International Standard

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

Part 11: Non-toleranced data

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

Partie 11: Données non tolérancées

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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 document 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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This document was prepared by Technical Committee ISO/TC 172, *Optics and Photonics*, Subcommittee SC 1, *Fundamental standards*.

This third edition cancels and replaces the second edition (ISO 10110-11:2016), which has been technically revised.

The main changes are as follows:

a) the default category “Clear aperture to part edge (mm),” which was in the second row of Table 1, has been removed;

b) more information is given in 4.2 and Table 1 to clarify how to apply surface form defaults;

c) homogeneity and striae defaults have been updated based on the creation of, and technical changes in ISO 10110-18;

d) a footnote has been added to Table 1 that defines the default for edge chips;

e) 4.2 has been added and includes basic rules for using Table 1;

f) defaults for surface texture have been added to Table 1;

g) stress birefringence default tolerances for large optics have been changed to more commonly occurring values;

h) the default for coatings is now explicitly defined as “uncoated”;

i) the default for angular tolerances has been clarified;

j) 4.4 has been added to summarize drawing specifications for which default (implicit) values are not given in this document.

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

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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.

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Introduction

This document addresses cases in which information required to fabricate optical elements is not included on drawings. They present the default values for the standard (ISO 10110 series), which, in many cases, are dependent on the size of the optic. These defaults are intentionally chosen to be values deemed as loose fabrication requirements for industry. These values do not represent absolute limits, however, and can be made looser for given drawings and applications.

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

Part 11: Non-toleranced data

1 Scope

This document specifies the default (implicit) tolerances for indication in the ISO 10110 series, which standardizes drawing indications for optical elements and systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

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

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

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

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

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

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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