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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****Seventy-eighth session**

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Item 4 of the provisional agenda

Simplification of lighting and light-signalling Regulations**Proposal to introduce requirements for the use of replaceable light emitting diode light sources for forward lighting in the new Regulation on Road Illumination Devices****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 with the aim to introduce requirements for replaceable light emitting diode (LED) light sources for forward lighting in the new Regulation on Road Illumination Devices (RID). The text of the new draft RID Regulation is still being developed but this document provides a more comprehensive indication of the nature of the modifications required in the main body than the text presented to the Working Party on Lighting and Light-Signalling (GRE) at its seventy-seventh session in informal document GRE-77-14. The modifications to the annexes are under development but will follow the same approach. The modifications to the text of the new draft 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 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.1), 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 3.3.2.5.2., amend to read:

"3.3.2.5.2. In the case of headlamps/AFS installation unit designed to meet the requirements of both traffic systems by means of an appropriate adjustment of the setting of the optical unit or the filament **or LED** light source or LED module(s), a horizontal arrow with a head on each end, the heads pointing respectively to the left and to the right;"

Paragraph 3.3.2.5.6., amend to read:

"3.3.2.5.6. In the case of headlamps/AFS installation unit so designed that the filament **or LED** light source(s) or LED module(s) producing the principal passing-beam shall not be lit simultaneously with that of any other lighting function with which it may be reciprocally incorporated: an oblique stroke (/) shall be placed behind the symbol indicating the headlamp producing the passing beam in the approval mark."

Paragraph 3.3.2.7.2.1., amend to read:

"3.3.2.7.2.1. In the case of filament **or LED** light source, the category(s) of filament **or LED light source(s)** ~~lamp(s)~~, and/or in the case of LED module(s), the rated voltage and rated wattage and the specific identification code(s) of the LED module(s)."

Paragraph 4.5.2.2.5., amend to read:

"4.5.2.2.5. The definitions in Regulation 48 allow the use of LED modules, which may contain holders for other light sources. Notwithstanding this provision a mixture of ~~LED(s)~~ **LED light sources or LED modules with** ~~and~~ other light sources for the principal passing-beam or the contributor to the bend lighting or each driving-beam, as specified by this Regulation is not allowed."

Paragraph 4.17.3.3.3., amend to read:

"4.17.3.3.3. The total objective luminous flux of all **LED light sources and** LED modules producing the principal passing-beam and measured as described in paragraph 5. of Annex 12 shall be equal or greater than 1,000 lumens."

Paragraph 4.17.2.1., amend to read:

"4.17.2.1. Headlamps shall be fitted with a device enabling them to be so adjusted on the vehicles as to comply with the rules applicable to them. Such a device may or may not provide horizontal adjustment, provided that the headlamps are so designed that they can maintain a proper horizontal aiming even after the vertical aiming adjustment. Such a device need not be fitted on units in which the reflector and the diffusing lens cannot be separated, provided the use of such units is confined to vehicles on which the headlamp setting can be adjusted by other means.

Where a headlamp providing a passing beam and a headlamp providing a driving beam, each equipped with its own filament ~~lamp(s)~~, gas-discharge **or LED** light source or LED module(s), are assembled to form a composite unit the adjusting device shall enable each optical system individually to be duly adjusted."

Paragraph 4.17.3.1., amend to read:

"4.17.3.1. Headlamps shall be equipped with filament **or LED light source**~~lamp~~(s) approved according to Regulation No. 37 **and No. 128 respectively**, and/or, with (an) LED module(s).

In the case of the use of additional light source(s) and/or additional lighting unit(s) to provide bend lighting, only categories of filament **or LED light sources** ~~lamps~~ covered by Regulation No. 37 **or No. 128**, provided that no restriction on the use for bending light is made in Regulation No. 37 **and No. 128 respectively**, and its series of amendments in force at the time of application for type approval, and / or LED modules(s) shall be used."

Paragraph 4.17.3.2., amend to read:

"4.17.3.2. It is possible to use two filament light sources for the principal passing beam and several filament light sources for the driving beam.

Any Regulation No. 37 filament ~~lamp~~**light source** may be used, provided that:

- (a) No restriction on the use is made in Regulation No. 37 and its series of amendments in force at the time of application for type approval;
- (b) For Class A and B, its reference luminous flux at 13.2V for principal dipped-beam does not exceed 900 lm;
- (c) For Class C and D, its reference luminous flux at 13.2V for principal dipped-beam does not exceed 2,000 lm.

The design of the device shall be such that the filament ~~lamp~~**light source** can be fixed in no other position but the correct one⁸.

The filament ~~lamp~~**light source** holder shall conform to the characteristics given in IEC Publication 60061. The holder data sheet relevant to the category of filament ~~lamp~~**light source** used, applies."

Paragraph 4.17.4.1. and 4.17.4.2. amend to read:

"4.17.4.1. The headlamp shall be equipped with (a) gas-discharge light source(s) approved according to Regulation No. 99 **and/or with LED light source(s) approved according to Regulation No. 128** and/or (an) LED module(s).

In the case of the use of additional light source(s) and/or additional lighting unit(s) to provide bend lighting, only categories of filament lamps covered by Regulation No. 37, provided that no restriction on the use for bending light is made in Regulation No. 37 and its series of amendments in force at the time of application for type, **and/or categories of LED light sources covered by Regulation No. 128, provided that no restriction on the use for bending light is made in Regulation No. 128 and its series of amendments in force at the time of application for type approval, and/or LED modules(s) shall be used.**"

"4.17.4.2. In the case of replaceable ~~gas-discharge~~ light sources the lamp holder shall conform to the dimensional characteristics as given on the data sheet of IEC Publication 60061-2, relevant to the category of gas-discharge light source used. The gas-discharge light source shall fit easily into the headlamp."

Paragraph 4.17.9., amend to read:

- "4.17.9. For class A and B, and passing beam of class D and AFS, the definitions in paragraphs 2.7.1.1.3. and 2.7.1.1.7., in UN Regulation No. 48 allow the use of LED module, which may contain holders for other light sources. Notwithstanding this provision a mixture of ~~LED(s)~~ **LED light sources or LED modules with** and other light sources for the passing beam or each driving beam, as specified by this Regulation is not allowed."

Paragraph 5.2.4., amend to read:

- "5.2.4. Headlamps designed to meet the requirements of both right-hand and left-hand traffic shall, in each of the two setting positions of the optical unit or LED module(s) producing the principal passing-beam or of the filament **or LED** light source light source, meet the requirements set forth above for the corresponding direction of traffic."

Paragraph 5.2.5.1.3., amend to read:

- "5.2.5.1.3. Means of one additional filament light source **or one or more LED light sources** or one or more LED module(s) without moving horizontally the kink of the elbow of the cut-off, measurements shall be carried out with this/**these light** source(s) or LED module(s) activated."

Paragraph 5.2.6. and its sub-paragraphs, amend to read:

- "5.2.6. Only one filament **or LED** light source or one or more LED module(s) are permitted for the principal passing-beam. Additional light sources or LED modules are permitted only as follows (see Annex 10):
- 5.2.6.1. One additional light source according to UN Regulation No. 37 **or No. 128** or one or more additional LED module(s) may be used inside the passing-beam headlamp to contribute to bend lighting;
- 5.2.6.2. One additional light source according to UN Regulation No. 37 **or No. 128** and/or one or more LED module(s), inside the passing-beam headlamp, may be used for the purposes of generating infrared radiation. It/they shall only be activated at the same time as the principal light source or LED module(s). In the event that the principal light source or (one of) the principal LED module(s) fails, this additional light source and/or LED module(s) shall be automatically switched off;
- 5.2.6.3. In the event of failure of an additional ~~filament~~ light source or one or more additional LED module(s), the headlamp shall continue to fulfil the requirements of the passing-beam."

Paragraph 5.4.4.5., amend to read:

- "5.4.4.5. Either one or two filament **or LED** light sources (Classes AS, BS, CS, DS) or one gas discharge light source (Class ES) or one or more LED module(s) (Classes CS, DS, ES) are permitted for the passing beam."

II. Justification

As the Informal Working Group "Simplification of the Lighting and Light-Signalling Regulations" (IWG SLR) continues working on the new RID Regulation, it is not possible to indicate all detailed modifications that will be required to incorporate the replaceable LED light sources for forward lighting. However, in general, only simple

editorial changes will be required. The approach to the modification of the text of the new RID Regulation was presented at the seventy-seventh session of GRE (GRE-77-14) and was agreed, pending a formal examination in conjunction with the final text of the new draft RID Regulation. The progress in preparing the text of the new RID Regulation has made it possible to indicate, in the present document, the detailed changes to the affected paragraphs of the main body. Further work is required to identify the changes that will be required in the annexes.
