IEC 62442-1

Edition 2.0 2018-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



## Energy performance of lamp controlgear – Part 1: Controlgear for fluorescent lamps – Method of measurement to determine the total input power of controlgear circuits and the efficiency of controlgear

## Performance énergétique des appareillages de lampes – Partie 1: Appareillages des lampes à fluorescence – Méthode de mesure pour la détermination de la puissance d'entrée totale des circuits d'appareillage et du rendement des appareillages

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International Standard IEC 62442-1 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision and has been harmonized with IEC 62442-2 and IEC 62442-3.

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

| CDV | Report on voting |
|---|---|
| 34C/1335A/CDV | 34C/1376/RVC |

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 "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- withdrawn,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 1: Controlgear for fluorescent lamps – Method of measurement to determine the total input power of controlgear circuits and the efficiency of controlgear



## 1 Scope

This part of IEC 62442 defines a measurement and calculation method of the total input power for controlgear-lamp circuits when operating with their associated fluorescent lamp(s). The calculation method for the efficiency of the lamp controlgear is also defined. This document applies to electrical controlgear-lamp circuits consisting only of the controlgear and the lamp(s). It is intended 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.

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

This document specifies the measurement method for the total input power and the calculation method of the controlgear efficiency for all controlgear used for domestic and normal commercial purposes operating with the following fluorescent lamps:

– linear fluorescent lamps;
– single-ended (compact) fluorescent lamps;
– other general purpose fluorescent lamps.

This document does not apply to:

– controlgear which form an integral part of the lamp;
– controllable wire-wound magnetic controlgear;
– luminaires, which rely on additional optical performance aspects.

## 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 60081:1997, *Double-capped fluorescent lamps – Performance specifications*
IEC 60081:1997/AMD4:2010

IEC 60901:1996, *Single-capped fluorescent lamps – Performance specifications*
IEC 60901:1996/AMD5:2011

IEC 60921:2004, *Ballasts for tubular fluorescent lamps – Performance requirements*

IEC 60929:2011, *AC and/or DC-supplied electronic control gear for tubular fluorescent lamps – Performance requirements*

IEC 61347-2-3, *Lamp control gear – Part 2-3: Particular requirements for AC and/or DC supplied electronic control gear for fluorescent lamps*

IEC 61347-2-8, *Lamp controlgear – Part 2-8: Particular requirements for ballasts for fluorescent lamps*

## 3 Terms and definitions

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

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

**3.1**
**nominal value**
suitable approximate quantity value used to designate or identify a component, device or equipment

**3.2**
**limiting value**
greatest or smallest admissible value of one of the quantities

**3.3**
**rated value**
quantity value for specified operating conditions of a component, device or equipment

Note 1 to entry: The value and conditions are specified in the relevant standard or assigned by the manufacturer or responsible vendor.

Note 2 to entry: For the different kinds of operation, rated electrical values are given on the lamp data sheets as:

- rated electrical values under “electrical characteristics”, if the lamp is defined for 50 Hz/60 Hz operation only,
- rated electrical values under “electrical characteristics”, if the lamp is defined for high frequency (≥ 20 kHz) operation only,
- rated electrical values and typical electrical values, if the lamp is defined simultaneously for 50 Hz/60 Hz operation and high frequency operation
  - for 50 Hz/60 Hz operation: rated electrical values under “electrical characteristics”, and
  - for high frequency operation: rated electrical values under “typical lamp characteristics”.

**3.4**
**controlgear**
one or more components between the supply and one or more lamps which may serve to transform the supply voltage, limit the current of the lamp(s) to the required value, provide starting voltage and preheating current, prevent cold starting, correct power factor or reduce radio interference

**3.5**
**electromagnetic controlgear**
**magnetic controlgear**
controlgear which, by means of inductance, or a combination of inductance and capacitance, serves mainly to limit the current of the lamp(s) to the required value and operates the lamp(s) at the same frequency as the supply frequency

**3.6**
**electronic controlgear**
AC invertor supplied with alternating current and/or direct current and including stabilizing elements for starting and operating one or more tubular fluorescent lamps, generally at high frequency