

Technical Guidance Note TGN 31 on test methods for Household Appliances containing a lighting function.

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Introduction.

This TGN 31 covers Household appliances that contain, apart from their primary function operated by motors and switches (such as airventilation) also a secondary function to illuminate a limited area closeby (such as room or workspace illumination). The illumination can be provided via different lamps ranging from incandescent to LED lamps.

Examples are: Range Hoods and Ceiling Ventilators.

The lighting is an additional function that in some cases can be switched on separately and stay on permanently. However it is common practice that a user would not buy and install the device for lighting purpose only but primarily for the household function.

This TGN does not cover appliances where the illumination is purely to illuminate the interior of the appliance (such as ovens, refrigerators, vending machines, etc). For these appliances it has always been common practice to only apply EN 55014-1/-2 and EN 61000-3-2/-3.

Test laboratories have different opinions as to which Harmonised Standard(s) to apply in order to have the Presumption of Conformity with all the essential requirements of the EMC Directive. This TGN aims at providing an uniform application in order to avoid discrepancies between Notified Bodies.

For household appliances Harmonised Standards EN 55014-1/-2 and EN 61000-3-2/-3 are applied while for lighting devices EN 55015 and EN 61547 (immunity) and EN 61000-3-2/-3 apply. To apply both EN 55014-1 and EN 55015 would lead to an overkill of testing and should be avoided.

This would specifically occur in the frequency range 30 – 300 MHz where EN 55014-1 applies the clamp method and EN 55015 the radiation method or alternatively the CDN method. Both EN 55014-1 and EN 55015 aim at providing similar radio protection.

For the frequency range 150 kHz – 30 MHz EN 55014-1 and EN 55015 also have methods and limits with the aim of providing adequate protection.

Because of the filters required to meet the limit at 150 kHz there is only a theoretical possibility that the emissions below 150 kHz would approach the limits. In addition no cases of interference from any household appliance due to the lighting function are known. It is thus overdone to perform measurements that are basically for situations where a mass amount of similar lamps are in one building.

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For immunity the standard EN 55014-2 adequately covers all immunity aspects and EN 61547 does not need to be applied.

Note: If CISPR/F has adapted CISPR 14-1 in order to clarify that household appliances incorporating lighting devices shall only be tested against CISPR 14-1 and CISPR 15 shall not be applicable, then this TGN will be withdrawn.

Guidelines

Household appliances as described in the introduction are considered to be in conformity with the essential requirements of the EMC Directive, if, with test configuration “motor on and lights on”, comply with Harmonised standards EN 55014-1/-2 and EN 61000-3-2 (Class A) and EN 61000-3-3.

In the case where the household appliance has a motor regulating device and/or a light regulating device it shall be evaluated what the effect of the regulation position of these devices is on the maximum interference level.

The test report shall indicate clearly that the "lighting function" has been adequately evaluated by applying EN 55014-1/-2 and EN 61000-3-2 (Class A) and EN 61000-3-3.

Note: In general, lighting equipment below 25W complies with a 500V surge test between line and neutral. Additional surge protection may be required to withstand the 1kV surge of EN 55014-2.

TGN 31 was approved in the EUANB May 24, 2012 meeting

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