Laser and laser related equipment - Standard optical components - Part 1: Components for the UV, visible and near-infrared spectral ranges

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 11151-1:2000 sisaldab Euroopa standardi EN ISO 11151-1:2000 ingliskeelset teksti. Käesolev dokument on jõustatud 15.11.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 11151-1:2000 consists of the English text of the European standard EN ISO 11151-1:2000. This document is endorsed on 15.11.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This International Standard specifies requirements for laser components used in the near ultra-violet, visible and near infrared spectral ranges, from wavelenghts 190 nm to 2100 nm, and facilitates the supply of spare parts: 1. by specifying preferred dimensions and tolerances, thereby reducing the variety of types 2. by standardizing the specifications and removing barriers to trade 3. by establishing an agreed designation for item orders.	**Scope:** This International Standard specifies requirements for laser components used in the near ultra-violet, visible and near infrared spectral ranges, from wavelenghts 190 nm to 2100 nm, and facilitates the supply of spare parts: 1. by specifying preferred dimensions and tolerances, thereby reducing the variety of types 2. by standardizing the specifications and removing barriers to trade 3. by establishing an agreed designation for item orders.

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English version

Lasers and laser-related equipment – Standard optical components

Part 1: Components for the UV visible, and near-infrared spectral ranges (ISO 11151-1 : 2000)

Lasers et équipements associés aux lasers – Composants optiques standards – Partie 1: Composants pour les plages spectrales UV, visible et proche de l'infrarouge (ISO 11151-1 : 2000)

Laser und Laseranlagen – Optische Standardkomponenten – Teil 1: Komponenten für den UV-, sichtbaren und nah-infraroten Spektralbereich (ISO 11152-1 : 2000)

This European Standard was approved by CEN on 2000-06-15.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
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Europäisches Komitee für Normung

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Foreword

International Standard

ISO 11151-1 : 2000 Lasers and laser-related equipment – Standard optical components – Part 1: Components for the UV, visible and near-infrared spectral ranges,

which was prepared by ISO/TC 172 'Optics and optical instruments' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 123 'Lasers and laser-related equipment', the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by December 2000 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 11151-1 : 2000 was approved by CEN as a European Standard without any modification.

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Introduction

Lasers are used in a wide variety of applications, including medicine, materials processing, information technology and metrology. Most lasers contain optical windows and mirrors (intracavity) and most laser systems use a variety of windows, beamsplitters, deflectors, mirrors and lenses. Those components used in high power laser applications must withstand high peak power and/or energy densities to avoid laser-induced damage, thus their component specifications are more demanding than those used in low power applications.

1 Scope

This part of ISO 11151 specifies requirements for laser components used in the near ultra-violet, visible and near infrared spectral ranges, from wavelengths 190 nm to 2 100 nm, and facilitates the supply of spare parts

— by specifying preferred dimensions and tolerances, thereby reducing the variety of types;

— by standardizing the specifications and removing barriers to trade;

— by establishing an agreed designation for item orders.

This part of ISO 11151 covers planar, plano-spherical and spherical substrates, lenses and optical components that are designed specifically as standardized optical components normally offered via catalogue from suppliers and intended for use with lasers.

This part of ISO 11151 includes component descriptions, materials employed, physical dimensions and manufacturing tolerances (including surface finish, figure and parallelism). Although most, but not all, of these components are coated (fully reflecting, partially reflecting or anti-reflecting) before incorporation into the laser system, this part of ISO 11151 does not include recommendations for the specification of coatings.

NOTE For optical components used in the infrared spectral range (> 2 100 nm), refer to ISO 11151-2. For the specification and testing of optical coatings, refer to the ISO 9211 series.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 11151. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 11151 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 9211-1:1994, *Optics and optical instruments — Optical coatings — Part 1: Definitions.*

ISO 9211-2:1994, *Optics and optical instruments — Optical coatings — Part 2: Optical properties.*

ISO 10110-1:1996, *Optics and optical instruments — Preparation of drawings for optical elements and systems — Part 1: General.*

ISO 11151-2:2000, *Lasers and laser-related equipment — Standard optical components — Part 2: Components for the infrared spectral range.*