

TECHNICAL REPORT



**Photobiological safety of lamps and lamp systems –
Part 2: Guidance on manufacturing requirements relating to non-laser optical
radiation safety**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	7
4 Risk groups applied for optical radiation safety assessments.....	10
4.1 Basis for optical radiation safety classification.....	10
4.2 Assessment criteria	10
4.3 Application-related issues	10
4.3.1 Near-infrared sources.....	10
4.3.2 “Point sources”	11
4.3.3 Application-related vertical standards	11
5 Guidelines for lamp and lamp system manufacturers on how to apply IEC 62471	11
5.1 Limit values	11
5.1.1 General	11
5.1.2 Limits provided in irradiance/radiant exposure	12
5.1.3 Limits provided in (time integrated) radiance	12
5.2 Guidelines for lamp/LED manufacturers	12
5.2.1 General	12
5.2.2 Measurement conditions.....	12
5.2.3 User information	13
5.3 Guidelines for lamp system/luminaire manufacturers	13
5.3.1 General	13
5.3.2 Sources for general lighting service (GLS).....	13
5.3.3 Multi-purpose lamps	14
5.3.4 Determination of the hazard distance.....	14
5.4 Labelling	15
5.5 Other information provisions.....	16
6 Allocation of safety measures	17
6.1 General.....	17
6.2 Maximum acceptable viewer-related risk	18
Annex A (informative) Radiance and ocular hazards from extended sources.....	20
Annex B (informative) Determination of hazard distances	26
Annex C (informative) Sources for general lighting service (GLS)	36
Annex D (informative) Lamps and lamp systems with integrated, attached beam-shaping or projection optics.....	41
Bibliography.....	45
Figure 1 – Example of graphic presentation of distant dependent emission hazard values.....	15
Figure 2 – Example of warning label for a lamp with multiple hazard spectral regions	17
Figure A.1 – Invariance of radiance with distance from an extended source.....	21
Figure A.2 – Usual measurement conditions for the determination of radiance and time integrated radiance	22

Figure A.3a – Source size larger than the FOV (overfilled).....	23
Figure A.3b – Source size smaller than the FOV (under-filled)	23
Figure A.3 – Source sizes	23
Figure A.4 – $B(\lambda)$ -weighted radiance distribution of a state-of-the-art “pc-white” LED component.....	24
Figure B.1 – Normalized correlation between radiance L and corresponding irradiance E for varying values of source diameter and distance	27
Figure B.2 – Direct intra-beam viewing of an arc searchlight showing a magnification of the actual arc.....	29
Figure B.3 – Calculated flash distance of LEDs depending on the individual half intensity angle θ of the spatial emission	30
Figure B.4 – Actinic UV-related safe use conditions for the example radiator	32
Figure B.5 – Distance-dependant (spectrally weighted) Exempt Risk Group limits for the spatially averaged radiance of a halogen lamp of 7 mm source size.....	34
Figure C.1 – Measured spatially averaged radiance	37
Figure C.2 – Relationships between illuminance of 500 lux and source luminance [cd/m^2] (indicated) for several source sizes and distances of some typical luminances.....	38
Figure D.1 – Ultraviolet and infrared filtering by projection optics	41
Figure D.2 – Magnified apparent source size of the filament in an incandescent projection lamp	42
Figure D.3 – Examples of projection optics	42
Figure D.4 – Formation of a virtual LED chip image by the integrated lens.....	43
Figure D.5 – Imaging of the apparent source and measurement condition for the assessment of sources with built-in or attached projection optics	43
Table 1 – Hazard-related risk group labelling of lamp systems.....	16
Table 2 – Explanation of labelling information and guidance on control measures.....	17
Table 3 – Maximum acceptable risk group of products assessed for viewer-related risk under application specific conditions.....	19
Table B.1 – Spatially averaged radiance	35
Table C.1 – Risk group-related inverse square law and hazard distances	37
Table C.2 – Risk group-related hazard distances (in m) for halogen lamp of 7 mm source diameter and with luminance of $3 \times 10^7 \text{ cd}\cdot\text{m}^{-2}$	39

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PHOTOBIOLOGICAL SAFETY OF LAMPS AND LAMP SYSTEMS –**Part 2: Guidance on manufacturing requirements
relating to non-laser optical radiation safety**

FOREWORD

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IEC 62471-2, which is a technical report, has been prepared by Technical Committee 76: Optical radiation safety and laser equipment

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
76/396/DTR	76/410/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62471 series, published under the general title *Photobiological safety of lamps and lamp systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

INTRODUCTION

Optical radiation hazards from all types of lamps or other broadband light sources are assessed by the application of IEC 62471:2006 (Edition 1), *Photobiological safety of lamps and lamp systems*. IEC 62471 covers LEDs as well as incandescent, low and high pressure gas-discharge, arc and other lamps. It also covers electrically-powered optical radiation sources that are not lamps. The standard provides a risk group classification system for all lamps and lamp systems, and the measurement conditions are well developed. IEC 62471 does not include manufacturing or user safety requirements that may be required as a result of a lamp or lamp system being assigned to a particular risk group. The safety requirements for lamp systems necessarily vary and are best dealt with in vertical standards. This Part 2 provides the basis for safety requirements dependent upon risk group classification and examples thereof. The assigned risk group of a product may be used to assist with risk assessments, e.g. for occupational exposure in workplaces. National requirements may exist for the assessment of products or occupational exposure.

NOTE 1 There are some instances where the IEC 60825 laser product standards may be useful for a nearly "point" source, as in an LED fibre source or a superluminescent diode (see 3.16).

NOTE 2 IEC 62471 is currently being revised and will be published as IEC 62471-1.

PHOTOBIOLOGICAL SAFETY OF LAMPS AND LAMP SYSTEMS –

Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety

1 Scope

This technical report provides the basis for optical radiation safety requirements of non-laser products, serving as a guide for development of safety requirements in vertical product standards and assisting lamp system manufacturers in the interpretation of safety information provided by the lamp manufacturers.

This report provides guidance on:

- requirements for optical radiation safety assessment;
- allocation of safety measures;
- labelling of products.

This technical report does not address safety requirements of intentional exposure to optical radiation from sun tanning equipment, ophthalmic instruments or other medical/cosmetic devices whose specific safety issues are addressed through appropriate standards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62471, *Photobiological safety of lamps and lamp systems*

IEC 60825 (all parts), *Safety of laser products*

IEC 60050-845, *International Electrotechnical Vocabulary – Chapter 845: Lighting*

IEC 60417, *Graphical symbols for use on equipment*