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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 38245-2019

**Optics and optical instruments - Lasers and laser-related
equipment - Test method for absorptance of optical laser
components**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify the use of ISO 11551.2003 "optical and optical instrument lasers and laser-related equipment

Optical Optical Element Absorbance Test Method.

This standard has structural changes compared to ISO 11551.2003. Move the diagram in Chapter 5 to Chapter 6, and add 6.1 test schematics;

The original Chapter 5 is divided into 5.1 test environment, 5.2 test light source and 5.3 test sample.

The technical differences between this standard and ISO 11551.2003 and their reasons are as follows.

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Replace ISO 31-6.1992 with GB/T 3102.6 equivalent to the international standard;

* Replaced ISO 11145.2001 with GB/T 15313 modified to international standards.

--- Added the terms "heat loss coefficient" and "light trap" (see Chapter 3);

--- Table 1 adds the sign and unit of pulse energy and repetition frequency (see Chapter 4).

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Optical and Photonics Standardization Technical Committee (SAC/TC103).

This standard was drafted. Dalian Institute of Chemical Physics, Chinese Academy of

Sciences, University of Electronic Science and Technology, Shenyang Instrument Science Research Institute Co., Ltd.

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1 Scope

This standard specifies the terms and definitions of laser optical component absorption rate test methods, symbols and units of measurement, test conditions, test principles,

Test process, calculation method and test report.

This standard applies to the test of the absorption rate of laser optical components.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3102.6 The amount and unit of light and related electromagnetic radiation (GB/T 3102.6-1993, eqvISO 31-6.1992)

GB/T 15313 laser terminology (GB/T 15313-2008, ISO 11145.2006, MOD)

GB/T 25915.1-2010 Clean rooms and related controlled environments - Part 1. Air cleanliness (ISO 14644-1..1999,

IDT)

3 Terms and definitions

The following terms and definitions as defined in GB/T 3102.6 and GB/T 15313 apply to this document.

3.1

Absorption rate absorptance

The ratio of the absorbed radiant flux to the incident radiant flux.

Note. The absorption rate defined in this standard is limited to the absorption process of energy into heat. For some types of optics and radiation, additional non-thermal processes may lead

The absorption loss is undetectable by the test procedure described in this standard (see

Appendix A).

3.2

Heat loss coefficient

The degree of heat loss per unit time.

3.3

Light trap beamstop

A device for collecting residual or transmitted laser radiation from a test sample.

4 symbols and units of measure

The following symbols apply to this document. (See the symbols, definitions, and units of measure given in Table 1)