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**Economic Commission for Europe****Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****177th session**

Geneva, 12-15 March 2019

Item 4.9.3 of the provisional agenda

**1958 Agreement:****Consideration of draft amendments to existing****UN Regulations submitted by GRE****Proposal for Supplement 9 to the original version of UN  
Regulation No. 128 (LED light sources)****Submitted by the Working Party on Lighting and Light-Signalling\***

The text reproduced below was adopted by the Working Party on Lighting and Light-Signalling (GRE) at its eightieth session (ECE/TRANS/WP.29/GRE/80, paras. 17 and 22). It is based on ECE/TRANS/WP.29/GRE/2018/39 and ECE/TRANS/WP.29/GRE/2018/49. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee AC.1 for consideration at their March 2019 sessions. This amendment constitutes a package with the corresponding proposal for amendment to the Consolidated Resolution on the common specifications of light source categories (R.E.5) (ECE/TRANS/WP.29/2019/29).

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\* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21/Add.1, cluster 3.1), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

## Supplement 9 to the original version of UN Regulation No. 128 (LED light sources)

*Insert a new paragraph 2.2.2.4., to read:*

- "2.2.2.4. Documents, in case of LED substitute light sources, showing:
- (a) The information to be displayed on; and
  - (b) The instructions to be contained by the packaging of LED substitute light sources."

*Insert a new paragraph 2.3.1.5., to read:*

- "2.3.1.5. In the case of LED substitute light sources, the following symbol<sup>1</sup>:



*Insert a new paragraph 3.12., to read:*

- "3.12. LED substitute light sources - additional requirements
- 3.12.1. The electrical current of the LED substitute light source shall be measured at ambient temperature of  $(23 \pm 2)$  °C in still air after 1 minute and after 30 minutes of operation at test voltage.
- Measured values of the electrical current shall be within the limits as specified in the relevant data sheet of Annex 1.
- 3.12.2. The LED substitute light source shall comply with the technical requirements to an electrical/electronic sub-assembly (ESA) as specified by Regulation No. 10 and its series of amendments in force at the time of application for type approval.
- 3.12.3. The LED substitute light source shall not emit light when activated for 2 milliseconds or shorter.
- 3.12.4. The correlated colour temperature<sup>2</sup> of LED substitute light sources emitting white light shall be no more than 3000 K, unless an appropriate keying is defined in the relevant data sheet of Annex 1 for light sources with a specified higher correlated colour temperature.
- 3.12.5. An LED substitute light source shall be equipped with a cap to prevent misuse in service, meeting the requirements as defined in the relevant data sheet of Annex 1. This shall be verified by the technical service."

*Insert a new paragraph 4, to read:*

### "4. Requirements to the packaging of LED substitute light sources

- 4.1. Each package shall display the following information:

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<sup>1</sup> ISO 7000, symbol 1641

<sup>2</sup> CIE S 017/E: 2011: ILV: International Lighting Vocabulary, or eILV; term 17-258

- 4.1.1. The trade name or mark of the manufacturer;
- 4.1.2. The rated voltage;
- 4.1.3. The designation of the LED substitute light source category;
- 4.1.4. The approval code;
- 4.1.5. The following symbol<sup>3</sup>:



- 4.2. Each package shall contain instructions in an official language of the 1958 Agreement (i.e. English, French or Russian), supplemented by the corresponding text in the language of the country where it is sold:
  - 4.2.1. Stating that this LED substitute light source is suitable for fitment in lamps on vehicle models if both the lamp and the vehicle in which it is to be installed are approved for the use of this LED substitute light source;
  - 4.2.2. Providing (a) website address(es) where the LED light source manufacturer shall publish up-to-date listing(s) of light signalling functions installed on vehicle models, specified by at least brand, type, model, and manufacturing period of the vehicle, approved for the use of the LED substitute light source;
  - 4.2.3. Referring to the lamp markings and instructions provided with the vehicle;
  - 4.2.4. Referring to professional maintenance or repair shops, if the applicability of the LED substitute light source is unclear;
  - 4.2.5. Warning, clearly legible, that if this LED substitute light source is not used in accordance with the instructions with its package and with the instructions provided with the vehicle, this LED substitute light source may cause a fault in the vehicle's electrical system and/or pose an operational and/or traffic safety risk.
- 4.3. The manufacturer shall provide the instructions, as referred to in paragraph 4.2, for displaying purposes at the point of sales without opening the package."

*Former paragraphs 4 to 7, subparagraphs and references therein, renumber as paragraphs 5 to 8, their respective subparagraphs and references.*

*New paragraph 5.1. (former 4.1.), amend to read:*

- "5.1. LED light sources approved to this Regulation shall be so manufactured as to conform to the type approved by meeting the inscriptions and technical requirements set forth in paragraph 3. and Annexes 1, 4 and 5 to this Regulation.

In addition, the information on the packages and the instructions of LED substitute light sources contained by the packages shall conform to the requirements as set forth in paragraph 4."

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<sup>3</sup> ISO 7000, symbol 1641

*Insert a new paragraph 5.3.7. to read:*

"5.3.7. Keep record of the listings, including the modifications and modification dates, published on its websites as described in paragraph 4.2.2."

*Annex 4,*

*Introductory part, amend to read:*

"LED light sources of all categories with integrated heat sink shall be measured in still air at ambient temperature of  $(23 \pm 2)$  °C, and at an additional ambient temperature if indicated in the relevant data sheet of Annex 1. For these measurements the minimum free air space as defined in the data sheets shall be maintained.

LED light sources of all categories with definition of a temperature  $T_b$  shall be measured by stabilising the  $T_b$ -point at the specific temperature defined on the category data sheet..."

*Paragraph 1.2., amend to read:*

"1.2. The luminous flux values, as measured after:

- (a) 30 minutes; or
- (b) Stabilisation of temperature  $T_b$ .

shall comply with the minimum and maximum requirements.

Additionally, in case of (a), unless otherwise specified on the data sheet,

- (i) Either the luminous flux value measured after 30 minutes shall be in between 100 per cent and 80 per cent of the luminous flux value measured after 1 minute; or
- (ii) The luminous flux value measured after 1 minute shall comply with the minimum and maximum requirements, and in addition the luminous flux value measured after 30 minutes shall not deviate by more than  $\pm 20$  per cent from the luminous flux value measured after 1 minute."

*Annex 5,*

*Paragraph 1., amend to read:*

"1. General

The conformity requirements shall be considered satisfied from a photometric, geometrical, visual and electrical standpoint if the specified tolerances for production LED light sources in the relevant data sheet of Annex 1, the relevant data sheet for the caps and in the case of LED substitute light sources the additional requirements to LED substitute light sources in paragraph 3.12. are met."

Annex 6,

Table 1, amend to read:

"Table 1

**Characteristics**

| <i>Grouping of characteristics</i>                                     | <i>Grouping* of test records between LED light source types</i> | <i>Minimum 12 monthly sample per grouping*</i> | <i>Acceptable level of non-compliance per grouping of characteristics (%)</i> |
|--|---|--|---|
| Marking, legibility and durability                                     | All types with the same external dimensions                     | 315  | 1   |
| External LED light source dimensions (excluding cap/base)              | All types of the same category                                  | 200  | 1   |
| Dimensions of caps and bases   | All types of the same category                                  | 200  | 6.5   |
| Dimensions related to light emitting surface and internal elements**   | All LED light sources of one type                               | 200  | 6.5   |
| Initial readings, power, colour and luminous flux**                    | All LED light sources of one type                               | 200  | 1   |
| Normalised luminous intensity or cumulative luminous flux distribution | All LED light sources of one type                               | 20   | 6.5   |
| Electrical current***  | All LED light sources of one type                               | 20   | 1   |

\* The assessment shall in general cover series production LED light sources from individual factories. A manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.

\*\* In case a LED light source has more than one light output function the grouping of characteristics (dimensions, power, colour and luminous flux) applies to each element separately.

\*\*\* LED substitute light sources only"