

CONSOLIDATED VERSION

VERSION CONSOLIDÉE



**AC and/or DC-supplied electronic control gear for tubular fluorescent lamps –
Performance requirements**

**Appareillages électroniques alimentés en courant alternatif et/ou continu pour
lampes tubulaires à fluorescence – Exigences de performances**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AC and/or DC-SUPPLIED ELECTRONIC CONTROL GEAR
FOR TUBULAR FLUORESCENT LAMPS –
PERFORMANCE REQUIREMENTS**

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This Consolidated version of IEC 60929 bears the edition number 4.1. It consists of the fourth edition (2011-05) [documents 34C/963/FDIS and 34C/976/RVD] and its amendment 1 (2015-10) [documents 34C/1114/CDV and 34C/1157/RVC]. The technical content is identical to the base edition and its amendment.

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60929 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

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

NOTE In this standard, the following print types are used:

- Requirements proper: in roman type.
- *Test specifications: in italic type.*
- Explanatory matter: in smaller roman type.

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The contents of the corrigendum of September 2011 have been included in this copy.

INTRODUCTION

This International Standard covers performance requirements for electronic control gear for use on a.c., at 50 Hz or 60 Hz, and/or d.c. supplies up to 1 000 V with operating frequencies deviating from the supply frequency, associated with tubular fluorescent lamps as specified in IEC 60081 and IEC 60901, and other tubular fluorescent lamps for high frequency operation, still to be standardised.

These control gear are intended to operate lamps at various frequencies including high frequencies and at various lamp powers. Attention is drawn to the fact that operating frequencies below 20 kHz may cause audio noise disturbance, whereas frequencies above 50 kHz may increase radio interference problems.

Some lamps may be specifically designed for high-frequency operation on high-frequency control gear. Two starting modes, preheat and non-preheat, are described.

NOTE Lamps, only specified for preheat starting may be operated on other types of circuits. The control gear manufacturer should provide test data which shows satisfactory starting and operation similar as the ones stated in Clause 6.

In order to obtain satisfactory performance of fluorescent lamps and electronic control gears, it is necessary that certain features of their design be properly co-ordinated. It is essential, therefore, that specifications for them be written in terms of measurement made against some common baseline of reference, permanent and reproducible.

These conditions may be fulfilled by reference ballasts. Moreover, the testing of control gear for fluorescent lamps will, in general, be made with reference lamps and, in particular, by comparing results obtained on such lamps with control gear to be tested and with reference ballast.

Whereas the reference ballast for frequencies of 50 Hz or 60 Hz is a self-inductive coil, the high-frequency reference ballast is a resistor because of its independence of frequency and the lack of influence of parasitic capacitance.

AC and/or DC-SUPPLIED ELECTRONIC CONTROL GEAR FOR TUBULAR FLUORESCENT LAMPS – PERFORMANCE REQUIREMENTS

1 Scope

This international Standard specifies performance requirements for electronic control gear for use on a.c. at 50 Hz or 60 Hz and/or d.c. supplies, both up to 1 000 V, with operating frequencies deviating from the supply frequency, associated with fluorescent lamps as specified in IEC 60081 and IEC 60901, and other fluorescent lamps for high-frequency operation.

NOTE 1 Tests in this standard are type tests. Requirements for testing individual control gear during production are not included.

NOTE 2 There are regional standards regarding the regulation of mains current harmonics and immunity for end-products like luminaires and independent control gear. In a luminaire, the control gear is dominant in this respect. Control gear, together with other components, should comply with these standards.

NOTE 3 Requirements for the digital addressable lighting interface of electronic control gear are given in IEC 62386.

2 Normative references

The following referenced documents are indispensable for the application 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*
Amendment 1(2000)
Amendment 2 (2003)
Amendment 3 (2005)
Amendment 4 (2010)

IEC 60901:1996, *Single-capped fluorescent lamps – Performance specifications*
Amendment 1(1997)
Amendment 2 (2000)
Amendment 3 (2004)
Amendment 4 (2007)

IEC 61347-1:2007, *Lamp controlgear – Part 1: General and safety requirements*
Amendment 1(2010)¹

IEC 61347-2-3:2000, *Lamp controlgear – Part 2-3: Particular requirements for a.c. supplied electronic ballasts for fluorescent lamps*
Amendment 1(2004)
Amendment 2 (2006)

IEC 62386 (all parts), *Digital addressable lighting*

IEC TR 62750:2012, *Unified fluorescent lamp dimming standard calculations*

¹ There exists a consolidated edition 2.1 (2010) that comprises IEC 61347-1:2007 and its Amendment 1 (2010).