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Light and lighting - Basic terms and criteria for specifying lighting requirements

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12665:2024 sisaldab Euroopa standardi EN 12665:2024 ingliskeelset teksti.	This Estonian standard EVS-EN 12665:2024 consists of the English text of the European standard EN 12665:2024.
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 08.05.2024.	Date of Availability of the European standard is 08.05.2024.
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.

ICS 01.040.91, 91.160.01

EUROPEAN STANDARD

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English Version

Light and lighting - Basic terms and criteria for specifying lighting requirements

Lumière et éclairage - Termes de base et critères pour la spécification des exigences en éclairage

Licht und Beleuchtung - Grundlegende Begriffe und Kriterien für die Festlegung von Anforderungen an die Beleuchtung

This European Standard was approved by CEN on 15 March 2024.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword

This document (EN 12665:2024) has been prepared by Technical Committee CEN/TC 169 “Light and lighting”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2024, and conflicting national standards shall be withdrawn at the latest by November 2024.

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

This document supersedes EN 12665:2018.

The main technical changes in this revision of EN 12665:2018 are through harmonization with the revised CIE International Lighting Vocabulary, CIE S 017:2020.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document specifies a basic framework intended to be used for the specification of lighting requirements.

Where a term is contained in CIE Publication CIE S 017:2020 ILV, *International Lighting Vocabulary* or IEC 60050-845, *International Electrotechnical Vocabulary*, *Part 845: Lighting*, a reference is given to the equivalent term where the terms in both documents are, for all practical purposes, identical.

NOTE Definitions from CIE S 017:2020 and IEC 60050-845:2020 contain notes providing information on the numbering in previous versions of both documents. These notes were generally omitted as they are not necessary for application in European standards.

For some terms, additional explanation is given in informative Annex A.

The lighting requirements for a space are determined by the need to provide:

— adequate illumination for safety and movement;

— conditions that will facilitate visual performance and colour perception;

— acceptable visual comfort for the occupants in the space.

The relative importance of these factors will vary for different applications. This basic framework covers aspects in the field of vision, photometry and colourimetry, involving natural and man-made optical radiation over the UV, the visible and the IR regions of the spectrum, and application subjects covering all usages of light, indoors and outdoors, including environmental, energy and sustainability requirements and aesthetics and non- image forming biological aspects.

Peculiar and specific terms can be defined in application standards.

Considerations should also be given to the energy used by lighting and to maintenance.

The parameters that need to be specified to ensure good visual conditions and an efficient lighting installation are common to many applications. These are dealt with in Clause 4 of this document.

LED terms and definitions already existing within EN 62504 have not been included in this document.

For terms and definitions concerning daylight openings within a building envelope the following standards may also be consulted:

— EN 12216, *Shutters, external blinds, internal blinds — Terminology, glossary and definitions*

— EN 12519, *Windows and pedestrian doors — Terminology*

1 Scope

This document defines basic terms and definitions for use in all lighting applications. This document also sets out a framework for the specification of lighting requirements, giving details of aspects that are to be considered when setting those requirements.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp/ui

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Eye and vision

3.1.1
adaptation
process by which the state of the visual system is modified by previous and present exposure to stimuli that can have various luminance values, spectral distributions and angular subtenses

Note 1 to entry: Adaptation to specific spatial frequencies, orientations, sizes, etc. is recognized as being included in this definition.

Note 2 to entry: The terms light adaptation and dark adaptation are also used, the former when the luminances of the stimuli are of at least several candelas per square metre, and the latter when the luminances are of less than some hundredths of a candela per square metre.

[SOURCE: IEC 60050-845:2020 845-22-012 / CIE S 017:2020; 17-22-012, modified - Note 2 to entry replaced]

3.1.2
accommodation
adjustment of the dioptric power of the crystalline lens by which the image of an object, at a given distance, is focused on the retina

[SOURCE: IEC 60050-845:2020 845-22-086 / CIE S 017:2020; 17-22-086]

3.1.3
visual acuity
visual resolution
<qualitatively> capacity for seeing distinctly fine details that have very small angular separation

[SOURCE: IEC 60050-845:2020 845-22-077 / CIE S 017:2020; 17-22-077]