

**Economic and Social Council**Distr.: General
11 August 2016

Original: English

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

Geneva, 25–28 October 2016

Item 4 of the provisional agenda

Simplification of lighting and light-signalling Regulation**Proposal for a collective amendment to Regulations Nos. 19,
98, 112, 113 and 123****Submitted by the expert from the International Automotive Lighting
and Light Signalling Expert Group (GTB)***

The text reproduced below was prepared by the expert from GTB to clarify the heat test cycle relating to the movement of the passing beam cut-off in the front fog lamp and headlamp Regulations. The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, 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

A. Supplement 9 to the 04 series of amendments to Regulation No. 19 (Front fog lamps):

Annex 5,

Paragraph 2.2.2., amend to read:

- "2.2.2. However, if this value is more than 2 mrad but not more than 3 mrad ($2 \text{ mrad} < \Delta r_1 \leq 3 \text{ mrad}$) a ~~second~~ **further sample of a front fog lamp mounted on a test fixture representative of the correct installation on the vehicle** shall be tested as described in paragraph 2.1. above ~~This shall be done after the front fog lamp has been~~ **after being** subjected to ~~three consecutive cycles~~ **three times** to the cycle as described below, in order to stabilise the position of the mechanical parts of the front fog lamp ~~that is mounted on a base representative of the correct installation on the vehicle:~~
- (a) Operation of the front fog lamp for one hour. (The voltage shall be adjusted as specified in paragraph 1.1.2. of this annex).
 - (b) ~~Period of rest for one hour.~~ **b) One hour period with the lamp switched off."**

Paragraph 2.2.3., amend to read:

- "2.2.3. ~~The front fog lamp type shall be considered acceptable if the mean value of the absolute values Δr_1 measured on the first sample and Δr_{II} measured on the second sample is not more than 2 mrad.~~
- ~~$(\Delta r_1 + \Delta r_{II}) / 2 \leq 2 \text{ mrad}$.~~
- After these three cycles, the front fog lamp type shall be considered as acceptable if the absolute values Δr measured according to paragraph 2.1. above on this further sample meet the requirements in paragraph 2.2.1. above."**

B. Supplement 8 to the 01 series of amendments to Regulation No. 98 (Headlamps with gas-discharge light sources):

Annex 4, paragraphs 2.2.1. and 2.2.2, amend to read:

- "2.2.1. The result expressed in milliradians (mrad) shall be considered as acceptable for a passing beam headlamp when the absolute value $\Delta r_1 = |r_3 - r_{60}|$ recorded on the headlamp is not more than 1.0 mrad ($\Delta r_1 \leq 1.0 \text{ mrad}$) upward and not more than 2.0 mrad ($\Delta r_1 \leq 2.0 \text{ mrad}$) downwards.
- 2.2.2. However, if this value is:

<i>Movement</i>	
Upward	more than 1.0 mrad but not more than 1.5 mrad ($1.0 \text{ mrad} < \Delta r_1 \leq 1.5 \text{ mrad}$)
Downward	more than 2.0 mrad but not more than 3.0 mrad ($2.0 \text{ mrad} < \Delta r_1 \leq 3.0 \text{ mrad}$)

~~A further sample of a headlamp shall be tested as described in paragraph 2.1. after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp on a base representative of the correct installation on the vehicle:~~

~~Operation of the passing beam for one hour, (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);~~

~~After this period of one hour, the headlamp type shall be considered as acceptable if the absolute value Δr measured on this sample meets the requirements in paragraph 2.2.1. above."~~

a further sample of a headlamp mounted on a test fixture representative of the correct installation on the vehicle shall be tested as described in paragraph 2.1. above after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp:

(a) Operation of the passing beam for one hour (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);

(b) One hour period with the lamp switched off.

After these three cycles, the headlamp type shall be considered as acceptable if the absolute values Δr measured according to paragraph 2.1. above on this further sample meet the requirements in paragraph 2.2.1. above."

C. Supplement 7 to the 01 series of amendments to Regulation No. 112 (Headlamps emitting an asymmetrical passing-beam):

Annex 4, paragraphs 2.2.1. and 2.2.2, amend to read:

"2.2.1. The result expressed in milliradians (mrad) shall be considered as acceptable for a passing beam headlamp when the absolute value $\Delta r_1 = | r_3 - r_{60} |$ recorded on the headlamp is not more than 1.0 mrad ($\Delta r_1 \leq 1.0$ mrad) upward and not more than 2.0 mrad ($\Delta r_1 \leq 2.0$ mrad) downwards.

2.2.2. However, if this value is:

<i>Movement</i>	
Upward	more than 1.0 mrad but not more than 1.5 mrad ($1.0 \text{ mrad} < \Delta r_1 \leq 1.5 \text{ mrad}$)
Downward	more than 2.0 mrad but not more than 3.0 mrad ($2.0 \text{ mrad} < \Delta r_1 \leq 3.0 \text{ mrad}$)

~~A further sample of a headlamp shall be tested as described in paragraph 2.1. after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp on a base representative of the correct installation on the vehicle:~~

~~Operation of the passing beam for one hour, (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);~~

~~After this period of one hour, the headlamp type shall be considered as acceptable if the absolute value Δr measured on this sample meets the requirements in paragraph 2.2.1. above."~~

~~a further sample of a headlamp mounted on a test fixture representative of the correct installation on the vehicle shall be tested as described in paragraph 2.1. above after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp:~~

- ~~(a) Operation of the passing beam for one hour (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);~~
- ~~(b) One hour period with the lamp switched off.~~

~~After these three cycles, the headlamp type shall be considered as acceptable if the absolute values Δr measured according to paragraph 2.1. above on this further sample meet the requirements in paragraph 2.2.1. above."~~

D. Supplement 7 to the 01 series of amendments to Regulation No. 113 (Headlamps emitting a symmetrical passing-beam):

Annex 4, paragraph 2.2., amend to read:

“2.2. Test results

2.2.1. The result in milliradians (mrad) shall be considered as acceptable for a headlamp producing a passing beam, only when the absolute value $\Delta r_1 = |r_3 - r_{60}|$ recorded on the headlamp is not more than 1.0 mrad ($\Delta r_1 < 1.0$ mrad) **upwards and not more than 2.0 mrad ($\Delta r_1 \leq 2.0$ mrad) downwards."**

2.2.2. However, if this value is ~~more than 1.0 mrad but not more than 1.5 mrad~~ ($1.0 \text{ mrad} < \Delta r_1 < 1.5 \text{ mrad}$):

<i>Movement</i>	
Upward	more than 1.0 mrad but not more than 1.5 mrad ($1.0 \text{ mrad} < \Delta r_1 \leq 1.5 \text{ mrad}$)
Downward	more than 2.0 mrad but not more than 3.0 mrad ($2.0 \text{ mrad} < \Delta r_1 \leq 3.0 \text{ mrad}$)

~~a second further sample of a headlamp mounted on a test fixture representative of the correct installation on the vehicle shall be tested as described in paragraph 2.1. after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp: on a base representative of the correct installation on the vehicle:~~

~~Operation of the passing beam for one hour, (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);~~

~~Period of rest for one hour.~~

~~The headlamp type shall be considered as acceptable if the mean value of the absolute values Δr_1 measured on the first sample and Δr_2 measured on the second sample is not more than 1.0 mrad.~~

- (a) Operation of the passing beam for one hour (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);
- (b) One hour period with the lamp switched off.

After these three cycles, the headlamp type shall be considered as acceptable if the absolute values Δr measured according to paragraph 2.1. above on this further sample meet the requirements in paragraph 2.2.1. above."

Annex 5, paragraph 1.4., amend to read:

"1.4. With respect to the verification of the change in vertical position of the "cut-off" line under the influence of heat, the following procedure shall be applied (Classes B, C, D and E headlamps only):

One of the sampled headlamps shall be tested according to the procedure described in paragraph 2.1. of Annex 4 after being subjected three consecutive times to the cycle described in paragraph 2.2.2. of Annex 4.

The headlamp shall be considered as acceptable if Δr does not exceed 1.5 mrad **upwards and does not exceed 2.5 mrad downwards.**

If this value exceeds 1.5 mrad but is not more than 2.0 mrad **upwards or exceeds 2.5 mrad but is not more than 3.0 mrad downwards**, a second sample shall be subjected to the test after which the mean of the absolute values recorded on both samples shall not exceed 1.5 mrad **upwards and shall not exceed 2.5 mrad downwards.**"

E. Supplement 8 to the 01 series of amendments to Regulation No. 123 (Adaptive front-lighting systems (AFS)):

Annex 4, paragraphs 2.2.1. and 2.2.2, amend to read:

"2.2.1. The result expressed in milliradians (mrad) shall be considered as acceptable for a passing beam headlamp when the absolute value $\Delta r_1 = | r_3 - r_{60} |$ recorded on the headlamp is not more than 1.0 mrad ($\Delta r_1 \leq 1.0$ mrad) upward and not more than 2.0 mrad ($\Delta r_1 \leq 2.0$ mrad) downwards.

2.2.2. However, if this value is:

<i>Movement</i>	
Upward	more than 1.0 mrad but not more than 1.5 mrad (1.0 mrad < $\Delta r_1 \leq 1.5$ mrad)
Downward	more than 2.0 mrad but not more than 3.0 mrad (2.0 mrad < $\Delta r_1 \leq 3.0$ mrad)

~~A further sample of a headlamp shall be tested as described in paragraph 2.1. after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp on a base representative of the correct installation on the vehicle:~~

~~Operation of the passing beam for one hour, (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);~~

~~After this period of one hour, the headlamp type shall be considered as acceptable if the absolute value Δr measured on this sample meets the requirements in paragraph 2.2.1. above."~~

a further sample of a headlamp mounted on a test fixture representative of the correct installation on the vehicle shall be tested as described in paragraph 2.1. after being subjected three consecutive times to the cycle as described below, in order to stabilize the position of mechanical parts of the headlamp:

- (a) Operation of the passing beam for one hour (the voltage shall be adjusted as specified in paragraph 1.1.1.2.);**
- (b) One hour period with the lamp switched off.**

After these three cycles, the headlamp type shall be considered as acceptable if the absolute values Δr measured according to paragraph 2.1. above on this further sample meet the requirements in paragraph 2.2.1. above."

II. Justification

This collective amendment on the stability of photometric performance during the heat test, with particular reference to the movement of the cut-off line, clarifies the test cycle and also aligns the requirements of Regulations Nos. 19, 98, 112, 113 and 123. In addition to resolving problems of interpretation presented by the current text, this collective amendment will assist the Informal Working Group "Simplification of Lighting and Light-Signalling Regulations" in drafting the new simplified Regulations which is underway.
