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

GB/T 14078-2024

Replacing GB/T 14078-2010

Technical specification for He-Ne lasers

氦氖激光器技术规范

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. This document replaces GB/T 14078-2010 "Technical Specifications for Helium-Neon Lasers". Compared with GB/T 14078-2010, in addition to the structural adjustment In addition to editorial changes, the main technical changes are as follows:

- Changed the laser classification (see 4.1, 4.1 of the.2010 edition);
- Changed the main technical parameters (see Table 1, Table 1 of the.2010 edition);
- Changed the inspection methods of main technical parameters (see 6.2, 6.3 of the.2010 edition);
- Added the test of average life (see 6.4);
- Added safety and protection inspection (see 6.5);
- Deleted the quality assurance period (see Chapter 9 of the.2010 edition). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Optical Radiation Safety and Laser Equipment Standardization (SAC/TC284). This document was drafted by: China Institute of Metrology, Shanghai Institute of Metrology and Testing Technology, Huazhong University of Science and Technology, Peking University, Chengdu Guoxiong Optoelectronics Technology Co., Ltd., China Electronics Technology Group Corporation 11th Research Institute, Hubei Institute of Metrology and Testing Technology, Daheng New Era Technology Co., Ltd. The main drafters of this document are. Deng Yuqiang, Xia Ming, Yin Cong, Li Chaochen, Tang Xiahui, Zhao Yanying, Zhan Jie, Qi Yan, Sun Dianzhong, Xu Xun, and Zhang Yi. The previous versions of this document and the documents it replaces are as follows:
- First published in.1993 as GB/T 14078-1993, first revised in.2010;
- This is the second revision. HeNe Laser Technical Specifications

1 Scope

GB/T 14078-2024 is the Chinese national standard on technical specification for he-ne lasers, in the field of electronics. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 23 August 2024 by the State Administration for Market Regulation; Standardization

Administration of China, and has been in force since 1 December 2024. Classification: ICS 31.260, CCS L51. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the classification and technical requirements of He-Ne lasers, describes the corresponding test methods, and specifies the acceptance rules, marking, packaging and Requirements for packaging, transportation and storage. This document is applicable to the manufacture of continuous wave He-Ne lasers with a wavelength of 632.8nm. The manufacture of He-Ne lasers with other wavelengths shall refer to this document.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 191 Pictorial markings for packaging, storage and transportation

GB/T 2423.1 Environmental testing for electric and electronic products Part

3 Terms and definitions

The following terms and definitions defined in GB/T 15313-2008 are applicable to this document.

3.1 Helium-Neonlaser; He-Ne laser A laser that uses neon as the working substance and helium as the auxiliary gas.

Note. Hereinafter referred to as laser.

3.2 Mean time to failure; MTTF The average working time before a product becomes irreparable.

3.3 Ignition voltage discharge voltage The voltage required between the two electrodes to break down the laser discharge tube and produce a stable discharge.

13 Classification and measurement of laser products

GB/T 7257-2013 He-Ne laser parameter measurement method

GB/T 10320-2011 Electrical safety of laser equipment and facilities

GB/T 13739-2011 Test method for laser beam width and divergence angle and identification method for transverse mode

GB/T 15313-2008 Laser Terminology

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