

Proposed alternatives to document ECE/TRANS/WP.29/GRE/2013/62, concerning electronic light source control gear

Note: The text reproduced below was jointly prepared by the experts from Germany, Netherlands and IEC for further clarification, after consultation with several experts and in response to discussions on GRE-70-17, GRE-70-34, ECE/TRANS/WP.29/GRE/2013/44 and ECE/TRANS/WP.29/GRE/2013/62. The modifications to the existing text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

I. Proposal for Supplement [5] to the 01 series of amendments to Regulation No. 112

Paragraph 2.2.6., amend to read:

"2.2.6. One electronic light source control gear, if applicable, **including documentation on the value of the input voltage or range of voltages, corresponding to the constant voltage operating condition of the electrical system of the vehicle to which the lamp is fitted.**"

Paragraph 5.3.1.3., amend to read:

"5.3.1.3. A means of controlling the voltage at the terminals of the device, ~~within the limits as defined~~ **described in paragraph 5.27.2 of Regulation No. 48**, may, ~~for convenience~~, be located within the body of the headlamp. However, for the purposes of type approval of the passing and/ or driving beam according to the provisions of this Regulation, such means of voltage control shall ~~not~~ be considered ~~to be part of the headlamp as an electronic light source control gear. and shall be disconnected during the testing to verify performance according to the requirements of this Regulation.~~ "

Insert a new paragraph 5.3.1.4., to read:

"5.3.1.4. **Electronic light source control gear associated with the operation of the filament lamp shall be considered to be part of the headlamp.**

5.3.1.4.1. **The effective output voltage (root-mean-square, r.m.s.) of the electronic light source control gear at the terminals of the filament light source, determined over a sufficient length of time to measure the correct value, shall be not less than 6.0 V (6 Volt-Systems), 12.0 V (12 Volt-Systems) or 24.0 V (24 Volt-Systems) and not larger than 7.0 V (6 Volt-Systems), 13.9 V (12 Volt-Systems) or 28.8 V (24 Volt-Systems)), when supplied with a voltage as described in paragraph 2.2.6."**

Paragraphs 6.1.3.1 .and , 6.1.3.2 amend to read:

"6.1.3.1. During the checking of the headlamp, the voltage at the terminals of the filament lamp shall be regulated as to obtain the reference luminous flux at 13.2 V as indicated for each filament lamp at the relevant data sheet of Regulation No. 37.

However:

(a) **If** a filament lamp of category H9 or H9B is used for the principal passing beam, the applicant may choose the reference luminous flux at

12.2 V or 13.2 V as indicated in the relevant data sheet of Regulation No. 37;

- (b) **In the case of use of an electronic light source control gear the input voltage of the electronic light source control gear shall be as specified in the application documentation corresponding to paragraph 2.2.6.**

A reference stating which voltage was chosen for type approval shall be made in item 9 in the communication form of Annex 1.

- 6.1.3.2. In order to protect the standard (étalon) filament lamp during the process of photometric measurement it is permissible to carry out the measurements at a luminous flux that differs from the reference luminous flux at 13.2 V. If the Technical Service chooses to carry out measurements in such a manner, the luminous intensity shall be corrected by multiplying the measured value by the individual factor F_{lamp} of the standard (étalon) filament lamp in order to verify the compliance with the photometric requirements where:

$$F_{\text{lamp}} = \Phi_{\text{reference}} / \Phi_{\text{test}}$$

$\Phi_{\text{reference}}$ is the reference luminous flux at 13,2 V as specified in the relevant data sheet of Regulation No. 37

Φ_{test} is the actual luminous flux used for the measurement.

However, where the reference luminous flux of 12.2 V as specified in the data sheet for the category H9 or H9B is chosen, **or in the case of use of an electronic light source control gear**, this procedure is not permitted."

II. Justification

1. The objective of this proposal is to restrict the allowed voltage at headlamps equipped with (halogen) filament lamp light sources, to avoid (semi-)permanent too low or too high luminous intensity of the headlamp and subsequent shorter lifetime of the halogen light source.
2. The essence of this proposal is the addition of a lower voltage limit and the verification that the headlamp performance - in terms of luminous intensity - under the normal operating conditions of the vehicle's electrical system is still compliant with the requirements of Regulation No. 112.
3. Previous proposals in documents ECE/TRANS/WP.29/GRE/2013/44, ECE/TRANS/WP.29/GRE/2013/62, Informal document GRE-70-17 and Informal document GRE-70-34 have been analysed and the essential substance of each proposal was noted. In response to the comments made during the (previous) session(s) of GRE, the simplest provisions were selected and combined with existing provisions, thus introducing a minimum of additional requirements necessary to achieve the above mentioned objectives.