

INTERNATIONAL  
STANDARD

**ISO**  
**9336-2**

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**Optics and optical instruments — Optical  
transfer function — Application —**

**Part 2:**

Lenses for office copiers

*Optique et instruments d'optique — Fonction de transfert optique —  
Application —*

*Partie 2: Objectifs pour photocopieurs de bureau*



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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.

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 9336-2 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 1, *Fundamental standards*.

ISO 9336 consists of the following parts, under the general title *Optics and optical instruments — Optical transfer function — Application*:

- *Part 1: Interchangeable lenses for 35 mm still cameras*
- *Part 2: Lenses for office copiers*
- *Part 3: Telescopes*

Annex A of this part of ISO 9336 is for information only.

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# Optics and optical instruments — Optical transfer function — Application —

## Part 2: Lenses for office copiers

### 1 Scope

This part of ISO 9336 specifies a method of testing lenses for office copiers in terms of imaging states aimed at making valid optical transfer function measurements.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9336. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9336 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 9334:—<sup>1)</sup>, *Optics and optical instruments — Optical transfer function — Definitions and mathematical relationships*.

ISO 9335:—<sup>1)</sup>, *Optics and optical instruments — Optical transfer function — Principles and procedures of measurement*.

### 3 Definitions

For the purposes of this part of ISO 9336, the definitions given in ISO 9334 apply.

### 4 General description of the lenses to be tested

Office copier lenses are a subclass of printer lenses designed to produce a legible image of an object when viewed with an unaided eye.

The image can be produced on film, paper or other material. Compared to the size of the object being copied, the image can be the same size, larger or smaller. The lenses are dedicated to the copier in which they are installed and are not user-interchangeable. The following does not apply to lens arrays. Two general types of copiers are covered. The first type has parallel image and object slits which are stationary with respect to the lens. The full object and image surfaces are scanned by relative motion between those surfaces and the lens/slit assembly. The lens is oriented so that its reference angle of best performance coincides with the slit openings. At any given time, the object format is not the entire object to be copied but rather is the object slit. The second type keeps the object and image surfaces effectively stationary with respect to the lens, and uses all reference angles of the lens to form the object, by using either a scanning or a pulsing illumination system. In both types, the lens assembly may be constructed of refractive surfaces only, or of a combination of refractive and reflective surfaces (e.g. mirror half lens, see figure 1). Also, in any type, the light path may be folded by means of plano mirrors. See figure 2.

1) To be published.