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

Part 8: Surface texture

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

Partie 8: État de surface

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

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 10110-8:2010), which has been technically revised.

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

a) a drawing notation and interpretation is provided for the following additional areal terms: *Sa*, *Sq*, *SΔq*, and APSD;

b) the following terms are explicitly allowed: *Ra*, *Rsk*, *Rku*, and *ACV*, which also required the addition of more definitions, and additional examples.

c) this edition removes the reference to micro-defects as a method of determining polish grade, and replaces it with specific rms roughness values.

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.

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

Part 8: Surface texture

1 Scope

This document specifies rules for the indication of the surface texture of optical elements, in the ISO 10110 series, which standardizes drawing indications for optical elements and systems. Surface texture is the characteristic of a surface that can be effectively described with statistical methods. Typically, surface texture is associated with high spatial frequency errors (roughness) and mid-spatial frequency errors (waviness).

This document is primarily intended for the specification of polished optics.

This document describes a method for characterizing the residual surface that is left after detrending by subtracting the surface form. The control of the surface form specified in ISO 10110-5, ISO 10110-12, and ISO 10110-19 is not specified in this document.

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 1302:2002, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

ISO 4287:1997, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4287 and the following apply.

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

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

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

3.1
surface texture
characteristic relating to the profile of an optical surface that can be effectively described with statistical methods

Note 1 to entry: Localized defects, known as surface imperfections, are specified in ISO 10110-7.