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Test method on electromagnetic emissions – Part 1: Electronic control gear for single- and double-capped fluorescent lamps

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CISPR 30-1, which is a technical report, has been prepared by CISPR subcommittee F: Interference relating to household appliances tools, lighting equipment and similar apparatus.

This first edition of CISPR/TR 30-1 cancels and replaces the first edition of CISPR/TR 30 published in 2001. It is a technical revision.

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

– minor correction of wiring distances of reference luminaire in Figure A.1;

– addition of reference luminaires for electronic control gear with output terminals on both ends;

– addition of reference luminaires for electronic control gear for circular-shaped fluorescent lamps;

– introduction of control gear marking indicating suitability for application in protection class I and/or class II luminaires.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
CISPR/F/538/DTR	CISPR/F/577/RVC

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

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

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 publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

Requirements to limit radio-frequency disturbances from lighting equipment are standardized in CISPR 15. 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 independent lamp control gear. No emission requirements apply to components intended to be built into luminaires.

Most electronic control gear for lamps (tubular fluorescent, low voltages halogen incandescent lamps or HID-lamps) are built into a number of different types of luminaires: not only in luminaires of different manufacturers but also in different types of luminaires of one manufacturer.

All those luminaires are tested, although disturbance data of a certain luminaire can be predicted from other luminaire measurements equipped with the same electronic control gear and lamps.

This has led to the question whether a worst-case test luminaire could be designed in which the electronic control gear could be tested. In the event that this test luminaire complies with the relevant requirements, all luminaires where that particular electronic control gear is built in comply, and a great deal of superfluous testing can be avoided. This idea looks correct, simple and interesting, but leads to two comments:

- a worst-case luminaire is too strict. From pre-measurements it appeared that commercial electronic control gear did not pass some tests in a worst-case dummy luminaire, whereas they do in real luminaires;
- even if the electronic control gear passes the tests in a worst-case luminaire, the question remains who is responsible in case the real luminaire, where it is built in, does not comply.

The conclusion is that it is not advisable to change the basic principle of CISPR 15 that no emission requirements apply to components built into a luminaire.

There is, however, a need for an independent test method to check the behaviour of an electronic control gear in the radiofrequency spectrum.

This edition of CISPR/TR 30-1, which replaces CISPR/TR 30, is published in conjunction with CISPR/TR 30-2. Each part of CISPR 30 series is independent and describes the test set-up for electronic control gear use together with a special lamp family. The formatting into separately published parts provides for ease of future amendments and revisions. Additional requirements will be added as and when a need for them is recognised.

CISPR 30-1 is a technical report for such a method, and it concerns electronic control gear for single- and double-capped fluorescent lamps.

CISPR 30-2 describes reference luminaires for EMC testing of electronic control gear for discharge lamps other than fluorescent lamps.

TEST METHOD ON ELECTROMAGNETIC EMISSIONS –

Part 1: Electronic control gear for single- and double-capped fluorescent lamps

1 Scope

This part of CISPR 30, which is a technical report, details, with the aid of reference luminaires, an independent method by which the radio disturbance characteristics of electronic control gear for fluorescent lamp luminaires with protection classes I and/or II may be compared against the requirements of CISPR 15.

This technical report covers electronic control gear for double-capped fluorescent lamps fitted with G5 or G13 lamp caps and to single-capped fluorescent lamps fitted with lamp caps: 2GX7, 2G8, 2G10, 2G11, 2GX13, G23, GX23, G24q, GX24q, GR8, and GR10q.

NOTE The above listing shows a typical selection of caps which are commonly used and does not lay claim to be exhaustive.

It is specifically applicable for equipment to be connected to 230 V – 50 Hz mains power networks. For other power systems, modifications may be necessary.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CISPR 15:2005, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*
Amendment 1 (2006)
Amendment 2 (2008)