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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

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Item 5(e) of the provisional agenda

#### Collective amendments - UN Regulations Nos. 19, 48 and 98

## Proposal for collective amendments to Regulations Nos. 19, 48 and 98

### Submitted by the expert from Germany\*

The text reproduced below was prepared by the expert from Germany, with the support of the expert from the Netherlands and based on the discussions in the previous sessions of Working Party on Lighting and Light-Signalling (GRE). The present proposal intend to clarify the provisions regarding the deletion of distributed lighting systems (DLS), or rather light generators, from the UN Regulations Nos. 19, 48 and 98, because the provisions for the DLS systems are incomplete. The necessary completion of this deletion has never been finalized and, in the meantime, there is no interest anymore in such systems. The modifications to the existing text of the UN Regulations 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, 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

### A. Proposal for Supplement 06 to the 04 series of amendments to Regulation No. 19

(The following text is based upon Rev 6 up to and including draft supplement 05)

*Contents, annexes, paragraph 12* amend to read:

"12 Requirements in case of use of LED module(s) ~~or for the use of light source module(s) for a DLS.~~"

*Introduction*, amend to read:

"Introduction

This ...

- (b) Light sources can be selected according to the provisions of Regulation No. 37 (Incandescent filament light sources) and Regulation No. 99 (gas discharge light sources). LED modules ~~and distributed lighting systems~~ may also be used.
- (c) The cut-off and the gradient definitions..."

*Paragraph 1.4.3.*, amend to read:

"1.4.3. the characteristics of the optical system; (basic optical design, type / category of light source, LED module, ~~DLS~~ etc.),"

*Paragraph 1.4.5.*, amend to read:

"1.4.5. the category of filament lamp(s) used, as listed in Regulation No. 37, Regulation No. 99 and/or the LED module ~~or light generator~~ specific identification code(s) (if applicable)."

*Paragraph 2.4.2.*, amend to read:

"2.4.2. In the case of LED module(s) ~~or a light generator~~, the specific identification code of the module shall be stated. The drawing shall contain sufficient details to identify it and the position intended for the specific identification code and the trademark of the applicant."

*Paragraphs 2.4.4.*, amend to read:

"2.4.4. If the front fog lamp is fitted with LED module(s) ~~or a distributed lighting system~~, a brief technical specification shall be provided. This information shall include the part number assigned by the light source manufacturer, a drawing with dimensions and the basic electrical and photometric values, an indication whether the light source complies with the UV-radiation requirements of paragraph 4.6. of Annex 12 of this Regulation, an official test report related to paragraph 5.9. of this Regulation and the objective luminous flux."

*Paragraph 2.4.5.*, to be deleted.

*Paragraphs 2.4.6. up to 2.4.1.1*, renumber as 2.4.5 up to 2.4.10.

*Paragraph 2.4.6.1. and 2.4.6.2.*, shall be deleted:

*Paragraph 2.4.7.*, amend to read:

"2.4.7. In the case of LED module(s) ~~or a distributed lighting system~~ and if no provisions are taken to shield the relevant front fog lamp ~~or distributed lighting system~~ components made of plastic material from UV-radiation of ~~(gas discharge)~~ light sources, e.g. by UV-retaining glass filters:

One sample of each of the relevant materials. This shall have similar geometry to that of the front fog lamp ~~or distributed lighting system~~ being tested. Each material sample shall have the same appearance and surface treatment, if any, as intended for use in the front fog lamp to be approved."

*Paragraph 2.4.8., amend to read:*

"2.4.8. In the case of an approval of a front fog lamp ~~according to paragraph 2.4.8. and/or according to paragraph 5.9.~~ containing plastic lenses and/or having inner optical parts made from plastic, which have already been tested:

..."

*Paragraph 3.1., amend to read:*

"3.1. The samples of a type of front fog lamp ~~or distributed lighting system~~ which are submitted for approval shall clearly, legibly and indelibly bear:

- (a) The trade name or mark of the applicant,
- (b) Marking indicating the class of the front fog lamp, and in case of Class F3 front fog lamps:
- (c) The LED module ~~or light generator~~ specific identification code, if any."

*Paragraph 3.3., amend to read:*

"3.3. The approval marking shall be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting light; ~~in the case of a distributed lighting system with outer lens built in the light guide, this condition is deemed satisfied if the approval marking is placed at least on the light generator and on the light guide or on its protective shield.~~ In any case the marking shall be visible when the device is fitted on the vehicle, at least when a movable part such as the hood or boot lid or a door is opened."

*Paragraph 3.4., amend to read:*

"3.4. In case of Class F3 front fog lamps with LED module(s) the lamp shall bear the marking of the rated voltage, rated wattage and the light source module specific identification code."

~~3.4.1. In case of a distributed lighting system, the light generator(s) shall bear the marking of the rated voltage and wattage and in the case that the electronic control gear is not part of the device the light generator(s) shall bear the trade name or mark of its manufacturer and the part number.~~

~~3.4.2. In case of lamps with LED module(s) the lamp shall bear the marking of the rated voltage, rated wattage and the light source module specific identification code."~~

*Paragraph 5.7. to 5.9., amend to read:*

"5.7. In the case of Class F3, the light sources shall be:

5.7.1. One or more replaceable light sources approved according to Regulation No. 37 or Regulation No. 99 and their associated series of amendments in force at the time of application for type approval.

- 5.7.2. And/or, one or more LED modules where the requirements of Annex 12 to this Regulation shall apply. The compliance with the requirements shall be tested.
- ~~5.7.3. And/or light generators where the requirements of Annex 12 to this Regulation shall apply. The compliance with the requirements shall be tested.~~
- 5.8. Even if these light sources cannot be replaced they shall comply with the requirements of Annex 12 to this Regulation, the requirements shall be tested.
- 5.9. In the case of LED module ~~or light generator~~ it shall be checked, that:
  - 5.9.1. The design of the LED module(s) ~~or light generator(s)~~ shall be such that they can be fitted in no position other than the correct one.
  - 5.9.2. Non-identical light source modules, if any, shall be non-interchangeable within the same lamp housing.
  - 5.9.3. The LED module(s) ~~or light generator(s)~~ shall be tamperproof."

*Annex 1*

*Item 10.4.*, to be deleted.

*Items 10.5. up to 10.10.*, renumber as items 10.4. up to 10.9.

*Item 10.5.*, amend to read:

"10.5. LED module ~~or light generator~~ specific identification code: ....." "

*Annex 12*

*Title of Annex 12*, amend to read:

"Requirements in case of use of LED module(s) ~~or of light generators~~"

*Paragraphs 1.1., 1.2. and 1.3.*, amend to read:

- "1.1. Each LED module ~~or light generator~~ sample submitted shall conform to the relevant specifications of this Regulation when tested with the electronic light source control-gear(s) supplied, if any.
- 1.2. LED modules ~~or light generators~~ shall be so designed as to be, and to remain in good working order when in normal use. They shall moreover exhibit no fault in design or manufacture.
- 1.3. LED modules ~~or light generators~~ shall be tamperproof."

*Paragraph 2.2. and subparagraphs*, amend to read:

- "2.2. In case of LED modules ~~or light generator(s)~~:
  - 2.2.1. The LED(s) on the LED module shall be equipped with suitable fixation elements.
  - 2.2.2. The fixation elements shall be strong and firmly secured to the light source(s) and the LED module.
  - ~~2.2.3. The light source in the light generator shall be equipped with suitable fixation elements.~~
  - ~~2.2.4. The fixation elements shall be strong and firmly secured to the light source(s) and the light generator."~~

*Paragraphs 3.1.3. to 3.1.3.2.*, amend to read:

- "3.1.3. LED module operating conditions  
~~LED module or light generator operating conditions:~~
- 3.1.3.1. All samples shall be tested under the conditions as specified in paragraph 6.4.1.4. of this Regulation.
- 3.1.3.2. If not specified differently in this annex, LED modules ~~or light generators~~ shall be tested inside the front fog lamp as submitted by the manufacturer."

*Paragraph 3.1.5.*, shall be deleted.

*Paragraphs 3.2.1. and 3.2.2.*, amend to read:

- "3.2.1. LED modules ~~or light generators~~ shall be aged.
- 3.2.2. The tests below shall be carried out after ageing with the LED module(s) ~~or light generator(s)~~ supplied by the submitted electronic light source control-gear at test voltage."

*Paragraph 4.5.1.*, amend to read:

- "4.5.1. Red content
- In addition to measurements as described in paragraph 7. of part A or B to this Regulation, the minimum red content of the light of a LED module ~~or light generator~~ shall be such that:

...."

*Paragraph 4.6.*, amend to read:

- "4.6. UV-radiation
- The UV-radiation of the LED module ~~or light generator~~ shall be such that:

...."

## B. Proposal for Supplement 03 to the 06 series of amendments to Regulation No. 48

(The following text is based upon 06 Series up to and including draft Supplement 1)

*Contents, annexes, line with Annex 10* amend to read:

"Annex 10 – "**Reserved**" "

*Paragraph 2.7.1, 2.7.1.1. and the note\**, amend to read:

- "2.7.1. Light source ~~\*/~~
- 2.7.1.1. "Light source" means one or more elements for visible radiation, which may be assembled with one or more transparent envelopes and with a base for mechanical and electrical connection-

~~\*/ ————— For clarification see Annex 10."~~

*Annex 10*, amend to read:

"ANNEX 10- **Reserved**"

## C. Proposal for Supplement 05 to the 01 series of amendments to Regulation No. 98

(The following text is based upon draft Supplement 4 to 01 series)

*Contents, annex 1, the title*, amend the content to read:

"

1. Communication concerning the approval or extension or refusal or withdrawal of approval or production definitively discontinued of a type of headlamp ~~or of a distributed lighting system~~ pursuant to Regulation No. 98

...."

*Paragraph 0*, amend to read:

"0. SCOPE <sup>1/</sup>

This Regulation applies to:

~~(a) headlamps, and~~

~~(b) distributed lighting systems,~~

**utilizing gas-discharge light sources, for vehicles of categories, M and N and L<sub>3</sub>.**"

*Paragraph 2.1.6.*, shall be deleted.

*Paragraph 2.1.7.*, renumber as paragraph 2.1.6. and amend to read:

- "2.1.7. the category of light source as listed in Regulations Nos. 37 or 99 and their series of amendments in force at the time of application for type approval.

~~For a distributed lighting system using a non-replaceable gas-discharge light source not approved under Regulation No. 99, the part number assigned by the light generator manufacturer to the light generator."~~

*Paragraph 2.2.2.*, amend to read:

- "2.2.2. A brief technical ...

(b) a drawing with dimensions and the basic electrical and photometric values and the objective luminous flux.

~~In addition, for a distributed lighting system, a brief technical specification including the list of the light guide(s) and related optical components and information describing the light generator(s) sufficient to permit identification. This information shall include the part number assigned by the light generator manufacturer, a drawing with dimensions and the basic electrical and photometric values and an official test report related to paragraph 5.8. of this Regulation."~~

*Paragraph 2.2.3.1.*, amend to read:

- "2.2.3.1. for approval of a headlamp, two samples of each type of headlamp, one sample intended for the installation on the left side of the vehicle and one sample intended for the installation of the right side of the vehicle, with standard gas-discharge light source and one ballast of each type to be used, where applicable.

~~For approval of a distributed lighting system using a non-replaceable gas-discharge light source not approved under Regulation No. 99, two samples of the system including the light generator and one ballast of each type to be used, where applicable."~~

*Paragraph 2.3.*, shall be deleted.

*Paragraph 2.4.*, renumber as paragraph 2.3. and amend to read:

"2.4. The materials making up the lens ~~and, in the case of a distributed lighting system, the materials making up the optical parts of the system, and related coatings/shields, if any,~~ shall be accompanied by the test report of the characteristics of these materials and coatings if they have already been tested."

*Paragraph 3.1.*, amend to read:

"3.1. Headlamps ~~or distributed lighting systems~~ submitted for approval shall bear legibly and indelibly the trade name or mark of the applicant."

*Paragraph 3.5.*, shall be deleted.

*Paragraphs 3.6. to 3.7.2.*, renumber as paragraphs 3.5. to 3.6.2.

*Paragraph 4.2.2.8.*, shall be deleted.

*Paragraph 4.2.5.*, amend to read:

"4.2.5. The marks and symbols referred to in paragraphs 4.2.1. to 4.2.3. above shall be clearly legible and be indelible. They may be placed on an inner or outer part (transparent or not) of the headlamp, which cannot be separated from the transparent part of the headlamp emitting the light. ~~In the case of a distributed lighting system with outer lens built in the light guide, this condition is deemed satisfied if the approval marking is placed at least on the light generator and on the light guide, or on its protective shield. In any case the marking shall be visible when the headlamp or the system is fitted on the vehicle or when a movable part such as the hood is opened.~~"

*Paragraph 4.3.2.2.2.*, amend to read:

"4.3.2.2.2. or in a group, in such a way that each of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see ~~four~~ possible examples in Annex 2, **Figures 10, 11, 12**)."

*Paragraph 4.3.2.5.*, amend to read:

"4.3.2.5. Annex 2, **Figures 10, 11, 12** of this Regulation gives examples of arrangements of approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols."

*Paragraph 4.3.3.1.*, amend to read:

"4.3.3.1. In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body ~~or distributed lighting system~~ of the headlamp, ..."

*Paragraph 4.3.3.2.*, amend to read:

"4.3.3.2. Annex 2, **Figure 10**, to this Regulation gives examples of arrangements of approval marks relating to the above case."

*Paragraph 4.3.4.*, shall be deleted.

*Paragraphs 5.8. to 5.8.4.*, amend to read:

"5.8. **Light sources**

- 5.8.1. ~~The gas-discharge light source(s) used in gas-discharge headlamps or in distributed lighting systems shall be replaceable and approved according to Regulation No. 99 and its series of amendments in force at the time of application for type approval. However, gas discharge light source(s) not approved according to Regulation No. 99 can be used only in the case where they are a non replaceable part of a light generator. However, in the case of distributed lighting systems the light generator can be replaceable without using special tools also in the case where the light source used in it is not approved.~~
- 5.8.2. In the case that one or more (additional) filament light sources are used in the gas-discharge headlamp, these filament light sources shall be **replaceable and** approved according to Regulation No. 37 and its series of amendments in force at the time of application for type approval, provided that 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.
- 5.8.3. The design of the device shall be such that the ~~filament lamp, if any,~~ **the light source(s)** can be fixed in no other position but the correct one.
- 5.8.4. ~~In the case of replaceable gas discharge light sources and in the case of additional filament light sources~~ The lamp holder shall conform to the dimensional characteristics as given on the data sheet of IEC Publication 60061, relevant to the category of light source( s) used. The light source( s) shall fit easily into the headlamp."

*Paragraph 5.9. to 5.9.3., to be deleted:*

*Paragraphs 5.10. to 5.13., renumber as paragraphs 5.9. to 5.12.*

*Paragraph 6.6.1., amend to read:*

- "6.1.1. Headlamps ~~or distributed lighting systems~~ shall be so made that with suitable gas-discharge light source they give adequate illuminance without dazzle when emitting the passing-beam, and good illumination when emitting the driving-beam."

*Paragraph 6.1.3., amend to read:*

- "6.1.3. The headlamp ~~or distributed lighting systems~~ shall be deemed satisfactory if the photometric requirements set in the present paragraph 6. are met with one light source, which has been aged during at least 15 cycles, in accordance with Annex 4, paragraph 4. of Regulation No. 99.

~~Where the gas discharge light source is approved according to Regulation No. 99~~ It shall be a standard (étalon) light-source approved according to Regulation No. 99 and its luminous flux may differ from the objective luminous flux specified in Regulation No. 99. In this case, the luminous intensities shall be corrected accordingly.

~~The above correction does not apply to distributed lighting systems using a non replaceable gas discharge light source or to headlamps with the ballast(s) totally or partially integrated.~~

~~Where the gas discharge light source is not approved according to Regulation No. 99 it shall be a production non replaceable light source."~~

*Annex 1, list of items,*

*Line above the list, amend to read:*

".....of a type of headlamp ~~or of a distributed lighting system~~ pursuant to Regulation No. 98....."

*Item 1*, amend to read:

"1. Trade name or mark of the headlamp ~~or distributed lighting system~~: ....."

*Item 2*, amend to read:

"2. Manufacturer' s name for the type of device ~~or system~~: ....."

*Item 9.1*, amend to read:

"9.1. Headlamp/~~system~~ submitted for approval as type: <sup>3/</sup> ....."

*Item 9.4*, amend to read:

"9.4. Category (or categories) of light source( s): <sup>4/</sup> ....."

*Item 9.8*, shall be deleted.

*Item 9.9. and 9.10.*, renumber as items 9.8. and 9.9.

*Note 3*, to be deleted.

*Note 4*, to be deleted.

*Annex 2*

*Figure 10 including the explanatory text*, to be deleted.

*Figures 11, 12 and 13*, renumber as figures 10, 11 and 12.

*Annex 4*

*Test on complete headlamps*, amend to read:

"....

(b) in case of ~~replaceable~~ light sources: using mass production filament light sources,...."

*Paragraph 1.1.1.2.*, amend to read:

"1.1.1.2. Test voltage

The voltage shall be applied to the terminals of the test sample as follows:

- (a) In case of ~~replaceable~~ filament light source(s) operated directly under vehicle voltage system conditions: the test shall be performed at 6.3 V, 13.2 V or 28.0 V as applicable except if the applicant specifies that the test sample may be used at a different voltage. In this case, the test shall be carried out with the filament light source operated at the highest voltage that can be used.
- (b) In case of ~~replaceable~~ gas discharge light source(s): The test voltage for the electronic light source control-gear is 13. 2 ±0.1 volts for 12 V vehicle voltage system, or otherwise specified in the application for approval.
- ~~(c) In the case of non replaceable light source operated directly under vehicle voltage system conditions: All measurements on lighting units equipped with non replaceable light sources (filament light sources and/ or others) shall be made at 6.3 V, 13.2 V or 28.0 V or at other voltages according to the vehicle voltage system as specified by the applicant respectively.~~

- (c) In the case of light sources, ~~replaceable or non-replaceable~~, being operated independently from vehicle supply voltage and fully controlled by the system, or, in the case of light sources supplied by a supply and operating device, the test voltages as specified above shall be applied to the input terminals of that device..."

*Annex 5, paragraph 1.2.*, amend to read:

- "1.2. The two samples of complete lamps/~~systems~~ supplied pursuant to paragraph 2. 2. 4. of this Regulation and incorporating lenses of plastic material shall, with regard to the lens material, satisfy the specifications below."

*Annex 8, paragraph 1.2.*, amend to read:

"...either  
equipped with a ~~replaceable~~ standard gas-discharge light source according..."

*Annex 9, paragraph 1.2.*, amend to read:

"...either  
equipped with a ~~removable~~ standard gas-discharge light source according..."

## II. Justification

1. The present proposal intends to clarify the deletion of distributed lighting systems (DLS), or rather light generators, from the Regulations Nos. 19, 48 and 98, because the provisions for the DLS systems are incomplete. The necessary completion of this deletion has never been finalized and in the meantime there is no interest anymore in such systems.
  2. Furthermore the remaining fragments of the requirements for DLS give the possibility of unintended interpretations. Such an interpretation was used to approve headlamps with 25W gas discharge light sources as DLS, but this should be avoided.
  3. As discussed in the sixty-seventh GRE session, the content of Annex 10 of Regulation No. 48 should be deleted and should be marked as "Reserved" for a separate proposal, later on, taking into account the matter of light source options with regard to replaceable, non-replaceable, light source modules and LED modules, etc.
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