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Working Party on Lighting and Light-Signalling

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Item 6 (a) of the provisional agenda

Installation UN Regulations:

UN Regulation No. 48 (Installation of Lighting and Light-Signalling Devices)

Proposal for a Supplement to the 06, 07, 08 and 09 series of amendments to UN Regulation No. 48

Submitted by the experts from the International Automotive Lighting and Light-Signalling Expert Group*

The text reproduced below was prepared by the experts from the International Automotive Lighting and Light-Signalling Expert Group (GTB) with the aim to clarify the voltage requirements for light-emitting diodes (LEDs). The proposed modifications to the current text of the UN Regulations are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2025 as outlined in proposed programme budget for 2025 (A/79/6 (Sect. 20), table 20.6), 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.

I. Proposal

Paragraph 5.27.3., re-structure and amend to read:

- “5.27.3. The provisions of paragraphs 5.27.1. and 5.27.2. shall not apply to devices which include:
- an electronic light source control gear, or
 - a variable intensity control being part of the device, **or**
 - **only light source(s) approved according to UN Regulation No. 128.”**

II. Justification

1. The requirements in paragraph 5.27. were introduced to manage the lifetime of filament light sources (used for driving beam, passing beam, front and rear position lamps, stop lamps) by limiting the voltage applied to them during normal operation in vehicles. This is necessary, because the lifetime of filament light sources has a very strong (exponential) voltage dependence, i.e. a strongly reduced lifetime at higher voltages.

2. The lifetime of LED light sources has no such strong dependence on voltage since LEDs are “current driven”, i.e. operated by an electronic circuit and not directly by the voltage supplied by the vehicle.

3. In order to avoid interpretation uncertainties, it is proposed to clarify that LEDs are excluded from the voltage requirements of paragraph 5.27.
