Photobiological safety of lamps and lamp systems - Part 5: Image projectors

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NATIONAL FOREWORD

See Eesti standard EVS-EN 62471-5:2015 sisaldab Euroopa standardi EN 62471-5:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 62471-5:2015 consists of the English text of the European standard EN 62471-5:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.10.2015.	Date of Availability of the European standard is 16.10.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Photobiologische Sicherheit von Lampen und Lampensystemen - Teil 5: Photobiologische Sicherheit von Lampensystemen für Bildprojektoren (IEC 62471-5:2015)

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European Committee for Electrotechnical Standardization
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European Foreword

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The following dates are fixed:

– latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-04-16
– latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-07-14

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Endorsement notice

The text of the International Standard IEC 62471-5:2015 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050	series	International Electrotechnical Vocabulary -	-	series
IEC 60065	-	Audio, video and similar electronic apparatus - Safety requirements	EN 60065	-
IEC 60825-1	2014	Safety of laser products -- Part 1: Equipment classification and requirements	EN 60825-1	2014
IEC 60950-1	-	Information technology equipment - Safety -- Part 1: General requirements	EN 60950-1	-
IEC 62471	-	Photobiological safety of lamps and lamp systems	EN 62471	-

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INTRODUCTION

Most lamps and lamp systems are safe and do not pose photobiological risks except under unusual exposure conditions. This also is the case for optical image projectors where experience shows that even high power cinema projectors may be safe for accidental momentary viewing and can only under some conditions pose optical hazards at close distances or for intentional 'long-duration' staring into the source. The rapid development of solid-state and other lamps or lamp systems has permitted new projector products, and generated the need for a photobiological safety standard for this group of lamp systems.

Optical radiation hazards from all types of lamps and lamp systems are currently assessed by the application of IEC 62471:2006 (CIE S 009:2002), *Photobiological safety of lamps and lamp systems*. IEC 62471 covers LEDs, incandescent, low- and high-pressure gas-discharge, arc and other lamps. Following the concept of vertical standards, the risk group classification system in IEC 62471 for lamps is to be adapted for specific product groups such as image projectors.

This part of IEC 62471 provides a risk group classification system for image projectors, and measurement conditions for optical radiation emitted by image projectors. It includes manufacturing requirements that may be required as a result of an image projector system being assigned to a particular risk group. Therefore, this part of IEC 62471 provides safety requirements for lamp systems that are intended to produce projected visible optical radiation, such as theatre projectors, data projectors and home-use projectors. The assigned risk group of a projector product also may be used by projector manufacturers to assist with any risk assessments, e.g. for occupational exposure in workplaces. National requirements may exist for the assessment of products or occupational exposure.

The emission limits provided in this part of IEC 62471 are derived from the exposure limits specified by ICNIRP in their 2013 Guidelines for incoherent visible and infrared radiation [1][1]. These exposure limits are also the basis for the emission limits to be specified in the future International Standard IEC 62471-1[2].

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1 Numbers in square brackets refer to the Bibliography.

2 Revision of IEC 62471:2006.

PHOTOBIOLOGICAL SAFETY OF LAMPS AND LAMP SYSTEMS –

Part 5: Image projectors

1 Scope

This part of IEC 62471 provides requirements regarding photobiological safety of the optical radiation emitted by image projectors. This part of IEC 62471 does not deal with other hazards such as electrical, mechanical or fire hazards.

This part of IEC 62471 provides requirements regarding:

- optical radiation safety assessment of image projectors;
- projector risk groups;
- testing conditions and measurement conditions;
- manufacturer's requirements including user information.

The scope of this part of IEC 62471 is photobiological safety of image projectors including the emissions from laser-illuminated projectors that fulfill the requirements as specified in IEC 60825-1:2014, 4.4 and for which visible light emission has been excluded from classification in IEC 60825-1.

This part of IEC 62471 does not address safety requirements for laser display products where collimated laser beams — generally scanned — are employed. It does address those laser-illuminated projectors that employ a laser source to illuminate, for example, a micro-electro-mechanical system (MEMS) without scanned beams or crystal-based display projector system.

NOTE Image projectors containing lasers are subject to those provisions of IEC 60825-1 applicable to the embedded laser. See IEC 60825-1:2014, 4.4 for which visible light emission has been excluded from the laser product classification.

This part of IEC 62471 includes projectors for only visible image projection and does not include ultraviolet (UV) projectors, infrared (IR) projectors, general lighting service (GLS) lamps (GLS; defined in IEC 62471) or projector lamp systems used for general lighting, which are treated in separate International Standards.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 60825-1:2014, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 60050 (all parts), *International Electrotechnical Vocabulary* (available at http://www.electropedia.org)

IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*