



**SLOVENSKI STANDARD**  
**SIST EN ISO 10938:2000**  
**01-januar-2000**

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Ophthalmic instruments - Chart projectors (ISO 10938:1998)

Ophthalmische Instrumente - Sehzeichenprojektoren (ISO 10938:1998)

Instruments ophtalmiques - Projecteurs d'optotypes (ISO 10938:1998)

**Ta slovenski standard je istoveten z: EN ISO 10938:1998**

[SIST EN ISO 10938:2000](https://standards.iteh.ai/catalog/standards/sist/85511706-2e17-477f-aa64-5d45b73253d7/sist-en-iso-10938-2000)

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**ICS:**

11.040.70      Oftalmološka oprema      Ophthalmic equipment

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN ISO 10938

May 1998

ICS 11.040.70

Descriptors: see ISO document

English version

## Ophthalmic instruments - Chart projectors (ISO 10938:1998)

Instruments optalmiques - Projecteurs d'optotypes (ISO  
10938:1998)

Ophthalmische Instrumente - Sehzeichenprojektoren (ISO  
10938:1998)

This European Standard was approved by CEN on 9 March 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Foreword

The text of the International Standard ISO 10938:1998 has been prepared by Technical Committee ISO/TC 172 "Optics and optical instruments" in collaboration with Technical Committee CEN/TC 170 "Ophthalmic optics", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 1998, and conflicting national standards shall be withdrawn at the latest by November 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 10938:1998 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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**ANNEX ZA (normative)****Normative references to international publications with their corresponding European publications**

This European Standard incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Year	Title	EN	Year
ISO 8596	1994	Ophthalmic optics - Visual acuity testing - Standard optotype and its presentation	EN ISO 8596	1996
ISO 8597	1994	Optics and optical instruments - Visual acuity testing - Method of correlating optotypes	EN ISO 8597	1996
ISO 15004	1997	Ophthalmic instruments - Fundamental requirements and test methods	EN ISO 15004	1997

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INTERNATIONAL  
STANDARD

**ISO**  
**10938**

First edition  
1998-05-15

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**Ophthalmic instruments — Chart projectors**

*Instruments ophtalmiques — Projecteurs d'optotypes*

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Reference number  
ISO 10938:1998(E)

**ISO 10938:1998(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 10938 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 7, *Ophthalmic optics and instruments*.

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# Ophthalmic instruments — Chart projectors

## 1 Scope

This International Standard, together with ISO 15004, specifies minimum requirements and test methods for chart projector systems, including an optical projector and a screen, for the projection of targets used for the determination of visual acuity, the refractive status and the binocular functions of the human eye.

This International Standard takes precedence over ISO 15004, if differences exist.

## 2 Normative references

The following standards contain provision which, through reference in this text, constitute provision 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 8596:1994 *Ophthalmic optics - Visual acuity testing - Standard optotype and its presentation*
- ISO 8597:1994 *Optics and optical instruments - Visual acuity testing - Method of correlating optotypes*  
<https://standards.iteh.ai/catalog/standards/sist/85511706-2e17-4771-aa64-5d45b73253d7/sist-en-iso-10938-2000>
- ISO 15004:1997 *Ophthalmic instruments - Fundamental requirements and test methods*
- IEC 60601-1:1988 *Medical electrical equipment - Part 1: General requirements for safety*

## 3 Requirements

### 3.1 General

The chart projector shall conform to the requirements specified in ISO 15004.

### 3.2 Functional requirements

The chart projector shall conform to the requirements specified in 3.2.1 to 3.2.5.

NOTE - Verification of these requirements is described in clause 4.

#### 3.2.1 Optotypes

If designed to be used for certification purposes, the chart projector shall be equipped either with the standard optotype according to ISO 8596 in the grades specified therein, or with optotypes which are correlated to the standard optotype by the method described in ISO 8597.