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World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on Lighting and Light-Signalling (GRE)

(Fifty-third session, 4-8 October 2004,
agenda item 7.)

**PROPOSAL FOR DRAFT AMENDMENTS TO NEW DRAFT REGULATION
ON ADAPTIVE FRONT-LIGHTING SYSTEMS (AFS)**

Transmitted by the expert from the United Kingdom

Note: The text reproduced below was prepared by the expert from the United Kingdom, proposing some amendments to the passing beam photometric requirements in the new draft Regulation (TRANS/WP.29/GRE/2004/27) in order to reduce the risk for glare of other road users.

Note: This document is distributed to the Experts on Lighting and Light-Signalling only.

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A. PROPOSALAnnex 3, (PASSING BEAM PHOTOMETRIC REQUIREMENTS)

Table 1, Part A, Row 13 (50L), under columns Class C (max) and Class V (max) amend the figure "[20]" to read "15".

Table 1, Part A, Row 13 (50L), under column Class W (max) amend the figure "[35]" to read "25".

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B. JUSTIFICATION

The subject of the maximum value at point 50L (for right hand traffic, 50R for left hand traffic) was hotly debated during the AFS group, particularly at meetings number 4 and 5. At this point, a majority vote of the Governments present was taken and the value 20 lux inserted in square brackets, for the full GRE meeting to take a final decision.

The United Kingdom feels that the existing value (15 lux) in today's Regulations should be preserved because it is sufficient and an increase in this value may cause glare.

Table 1 below gives the requirements today. Regulation No 112 is based on earlier headlamp Regulations. Upon the introduction of High Intensity Gas Discharge (HID) headlamps in Regulation No. 98, the value of 15 lux was "scaled up" to 20 lux using an appropriate multiplication factor. This was necessary due to the fact that, although halogen headlamps are tested at approximately 12 V in the lab, when installed in the vehicle they are typically supplied with voltages of approx. 13.5V, whereas an HID lamp normally has an integral power supply and thus the voltage is regulated to the same value whether on the vehicle or in the laboratory.

Table 1 (values in lx)	At 12 V: nominal-reference luminous flux	At 13.5 V: objective luminous flux
Regulation No. 112	15	
Regulation No. 98		20

Table 2 below allows a comparison for the proposed values for AFS point 50L against Regulations Nos. 112 and 98.

Table 2 (values in lx)	At 12V: nominal-reference luminous flux	At 13.5V: objective luminous flux
Regulation No. 112	15	
Regulation No. 98		20
AFS Regulation:		
Assuming [20] at 50L	20	28.57
Assuming [15] at 50L	15	21.43

In the new draft Regulation on AFS, the division factor is 0.7 to convert values obtained at reference luminous flux to values obtained at objective luminous flux.

It can be seen that if 20 lux for point 50L under the AFS Regulation is permitted, a gas discharge headlamp approved to AFS Regulation will be permitted to have values of approx. 29 lux at 50L.

The United Kingdom feels that such a high value is not necessary and may cause glare, particularly in the very common situations of a vehicle hitting a bump in the road, crossing a bridge or driving up a gradient. This will cause the point 50L to be shining in the opposing driver's eyes for a short period. This is distracting and may cause discomfort glare or disability glare. The large number of glare complaints means that caution is needed when signing off new regulations and this point is one where the United Kingdom feels that there should be no deviation from the existing, well accepted values. The United Kingdom does not see the need to increase the value at this point; on the contrary, it sees strong reasons not to increase it. Therefore a retention of the status quo is requested.
