

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Luminaire performance –
Part 1: General requirements**

**Performance des luminaires –
Partie 1: Exigences générales**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2022 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
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

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 It also gives information on projects, replaced and withdrawn publications.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

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

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

IEC Products & Services Portal - 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

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

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

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

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

IEC Products & Services Portal - 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

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.



IEC 62722-1

Edition 2.0 2022-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Luminaire performance –
Part 1: General requirements**

**Performance des luminaires –
Partie 1: Exigences générales**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.140.40

ISBN 978-2-8322-3807-3

**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	3
INTRODUCTION	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 General requirements	8
5 Light sources and components of luminaires	9
6 Photometric data	9
7 Electrical data	9
8 Luminaire efficacy data	10
9 Environmental data	10
9.1 Materials information	10
9.2 Maintenance instructions	10
9.3 End of life dismantling instructions	10
Annex A (informative) Use of regional standards	11
Annex B (normative) Measurement method of total power of luminaires and associated powers	12
B.1 General	12
B.2 Test measurement of luminaire power during normal operation	12
B.3 Standard test conditions	12
B.4 Electrical measuring instruments	12
B.5 Test luminaires	12
B.6 Test voltage	12
B.7 Luminaire power	13
B.8 Luminaire standby power	13
B.9 Luminaire networked standby power	13
B.10 Emergency lighting charging power	13
Annex C (informative) Pictograms to assist the communication of instructions for maintenance through life and end of life recycling	14
Annex D (normative) Photometric distribution data for luminaires	15
D.1 General	15
D.2 Measurement resolution of photometric distribution data	15
D.3 Method of comparison and acceptable limits of variation	15
D.3.1 General	15
D.3.2 Scenarios for each main half plane: C_0 ; C_{90} ; C_{180} ; C_{270}	16
D.3.3 Scenarios for half plane: $C I_{max}$	17
D.3.4 Compliance	17
Bibliography	18
Figure C.1 – Instructions for luminaire servicing	14
Figure C.2 – Instructions for luminaire cleaning	14
Figure C.3 – Instructions for end of life dismantling	14
Table D.1 – Examples of nearest values to be selected for comparison	16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LUMINAIRE PERFORMANCE –**Part 1: General requirements****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 62722-1 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) The reference to and use of the measurement methods for non-active power consumption in accordance with IEC 63103 have been added.
- b) The pictograms of Annex C have been updated to represent modern light sources.

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

Draft	Report on voting
34D/1658/FDIS	34D/1660/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

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

INTRODUCTION

This part of IEC 62722 is a performance standard for luminaires (general requirements) and acknowledges the need for defining performance data to be provided, the presentation of this data, the basis of its measurement, and the associated tolerances that can be reasonably expected. Information to support responsible environmental use is also included. Future Parts 2 of the IEC 62722 series can be introduced where additional performance requirements for specific types of light sources are required. The structure of these performance standards also allows for the possibility of Part 3 of the IEC 62722 series to be introduced in the future should standardization of performance criteria linked to specific luminaire applications be determined as necessary (e.g. floodlighting, street lighting).

LUMINAIRE PERFORMANCE –

Part 1: General requirements

1 Scope

This part of IEC 62722 covers specific performance and environmental requirements for luminaires, incorporating electric light sources for operation from supply voltages up to 1 000 V. Unless otherwise detailed, performance data covered under the scope of this document are for the luminaires in a condition representative of new manufacture, with any specified initial aging procedures completed.

This document covers requirements for luminaires to support energy efficient use and responsible environmental management to the end of life. The object of this document is to provide a set of requirements which are considered to be generally applicable to most types of luminaires. Where additional performance requirements for specific types of light source are relevant, these are specified in the IEC 62722-2 series. The IEC 62722-2 series can also cover a wider scope of performance aspects appropriate to the particular light source technology.

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.

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, *Luminaires – Part 1: General requirements and tests*

IEC 60598-2 (all parts), *Luminaires – Part 2: Particular requirements*

IEC 62722-2 (all parts), *Luminaire performance – Part 2: Particular requirements*

IEC 63103:2020, *Lighting equipment – Non-active mode power measurement*

IEC TS 63105, *Lighting systems and related equipment – Vocabulary*

CIE 034:1977, *Road lighting lantern and installation data: Photometrics, classification and performance*

CIE 043:1979, *Photometry of floodlights*

CIE 121:1996, *The photometry and goniophotometry of luminaires*