

ICS 29.140.01
CCS K 74



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

GB/T 30117.7-2026

**Photobiological safety of lamps and lamp systems - Part 7:
Light sources and luminaires primarily emitting visible
radiation**

灯和灯系统的光生物安全 第7部分:主要发射可见辐射的光源和灯具
(English Translation)

Issued on: February 27, 2026

Implemented on: September 1, 2026

Issued by: State Administration for Market Regulation

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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 is Part 7 of GB/T 30117. GB/T 30117 has the following parts published.

- Photobiological safety of incoherent light products - Part 1: General requirements;
- Photobiological safety of lamps and lamp systems, Part 2: Guidance on manufacturing requirements related to safety of non-laser light radiation;
- Photobiological safety of lamps and lamp systems Part 3: Guidelines for the safe use of high-intensity pulsed light source devices for the human body;

---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;
---Photobiological safety of lamps and lamp systems Part 7: Light sources and luminaires that primarily emit visible radiation.

This document is equivalent to IEC 62471-7:2023 "Photobiological safety of lamps and lamp systems - Part 7: Light emitting primarily visible radiation".

Sources and lighting fixtures.

The following minimal editorial changes have been made to this document.

---Incorporates amendments to IEC 62471-7:2023/COR1.2023; the relevant clauses are indicated by vertical margins.

The double lines (||) are marked;

---Incorporates amendments to IEC 62471-7:2023/COR2.2024; the relevant clauses are indicated by vertical margins.

The double lines (||) are marked;

---Incorporates amendments to IEC 62471-7:2023/ISH1.2025; the relevant clauses are indicated by vertical margins.

The double lines (||) are used to indicate this.

---Notes have been added to Appendix B to explain the corresponding national standards for relevant international standards.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China National Light Industry Council.

This document was prepared by the National Technical Committee on Standardization of Lighting Appliances (SAC/TC224) and the National Technical Committee on Standardization of Optical Radiation Safety and Laser Equipment.

It is jointly managed by the Technical Committee (SAC/TC284).

Introduction

The main element of the document title in the IEC 62471 series uses "lamp and lamp system", but in the supplementary element of the document title in Part 7...

The term "light source and luminaire" has been changed. This is because the introduction

of new LED technology has led to changes in the characteristics of the light-emitting components; therefore, "electric light source" and "luminaire" are used instead.

Replaces old terminology.

"Electric light source" is a general term for products that produce light, which also includes "lamp" (i.e., a light source with a lamp holder system).

"Luminaire" is a basic term (see 845-30-001 in GB/T 2900.65-2023), referring to the distribution, transmission, or alteration of at least one type of light radiation.

The device that emits light, including all the necessary components for fixing and protecting the source, as well as the necessary circuitry and connections to the power source.

The device, but not the source itself.

When luminaires are designed and manufactured in accordance with the requirements of this document, it can be assumed that they will operate safely under normal use and will not cause [damage/harm].

Photobiological hazards. The compliance of luminaires can be verified by applying the assessment procedures described in this document.

The light source may be interchangeable or it may be a non-removable part of the lamp fixture. If the light source is a non-removable part of the lamp fixture, then the lamp...

The device can also be considered a light source system (corresponding to a lamp system).

This document covers most electric light sources and luminaires within its scope, taking into account their spectrum, light distribution, light intensity, and natural avoidance response—for example, people generally do not look directly at bright light sources, so there is no photobiological hazard. However, there are still some light sources and lamps that emit light radiation...

Radiation exposure may have adverse health effects. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has published guidelines and regulations regarding broadband optical radiation sources.

A series of exposure limits for photobiological hazards were established.

This document introduces a new evaluation procedure to address a variety of lighting applications, including object and scene lighting applications as well as signal applications.

This new method employs revised time bases (and emission limits) related to intentional or unintentional direct viewing of luminaires, as well as those depending on the application.

The evaluation distance used. These emission limits are based on ICNIRP's exposure limits.

This document employs a complete procedure to cover the wavelength range of 200nm to

3000nm as described in IEC 62471.

It poses a photobiological hazard.

This assessment procedure is product- and application-specific and will provide a pass/fail result for a particular product in a given application.

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

---Photobiological Safety of Incoherent Optical Products - Part 1: General Requirements.

The purpose is to standardize the photobiological safety of incoherent optical products.

The assessment requirements, hazard types, emission limits, risk level classifications, risk labels, and safety control measures.

---Photobiological Safety of Lamps and Lamp Systems Part 2: Guidance on Manufacturing Requirements Related to Non-Laser Light Radiation Safety. The purpose is to provide guidance on...

The basic principles for the safety requirements of optical radiation in non-laser products are established to guide the relevant general product specifications in stipulating safety requirements.

---Photobiological Safety of Lamps and Lamp Systems Part 3: Safe Use Guidelines for High-Pulse Light Source Devices to Humans. The purpose is to...

Provide guidance on establishing safety measures and procedures to protect people exposed to light radiation hazards and related dangers.

---Photobiological safety of lamps and lamp systems, Part 4: Measurement methods. The purpose is to standardize the measurement of photobiological safety of lamps and lamp systems.

Test conditions and test methods.

---Photobiological safety of lamps and lamp systems, Part 5: Projectors. The purpose is to specify the photobiological safety of light emitted by projectors.

All requirements.

---Photobiological Safety of Lamps and Lamp Systems Part 6: Ultraviolet Lamp Products. The purpose is to regulate the manufacturing of ultraviolet lamp products.

The manufacturing, installation, use, and human protection of related products are all ensured to guarantee the safety of light radiation when using them.

---Photobiological safety of lamps and lamp systems Part 7: Light sources and luminaires that primarily emit visible radiation. The purpose is to specify the main...

Photobiological safety requirements for light sources and luminaires that emit visible