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PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 87

(Daytime running lamps)

Transmitted by the expert from the Working Party "Brussels 1952" (GTB)

Note: The text reproduced below was prepared by the expert from GTB, in order to update Regulation No. 87 with regard to the testing of daytime running lamps being reciprocally incorporated with another function and having an electronic light source control gear. The proposed amendments to the current text of the Regulation are marked in **bold** characters.

Note: This document is distributed to the Experts on Lighting and Light-Signalling only.

A. PROPOSAL

Paragraph 4.3., amend to read:

"4.3. in the case of lamps with an electronic light **source control gear and/or non-replaceable light sources and/or** light source module(s), bear the marking of the rated voltage **or range of voltage** and rated **maximum** wattage."

Insert new paragraphs 4.6. and 4.7., to read:

"4.6. **Lamps operating at voltages other than the nominal rated voltages of 6 V, 12 V or 24 V respectively, by the application of an electronic light source control gear being not part of the lamp, must also bear a marking denoting the rated secondary design voltage.**

4.7. **An electronic light source control gear being part of the lamp but not included into the lamp body shall bear the name of the manufacturer and its identification number."**

Insert a new paragraph 6.3., to read:

"6.3. **Daytime running lamps, which are reciprocally incorporated with another function, using a common light source, and designed to operate permanently with an electronic light source control gear to regulate the intensity of the light emitted, are permitted."**

Paragraph 9., amend to read:

"9. COLOUR OF LIGHT

The colour of the light shall be white. It shall be measured under the conditions as prescribed in paragraph 10. below.

The colour must be within the limits of the trichromatic co-ordinates prescribed in Annex 4 to this Regulation."

Paragraphs 10. to 10.2., amend to read (inserting a new footnote 2/):

"10. TEST PROCEDURE

10.1. All measurements, **photometric and colorimetric**, shall be made with a colourless standard filament lamp of the category **prescribed for the device, the supply voltage being so regulated as to produce the reference luminous flux required for that category of lamp, when not supplied by an electronic light source control gear.**

- 10.2. In the case of a system that uses an electronic light source control gear being part of the lamp 2/, all measurements, photometric and colorimetric, shall be made applying at the input terminals of the lamp a voltage of 6.75 V, 13.5 V or 28.0 V respectively.
- 10.3. In the case of a system that uses an electronic light source control gear not being part of the lamp the voltage declared by the manufacturer shall be applied to the input terminals of the lamp. The test laboratory shall require from the manufacturer the light source control gear needed to supply the light source and the applicable functions. The voltage to be applied to the lamp shall be noted in the communication form in Annex 1 of this Regulation.
- 10.4. For any lamp except those equipped with filament lamps, the luminous intensities, measured after one minute and after 30 minutes of operation, shall comply with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated from the luminous intensity distribution after 30 minutes of operation by applying at each test point the ratio of luminous intensities measured at HV after one minute and after 30 minutes of operation."

Annex 1, item 9., amend to read (existing footnotes 2/ and 3/ not modified):

- "9. Concise description:
By category of lamp:
Number, category and kind of light source(s): 3/
Voltage and wattage
- Application of an electronic light source control gear:**
- being part of the lamp yes/no 2/
- being not part of the lamp yes/no 2/
- Input voltage supplied by an electronic light source control gear**
.....
- Electronic light source control gear manufacturer and identification number (when the light source control gear is part of the lamp but is not included into the lamp body):**
..... "

* * *

2/ For the purpose of this Regulation "being part of the lamp" means to be physically included in the lamp body or to be external, separated or not, from the lamp body but supplied by the lamp manufacturer as part of the lamp system.

B. JUSTIFICATION

During discussions about daytime running lamps, there were requests from vehicle manufacturers to allow the use of daytime running lamp reciprocally incorporated with any function emitting white light. This proposal is intended to introduce all necessary amendments for measurements under different voltage conditions.

The definition for reciprocally incorporated lamps in paragraph 2.7.6. of Regulation No. 48 allows a single light source to operate in different ways, for example optical, mechanical and electrical. Different light levels produced by different supply conditions require a special power supply, which is defined in Supplement 8 to the 02 series of amendments as electronic light source control gear.

The proposed changes are aimed at clearly separating the two different situations applicable to the use of an electronic light source control gear:

- a - the electronic light source control gear is physically part of the lamp or, even if separate from the lamp, is provided by the lamp manufacturer and included in the lamp system at the time of approval: in this case the lamp manufacturer is responsible for the application of the correct voltage and the vehicle manufacturer (and the test house) will supply the standard voltage to the input terminal of the lamp;
- b - the electronic light source control gear is not part of the lamp but a part of the electrical system of the vehicle: in this case the lamp manufacturer is responsible only for the lamp itself and for requiring from the vehicle manufacturer the correct power supply, as voltage and other characteristics that are recorded in the communication form; the vehicle manufacturer is therefore responsible for providing the correct power supply as requested by the lamp manufacturer; he shall also provide to the lamp manufacturer the electronic light source control gear necessary for the approval of the lamp.

Technical development of power supply systems in motor vehicles will require to address the issue of voltage for lighting and light-signalling devices in more detail in the relevant Regulations. Vehicle manufacturers are introducing power supply systems where the DC voltage for light sources is produced by pulse width modulation (PWM). GTB is presently investigating the possibilities to define such systems and their characteristics, e.g. r.m.s., ripple content not exceeding ... per cent, and voltage peak value.

This issue should be further discussed in conjunction with proposals discussed in GRE to insert the operating voltage requirement into Regulation No. 48.
