Draft for Public Comment

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Interested committees:

Title: Draft BS EN ISO 25178-603 Geometrical product specifications (GPS) — Surface texture: Areal. Part 603: Design and characteristics of non-contact (phase shifting interferometry) instruments.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at **https://standardsdevelopment.bsigroup.com/**. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx

1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex **(e.g. 3.1)**	Paragraph/ Figure/Table/Note	**Type of comment**	**Commend (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations on each comment submitted**
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

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DRAFT INTERNATIONAL STANDARD

ISO/DIS 25178-603

ISO/TC **213**

Secretariat: **BSI**

Voting begins on:
2023-10-23

Voting terminates on:
2024-01-15

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

Part 603:
Design and characteristics of non-contact (phase shifting interferometry) instruments

ICS: 17.040.20

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

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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 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 Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This second edition cancels and replaces the first edition (ISO 25178-603:2013), which has been technically revised.

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

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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 of the relation of this document to other standards and the GPS matrix model, see Annex C.

This document includes normative terms and definitions relevant to the phase shifting interferometry (PSI) method for the measurement of areal surface topography. The informative Annex A briefly summarizes PSI instruments and methods to clarify the normative definitions and to provide a foundation for informative Annex B, which describes common sources of uncertainty and their relation to the metrological characteristics of PSI.

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 phase shifting interferometry. This document is not intended to establish priority for any intellectual property, nor does it imply a license to proprietary technologies described herein.

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

Part 603: Design and characteristics of non-contact (phase shifting interferometry) instruments

1 Scope

This document describes the design and metrological characteristics of phase shifting interferometry instruments for areal measurement of surface topography. Because surface profiles can be extracted from areal surface topography data, the methods described in this document can be applied to profiling measurements as well.

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 25178-600 and the following apply.

ISO and IEC maintain terminological 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/

3.1
phase shifting interferometry
PSI
method for measuring areal surface topography from the surface height dependence of an interferometric signal, whereby the interference phase is estimated from two or more digitized interference images acquired over a sequence of controlled phase shifts

Note 1 to entry: In this document, PSI refers specifically to methods that employ time-dependent phase shifting mechanisms. Other methods of acquiring and analysing interference patterns, including parallel or instantaneous methods using polarization or carrier fringes, are outside the scope of this document.

Note 2 to entry: ISO/TR 14999-2:2019, 6.4.4 provides further information on synchronous detection and phase shifting interferometry.

Note 3 to entry: PSI instruments are most often employed for measurements of optically smooth surfaces, as defined in ISO 25178-600:2019, 3.4.4.

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