

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62471-7:2023 sisaldab Euroopa standardi EN IEC 62471-7:2023 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62471-7:2023 consists of the English text of the European standard EN IEC 62471-7:2023.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.03.2023.	Date of Availability of the European standard is 24.03.2023.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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

ICS 29.140.01, 31.260

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

ICS 29.140.01; 31.260

English Version

Photobiological safety of lamps and lamp systems - Part 7: Light  
sources and luminaires primarily emitting visible radiation  
(IEC 62471-7:2023)

Sécurité photobiologique des lampes et des appareils  
utilisant des lampes - Partie 7: Sources de lumière et  
luminaires qui émettent principalement un rayonnement  
visible  
(IEC 62471-7:2023)

Photobiologische Sicherheit von Lampen und  
Lampensystemen - Teil 7: Lichtquellen und Leuchten, die  
hauptsächlich sichtbare Strahlung aussenden  
(IEC 62471-7:2023)

This European Standard was approved by CENELEC on 2023-03-23. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## European foreword

The text of document 34/1004/FDIS, future edition 1 of IEC 62471-7, prepared by IEC/TC 34 "Lighting" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62471-7:2023.

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) 2023-12-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-03-23

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

## Endorsement notice

The text of the International Standard IEC 62471-7:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60432-1:1999	NOTE Approved as EN 60432-1:2000 (modified)
IEC 60432-1:1999/A1:2005	NOTE Approved as EN 60432-1:2000/A1:2005 (not modified)
IEC 60432-1:1999/A2:2011	NOTE Approved as EN 60432-1:2000/A2:2012 (not modified)
IEC 60432-2:1999	NOTE Approved as EN 60432-2:2000 (modified)
IEC 60432-2:1999/A1:2005	NOTE Approved as EN 60432-2:2000/A1:2005 (modified)
IEC 60432-2:1999/A2:2012	NOTE Approved as EN 60432-2:2000/A2:2012 (not modified)
IEC 60432-3:2012	NOTE Approved as EN 60432-3:2013 (not modified)
IEC 60598 (series)	NOTE Approved as EN 60598 (series)
IEC 60598-2-13:2006	NOTE Approved as EN 60598-2-13:2006 (not modified) + A11:2021
IEC 60598-2-13:2006/A1:2011	NOTE Approved as EN 60598-2-13:2006/A1:2012 (not modified)
IEC 60598-2-13:2006/A2:2016	NOTE Approved as EN 60598-2-13:2006/A2:2016 (not modified)
IEC 60825-1:2014	NOTE Approved as EN 60825-1:2014 (not modified) + A11:2021
IEC 62031:2018	NOTE Approved as EN IEC 62031:2020 (not modified) + A11:2021
IEC 62035:2014	NOTE Approved as EN 62035:2014 (modified)
IEC 62035:2014/A1:2016	NOTE Approved as EN 62035:2014/A1:2019 (not modified)

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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

**Sécurité photobiologique des lampes et des appareils utilisant des lampes –  
Partie 7: Sources de lumière et luminaires qui émettent principalement  
un rayonnement visible**



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2023 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

#### IEC publications search - [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [sales@iec.ch](mailto:sales@iec.ch).

#### IEC Products & Services Portal - [products.iec.ch](http://products.iec.ch)

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

### A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Recherche de publications IEC -

[webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

#### Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [sales@iec.ch](mailto:sales@iec.ch).

IEC Products & Services Portal - [products.iec.ch](http://products.iec.ch)

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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

**Sécurité photobiologique des lampes et des appareils utilisant des lampes –  
Partie 7: Sources de lumière et luminaires qui émettent principalement  
un rayonnement visible**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 29.140.01; 31.260

ISBN 978-2-8322-6523-9

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	8
4 Optical radiation hazards of light sources and luminaires.....	15
5 Actinic UV hazards exposure for skin and eye (200 nm to 400 nm).....	16
5.1 General.....	16
5.2 Actinic UV assessment for light sources.....	16
5.3 Actinic UV assessment for luminaires .....	16
6 UV-A hazard assessment for the eye lens (315 nm to 400 nm).....	17
6.1 General.....	17
6.2 UV-A light source and luminaire assessment .....	17
7 Retinal blue light hazard assessment (300 nm to 700 nm) .....	18
7.1 General.....	18
7.2 Blue light hazard assessment for light sources.....	18
7.3 Blue light hazard assessment for luminaires .....	18
7.4 Retinal blue light hazard assessment – Small source (300 nm to 700 nm).....	21
8 Retinal thermal hazard assessment (380 nm to 1 400 nm).....	21
8.1 General.....	21
8.2 Retinal thermal hazard for light source assessment .....	21
8.3 Retinal thermal hazard assessment for luminaire .....	22
8.4 Retinal thermal hazard assessment – Weak visual stimulus (780 nm to 1 400 nm) .....	22
9 Infrared hazard assessment for the eye (780 nm to 3 000 nm).....	22
9.1 General.....	22
9.2 Light source and luminaire assessment.....	23
10 Thermal hazard assessment for the skin (380 nm to 3 000 nm) .....	23
10.1 General.....	23
10.2 Light source and luminaire assessment.....	23
Annex A (informative) Information on emission limits for light sources and luminaires.....	24
Annex B (informative) Information on UV hazards exposure (200 nm to 400 nm) .....	26
Annex C (informative) Information on retinal hazards (300 nm to 1 400 nm).....	27
Annex D (informative) Information on IR-hazard (380 nm to 3 000 nm) .....	29
Annex E (informative) Example of a complete luminaire assessment of a LED office luminaire .....	30
E.1 UV assessment.....	30
E.1.1 Actinic UV (Clause 5) .....	30
E.1.2 UV-A (Clause 6) .....	30
E.2 Retinal hazard assessment.....	30
E.2.1 Blue light hazard (Clause 7).....	30
E.2.2 Thermal retinal hazard (Clause 8).....	30
E.3 Infrared radiation hazard assessment for the eye (780 nm to 3 000 nm) (Clause 9).....	30
E.4 Thermal hazard assessment for the skin (380 nm to 3 000 nm) (Clause 10).....	30
Bibliography.....	31



Figure C.1 – Flowchart to define worst-case (minimum) time to dose for the assessment of the blue light hazard $L_B$ as a function of application-specific conditions of luminaires .....	28
Table 1 – Optical radiation hazards covered in this document .....	15
Table 2 – Application-related blue light radiance emission limits at assessment distances for luminaires .....	20

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PHOTOBIOLOGICAL SAFETY OF LAMPS AND LAMP SYSTEMS –****Part 7: Light sources and luminaires primarily emitting visible radiation****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62471-7 has been prepared by IEC technical committee 34: Lighting. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
34/1004/FDIS	34/1011/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts in 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 document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

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

## INTRODUCTION

The wording "lamps and lamp systems" is used in the title of the IEC 62471 series. However, in the title of this Part 7, the wording "light sources and luminaires" is used. The reason for this is that due to the introduction of new LED technologies the characteristics of the light-generating components have changed. Therefore, the terms "electrical light source" and "luminaire" are nowadays used in TC 34 instead of "lamp" and "lamp system".

"Electric light source" is the generic term for products which produce light; the term "lamp" (light source with a lamp cap-holder system) is thereby included.

"Luminaire" is the basic term (see IEC 60050-845:2020, 845-30-001) for a product that includes all necessary accessories and describes a device that distributes, filters, or transforms the light produced from at least one source of optical radiation and which includes, except the sources themselves, all the parts necessary for fixing and protecting the sources and, where necessary, circuit auxiliaries together with the means for connecting them to the power supply.

When luminaires are designed and constructed in accordance with the requirements of this document, they are presumed to function safely under normal use and present a photobiological hazard. Conformity of luminaires can be verified by application of the assessment procedures described in this document.

The light sources can be interchangeable or an integral part of the luminaire. If the light source is an integral part of the luminaire, the luminaire can also be considered a light source system (corresponding to a lamp system).

Most electrical light sources and luminaires within the scope of this document will not present a photobiological hazard due to their spectra, their light distribution, the light levels, and the natural aversion responses – people do not usually stare into bright sources, for example. There remain, however, some light sources and luminaires, which have the potential to pose adverse health effects from the emitted optical radiation. Exposure limits for a range of photobiological hazards associated with broad-band optical radiation sources have been developed and published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

This document introduces a new assessment procedure to address the various lighting applications in which the intended purpose is the illumination of objects and scenes and in signalling applications. This new approach uses revised time bases (and emission limits) related to the intentional or unintentional direct viewing of the luminaire and assessment distances depending on application. These emission limits are based on the exposure limits of the ICNIRP.

In this document, a complete procedure is used to cover all photobiological hazards in the range of 200 nm to 3 000 nm as implemented in IEC 62471.

This procedure, based on a product- and application-related assessment, leads to a pass/fail result for a specific product in that given application.

## PHOTOBIOLOGICAL SAFETY OF LAMPS AND LAMP SYSTEMS –

### Part 7: Light sources and luminaires primarily emitting visible radiation

#### 1 Scope

This part of IEC 62471 specifies an assessment of the photobiological safety of electrical light sources and luminaires in normal use as well as some basic product requirements. It applies to electrical light sources and luminaires that emit radiation predominantly in the visible spectral range (380 nm to 780 nm) and are used to illuminate spaces or objects or used for signalling.

Electrical light sources and luminaires designed for emitting radiation in the visible range can also emit radiation in the ultraviolet (UV) and infrared (IR) regions depending on the technology applied. This document, therefore, includes the blue light, thermal, UV, UV-A, IR and skin thermal hazards for the optical radiation over the wavelength range 200 nm to 3 000 nm.

Electrical light sources and luminaires that are designed to predominantly emit radiation outside the visible spectral range (380 nm to 780 nm) (e.g. UV sterilizers or industrial heaters) are not within the scope of this document.

Electrical light sources for illumination are considered to emit continuous light for photobiological safety assessment. This includes light sources with pulse width modulation (PWM).

This document can also be applied to the illumination function of multi-function luminaires which can simultaneously perform functions other than illumination. Other standards can be applied to the non-illumination function(s).

This document can also be applied to electric light sources and luminaires which emit visible light, when there is no limitation on the presence of people (e.g. horticulture).

This document can also be applied to laser products used for illumination and signalling when the conditions of IEC 60825-1:2014, 4.4 are met.

NOTE See IEC 60825-1:2014 for other requirements of laser products.

This document is intended to be referenced by product standards for the assessment of applicable photobiological safety aspects. Additional details for the photobiological safety assessment and data presentation are specified in the product standards.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60050-845, *International Electrotechnical Vocabulary (IEV) – Part 845: Lighting*, available at <http://www.electropedia.org>

IEC 60598-1:2020, *Luminaires – Part 1: General requirements and tests*

IEC 62471:2006, *Photobiological safety of lamps and lamp systems*

IEC 62471-5:2015, *Photobiological safety of lamps and lamp systems – Part 5: Image projectors*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62471, IEC 60050-845 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

#### 3.1

##### **blue light hazard**

##### **BLH**

potential for a photochemically induced retinal injury (photoc maculopathy) resulting from optical radiation exposure at wavelengths primarily between 400 nm and 500 nm

Note 1 to entry: This damage mechanism dominates over the thermal damage mechanism for exposure durations exceeding 10 s.

Note 2 to entry: The weighting function extends into the UV-A for persons without a normal UV-A absorbing lens.

[SOURCE: IEC 60050-845:2020, 845-26-055, modified – In Note 2 to entry "action spectrum" has been replaced with "weighting function".]

#### 3.2

##### **exposure limit**

maximum level of exposure of a surface, usually the eye or skin, that is not expected to result in adverse biological effects

Note 1 to entry: Exposure limits for human safety of optical radiation,  $H_L$ , are normally recommended by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

Note 2 to entry: Exposure limits are often based on irradiance (e.g. for the skin), but where relevant, can also be based on radiance (e.g. the blue light hazard of extended sources).

[SOURCE: IEC 60050-845:2020, 845-26-072]

#### 3.3

##### **emission limit**

specified maximum emission level of a source of optical radiation that is not expected to result in adverse biological effect for a specific application

Note 1 to entry: Evaluation of sources to the emission limits can be based upon reasonably foreseeable conditions of time-weighted exposure. It incorporates both the concept of exposure duration and exposure distance and is derived from exposure limits.

[SOURCE: IEC 60050-161:1990, 161-03-12, modified – The domain has been deleted, the definition has been adapted in relation to optical radiation and the Note to entry has been added.]