BSI Standards Publication

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

National foreword

This British Standard is the UK implementation of EN IEC 55015:2019. It is identical to CISPR 15:2018. It supersedes BS EN 55015:2013+A1:2015, which will be withdrawn on 30 August 2022.

The UK participation in its preparation was entrusted to Technical Committee GEL/210/11, EMC - Standards Committee.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD **EN IEC 55015**

EUROPÄISCHE NORM

August 2019

ICS 33.100.10

Supersedes EN 55015:2013 and all of its amendments and corrigenda (if any)

English Version

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

Limites et méthodes de mesure des perturbations radioélectriques produites par les appareils électriques d'éclairage et les appareils analogues (CISPR 15:2018)

Grenzwerte und Messverfahren für Funkstörungen von elektrischen Beleuchtungseinrichtungen und ähnlichen Elektrogeräten (CISPR 15:2018)

This European Standard was approved by CENELEC on 2018-06-19. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document CIS/F/733/FDIS, future edition 9 of CISPR 15, prepared by CISPR SC F "Interference relating to household appliances tools, lighting equipment and similar apparatus" of CISPR "International special committee on radio interference" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 55015:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-02-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-08-30

This document supersedes EN 55015:2013 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Endorsement notice

The text of the International Standard CISPR 15:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

CISPR/TR 16-4-3:2004	NOTE	Harmonized as EN 55016-4-3 (not modified)[1]
IEC 60155:1993	NOTE	Harmonized as EN 60155:1995 (not modified)
IEC 60155:1993/A1:1995	NOTE	Harmonized as EN 60155:1995/A1:1995 (not modified)
IEC 60155:1993/A2:2006	NOTE	Harmonized as EN 60155:1995/A2:2007 (not modified)
IEC 61000-6-3:2006	NOTE	Harmonized as EN 61000-6-3:2007 (not modified)
IEC 61000-6-3:2006/A1:2010	NOTE	Harmonized as EN 61000-6-3:2007/A1:2011 (not modified)
IEC 61347-1:2015	NOTE	Harmonized as EN 61347-1:2015 (not modified)
IEC 62776:2014	NOTE	Harmonized as EN 62776:2015 (not modified)

[1] To be published. Stage at the time of publication: prEN 55016-4-3:2018

(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60038	-	IEC standard voltages	EN 60038	-
IEC 60050-161	-	International Electrotechnical Vocabulary. Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-845	1987	International Electrotechnical Vocabulary. Lighting	-	-
IEC 60061-1	-	Lamp caps and holders together with gauges for the control ofinterchangeability and safety. Part 1: Lamp caps	EN 60061-1	-
IEC 60081	-	Double-capped fluorescent lamps - Performance specifications	EN 60081	-
IEC 60598-1 (mod)	2014	Luminaires - Part 1: General requirements and tests	EN 60598-1	2015
+ A1	2017		+ A1	2018
IEC 60921	-	Ballasts for tubular fluorescent lamps - Performance requirements	EN 60921	-
IEC 61000-4-20	2010	Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides	EN 61000-4-20	2010
IEC 61195	-	Double-capped fluorescent lamps - Safety specifications	EN 61195	-
IEC 62504	2014	General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions	EN 62504	2014

CISPR 16-1-1	2015	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	-	-
CISPR 16-1-2	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Coupling devices for conducted disturbance measurements	EN 55016-1-2	2014
CISPR 16-1-4	2010	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for radiated disturbance measurements	EN 55016-1-4	2010
+ A1	2012		+ A1	2012
+ A2	2017		+ A2	2017
CISPR 16-2-1	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements	EN 55016-2-1	2014
+ A1	2017		+ A1	2017
CISPR 16-2-3	2016	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements	EN 55016-2-3	2017
CISPR 16-4-2	2011	Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-2: Uncertainties, statistics and limit modelling - Measurement instrumentation uncertainty	EN 55016-4-2	2011
+ A1	2014		+ A1	2014
CISPR/TR 30-1	2012	Test method on electromagnetic emissions - Part 1: Electronic control gear for single- and double-capped fluorescent lamps	-	-
CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements	EN 55032	2015
ISO/IEC 17025	2005	General requirements for the competence of testing and calibration laboratories	-	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

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LIMITS AND METHODS OF MEASUREMENT OF RADIO DISTURBANCE CHARACTERISTICS OF ELECTRICAL LIGHTING AND SIMILAR EQUIPMENT

FOREWORD

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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.

LIMITS AND METHODS OF MEASUREMENT OF RADIO DISTURBANCE CHARACTERISTICS OF ELECTRICAL LIGHTING AND SIMILAR EQUIPMENT

1 Scope

This document applies to the emission (radiated and conducted) of radiofrequency disturbances from:

– lighting equipment (3.3.16);
– 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, entertainment lighting.

– UV and IR radiation equipment for residential and non-industrial applications;
– advertising signs;

NOTE 2 Examples are neon tube advertising signs.

– decorative lighting;
– 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;

NOTE 3 See CISPR 30 (all parts) for built-in controlgear.

– lighting equipment operating in the ISM frequency bands (as defined in Resolution 63 (1979) of the ITU Radio Regulation);
– lighting equipment for aircraft and airfield facilities (runways, service facilities, platforms);
– video signs;
– installations;
– equipment for which the electromagnetic compatibility requirements in the radio-frequency range are explicitly formulated in other CISPR standards, even if they incorporate a built-in lighting function.

NOTE 4 Examples of exclusions are:

– equipment with built-in lighting devices for display back lighting, scale illumination and signaling;
– SSL-displays;
– range hoods, refrigerators, freezers;
– photocopiers, projectors;
– lighting equipment for road vehicles (in scope of CISPR 12).

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.

For equipment outside the scope of this document and which includes lighting as a secondary function, there is no need to separately assess the lighting function against this document, provided that the lighting function was operative during the assessment in accordance with the applicable standard.