INTERNATIONAL STANDARD

ISO 10110-6

Second edition
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Optics and photonics — Preparation of drawings for optical elements and systems —

Part 6: Centring tolerances

Optique et photonique — Indications sur les dessins pour éléments et systèmes optiques —

Partie 6: Tolérances de centrage

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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.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

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

This second edition cancels and replaces the first edition (ISO 10110-6:1996), which has been technically revised. It also incorporates ISO 10110-6:1996/Cor.1:1999.

ISO 10110 consists of the following parts, under the general title *Optics and photonics — Preparation of drawings for optical elements and systems*:

— *Part 1: General*

— *Part 2: Material imperfections — Stress birefringence*

— *Part 3: Material imperfections — Bubbles and inclusions*

— *Part 4: Material imperfections — Inhomogeneity and striae*

— *Part 5: Surface form tolerances*

— *Part 6: Centring tolerances*

— *Part 7: Surface imperfection tolerances*

— *Part 8: Surface texture; roughness and waviness*

— *Part 9: Surface treatment and coating*

— *Part 10: Table representing data of optical elements and cemented assemblies*

— *Part 11: Non-toleranced data*

— *Part 12: Aspheric surfaces*

— *Part 14: Wavefront deformation tolerance*

— *Part 17: Laser irradiation damage threshold*

— *Part 19: General description of surfaces and components*

Optics and photonics — Preparation of drawings for optical elements and systems —

Part 6: Centring tolerances

1 Scope

This International Standard specifies the presentation of design and functional requirements for optical elements and systems in technical drawings used for manufacturing and inspection.

This part of ISO 10110 specifies rules for indicating centring tolerances for optical elements, subassemblies, and assemblies.

This part of ISO 10110 applies to plano surfaces, rotationally invariant surfaces, circular cylindrical, non-circular cylindrical, and non-symmetrical surfaces (general surfaces). General surfaces are described using ISO 10110-19.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 5459, *Geometrical product specifications (GPS) — Geometrical tolerancing — Datums and datum systems*

ISO 10110-1, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 1: General*

ISO 10110-10, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 10: Table representing data of optical elements and cemented assemblies*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5459 and the following apply.

3.1
optical surface
optically effective surface which deflects the incident light by reflection or refraction

Note 1 to entry: Optical surfaces can be of different degrees of complexity. Correspondingly, the number of the degrees of freedom needed for describing the orientation and location of the surface increases with complexity.

3.2
optical element
part with one or more *optical surfaces* (3.1) providing an optical function and which has a mechanical interface to the superior system

EXAMPLE One optical surface (e.g. parabolic mirror), two optical surfaces (e.g. lens element), or more than two optical surfaces (e.g. cube corner prism).