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

GB 24461-2009

Replacing GB/T 24461-2009

Technical requirements for luminaries used for cleanroom

洁净室用灯具技术要求

(English Translation)

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Table of Contents

Preface
1 Scope
2 Normative references
3 Terms and Definitions
4 General requirements
5 Technical requirements
5.1 Mark
5.2 Structure
5.3 Luminous maintenance life
5.4 Electromagnetic compatibility
5.5 Transient light artifacts
5.6 Brightness Limitation
6 Test methods
6.1 Mark
6.2 Structure
6.3 Luminous maintenance life
6.4 Electromagnetic compatibility
6.5 Transient light artifacts
6.6 Brightness Limitation
Reference

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document replaces GB/T 24461-2009 "Technical Requirements for Lamps for Clean Rooms": Compared with GB/T 24461-2009, except for structural adjustments in addition to general and editorial changes, the main technical changes are as follows:

- a) Modified the scope of application of the standard (see Chapter 1, Chapter 1 of the:2009 edition);
- b) Added five terms and definitions: "transient light artifact", "fluctuation depth", "flicker", "stroboscopic effect" and "lumen maintenance life" (see 3.6~ 3:10), the definitions of the

four terms "clean room", "clean area", "cleanliness" and "clean room lamps" have been changed (see 3.1, 3:2, 3:4, 3:5; 2009 version 4:1, 4:2, 4:4, 4:5);

c) Deleted the classification of lamps (see Chapter 5 of the:2009 edition), creepage distances and clearances (see Chapter 8 of the:2009 edition), and grounding regulations (see Chapter 9 of the:2009 edition), terminal blocks (see Chapter 10 of the:2009 edition), external wiring and internal wiring (see Chapter 11 of the:2009 edition), protection against electric shock (see Chapter 12 of the:2009 edition), durability test and thermal test (see Chapter 12 of the:2009 edition) Chapter 13 of the:2009 edition), dust protection, against solid foreign objects and water resistance (see Chapter 14 of the:2009 edition), insulation resistance and electrical strength (see Chapter 15 of the:2009 edition), heat resistance, fire resistance and marking resistance (see Chapter 16 of the:2009 edition);

d) Changed the general requirements (see Chapter 4, Chapter 3 of the:2009 edition);

e) Changed the relevant requirements for marking (see 5.1, Chapter 6 of the:2009 edition);

f) Changed the relevant requirements for structure (see 5.2, Chapter 7 of the:2009 edition);

g) Added requirements and test methods for luminous flux maintenance life (see 5.3 and 6:3);

h) Added requirements and test methods for electromagnetic compatibility (see 5.4 and 6:4);

i) Added requirements and test methods for transient optical artifacts (see 5.5 and 6:5);

j) Added brightness limit requirements and test methods (see 5.6, 6:6):

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1 Scope

This document specifies recessed luminaires for clean rooms and ceiling-mounted fixed luminaires that use electric light sources and have a power supply voltage not exceeding 1000V:

The technical requirements for lamps (hereinafter referred to as "lamps") describe the corresponding test methods:

This document applies to lamps installed in places with cleanliness requirements or similar places:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated

referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 2900.65 Electrical terminology lighting GB/T 7000.1-2023 Luminaires Part 1: General requirements and tests GB/T 7000.201 Luminaires Part 2-1: Fixed general purpose luminaires with special requirements GB/T 7000.202 Luminaires Part 2-2: Recessed luminaires with special requirements GB/T 9468 General requirements for goniophotometric measurement of lamps GB 17625.1 Electromagnetic compatibility limits Part 1: Harmonic current emission limits (Equipment input current $\leq 16\text{A}$ per phase) GB/T 17743 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment GB/T 18595-2014 Electromagnetic compatibility and immunity requirements for general lighting equipment GB/T 25915.4-2010 Clean rooms and related controlled environments Part 4: Design, construction, start-up GB/T 31897.1 Lamp performance Part 1: General requirements GB/T 31897.201-2016 Lamp performance Part 2-1: Special requirements for LED lamps GB/T 33721-2017 Reliability test method for LED lamps GB 50034 architectural lighting design standards IEC TR61547-1:2017 Electromagnetic compatibility and immunity requirements for general lighting equipment Part 1: Objective light scintillator and voltage IEC TR63158 Objective test method for stroboscopic effect of lighting equipment for general lighting (Equipment for general IEEEStd1789-2015 IEEE recommended practices for high-brightness LEDs with adjustable current to reduce health risks to viewers

3 Terms and definitions

GB/T 7000.1-2023, GB/T 9468, GB/T 31897.1, GB/T 31897.201-2016, GB 50034 and the terms and definitions defined in GB/T 2900.65 and the following apply to this document: