

Lasers and laser-related equipment — Test methods for laser beam parameters — Beam positional stability

The European Standard EN ISO 11670:2003 has the status of a British Standard

ICS 31.260

National foreword

This British Standard is the official English language version of EN ISO 11670:2003. It is identical with ISO 11670:2003, including Technical Corrigendum May 2004. It supersedes BS EN ISO 11670:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CPW/172, Optics and optical instruments, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 25 April 2003

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to v, a blank page, pages 1 to 15, the Annex ZA page, an inside back cover and a back cover.

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Amendments issued since publication

Amd. No.	Date	Comments
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15533 Corrigendum No. 3	9 May 2005	Addition of an Endorsement notice to Foreword

English version

Lasers and laser-related equipment - Test methods for laser beam parameters - Beam positional stability (ISO 11670:2003)

Lasers et équipements associés aux lasers - Méthodes d'essai des paramètres du faisceau laser - Stabilité de visée du faisceau (ISO 11670:2003)

Laser und Laseranlagen - Prüfverfahren für Laserstrahlparameter - Strahllagestabilität (ISO 11670:2003)

This European Standard was approved by CEN on 21 February 2003.

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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN ISO 11670:2003) has been prepared by Technical Committee ISO/TC 172 "Optics and optical instruments" in collaboration with Technical Committee CEN/TC 123 "Lasers and laser-related equipment", the secretariat of which is held by DIN.

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 October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This document supersedes EN ISO 11670:1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 11670:2003 has been approved by CEN as EN ISO 11670:2003 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

Endorsement notice

The text of ISO 11670:2003/Cor.1:2004 has been approved by CEN as a European Corrigendum without any modifications.

INTERNATIONAL STANDARD

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2004-05-15

Lasers and laser-related equipment — Test methods for laser beam parameters — Beam positional stability

*Lasers et équipements associés aux lasers — Méthodes d'essai des
paramètres du faisceau laser — Stabilité de visée du faisceau*



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Contents

Page

1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Coordinate systems and beam axis	3
4.1	Beam axis distribution	3
4.2	Coordinate systems	3
5	Test principles	5
5.1	Beam positional stability	5
5.2	Beam angular stability	5
6	Measurement arrangement, test equipment and auxiliary devices	5
6.1	Preparation	5
6.2	Control of environment	5
6.3	Detection system	6
6.4	Beam-forming optics, optical attenuators, beam splitters, focusing elements	6
6.5	Calibration	6
7	Test procedures	7
7.1	General	7
7.2	Beam positional stability	7
7.3	Beam angular stability	7
8	Evaluation	7
8.1	Beam positional stability	7
8.2	Beam angular stability	8
9	Test report	10
Annex A (informative)	Propagation of absolute beam stability	12
Annex B (informative)	Decoupling of short- and long-term fluctuations	15

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 11670 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 9, *Electro-optical systems*.

This second edition cancels and replaces the first edition (ISO 11670:1999), Clauses 3 and 9 of which have been technically revised. Annexes A and B have been added.

Introduction

The centre of a laser beam is defined as the centroid or first-order spatial moment of the power density distribution. The current propagation axis of a beam is then the straight line connecting two centroids measured at two different planes simultaneously in a uniform, homogeneous medium. Beam axis instability may be characterized by transverse displacements and angular movements that are either monotonic, periodic or stochastic in time.

The movement of a laser beam may be randomly distributed and uniform in amplitude in all directions. In general, the beam may move a greater amount in one direction. If one direction predominates, the procedures specified in this International Standard can be used to identify that dominant direction (the beam x -axis) and its azimuthal location relative to the axes of the laboratory system.

This International Standard provides general principles for the measurement of these quantities. In addition, definitions of terminology and symbols to be used in referring to beam position are provided.