

Proposal for Supplement [...] to the 01 series of amendments to Regulation No. 123 (Adaptive front lighting systems (AFS))

The text reproduced below was prepared by the expert from France in order to delete a design restrictive requirement for which no clear justification is included in the regulation.

I. Proposal

Paragraph 5.14., to be deleted:

~~“5.14. In the case of the basic passing beam in the neutral state being produced exclusively by LED modules, the total objective luminous flux of these LED modules shall be equal or greater than 1,000 lumen per side, when measured as described in paragraph 5. of Annex 11.”~~

Paragraph 5.15., renumber as 5.14.

II. Justification

1. Currently luminous flux of LEDs contributing to the main low beam must be greater than or equal to 1,000 lm according to paragraph 5.14. while filaments light sources lamps used for low beam have a reference flux at 13.2V which is from 800 lm (H8) to 2100 Lm (H9).

The optical systems adapted to the LEDs have an efficiency which is of the order of 50 – 60 % while the classic reflectors adapted to filament bulbs may have an efficiency of roughly 35 %. This constraint of 1000 lm is designed restrictive and not in line with the “performance oriented” regulation. Requirements have to be focused on the performances and not on means how to reach these performances. The main criterion in which has to achieve LED headlamp is the output luminous intensity at the voltage defined by the regulations. So, the minimum luminous flux of LEDs should not be in the scope of the regulation and should be removed.

The most relevant criteria are the photometric points of the grid to be achieved.

Such requirement was may be justified some years ago at the time the LED modules were added to the regulation but is not justified anymore taking into account the improvement of such technology.

2. To allow the use of LEDs, the flux of which is less that 1,000 lm, is a cheapest solution which can be used for energy saving vehicles (e.g.: Electrical urban vehicles) while having at least the same luminous intensity than other luminous sources.
