

## **Incorporation of LED light sources in the new Regulation for Road Illumination Devices (RID)**

To complete the package of proposals for the introduction of LED light-sources for road illumination applications it is necessary to consider how the Draft RID Regulation is to be amended. The intention behind the proposals submitted to GRE-76 (ECE/TRANS/WP.29/GRE/2016/34) was to amend the regulations Nos. 19, 98, 112, 113 and 123 but GRE was not in a position to reach a decision. Consequently, as the existing regulations are now closed to further amendment, it is necessary to consider how the new RID regulation, currently being drafted by GRE IWG-SLR, could be amended.

GTB has submitted an informal proposal to GRE-77 updating and simplifying the content of GRE/2017/05 and GRE/2017/06. The consequence will be a minor amendment to the current version of the draft RID Regulation that is explained below.

As the new RID Regulation is still a working document in GRE IWG-SLR it is not possible to indicate the detailed changes that will be required to incorporate the LED light sources but the general principle is that only simple editorial changes are required:

- a) Currently the IWG-SLR has a challenge to draft the RID regulation because the individual regulations (19, 98,112,113, 119 and 123) refer to light sources in different ways although the photometric requirements are, with the exception of Regulation No. 98, now written to be light source neutral. This means that the RID regulation shall make reference to “light sources” and not to the current list of “filament light source(s), gas-discharge light source(s) and LED(s).
- b) A definition of “light Source” is already included in Regulation No.48 so it is sufficient to apply this definition in the draft RID Regulation.

Example 1: “The category of **filament, gas-discharge or LED light source** used and/or the LED module specific identification code(s)”

could become

“The category of **light source** used and/or the LED module specific identification code(s);”

Example2: “References made in this Regulation to standard (étalon) **filament light source(s), gas-discharge light source(s) and LED light source(s)** shall refer to Regulations Nos. 37, 99 and 128 respectively, and to their series of amendments in force at the time of application for type approval.”

could become

“References made in this Regulation to standard (étalon) **light sources** shall refer to Regulations Nos. 37, 99 and 128 respectively, and to their series of amendments in force at the time of application for type approval.”

Based upon these examples, GTB proposes to take the opportunity to make the draft RID Regulation technology neutral with respect to the light source whilst still making a generic reference to the light source Regulations and R.E.5.

- c) Additionally, as indicated in the rationale of GRE/2016/34, it will be necessary to address the following issues as part of work of drafting the new RID Regulation:
  - (i) *Changes related to mixing of light sources*

- Mixing of LED modules and Regulation No. 128 LED light sources in the same function is allowed.
  - No "hybrid" solutions, e.g. mixing of filament light source technology and LED light source technology is not allowed in the same function (comment: also today mixing of filament light source and LED modules is not allowed, but in Regulation No. 123 mixing of technologies is already allowed).
- (ii) *Changes related to the "luminous flux limits for the light source" for principle passing beam*
- The luminous flux limits for the light sources (e.g. minimum 1,000 lm for Regulation No. 112 principal passing beam) apply to the total luminous flux value of all LEDs (LED modules and Regulation No. 128 LED light sources) added together.
- (iii) *Changes related to the type-approval testing*
- For type approval of the headlamp an etalon (standard) Regulation No. 128 LED light source is used, and the luminous flux is corrected to the objective value (comment: the use of etalon light source for type approval is the same like for filament and high-intensity discharge (HID) light sources today).
- (iv) *Changes related to the Conformity of Production (COP) testing*
- Etalon or serial (mass) production Regulation No. 128 LED light source(s) are allowed for COP testing (comment: the same procedure is foreseen in Regulation No. 98, Annex 8., paragraph 1.2.).
  - In case of etalon light source(s), a correction of intensity values up to 10 per cent is allowed.
  - In case of serial production light source(s), a correction of intensity values up to 20 per cent is allowed (comment: the same procedure already exists in Regulation No. 98, Annex 8, paragraph 1.2.).

-----