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

**GB/T 30117.6-2025**

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**Photobiological safety of lamps and lamp systems - Part 6:  
Ultraviolet lamp products  
(English Translation)**

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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 is Part 6 of GB/T 30117. GB/T 30117 has been published in the following parts.

- Photobiological safety of incoherent optical products Part 1: General requirements;
- Photobiological safety of lamps and lamp systems Part 2: Guidance on manufacturing requirements related to safety of non-laser optical radiation;
- Photobiological safety of lamps and lamp systems Part 3: Guidelines for the safe use of intense pulsed light equipment in humans;
- Photobiological safety of lamps and lamp systems Part 4: Measurement methods;
- Photobiological safety of lamps and lamp systems Part 5: Projectors;
- Photobiological safety of lamps and lamp systems Part 6: Ultraviolet lamp products.

This document is modified to adopt IEC 62471-6:2022 "Photobiological safety of lamps and lamp systems - Part 6: Ultraviolet lamp products".

This document has the following structural adjustments compared to IEC 62471-6:2022.

- Appendix B corresponds to Appendix C in IEC 62471-6:2022;
- Appendix C corresponds to Appendix B in IEC 62471-6:2022;
- Appendix D corresponds to Appendix E in IEC 62471-6:2022;
- Appendix E corresponds to Appendix D in IEC 62471-6:2022;
- "Reference documents" in the informative appendix are uniformly adjusted to "references", and the relevant clause numbers in the appendix are deleted, and the subsequent clause numbers are changed to Move forward and keep the clause numbers continuous.

The technical differences between this document and IEC 62471-6:2022 and their reasons are as follows.

- ISO 7010 is replaced by the normative reference GB/T 31523.1-2015 to facilitate the application of this document (see 7.3.3, 7.3.4);
- The normative reference GB/T 30117.1-2024 replaces IEC 62471:2006 to facilitate the application of this document (see Section 1 Chapter, 3.9, 4.1, 4.2, C.3.10, F.3.4);
- IEC 61549 is replaced by the normative reference GB/T 21092-2013 to facilitate the application of this document (see 7.3.4, 7.4.4);
- The normative reference GB/T 4706.85-2024 replaces IEC 60335-2-27 to facilitate the application of this document (see Chapter 1, 4.1, Table 3);
- Replaced IEC 60601-2-57 with the normative reference YY9706.257-2021 to facilitate the application of this document (see Chapter 1, Table 3, Table 4).

The following editorial changes have been made to this document.

- Added a note to the scope of Chapter 1;
- Correct "see 5.3.3" in footnote b of Table 1 to "see 5.3.4";
- Change the first paragraph of 5.3.3 "The products listed in Table 2 are suitable for application scenarios that require special training and usually only require administrative control measures" "Table 2" was corrected to "Table 3";
- Change 5.3.3 paragraph 2 "Table 2 lists the items that require engineering control measures and/or personal protective equipment as well as administrative controls and special training "Table 2" in the "Products" section was corrected to "Table 4";

- Added introductory words before the items in 6.1;
- The value of the abscissa in Figure E.2 is corrected from "17" to "7";
- Replaced IEC 62368-1:2018 with the informative reference GB 4943.2-2022;
- Replaced IEC TR 62471-4:2022 with the informative reference GB/T 30117.4-2023.

## Introduction

Most lamps and lamp systems are safe and do not pose photobiological hazards under normal exposure conditions. However, UV lamp products are Under certain conditions, light radiation hazards may occur during use; therefore, it is necessary to evaluate the direct effects of light radiation from these products on human eyes and skin.

Possible risks arising from direct/indirect radiation.

GB/T 30117.1-2024 covers the optical radiation hazards caused by all types of lamps and broadband light sources, including light-emitting diodes (LED), incandescent lamps, low-pressure and high-pressure gas discharge lamps, arc lamps and other types of light source products; including those that mainly produce ultraviolet radiation Various lamps and lamps, such as ultraviolet light sources excited by fluorescent radiation materials, are used for insect trapping, scientific experiments, mineral identification, non-destructive testing, disinfection and Sterilization, etc.

This document provides a Risk Grade (RG) classification system for all UV lamp products, as well as the assessment distances and measurements for different products.

Conditions (see Appendix A and Appendix B). This document applies only to products whose sole purpose is to emit ultraviolet radiation and is based on GB/T 30117.1-2024 is refined. Its advantage is that for lamps that mainly emit ultraviolet light, it is not necessary to evaluate visible light and infrared light.

Radiation risk. The risk levels determined in this document can also help to carry out other necessary risk assessments, such as occupational exposure risks in the workplace.

Risk assessment, etc.

GB/T 30117 is intended to consist of the following parts.

--- Part 1: General requirements. The purpose is to standardize the assessment requirements, hazard types, emission limits, and other requirements for the photobiological safety of incoherent optical products.

Value and hazard level classification method.

--- Part 2: Guidance on manufacturing requirements related to non-laser optical radiation safety. The purpose is to standardize the optical radiation safety of non-laser products.