AS/NZS CISPR 15:2025

STANDARDS NEW ZEALAND
TE MANA TAUTIKANGA O AOTEAROA

STANDARDS Australia

Australian/New Zealand Standard™

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15:2018 (ED.9.1) MOD)

AS/NZS CISPR 15:2025

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee TE-003, Electromagnetic Compatibility. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 28 February 2025 and by the New Zealand Standards Approval Board on 05 February 2025.

This Standard was published on 17 April 2025.

This Standard was issued in draft form for comment as DR AS/NZS CISPR 15:2024.

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

www.standards.org.au

www.standards.govt.nz

ISBN 978 1 76175 108 0

Australian/New Zealand Standard™

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15:2018 (ED.9.1) MOD)

Originated as AS/NZS 4051:1992.
Previous edition in Australia AS CISPR 15:2017.
Previous edition in New Zealand AS/NZS CISPR 15:2011.
Jointly revised and redesignated as AS/NZS CISPR 15:2025.

How to read this Standard

This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

Australian and Australian/New Zealand Standards are voluntary unless they are referenced in legislation or called up in contracts.

Requirements

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

Recommendations, permissions and possibilities

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

Structure of Standards

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Technical Specification will explain when those requirements apply.

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

This Standard is a modified adoption of an International Standard. It makes changes to the international text.

The changes to the international text are shown in boxes in the text. These boxes have the heading "National Variations".

To use this Standard in Australia/New Zealand, the changes in the national variation boxes need to be followed.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003 Electromagnetic Compatibility to supersede AS CISPR 15:2017 in Australia and AS/NZS CISPR 15:2017 in New Zealand.

The objective of this document is to set requirements for the emission (radiated and conducted) of radiofrequency disturbances from lighting equipment, the lighting part of multi-function equipment where this lighting part is a primary function, UV and IR radiation equipment for residential and non-industrial applications, advertising signs, decorative lighting and emergency signs.

This document is an adoption with national modifications, and has been reproduced from, CISPR 15:2018, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*, its Amendment No 1 (2024) and its Interpretation sheet No 1 (2019), which have been incorporated into the source text.

The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

As this document has been reproduced from an international document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

Contents

List of Figures

List of Tables

INTERPRETATION SHEET 1

This interpretation sheet has been prepared by subcommittee CISPR F: Interference relating to household appliances tools, lighting equipment and similar apparatus, of IEC technical committee CISPR: International special committee on radio interference.

The text of this interpretation sheet is based on the following documents:

DISH	Report on voting
CIS/F/777/DISH	CIS/F/790/RVDISH

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

CISPR 15 interpretation sheet on the worst-case mode of operation

Introduction

Subclause 7.5 specifies the operating modes of lighting equipment that must be considered during an emission test. A few examples are given to support the explanation of what ‘different operating modes’ means. The list of examples is of course not exhaustive. Apparently, the example of ‘colour shifting’ is not clear enough and it is sometimes interpreted as if any possible colour and/or correlated colour temperature (CCT) setting that lighting equipment may produce shall be assessed during measurements. Many types of LED lighting may be set in many different colours and CCTs. Compared to other operational-mode related influence quantities such as light level regulation, flashing or radio communication, the risk of not capturing the maximum level of electromagnetic (EM) disturbances due to different colour or CCT settings is very small, provided that all channels of a LED driver used to change colour or CCT are operative. The ‘colourshifting’-example was meant for example for a mode where the light output continuously switches from one colour to another with a certain repetition frequency (e.g. applied for entertainment, events etc.), instead of emitting a single stable colour and/or CCT.

Question

What is the meaning of example ‘colour shifting’ as mode of operation to be considered during testing? What colour and/or colour temperature should be selected in case lighting equipment can be set in a wide range of colours and/or CCTs?

Interpretation

The example ‘colour shifting’ in the first paragraph of 7.5 of CISPR 15:2018 must not be interpreted as if any possible colour and/or CCT setting that lighting equipment may produce shall be assessed during measurements.

Generally, according to 7.5 the worst case shall be found by prescanning every mode of operation over at least one repetition interval of the specific mode.

Alternatively, measurements can be performed using the setting(s) that are expected to produce the highest amplitude emissions relative to the limit; and, the reasons for the selection shall be given in the test report.

A reason could be that highest level of electromagnetic (EM) disturbances will be captured if all channels of a LED driver used to create different colours and/or CCTs are operative. The number of channels applied depends on the LED-driver/LED-light-source architecture. Often, maximum EM disturbances can be achieved by selecting a white colour and/or a CCT setting in the middle of the specified CCT range.

EXAMPLE Colour variation and CCT variation may be achieved using a 5-channel LED driver powering three LED strings for colour (RGB) setting and two cool white and warm white LED strings for CCT setting. Hence, in case the lighting equipment under test is capable to operate at different colours and/or CCTs, a white colour and/or a single CCT in the middle of the specified CCT range may be selected[1].

1 7.4 of CISPR 15:2018, also still applies.

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 byagreement 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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) (patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec .ch. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience..

CISPR 15 edition 9.1 contains the ninth edition (2018-05) [documents CIS/F/733/FDIS and CIS/F/736/RVD], its interpretation sheet (2019-11), and its amendment 1 (2024-07) [documents CIS/F/851/FDIS and CIS/F/854/RVD].

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

International Standard CISPR 15 has been prepared by subcommittee CIS/F: Interference relating to household appliances tools, lighting equipment and similar apparatus, of IEC technical committee CISPR: International special committee on radio interference.

This ninth edition cancels and replaces the eighth edition published in 2013 and its Amendment 1:2015. This edition constitutes a technical revision.

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

a) full editorial revision and restructuring;

b) the restriction to mains and battery operation is deleted in the scope;

c) radiated disturbance limits in the frequency range 300 MHz to 1 GHz have been introduced;

d) the load terminals limits and the CDNE (alternative to radiated emissions) limits have changed;

e) deletion of the insertion-loss requirements and the associated Annex A;

f) introduction of three basic ports: wired network ports, local wired ports and the enclosure port;

g) introduction of a more technology-independent approach;

h) replacement of Annex B (CDNE) by appropriate references to CISPR 16-series of standards;

i) modified requirements for the metal holes of the conical housing;

j) new conducted disturbance measurement method for GU10 self-ballasted lamp;

k) addition of current probe measurement method and limits for various types of ports (in addition to voltage limits and measurement methods);

l) introduction of the term ‘module’ (instead of independent auxiliary) and requirements for measurement of modules using a host (reference) system;

m) modified specifications for stabilization times of EUTs;

n) for large EUT (> 1,6 m), addition of the magnetic field measurement method using a 60 cm loop antenna at 3 m distance (method from CISPR 14-1) as an alternative to the 3 m and 4 m LAS.

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

FDIS	>Report on voting
CIS/F/733/FDIS	CIS/F/736/RVD

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.

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.

IMPORTANT **The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

INTRODUCTION to Amendment 1

This Amendment includes the following significant technical changes with respect to CISPR 15:2018.

a) The voltage probe method for the conducted disturbance measurement of local wired port other than the electrical power supply interface of ELV lamps has been deleted.

b) Limits and measurement methods have been introduced for radiated disturbance of the enclosure port in the frequency range 1 GHz to 6 GHz.

c) The test set-up for the conical metal housing for single capped lamps has been rotated.

d) The arrangement of cables connected to interfaces of wired network ports has been modified. Cable length has been extended to 1,0 m.

e) Measuring arrangements for conducted disturbances for very large EUTs have been clarified.

f) Annex E regarding statistical methods has been deleted.

Australian/New Zealand Standard

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15:2018 (ED.9.1) MOD)

1 Scope

This document sets out requirements for controlling the emission (radiated and conducted) of radiofrequency disturbances from:

- lighting equipment (3.3.16) and modules, except for the types excluded in the second paragraph;
- the lighting part of multi-function equipment where this lighting part is a primary function;

  NOTE 1 Examples are lighting equipment with visible-light communication.

- UV and IR radiation equipment for residential and non-industrial applications;
- simple advertising signs (see 3.3.1);
- decorative and entertainment lighting (see 3.3.6);
- emergency signs.

Excluded from the scope of this document are:

- components or modules intended to be built into lighting equipment and which are not user-replaceable;
- lighting equipment intended exclusively for aircraft or airfield facilities (runways, service facilities, platforms). However, general-purpose lighting that can be installed in many locations, including installations not related to aircraft or airfield, is not excluded from the scope of this document;
- installations;
- equipment for which the electromagnetic compatibility requirements in the radio-frequency range are explicitly formulated in other IEC standards, even if they incorporate a built-in lighting function.

  NOTE 2 Examples of exclusions are:

- equipment with built-in lighting devices for display back lighting, scale illumination and signalling;
- video signs and dynamic displays (in scope of CISPR 32);
- range hoods, refrigerators, freezers (in scope of CISPR 14);
- photocopiers, projectors (in scope of CISPR 32);
- lighting equipment for road vehicles (in scope of CISPR 12);
- maritime equipment (in scope of IEC TC 18 and TC 80);
- lighting equipment operating in the ISM frequency bands (in scope of CISPR 11).

The frequency range covered is 9 kHz to 400 GHz. No measurements need to be performed at frequencies where no limits are specified in this document.

Multi-function equipment which is subjected simultaneously to different clauses of this document and/or other standards need to meet the provisions of each clause/standard with the relevant functions in operation.