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Geometrical product specifications (GPS) - Surface texture: Areal - Part 604: Design and characteristics of non-contact (coherence scanning interferometry) instruments (ISO 25178-604:2025)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EN ISO 25178-604

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English Version

**Geometrical product specifications (GPS) - Surface texture:
Areal - Part 604: Design and characteristics of non-contact
(coherence scanning interferometry) instruments (ISO
25178-604:2025)**

Spécification géométrique des produits (GPS) - État de surface: Surfamique - Partie 604: Conception et caractéristiques des instruments sans contact (à interférométrie par balayage à cohérence) (ISO 25178-604:2025)

Geometrische Produktspezifikation (GPS) - Oberflächenbeschaffenheit: Flächenhaft - Teil 604: Aufbau und Merkmale von berührungslos messenden Geräten (Weißlicht-Interferometrie) (ISO 25178-604:2025)

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EN ISO 25178-604:2025 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 25178-604:2025) has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" in collaboration with Technical Committee CEN/TC 290 "Dimensional and geometrical product specification and verification" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by August 2025, and conflicting national standards shall be withdrawn at the latest by August 2025.

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Endorsement notice

The text of ISO 25178-604:2025 has been approved by CEN as EN ISO 25178-604:2025 without any modification.



International Standard

ISO 25178-604

Geometrical product specifications (GPS) — Surface texture: Areal —

Part 604:

Design and characteristics of non-contact (coherence scanning interferometry) instruments

*Spécification géométrique des produits (GPS) — État de surface:
Surfacique —*

*Partie 604: Conception et caractéristiques des instruments sans
contact (à interférométrie par balayage à cohérence)*

**Second edition
2025-02**

ISO 25178-604:2025(en)



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ISO 25178-604:2025(en)**Contents**

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Instrument requirements	5
5 Metrological characteristics	6
6 Design features	6
7 General information	6
Annex A (informative) Principles of CSI instruments for areal surface topography measurement	7
Annex B (informative) Sources of measurement error for CSI instruments	13
Annex C (informative) Relationship to the GPS matrix model	18
Bibliography	19

ISO 25178-604:2025(en)**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 213, *Dimensional and geometrical product specifications and verification*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 290, *Dimensional and geometrical product specification and verification*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 25178-604:2013), which has been technically revised.

The main changes are as follows:

- removal of the terms and definitions now specified in ISO 25178-600;
- revision of all terms and definitions for clarity and consistency with other ISO standards documents;
- addition of [Clause 4](#) for instrument requirements, which summarizes normative features and characteristics;
- addition of [Clause 5](#) on metrological characteristics;
- addition of [Clause 6](#) on design features, which clarifies types of instruments relevant to this document;
- addition of an information flow concept diagram in [Clause 4](#);
- revision of [Annex A](#) describing the principles of instruments addressed by this document;
- addition of [Annex B](#) on metrological characteristics and influence quantities; replacement of the normative table of influence quantities with an informative description of common error sources and how these relate the metrological characteristics in ISO 25178-600.

A list of all parts in the ISO 25178 series can be found on the ISO website.

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ISO 25178-604:2025(en)

Introduction

This document is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO 14638). It influences chain link F of the chains of standards on profile and areal surface texture.

The ISO GPS matrix model given in ISO 14638 gives an overview of the ISO GPS system of which this document is a part. The fundamental rules of ISO GPS given in ISO 8015 apply to this document and the default decision rules given in ISO 14253-1 apply to the specifications made in accordance with this document, unless otherwise indicated.

For more detailed information on the relation of this document to other standards and the GPS matrix model, see [Annex C](#).

This document includes terms and definitions relevant to the coherence scanning interferometry (CSI) instrument for the measurement of areal surface topography. [Annex A](#) briefly summarizes CSI instruments and methods to clarify the definitions and to provide a foundation for [Annex B](#), which describes common sources of uncertainty and their relation to the metrological characteristics of CSI.

NOTE Portions of this document, particularly the informative sections, describe patented systems and methods. This information is provided only to assist users in understanding the operating principles of CSI instruments. This document is not intended to establish priority for any intellectual property, nor does it imply a license to proprietary technologies described herein.

Geometrical product specifications (GPS) — Surface texture: Areal —

Part 604:

Design and characteristics of non-contact (coherence scanning interferometry) instruments

1 Scope

This document specifies the design and metrological characteristics of coherence scanning interferometry (CSI) instruments for the areal measurement of surface topography. Because surface profiles can be extracted from surface topography data, the methods described in this document are also applicable to profiling measurements.

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 25178-600:2019, *Geometrical product specifications (GPS) — Surface texture: Areal — Part 600: Metrological characteristics for areal topography measuring methods*

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