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**ECONOMIC COMMISSION FOR EUROPE**

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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.)

DRAFT PROPOSAL FOR AMENDMENTS TO REGULATION No. 87

(Daytime running lights)

Transmitted by the expert from the Working Party "Brussels 1952" (GTB)

Note: The text reproduced below was prepared by the expert from GTB, in order to update the photometric requirements in Regulation No. 87, taking into account research results, and to promote the installation of dedicated daytime running lamps by vehicle manufacturers. The modifications to the existing text of the Regulations are marked in **bold** characters.

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

## A. PROPOSAL

List of contents,  
ANNEXES, amend the list to read:

" .....

Annex 6 - Minimum requirements for sampling by an inspector

**Annex 7 - Minimum angles required for light distribution in space"**

Paragraphs 7.1. to 7.3., amend to read:

"7.1. The luminous intensity of the light emitted by each lamp shall **not be less than 500 cd** in the axis of reference.

7.2. Outside the reference axis **and within the angular fields defined in the arrangement diagram in Annex 7 to this Regulation, the intensity of the light emitted by each lamp must:**

7.2.1. **In each direction corresponding to the points in the table of standard light distribution reproduced in Annex [3] to this Regulation, be not less than the minimum specified in paragraph 7.1. above, multiplied by the percentage specified in the said table of the direction in question, and**

7.2.2. **not exceed 1500 cd in any direction the lamp is visible**

7.3. **Moreover,**

7.3.1. **throughout the field defined in the diagram in Annex 7, the intensity of the light emitted must not be less than 1.0 cd.**

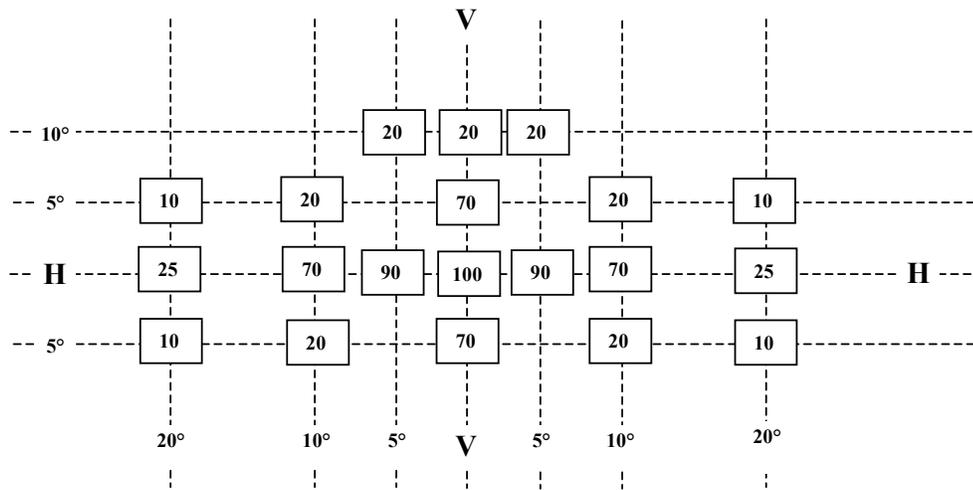
7.3.2. **[As an alternative, at the discretion of the manufacturer, a minimum area of 12.5 cm<sup>2</sup> must be visible when measured from H-20° outboard to H-20° inboard, of the reference axis.]"**

Paragraph 8., amend to read:

"8. ILLUMINATING SURFACE

The area of the illuminating surface shall be not less than **25 cm<sup>2</sup> and not more than 200 cm<sup>2</sup>.**"

Annex 3, paragraph 5., amend the table of standard light distribution to read:



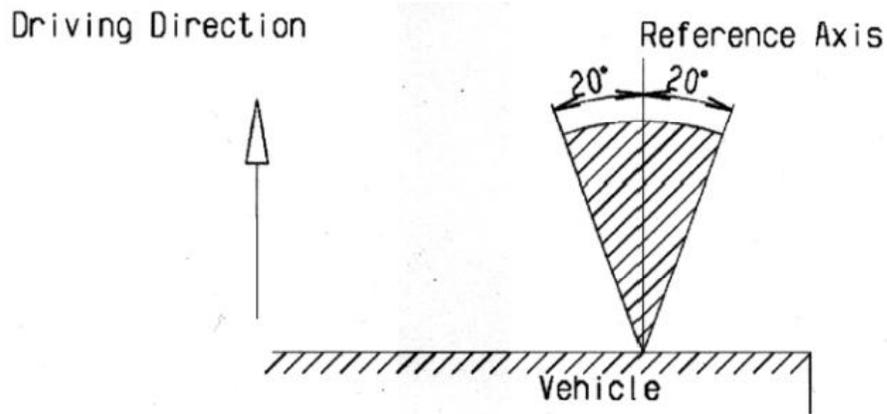
Insert a new annex 7, to read (see next page):

**"Annex 7**

**MINIMUM ANGLES REQUIRED FOR LIGHT DISTRIBUTION IN SPACE**

**In all cases, the minimum vertical angles of light distribution in space are 10° above and 5° below the horizontal for DRL devices included in the Regulation.**

**Minimum horizontal angles of light distribution in space:**



\* \* \*

**B. JUSTIFICATION**

More and more countries are making the use of lighting devices during daytime a use requirement. The existing ECE Regulation No. 87 requirement for 40 cm<sup>2</sup> is from a time when vehicle front ends were much more upright and square. Modern pedestrian friendly front-end designs mean there is much less space in which to package the old size devices.

To comply with those national use requirements, vehicle manufacturers are tending to use dipped beam headlamps, to fulfil this function, which in turn uses more fuel and can mean that the filament life is exhausted sooner than if it were used only as a night time function.

To enable a dedicated DRL function to be provided, with current design restrictions a reduced area is required, this will also reduce this use dependence on the dipped beam filament.

In a recent study through UMTRI (2003-11 Functional requirements from DRL), Professor Kare Rumar of Sweden came to the conclusion that a smaller brighter DRL lamp would provide adequate illumination levels.

The standard light distribution in Annex 3 of Regulation No. 87 has been modified to restrict the requirements to 5 degrees down. This is because a DRL is intended to give advanced warning of the presence or approach of a vehicle and there is unlikely to be a case where the viewing angle will be below 5 degrees down.

The current photometric table requires the beam to extend to 10 degrees down but to achieve this it is necessary to divert useful flux from the effective areas.

Annex 7 has been introduced to define the angles of light distribution in space, in line with other signal lamps regulations.

In-line with other proposed harmonization activities an area requirement of 12.5 cm<sup>2</sup> from H20° left to H20° right is proposed as an optional requirement.

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