

Luminaire performance - Part 2-1: Particular
requirements for LED luminaires

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Luminaire performance - Part 2-1: Particular requirements - LED
luminaires
(IEC 62722-2-1:2023)**

Performance des luminaires - Partie 2-1: Exigences
particulières - Luminaires à LED
(IEC 62722-2-1:2023)

Arbeitsweise von Leuchten - Teil 2-1: Besondere
Anforderungen an LED-Leuchten
(IEC 62722-2-1:2023)

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The following dates are fixed:

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IEC 62442-3 NOTE Approved as EN IEC 62442-3

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Luminaire performance –
Part 2-1: Particular requirements – LED luminaires**

**Performance des luminaires –
Partie 2-1: Exigences particulières – Luminaires à LED**



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

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Luminaire performance –
Part 2-1: Particular requirements – LED luminaires**

**Performance des luminaires –
Partie 2-1: Exigences particulières – Luminaires à LED**

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	8
4 Product information	9
5 General requirements	10
6 Test conditions	10
6.1 General test conditions	10
6.2 Luminaires using LED modules where compliance with IEC 62717 is given (Type A).....	11
6.3 Luminaires using LED modules where compliance with IEC 62717 is not given (Type B)	11
6.3.1 General	11
6.3.2 Creation of module families to reduce test effort	11
6.4 Performance requirements	12
7 Input power	13
8 Photometric performance.....	14
8.1 Luminous flux	14
8.2 Luminous intensity distribution, peak intensity and beam angle.....	14
8.2.1 General	14
8.2.2 Measurement.....	14
8.2.3 Luminous intensity distribution.....	14
8.2.4 Peak intensity	14
8.2.5 Beam angle	14
8.3 Luminaire luminous efficacy	14
9 Chromaticity coordinates, correlated colour temperature (CCT) and colour rendering.....	14
9.1 Chromaticity coordinates.....	14
9.2 Correlated colour temperature (CCT)	14
9.3 Colour rendering index (CRI)	14
10 LED luminaire life	14
10.1 General.....	14
10.2 Lumen maintenance.....	15
10.3 Endurance tests	15
11 Verification	15
Annex A (normative) Measurement method of LED luminaire characteristics	18
A.1 General.....	18
A.2 Electrical characteristics	18
A.3 Photometric characteristics	18
Annex B (informative) Explanation of recommended lifetime metrics	19
B.1 General.....	19
B.2 Lifetime specification	19
Annex C (normative) Methods for calculation and measurements of parameters for extension of electric and photometric data	20
C.1 Introductory remarks	20

C.2	General.....	20
C.3	Method 1 – Different current setting	21
C.3.1	General	21
C.3.2	Procedure.....	21
C.3.3	Example of applicability of Method 1 using a goniophotometer	23
C.4	Method 2 – Different binning (flux, CCT, CRI) of LED packages or LED modules	24
C.4.1	General	24
C.4.2	Procedure I for method 2 ($K\Phi$ for LED modules)	24
C.4.3	Procedure II for method 2 ($K\Phi$ for LED luminaires)	25
C.4.4	Procedure III for method 2 ($K\Phi$ for LED packages)	25
C.5	Method 3 – Use of a different LED controlgear or additional electrical components	26
C.5.1	General	26
C.5.2	Use of a different LED controlgear	26
C.5.3	Additional electrical components installed in the luminaire (e.g. controlling device)	26
C.6	Application of methods 1, 2 and 3 to luminaires of the same family	27
C.7	Overview of the methods in Annex C.....	27
Bibliography.....		29
Figure 1 – Terminals to be used for input power measurement		17
Figure C.1 – Example of flux vs current (in blue) and power vs current (in orange) curves, showing which are LUM_O or LUM_D measurements.....		22
Figure C.2 – Example of flux vs current (in blue) and power vs current (in orange) curves.....		23
Table 1 – Product information		10
Table 2 – Performance criteria for which testing is required		13
Table 3 – Sample sizes		16
Table C.1 – Overview of the methods in Annex C and parameters that can be derived from LUM_O		28

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LUMINAIRE PERFORMANCE –

Part 2-1: Particular requirements – LED luminaires

FOREWORD

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IEC 62722-2-1 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lighting. It is an International Standard.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment with IEC 62717:2014, IEC 62717:2014/AMD1:2015 and IEC 62717:2014/AMD2:2019;
- b) clarification of temperature requirements for the maintenance test, in 10.2 and Annex A;
- c) introduction of a new Annex C on methods for calculation and measurements of parameters for extension of electric and photometric data.

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

Draft	Report on voting
34D/1680/FDIS	34D/1687/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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62722 series, published under the general title *Luminaire performance* 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 in the data related to the specific document. At this date, the document will be

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INTRODUCTION

This document acknowledges the need for relevant tests for luminaires using LED as an electrical light source. This document is seen in close context with the publication of simultaneously developed performance standards for luminaires in general and for LED modules. This document does not consider luminaires designed for LED lamps, which are covered in IEC 62722-1. Changes in LED luminaires standards have an impact on LED module standards and vice versa, due to the behaviour of LED. Therefore, for the development of this document, the mutual consultancy of experts of both products has taken place.

The provisions in this document represent the technical knowledge of experts from the fields of the semiconductor (LED chip) industry and of the traditional electrical light sources and luminaires.

As this document has been simultaneously developed and edited with the standard for LED modules (IEC 62717), where appropriate, the compliance of the LED modules with the provisions of IEC 62717 can be transferred to the whole luminaire.

LUMINAIRE PERFORMANCE –

Part 2-1: Particular requirements – LED luminaires

1 Scope

This part of IEC 62722 specifies the performance requirements for LED luminaires, together with the test methods and conditions. It applies to LED luminaires for general lighting purposes.

Semi-luminaires are not covered under the scope of this document.

For some types of luminaires (e.g. decorative or household) the provision of performance data under the scope of this document is not appropriate.

In this document, the following types of LED luminaires are distinguished.

- Type A – Luminaires using LED modules where compliance with IEC 62717 is given.
- Type B – Luminaires using LED modules where compliance with IEC 62717 is not given.

Luminaires using an LED lamp are covered in IEC 62722-1 and are not within the scope of this document.

The requirements of this document relate to type testing.

This document covers LED luminaires using LED modules, based on inorganic LED technology that produces white light. It does not cover luminaires using light sources based on OLED technology (organic LED technology).

The lifetime of LED luminaires is in most cases much longer than the practical test times. Consequently, the verification of manufacturer's lifetime claims is out of the scope of this document.

Instead of lifetime validation, this document has opted for lumen maintenance categories at a defined finite test time. Therefore, the category number does not imply a prediction of achievable lifetime. The categories are lumen-depreciation character categories showing behaviour in agreement with the manufacturer's information which is provided before the test is started.

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

IEC 60598-2-3:2002, *Luminaires – Part 2-3: Particular requirements – Luminaires for road and street lighting*

IEC 60598-2-5:2015, *Luminaires – Part 2-5: Particular requirements – Floodlights*

IEC 62031:2018, *LED modules for general lighting – Safety specifications*

IEC 62717:2014, *LED modules for general lighting – Performance requirements*

IEC 62717:2014/AMD1:2015

IEC 62717:2014/AMD2:2019

IEC 62722-1, *Luminaire performance – Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62717 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

LED luminaire

luminaire designed to incorporate at least one LED light source

Note 1 to entry: The LED light source(s) can be an integral part of an LED luminaire.

[SOURCE: IEC 60050-845:2020, 845-30-056]

3.2

rated ambient performance temperature value

t_q

highest ambient temperature around the luminaire related to a rated performance of the luminaire under normal operating conditions, as declared by the manufacturer or responsible vendor

Note 1 to entry: Rated ambient performance temperature value is expressed in °C.

Note 2 to entry: There can be more than one t_q temperature, depending on the lifetime claim, see 3.3.

3.3

useful life

$L_x B_y$

<of LED luminaires> length of time until at maximum a percentage y of a population of operating LED luminaires of the same type have degraded to the initial luminous flux emitted multiplied by the luminous flux maintenance factor x

Note 1 to entry: The useful life includes operating LED luminaires only.

Note 2 to entry: The term "useful life" does not account for the replaceability of the LED luminaire.

Note 3 to entry: The useful life has unit h.