# IEC 62442-3

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# INTERNATIONAL STANDARD

colour inside

## 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

INTERNATIONAL
ELECTROTECHNICAL
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# 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

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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. 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 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 in the data related to the specific document. At this date, the document will be

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# 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 a measurement method for the power losses of electromagnetic transformers as well as the power losses and the standby power of electronic convertors for tungsten-halogen lamps and for LED light source(s).~~

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.

~~A calculation method of the efficiency of the mentioned controlgear for tungsten-halogen lamps and LED light source(s) is also defined.~~

~~This document applies to electrical controlgear-lamp circuits comprised solely of the controlgear and of the lamp(s) (LED light sources).~~

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 specifies the measurement method for the total input power, the standby power and the calculation method of the controlgear efficiency for all controlgear sold for domestic and normal commercial purposes operating with tungsten-halogen lamps and LED light source(s). The term "LED light sources" includes LED modules and LED lamps.~~

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 61347-2-2, *Lamp controlgear – Part 2-2: Particular requirements for DC or AC supplied electronic step-down convertors for filament lamps*~~

~~IEC 61347-2-13, *Lamp controlgear – Part 2-13: Particular requirements for DC or AC supplied electronic controlgear for LED modules*~~

~~IEC 61558-1, *Safety of transformers, reactors, power supply units and combinations thereof – Part 1: General requirements and tests*~~

~~IEC 61558-2-6, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers*~~

~~IEC 62301:2011, *Household electrical appliances – Measurement of standby power*~~

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

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

IEC Guide 115:~~2007~~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**



IEC 62442-3:2022-02(en-fr)

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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*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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# 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

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L'IEC 62442-3 a été établie par le sous-comité 34C: Appareils auxiliaires pour lampes, du comité d'études 34 de l'IEC: Eclairage. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2018. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) cette édition a été harmonisée avec l'IEC 62442-1 et l'IEC 62442-2;
b) des références à l'IEC 63103 ont été ajoutées afin d'appliquer les méthodes de mesurage de la consommation de puissance en mode non actif.

Le texte de cette Norme internationale est issu des documents suivants:

| Projet | Rapport de vote |
|---|---|
| 34C/1547/FDIS | 34C/1550/RVD |

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La version française de cette norme n'a pas été soumise au vote.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

Une liste de toutes les parties de la série IEC 62442, publiées sous le titre général *Performance énergétique des appareillages de lampes*, se trouve sur le site web de l'IEC.

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# 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

## 1 Domaine d'application

La présente partie de l'IEC 62442 définit les méthodes de mesurage et de calcul afin de spécifier le rendement et la puissance de veille des appareillages des lampes tungstène-halogène et des sources lumineuses à LED.

NOTE 1 Cela comprend les transformateurs électromagnétiques et les convertisseurs électroniques pour lampes à tungstène-halogène, ainsi que les appareillages électroniques pour sources lumineuses à LED.

NOTE 2 Le terme "sources lumineuses à LED" couvre les modules de LED et les lampes à LED.

Le présent document s'applique aux appareillages conçus pour des alimentations en courant continu jusqu'à 1 000 V et/ou des alimentations en courant alternatif jusqu'à 1 000 V à 50 Hz ou 60 Hz.

Pour les alimentations électriques à usages multiples, seule la partie éclairage est prise en compte.

NOTE 3 Les exigences pour les essais des appareillages individuels pendant la production ne sont pas incluses.

Le présent document ne s'applique pas aux:

– appareillages qui font partie intégrante des lampes (sources lumineuses à LED);
– circuits d'appareillages à condensateurs reliés en série;
– appareillages de commande électromagnétiques gradables.

## 2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60050-845, *Vocabulaire électrotechnique international (IEV) – Partie 845: Eclairage* (disponible à l'adresse http://www.electropedia.org)

IEC 61047:2004, *Convertisseurs abaisseurs électroniques alimentés en courant continu ou alternatif pour lampes à incandescence – Exigences de performances*

IEC 61347-1:2015, *Appareillages de lampes – Partie 1: Exigences générales et exigences de sécurité*

IEC 63103:2020, *Appareils d'éclairage – Mesure de puissance en mode non actif*

IEC TS 63105:2021, *Lighting systems and related equipment – Vocabulary* (disponible en anglais seulement)

Guide IEC 115:2021, *Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector* (disponible en anglais seulement)