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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****Seventieth session**

Geneva, 21-23 October 2013

Item 4(b) of the provisional agenda

**Regulation No. 48 (Installation of lighting and light-signalling devices) –****Proposal for amendments to the 06 series of amendments****Proposal for Supplement 3 to the 06 series of amendments to Regulation No. 48 (Installation of lighting and light-signalling devices)****Submitted by the expert from Poland\***

The text reproduced below was prepared by the expert from Poland to introduce an alternative set of performance-based requirements for the initial aiming of dipped-beam headlamps and allowing removing the artificial 2,000 lm borderline and Light Emitting Diode (LED) automatic levelling.

It is a revision of ECE/TRANS/WP.29/GRE/2013/15, as discussed during the sixty-ninth session of the Working Party on Lighting and Light-Signalling (GRE). The modifications to the existing text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, 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

Paragraph 6.2.6.1.1., amend to read:

"6.2.6.1.1. The initial downward ...

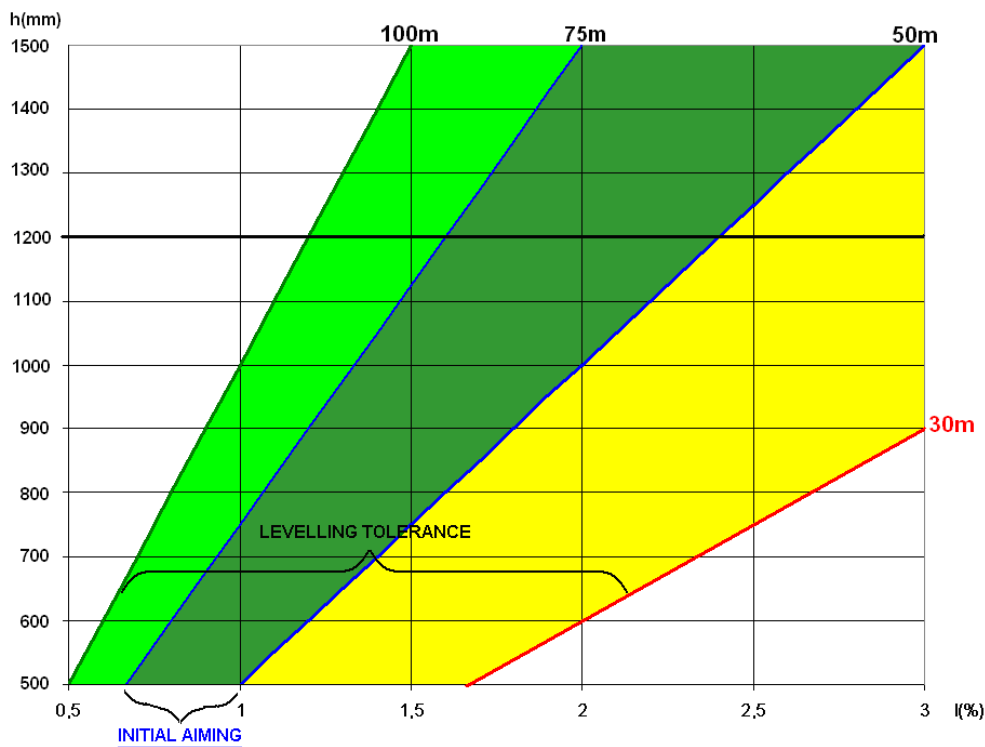
The value of this indicated downward inclination shall be defined in accordance with **either** paragraph 6.2.6.1.2. **or** paragraph 6.2.6.1.3. (at the discretion of the manufacturer)."

Insert a new paragraph 6.2.6.1.3., to read:

**"6.2.6.1.3. Depending on the mounting height in millimetres (h) of the dipped-beam headlamp reference axis, the vertical inclination of the cut-off of the dipped-beam (in the direction of the reference axis) measured on the unladen vehicles, taking in account 0.1 per cent accuracy, shall have the value of initial downward inclination (initial aiming) for which the horizontal part of the cut-off intersects with the surface of a flat horizontal road at a distance between 50 m and 75 m from the headlamp.**

**The aiming limits under all the static conditions of Annex 5 shall be such that the distance of intersection of the horizontal part of the cut-off with the road surface shall remain between 30 m and 100 m, including aiming inaccuracy (see figure below).**

**At the discretion of the manufacturer the minimum distance of intersection of the horizontal part of the cut-off with the road surface longer than 30m may be declared.**



*Paragraph 6.2.6.2.1.*, amend to read:

"6.2.6.2.1. In the case where a headlamp levelling device is necessary to satisfy the requirements of paragraphs 6.2.6.1.1. and **either** 6.2.6.1.2. **or** **6.2.6.1.3. (which ever applies)** the device shall be automatic."

*Paragraph 6.2.9.*, amend to read:

"6.2.9. Other requirements

The requirements of paragraph 5.5.2. shall not apply to dipped-beam headlamps.

...

With respect to vertical inclination, **in the case the values used for the downward inclination of the cut-off of the dipped-beam are in accordance with paragraph 6.2.6.1.2.**, the provisions of paragraph 6.2.6.2.2. above shall not be applied for dipped-beam headlamps:

- (a) With LED module(s) producing the principal dipped beam; or
- (b) With a light source producing the principal dipped beam and having an objective luminous flux which exceeds 2,000 lumen.

In the case of filament lamps ..."

*Annex 1, insert a new item 10.9.*, to read:

"**10.9. Value used for the initial downward inclination of the cut-off of the dipped-beam (according to paragraph 6.2.6.1.1.) as defined:**

- (a) **In accordance with paragraph 6.2.6.1.2.<sup>2</sup> or**
- (b) **In accordance with paragraph 6.2.6.1.3.<sup>2</sup> (value of minimum distance of intersection of the horizontal part of the cut-off with the road surface if declared more than 30 m.)"**

*Annex 9, paragraph 1.3.2.*, amend to read:

"1.3.2. Variation of inclination with load

(a) **In the case the values used for the downward inclination of the cut-off of the dipped-beam are in accordance with paragraph 6.2.6.1.2** the variation of the dipped-beam downward inclination as a function of the loading conditions specified within this section shall remain within the range

0.2 per cent to 2.8 per cent	for headlamp mounting height $h < 0.8$ ;
0.2 per cent to 2.8 per cent	for headlamp mounting height $0.8 \leq h \leq 1.0$ ; or
0.7 per cent to 3.3 per cent	(according to the aiming range chosen by the manufacturer at the approval);
0.7 per cent to 3.3 per cent	for headlamp mounting height $1.0 < h \leq 1.2$ m;
1.2 per cent to 3.8 per cent	for headlamp mounting height $h > 1.2$ m.

(b) **In the case the values used for the downward inclination of the cut-off of the dipped-beam are in accordance with paragraph 6.2.6.1.3** the variation of the dipped-beam downward inclination as a function of

**the loading conditions specified within this section shall remain within the range prescribed in 6.2.6.1.3.**

In the case of a class "F3" front fog lamp ..."

## **II. Justification**

1. In UN Regulation No. 48 values were fixed for the initial aiming of dipped-beam headlamps (and their tolerances) in specific and rather large (crude) ranges depending on the mounting height. As a result, in real-world road conditions for new type-approved vehicles, it is possible to have an illuminated road section starting almost immediately in front of the vehicle and ending between 20 m and 200 m ahead of the vehicle. These values do not take into account additional conformity of production tolerances, allowed by the current text of UN Regulation No. 48.

2. The above-mentioned proposal improves the present situation by introducing an alternative set of requirements for the initial aiming of dipped-beam headlamps going in the direction of performance-based requirements and more matching real-world dipped-beam road illumination range, independent of the headlamp mounting height. When is used alternative set of requirements it is removed the artificial 2,000 lm borderline and Light Emitting Diode (LED) automatic levelling.

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