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DIN ISO 10110-1

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Supersedes
DIN ISO 10110-1:2007-08 and
DIN ISO 10110-10:2004-12

Optics and photonics – Preparation of drawings for optical elements and systems – Part 1: General (ISO 10110-1:2019), English translation of DIN ISO 10110-1:2020-09

Optik und Photonik –
Erstellung von Zeichnungen für optische Elemente und Systeme –
Teil 1: Allgemeines (ISO 10110-1:2019),
Englische Übersetzung von DIN ISO 10110-1:2020-09

Optique et photonique –
Indications sur les dessins pour éléments et systèmes optiques –
Partie 1: Généralités (ISO 10110-1:2019),
Traduction anglaise de DIN ISO 10110-1:2020-09

Document comprises 52 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

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A comma is used as the decimal marker.

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National foreword

This document has been prepared by Technical Committee ISO/TC 172 "Optics and photonics", Subcommittee SC 1 "Fundamental standards" (Secretariat: DIN, Germany), with the active participation of German experts.

The responsible German body involved in its preparation was *DIN-Normenausschuss Feinmechanik und Optik* (DIN Standards Committee Optics and Precision Mechanics), Working Committee NA 027-01-02 AA "Fundamental standards for optics", Working Group "Technical drawings for optical elements and systems".

The DIN documents corresponding to the international documents referred to in this document are as follows:

ISO 1	DIN EN ISO 1
ISO 128-20	DIN EN ISO 128-20
ISO 128-30	DIN ISO 128-30
ISO 128-50	DIN ISO 128-50
ISO 7944	DIN EN ISO 7944
ISO 10110-5	DIN ISO 10110-5
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ISO 10110-19	DIN ISO 10110-19
ISO 12123	DIN ISO 12123
ISO 13715	DIN ISO 13715
ISO 14405-1	DIN EN ISO 14405-1
ISO 14405-2	DIN EN ISO 14405-2
ISO 80000-1	DIN EN ISO 80000-1
IEC 60758	DIN EN 60758

For current information on this document, please go to DIN's website (www.din.de) and search for the document number in question.

Amendments

This standard differs from DIN ISO 10110-1:2007-08 and DIN ISO 10110-10:2004-12 as follows:

a) the standards have been technically revised and combined into one document;

b) the drawing scale and the reference wavelength are required to be included in the drawing;

c) provisions have been added to allow coordinate systems to be defined for each surface and for the part as a whole;

d) new tabular formats have been added to allow more surfaces on a tabular drawing, partially tabulated drawings, and new types of assembly drawings;

e) a new notation for special surfaces has been added;

f) in addition, many more examples of drawings and notations have been provided;

g) various detailed notes have been added, and corrections and modifications have been made for improved clarity;

h) GSP defaults by definition no longer apply, they have to be specifically invoked;

i) in earlier versions of DIN ISO 10110-1, test fields have been designated as circular test field.

Previous editions

DIN 3140: 1958-10
DIN 3140-1: 1971-03, 1978-10
DIN 58170-51: 1973-06
DIN ISO 10110-1: 2000-02, 2007-08
DIN ISO 10110-10: 2000-02, 2004-12

National Annex NA
(informative)

Bibliography

DIN EN ISO 1, *Geometrical product specification (GPS) — Standard reference temperature for geometrical product specifications and verification*

DIN EN ISO 128-20, *Technical drawings — General principles of presentation — Part 20: Basic conventions for lines*

DIN EN ISO 7944, *Optics and optical instruments — Reference wavelengths*

DIN ISO 128-30, *Technical drawings — General principles of presentation — Part 30: Basic conventions for views*

DIN ISO 128-50, *Technical drawings — General principles of presentation — Part 50: Basic conventions for representing areas on cuts and sections*

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

DIN ISO 10110-6, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 6: Centring tolerances*

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

DIN ISO 10110-8, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 8: Surface texture — Roughness and waviness*

DIN ISO 10110-9, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 9: Surface treatment and coating*

DIN ISO 10110-11, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 11: Non-toleranced data*

DIN ISO 10110-12, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 12: Aspheric surfaces*

DIN ISO 10110-14, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 14: Wavefront deformation tolerance*

DIN ISO 10110-17, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 17: Laser irradiation damage threshold*

DIN ISO 10110-18, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 18: Stress birefringence, bubbles and inclusions, homogeneity, and striae*

DIN ISO 10110-19, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 19: General description of surfaces and components*

DIN ISO 12123, *Optics and photonics — Specification of raw optical glass*

DIN ISO 13715, *Technical product documentation — Edges of undefined shape — Indication and dimensioning*

DIN EN ISO 14405-1, *Geometrical product specifications (GPS) — Dimensional tolerancing — Part 1: Linear sizes*

DIN EN ISO 14405-2, *Geometrical product specifications (GPS) — Dimensional tolerancing — Part 2: Dimensions other than linear or angular sizes*

DIN EN ISO 80000-1, *Quantities and units — Part 1: General*

DIN EN 60758, *Synthetic quartz crystal — Specifications and guidelines for use*

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 172, *Optics and photonics*, Subcommittee SC 1, *Fundamental standards.*

This third edition cancels and replaces ISO 10110-1:2006 and ISO 10110-10:2004, which have been technically revised and merged into one single document.

The main changes compared to the previous edition are as follows:

a) Drawing scale and the reference wavelength are required to be included on the drawing;

b) provisions have been added to allow coordinate systems to be defined for each surface and for the part as a whole;

c) new tabular formats have been added to allow more surfaces on a tabular drawing, partially tabulated drawings, and new types of assembly drawings;

d) a new notation for special surfaces has been added;

e) in addition, many more examples of drawings and notations have been provided;

f) and various detailed notes have been added, and corrections and modifications have been made for improved clarity;

g) GSP defaults by definition no longer apply, they have to be specifically invoked.

A list of all parts in the ISO 10110 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.