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INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

Test method on electromagnetic emissions -
Part 3: Electronic control gear for LED light sources - Built-in control gear

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CONTENTS

FOREWORD 2
INTRODUCTION 4
1 Scope 5
2 Normative references 5
3 Terms, definitions and abbreviated terms 5
3.1 Terms and definitions 5
3.2 Abbreviated terms 7
4 Reference luminaire 7
4.1 Construction 7
4.2 EUT 8
4.3 LED light source load 8
4.3.1 Generic versatile load 8
4.3.2 Specific load 8
4.3.3 Mounting on the baseplate 9
4.4 Selection of size of the reference luminaire and positioning of EUT and versatile loads 9
4.5 Mounting and wiring schemes 9
4.6 Grounding 10
4.7 Wiring 10
4.8 Additional components and other provisions 10
5 Test procedure 11
5.1 General 11
5.2 Operating points and test conditions of the ECG 11
6 Test report 12
Annex A (informative) Reference luminaire specifications, mounting and wiring schemes 13
Annex B (informative) Specification of a LED light source versatile load 17
B.1 Schematic 17
B.2 Examples 17
Annex C (informative) Background on the development and validation of the reference luminaires 19
Bibliography 21

Figure 1 – Depiction of the terms associated with EUT and the reference luminaire 6
Figure 2 – Operating points (blue dots) in V-I operating range for four types of LED ECGs 12
Figure A.1 – Baseplates with mounting and wiring schemes 15
Figure A.2 – Example of cascading two baseplates with dimensions 0,6 m × 0,6 m to build a 0,6 m × 1,2 m baseplate 16
Figure B.1 – Schematic principle of a LED light source versatile load 17
Figure B.2 – Example of a LED light source versatile load 18
Figure C.1 – Influence quantities affecting disturbance properties of a LED luminaire 19

Table 1 – Selection of size of the baseplate, location of the EUT and distribution of the versatile loads 9
Table 2 – Overview of reference luminaire grounding connection for safety protection class I applications 11

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Test method on electromagnetic emissions - Part 3: Electronic control gear for LED light sources - Built-in control gear

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CISPR TR 30-3 has been prepared by CISPR subcommittee F: Interference relating to household appliances, electric tools, electrical lighting equipment and similar apparatus. It is a Technical Report.

The text of this Technical Report is based on the following documents:

Draft	Report on voting
CIS/F/908/DTR	CIS/F/913/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of the CISPR 30 series can be found, under the general title *Test method on electromagnetic emissions*, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

INTRODUCTION

Requirements and test methods to limit radio-frequency disturbances from lighting equipment are standardized in CISPR 15:2018 and CISPR 15:2018/AMD1:2024. They are restricted to those kinds of lighting equipment which are considered as finished products and intended to be placed on the market for the end user, viz. luminaires, self-ballasted lamps and modules[1] such as independent control gear and LED control gears. No emission requirements apply to components or modules intended to be built into luminaires.

Electronic control gear can be built into a number of different types of luminaires: not only in luminaires of different manufacturers but also in different types of luminaires of a given manufacturer. Each of those luminaires including the same electronic control gear can be tested separately, although disturbance data of a certain luminaire can also very well be predicted from a test using a reference luminaire equipped with the same electronic control gear and similar light sources.

The CISPR TR 30 series [1][2] are technical reports in which reference luminaires are given for testing electronic control gears for specific light source technologies[3].

Each part of CISPR 30 series is independent and describes the disturbance measurement test set-up for electronic control gear used together with a special light source family (applying a different technology, topology or form factor). The formatting into separately published parts provides for ease of future amendments and revisions. Additional requirements will be added when a need for them is recognised.

The following sub-parts are published:

– CISPR TR 30-1 describes reference luminaires for emission testing of electronic control gear for single- and double-capped fluorescent lamps [3];
– CISPR TR 30-2 describes reference luminaires for emission testing of electronic control gear for discharge lamps other than fluorescent lamps [4];
– CISPR TR 30-3 (this document) describes reference luminaires for emission testing of built-in control gear for LED light sources.

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1 For definitions of the terms used in the context of electromagnetic emission testing (e.g. *lighting equipment*, *module, component,* etc.) refer to CISPR 15:2018 and CISPR 15:2018/AMD1:2024.

2 Numbers between brackets refer to the Bibliography.

3 Edition 1 of CISPR TR 30 [2] was published in 2001, including a specification for a reference luminaire for disturbance measurement of electronic control gear for single- and double-capped fluorescent lamps. In 2012, CISPR TR 30-1 [3], which replaces CISPR TR 30, was published in conjunction with CISPR TR 30-2 [4].

1 Scope

This document details the construction and parameters of a reference luminaire, a measurement procedure and conditions for assessment of the radio disturbance characteristics of electronic control gears (ECG) for LED light sources applied inside.

This document is limited to ECGs (also called “control gears”) as well as end-user replaceable ECGs with the following characteristics or applications:

– applied in luminaires with safety protection class I;

NOTE This means that the mains interface of the ECG itself can have either a protective earth (PE) or a functional earth (FE) terminal. For details, see 4.6 and Table 2.

– linear form factor, i.e. fits within the space provision defined in Figure A.1 a).

– ECGs with a rated output power less than 360 W.

Excluded from the scope of this document are:

– ECGs for applications that are excluded in CISPR 15:2018 and CISPR 15:2018/AMD1:2024, and

– control gear with only L, N input terminals (without PE terminal).

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.

CISPR 15:2018, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*
CISPR 15:2018/AMD1:2024

Bibliography

[1] CISPR 30 (all parts), *Test methods on electromagnetic emissions*

[2] CISPR TR 30:2001, *012, Test method on electromagnetic emissions for electronic ballasts for single- and double-capped fluorescent lamps*[4]

[3] CISPR TR 30-1:2012, *Test method on electromagnetic emissions - Part 1: Electronic control gear for single- and double-capped fluorescent lamps*

[4] CISPR TR 30-2:2012, *Test method on electromagnetic emissions - Part 2: Electronic control gear for discharge lamps excluding fluorescent lamps*

[5] CISPR 32, *Electromagnetic compatibility of multimedia equipment - Emission requirements*

[6] CISPR/F/WG2 (Beeckman - CISPR 30-3 TF) 19-01, *EMC assessment of LED drivers Clarification and comparison of CISPR & Zhaga objectives & activities and the synergy between those activities & roadmap*, 2019-01-10

[7] IEC 60050-845:2020, *International Electrotechnical Vocabulary (IEV) - Part 845: Lighting*

[8] IEC 62504:2014, *General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions*

[9] IEC 61347-2-13:2024, *Controlgear for electric light sources - Safety - Part 2-13: Particular requirements - Electronic controlgear for LED light sources*

[10] IEC 60598-1:2024, *Luminaires - Part 1: General requirements and tests*

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4 This publication has been withdrawn.