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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Lighting and Light-Signalling****Sixty-fourth session**

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Item 16 of the provisional agenda

Regulation No. 112 (Headlamps emitting an asymmetrical passing beam)**Proposal for draft Supplement 1 to the 01 series of amendments to Regulation No. 112****Submitted by the expert from France ***

The text reproduced below was prepared by the expert from France to harmonize the introduction of the voltage control gear in Regulation Nos. 112 and 48 and to clarify the use of such device built-in with the headlamp or provided by the car manufacturer. It is based upon a document without symbol (GRE-63-16) distributed during the sixty-third session of the Working Party on Lighting and Light-Signalling (GRE). The modifications to the current text of Regulation No. 112 are shown in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2006–2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Insert new paragraphs 1.3.8. and 1.3.9., to read:

- “1.3.8. whether the device contains one or more control gear(s),**
1.3.9. whether the device is designed to operate in conjunction with an external control gear”

Paragraph 1.3.8.(former), renumber as paragraph 1.3.10.

Paragraph 2.1.5., amend to read:

- “2.1.5. the category of the filament lamp(s) used, as listed in Regulation No. 37 and its series of amendments in force at the time of application for type approval, ~~and/or the light source module specific identification code(s) for LED modules, if available~~”**

Insert new paragraphs 2.1.6 to 2.1.9., to read:

- “2.1.6. the light source module specific identification code(s) for LED modules, if available, and/or**
2.1.7. whether the headlamp incorporates one or more control gear(s) for the dipped beam function, for the driving beam function, or for both functions,
2.1.8. whether the dipped beam function has been designed for a vehicle fully controlling the power supply for this function,
2.1.9. whether the driving beam function has been designed for a vehicle fully controlling the power supply for this function.”

Paragraph 2.2.2., amend to read:

“2.2.2.
...

- (c) in case of electronic light source control gear **not being part of the headlamp**, information on the electrical interface necessary for approval testing;”

Insert new paragraph 3.7., to read:

- “3.7. An electronic light source control gear being part of the headlamp but not included into the headlamp body shall bear the name of the manufacturer of the control gear and the identification number of the control gear.”**

Insert new paragraph 5.3.3., to read:

- “5.3.3. In case of electronic light source control gear(s) being part of the headlamp, the Root Mean Square (RMS) voltage at the terminals of the affected replaceable filament light source(s) shall be not smaller than 12.0 V if voltage supplied by the vehicle is more than 12.0 V, and no more than 13.5 V. The control gear(s) shall be considered to be part(s) of the headlamp.”**

Paragraph 6.1.3., amend to read:

“6.1.3. **In the case of replaceable filament lamps operated directly under vehicle voltage system conditions, the system or parts thereof** shall be checked by means of (an) uncoloured standard (étalon) filament lamp(s) designed for a rated voltage of 12 V. ...”

Insert new paragraphs 6.1.5. and 6.1.6., to read:

“6.1.5. **In the case of (a) replaceable filament lamp(s) operated by one or more control gear(s) being part of the headlamp, all measurements shall be made by applying at the terminals of the headlamp the power condition(s) specified by the Applicant, or, failing that, 6.3 V, 13.2 V or 28.0 V.**

6.1.6. **In the case of a system that uses an electronic light source control gear not being part of the headlamp, 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.”**

Paragraph 6.1.5.(former), renumber as paragraph 6.1.7.

Annex 1, item 9, amend to read:

“9. Brief description:

...

The determination of the minimum sharpness of the “cut-off” has been carried out at: 10 m/ 25 m.²

Application of an electronic light source control gear:

(a) **being part of the lamp yes/ no²**

(b) **being not part of the lamp yes/ no²**

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 headlamp but is not included into the headlamp body):”

II. Justification

1. The filament lamps in the current version of Regulation No. 112 must be subject to a power supply that produces the reference flux specified in Regulation No. 37.
2. The informal group on operating voltage (OVIG) has clarified the use of control gear in lighting and light-signalling devices as headlamps. Regulations Nos. 19 (class F3, paragraphs 2.4.3. and 6.4.1.1.3.) and 123 (paragraph 2.4.) already contain such requirements.
3. For harmonization reasons, we propose to introduce voltage control gear in Regulations Nos. 112 and 48 to clarify the use of such device built-in with the headlamp or provided by the car manufacturer.

4. Such device may reduce the thermal stress inside the headlamp and allows the headlamp manufacturer to use different materials for the design of the headlamps. The vehicle manufacturer may also use it to optimize the design taking into account the true power supply delivered to the equipments.

5. The RMS voltage reduction also has a beneficial effect on the power consumption, because power consumption varies with the square value of the voltage. It might be convenient for electrical cars or Energy saving cars (e.g., hybrid cars).
