

Density shall be measured with a densitometer in conformance with the requirements of ISO 5-2 and ISO 5-3 for measurement of ISO standard diffuse visual density and having an aperture of diameter 0,5 mm to 3,0 mm.

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Each area measured should be of even density and completely cover the aperture of the densitometer. A target area can be provided for this purpose when making first generation microforms. The emulsion surface shall face the collecting head of the densitometer which is usually opposite of the illumination lamp.

Density is usually measured on sample images. If density does not appear visually to be uniform within an image, it is recommended that further measurements be made at different places within the image.

5 Density specifications

Background density shall be as specified in Table 1.

All values specified are ISO standard visual diffuse densities. The background densities given in Table 1 are densities above base plus fog. Therefore, for all density readings, the value of base plus fog shall be subtracted to enable comparison with the density requirements specified in Table 1.

The base plus fog density for microforms with clear base shall be not greater than 0,10.

Some silver-gelatin microforms have a tinted base (grey base for example). The base plus fog density for these films is often higher than 0,10 due to the higher density of the base. Where appropriate, specific recommendations from the film manufacturer should be followed for background density.

Documents which contain fine-line details, or complex characters such as Chinese and Japanese, may require lower background density values than those specified in Table 1, with a lower limit of 0,70.

When the content of a document has areas of different qualities, the density to be achieved shall be dictated by the lowest quality.

Table 1 — Background densities

Document Group	Document Description	Background density
1	Dense black well-formed characters and lines of high effective contrast.	1,00 to 1,50[a]
2	Group 1 documents with fine lines, or documents with lower density print or medium effective contrast, typical of general commercial documents.	0,90 to 1,10
3	Low effective contrast documents.	0,80 to 1,00[b]
4	Very low effective contrast documents.	0,70 to 0,85[b]

NOTE When filming a set of very uniform high quality documents a background density of up to 1,50 is allowable, however a maximum range of 0,20 within a group of images should be maintained.

[a] When filming double sided documents with noticable show-through, densities may be reduced to reduce image show-through.

[b] 1:24 reduction or less recommended.

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