

<b>STN</b>	<b>Energetické vlastnosti ovládacích zariadení svetelných zdrojov</b> <b>Časť 3: Ovládacie zariadenia halogénových žiaroviek a svetelných zdrojov LED</b> <b>Metóda merania na stanovenie účinnosti ovládacích zariadení</b>	<b>STN</b> <b>EN IEC 62442-3</b>  36 0513
------------	--	--

Energy performance of lamp controlgear - Part 3: Controlgear for tungsten-halogen lamps and LED light sources - Method of measurement to determine the efficiency of controlgear

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/22

Obsahuje: EN IEC 62442-3:2022, IEC 62442-3:2022

Oznámením tejto normy sa od 17.03.2025 ruší  
STN EN IEC 62442-3 (36 0513) z marca 2019

**134956**

EUROPEAN STANDARD

**EN IEC 62442-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2022

ICS 29.140.99

Supersedes EN IEC 62442-3:2018 and all of its amendments and corrigenda (if any)

English Version

**Energy performance of lamp controlgear - Part 3: Controlgear for tungsten-halogen lamps and LED light sources - Method of measurement to determine the efficiency of controlgear (IEC 62442-3:2022)**

Performance énergétique des appareillages de lampes -  
Partie 3: Appareillages des lampes tungstène-halogène et  
des sources lumineuses à LED - Méthode de mesurage  
pour la détermination du rendement des appareillages  
(IEC 62442-3:2022)

Energieeffizienz von Lampenbetriebsgeräten - Teil 3:  
Betriebsgeräte für Halogenlampen und LED-  
ModuleLichtquellen - Messverfahren zur Bestimmung des  
Wirkungsgrades des Betriebsgerätes  
(IEC 62442-3:2022)

This European Standard was approved by CENELEC on 2022-03-17. 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, Turkey 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**

## EN IEC 62442-3:2022 (E)

### European foreword

The text of document 34C/1547/FDIS, future edition 3 of IEC 62442-3, prepared by SC 34C "Auxiliaries for lamps" of IEC/TC 34 "Lighting" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62442-3:2022.

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) 2022-12-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-03-17

This document supersedes EN IEC 62442-3:2018 and all of its amendments and corrigenda (if any).

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 62442-3:2022 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 standards indicated:

IEC 60357 NOTE Harmonized as EN 60357

IEC 62384 NOTE Harmonized as EN IEC 62384

IEC 62442-1 NOTE Harmonized as EN IEC 62442-1

IEC 62442-2 NOTE Harmonized as EN IEC 62442-2

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-845	-	International Electrotechnical Vocabulary (IEV) – Part 845: Lighting	-	-
IEC 61047	2004	DC or AC supplied electronic step-down converters for filament lamps - Performance requirements	EN 61047	2004
IEC 61347-1	2015	Lamp controlgear - Part 1: General and safety requirements	EN 61347-1	2015
IEC 63103	2020	Lighting equipment - Non-active mode power measurement	EN IEC 63103	2020
IEC TS 63105	2021	Lighting systems and related equipment - Vocabulary	-	-
IEC Guide 115	2021	Application of uncertainty of measurement - to conformity assessment activities in the electrotechnical sector	-	-



IEC 62442-3

Edition 3.0 2022-02

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Energy performance of lamp controlgear –  
Part 3: Controlgear for tungsten-halogen lamps and LED light sources – Method  
of measurement to determine the efficiency of controlgear**

**Performance énergétique des appareillages de lampes –  
Partie 3: Appareillages des lampes tungstène-halogène et des sources  
lumineuses à LED – Méthode de mesurage pour la détermination du rendement  
des appareillages**



**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 Varembé  
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.



IEC 62442-3

Edition 3.0 2022-02

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

---

**Energy performance of lamp controlgear –  
Part 3: Controlgear for tungsten-halogen lamps and LED light sources – Method  
of measurement to determine the efficiency of controlgear**

**Performance énergétique des appareillages de lampes –  
Partie 3: Appareillages des lampes tungstène-halogène et des sources  
lumineuses à LED – Méthode de mesurage pour la détermination du rendement  
des appareillages**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

---

ICS 29.140.99

ISBN 978-2-8322-1077-2

**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
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	6
4 General .....	8
4.1 General notes on tests .....	8
4.2 Controllable controlgear .....	8
4.3 Measurement uncertainty .....	8
4.4 Sampling of controlgear for testing .....	8
4.5 Size of the test sample .....	8
4.6 Power supply .....	8
4.7 Supply voltage waveform .....	9
4.8 Substitution load .....	9
4.9 Thermocouple and temperature indicator .....	9
4.10 Instrument accuracy .....	9
4.11 Measuring circuits .....	10
4.12 Multi-rated voltage controlgear .....	10
4.13 Multi-power controlgear .....	10
4.14 Sensor and network connections .....	10
5 Method of measurement and calculation of the efficiency .....	10
5.1 Measurement set-up: input and output power .....	10
5.2 Efficiency calculation .....	11
5.3 Measurement set-up: input power in no-load mode .....	12
5.4 Standby power measurement .....	12
5.5 Networked standby power measurement .....	12
5.6 Reporting of power measurements .....	12
Bibliography .....	13
Figure 1 – Power losses measurement set-up for electromagnetic controlgear (transformer) and input and output power measurement set-up for convertor (electronic controlgear) .....	11
Table 1 – Typical nominal electricity supply details for some regions .....	9



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ENERGY PERFORMANCE OF LAMP CONTROLGEAR –****Part 3: Controlgear for tungsten-halogen lamps and LED light sources –  
Method of measurement to determine the efficiency of controlgear**

## 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 62442-3 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lighting. It is an International Standard.

This third edition cancels and replaces the second edition published in 2018. This edition constitutes a technical revision.

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

- a) this edition has been harmonized with IEC 62442-1 and IEC 62442-2;
- b) the reference to and use of the measurement methods for non-active power consumption in accordance with IEC 63103 have been added.

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

Draft	Report on voting
34C/1547/FDIS	34C/1550/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/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

A list of all parts in the IEC 62442 series, published under the general title *Energy performance of lamp controlgear*, 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.

## ENERGY PERFORMANCE OF LAMP CONTROLGEAR –

### Part 3: Controlgear for tungsten-halogen lamps and LED light sources – Method of measurement to determine the efficiency of controlgear

#### 1 Scope

This part of IEC 62442 defines measurement and calculation methods for specifying the efficiency and the standby power of controlgear for tungsten-halogen lamps and LED light sources.

NOTE 1 This includes electromagnetic transformers and electronic convertors for tungsten-halogen lamps, as well as electronic controlgear for LED light source(s).

NOTE 2 The term "LED light sources" includes LED modules and LED lamps.

This document is applicable for controlgear designed for use on DC supplies up to 1 000 V and/or AC supplies up to 1 000 V at 50 Hz or 60 Hz.

For multipurpose power supplies only the lighting part will be considered.

NOTE 3 Requirements for testing individual controlgear during production are not included.

This document does not apply to:

- controlgear which form an integral part of lamps (LED light sources);
- controlgear circuits with capacitors connected in series;
- controllable electromagnetic controlgear.

#### 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 61047:2004, *DC or AC supplied electronic step-down convertors for filament lamps – Performance requirements*

IEC 61347-1:2015, *Lamp controlgear – Part 1: General and safety requirements*

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

IEC TS 63105:2021, *Lighting systems and related equipment – Vocabulary*

IEC Guide 115:2021, *Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**