AS/NZS 60929:2005
IEC 60929, Ed. 2.0 (2003)
Reconfirmed 2016

Australian/New Zealand Standard™

A.C. supplied electronic ballasts for tubular fluorescent lamps—Performance requirements

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-041, Lamps and Related Equipment. It was approved on behalf of the Council of Standards Australia on 31 August 2005 and on behalf of the Council of Standards New Zealand on 30 September 2005.
This Standard was published on 21 December 2005.

The following are represented on Committee EL-041:

Association of Consulting Engineers Australia
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Certification Interests (New Zealand)
Consumers' Federation of Australia
Electrical Compliance Testing Association
Electrical Regulatory Authorities Council
Energy Efficiency & Conservation Authority of New Zealand
IES: The Lighting Society
Institution of Professional Engineers New Zealand

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Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 05271.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF

AS/NZS 60929:2005

A.C. supplied electronic ballasts for tubular fluorescent lamps—Performance requirements

RECONFIRMATION NOTICE

Technical Committee EL-041 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 22 July 2015.

Approved for reconfirmation in New Zealand on behalf of the Standards Council of New Zealand on 4 November 2016.

The following are represented on Technical Committee EL-041:

Australasian Fire and Emergency Service Authorities Council
Australian Industry Group
Consumers Federation of Australia
Department of Resources, Energy and Tourism
ECANZ
Electrical Compliance Testing Association
Electrical Regulatory Authorities Council
Energy Efficiency & Conservation Authority of New Zealand
Fair Trading NSW
IES: The Lighting Society
Independent Pricing and Regulatory Tribunal
Institution of Professional Engineers New Zealand
Joint Accreditation System of Australia and New Zealand
Lighting Council Australia
Lighting Council New Zealand
Master Electricians Australia
Ministry of Business, Innovation and Employment (NZ)

NOTES

Australian/New Zealand Standard™

A.C. supplied electronic ballasts for tubular fluorescent lamps—Performance requirements

Originated as AS/NZS 60929:2000.
Second edition 2005.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 7063 0

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, Lamps and Related Equipment, to supersede AS/NZS 60929:2000 on publication.

The objective of this Standard is to provide the lighting industry with performance requirements for electronic ballasts for tubular fluorescent lamps for use on a.c. supplies up to 1000 V at 50 Hz or 60 Hz with operating frequencies deviating from the supply frequency.

This Standard is identical with, and has been reproduced from IEC 60929, Ed. 2.0 (2003), *AC supplied electronic ballasts for tubular fluorescent lamps—Performance requirements*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'IEC 60929' should read 'AS/NZS 60929'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

In this Standard, the following print types are used:

– requirements proper: in arial type;

– *test specifications: in italic type;*

– explanatory matter: in smaller arial type.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

Attention is drawn to Electromagnetic Compatibility (EMC) schemes introduced in their respective countries by the Australian Communications Authority (ACA) and the Ministry of Commerce New Zealand (MOC) to manage the use and performance of devices that either intentionally or unintentionally emit electromagnetic energy in the radiofrequency spectrum. Mandated Standards form an integral part of the EMC compliance schemes.

Electrical lighting products fall within the scope of AS/NZS CISPR 15, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*. AS/NZS CISPR 15 has been reproduced from IEC/CISPR 15 (same title) but contains some changes to limits to protect local radio services.

Information on EMC compliance for lighting equipment is to be found on the internet for Australia at http://www.aca.gov.au/standards/emcindex.htm and for NZ at http://www.moc.govt.nz/rsm

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INTRODUCTION

This International Standard covers performance requirements for electronic ballasts for use on a.c. supplies up to 1 000 V at 50 Hz or 60 Hz 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 standardized.

These ballasts 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 ballasts. Two starting modes, preheat and non-preheat, are described.

NOTE The possibility exists for operation of lamps designed for preheat starting on circuits of the non-preheat type. Lamps specified for operation on both types of circuits may appear in IEC 60081, or lamp manufacturers can authorize such operation of their lamps.

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

These conditions may be fulfilled by reference ballasts. Moreover, the testing of ballasts for fluorescent lamps will, in general, be made with reference lamps and, in particular, by comparing results obtained on such lamps with ballasts to be tested and with a 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 independency of frequency and the lack of influence of parasitic capacitance.

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Any table, figure or text of the international standard that is struck through is not part of this standard. Any Australian/New Zealand table, figure or text that is added is part of this standard and is identified by shading.

1 Scope

This International Standard specifies performance requirements for electronic ballasts for use on a.c. supplies up to 1 000 V at 50 Hz or 60 Hz 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.

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

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.

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

~~IEC 60081, *Double-capped fluorescent lamps – Performance specifications*~~

AS/NZS 4782.1, *Double-capped fluorescent lamps—Performance specifications—General* (IEC 60081:2000, MOD)

IEC 60410:, *Sampling plans and procedures for inspection by attributes*

IEC 60669-2-1, *Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches*

~~IEC 60901, *Single-capped fluorescent lamps – Performance specifications*~~

AS/NZS 60901, *Single-capped fluorescent lamps—Performance specifications* (identical to IEC 60901)

~~IEC 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current <= 16A per phase)*~~
~~Amendment 1 (2001)~~

AS/NZS 61000.3.2, *Electromagnetic compatibility (EMC)—Limits—Limits for harmonic current emissions (equipment input current less than or equal to 16 A per phase)*

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

AS/NZS 61347.1, *Lamp controlgear—General and safety requirements*