

**Comments on AFS (GRE/2001/14, 15 and 16)**  
**Transmitted by the expert from Japan**

**AMENDMENT for ECE R.48 (GRE/2001/15)**

Amend for para. 2.16.1 as follows:

2.16.1. “A single lamp” means a device or part of a device having one ~~lighting or~~ light-signalling function, one or more light source(s) and one apparent surface in the direction of the reference axis which may be a continuous surface or composed of 2 or more distinct parts, meeting the requirements of paragraph 5.7.1.below.

For the purpose of installation on a vehicle, a “single lamp” also means any assembly of 2 independent or grouped lamps, whether identical or not, having the same function, if they are installed so that the projection of their apparent surfaces in the direction of the reference axis occupies not less than 60 per cent of the smallest rectangle circumscribing the projections of the said apparent surfaces in the direction of the reference axis.

In such a case, each of these lamps shall, where approval is required, be approved as a type “D” lamp.

~~This possible combination does not apply to main beam headlamps, dipped beam headlamps and front fog lamps.~~

Add new para. 2.16.2 as follows:

**2.16.2. “A single lamp” means a device or part of a device having one lighting function, one or more light source(s) and one apparent surface in the direction of the reference axis which may be a continuous surface or composed of 2 or more distinct parts, meeting the requirements below.**

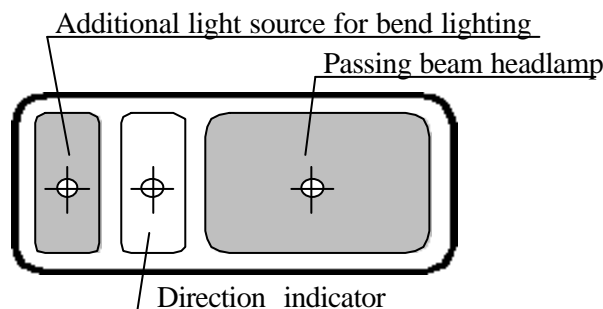
**For the purpose of bend lighting, additional light source in the headlamp assembly can be considered as a part of the above defined apparent surface.**

Justification:

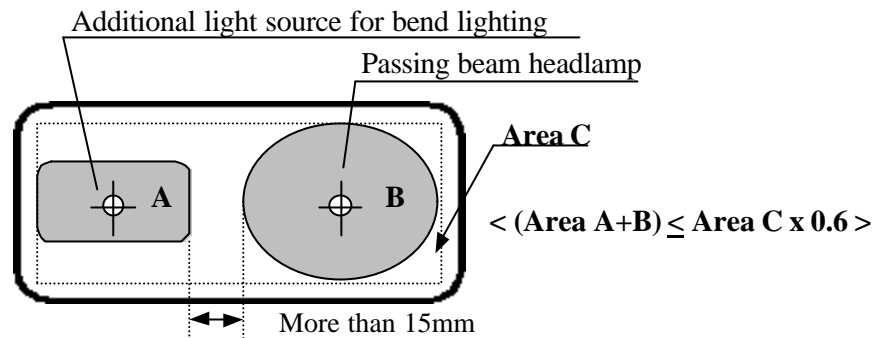
Definition of a single lamp for lighting functions should be established separately from that of light signalling functions. In this case, the hypothetical design layouts as shown in example 1 and 2 both having a common built-in outer lens for the passing beam headlamp and the additional light source should be considered as a single lamp.

If the recently proposed definition (60% area or 15mm) by WP29/2001/8, that is originally meant for light-signalling functions, is to be applied also to lighting functions, that will place a tremendous restriction on manufacturer’s freedom to design.

<Example 1>



<Example 2>



Amend for para. 2.26.1 as follows:

- 2.26.1 a passing beam, a driving beam and/or a fog beam where the beam pattern is variable according to the turn radius of the vehicle by means of
- a movement (swivelling) of the lamp(s) around a substantial vertical axis, or
  - a movement of parts of the lamp(s), or
  - a variation of the beam pattern itself, e.g. by switching on one additional light source ~~inside~~ **in a lamp grouped, combined or reciprocally incorporated with** the passing beam headlamp, or
  - any combination of these means or...

Justification:

Current wording of the proposal “inside the passing beam” should be clearly stated using the words exactly defined in the regulation.

Amend for para. 6.1.9.3. as follows:

- 6.1.9.3. **If there is one pair of driving beam headlamp, one driving beam headlamp may be used to produce bend lighting.**
- If there are two pairs of driving beam headlamps, either one, two or three driving beam headlamps may be used to produce bend lighting.**

Justification:

The number of headlamps used concurrently for bend lighting function should be limited to one if there is only one pair of driving beam headlamp, and one, two or three if there are two pairs of driving beam headlamp. This means at least one driving beam headlamp should be left in its normal position of use (without bending), in order to provide certain degree of illumination to the vehicle’s straight forward direction.

Amend for para. 6.2.7. as follows:

- 6.2.7. ...same time as the main beams.

In the case where bend lighting is achieved by using one additional light source, the additional light source must not be energized when the horizontal radius of

curvature of the trajectory of the centre of gravity of the vehicle is bigger than ~~500~~ 600m. **However, the additional light source may remain energized for a few seconds after detecting the horizontal radius bigger than ~~500~~ 600m.**

Justification:

In order to bring about sufficient effect of the bend lighting function, the horizontal radius 500m should be modified to 600m; Japanese car manufacturers' view.

It is not sufficiently discriminant to say that having a few minute of time lag, the additional light source used for bend lighting only causes adverse effects on the traffic safety. In reverse, there are some situations where it bears some safety advantages allowing a few seconds of time lapse,

Renumber the second para. of 6.2.9. as 6.2.9.1. and amend as follows;

6.2.9. The requirements of paragraph 5.5.2. shall not apply to dipped-beam headlamps.

**6.2.9.1.** Either one or two passing beam headlamp(s) may be used to produce bend lighting. In this case only passing beam headlamps according to Regulation No.98 or class B headlamps according to Regulation No."00" are permitted to produce bend lighting. ~~In case of swivelling passing beam headlamp(s),~~ **In case of bend lighting**, the beam axis (**kink**) shall not cross the line of the trajectory of the centre of gravity of the vehicle at distances bigger than 100x mounting height (**lower edge of apparent surface**) of the respective passing beam headlamp(s).

**The totally swivelled bend lighting (passing beam) shall only be activated at driving speeds > 3 km/h. However, in case where a vehicle is making a right turn for the right-hand traffic (left turn for the left-hand traffic), this requirement does not apply.**

Justification:

- Current wording of the proposal "beam axis" should be clearly stated as "kink".
- Current wording of the proposal "in case of swivelling passing beam headlamp" should be reworded to "in case of bend lighting", that is including not only a swiveling function, but also other variation of bend lighting function.
- Measuring point of the mounting height should be clearly stated as "**lower edge of apparent surface**".
- **The condition should be met in actual driving situations; e.g. stopping temporarily at the center of a crossroads waiting for a timing to make a left turn (right-hand traffic) holding the vehicle's steering to the intended direction of movement, a typical condition where intense illumination from the passing-beam may generate undue dazzles to the opposing drivers. However, in order to bring about the potential safety advantages of bend lighting function presumably in detecting pedestrians at intersections, the non-activation requirement of a bend lighting at driving speeds > 3 km/h shall be excluded at least in a situation where a vehicle is making a turn right (for the right hand traffic).**

Study Item:

Do you think both sides of passing beam swivelling totally have some problem for forward illumination, especially in the case of deeply winding roads and runabout roads in Europe? Japan (JARI) is now

under studying such a problem and can probably make some report on it in the next GRE meeting. Therefore, it is one of the solutions that only the headlamp on the side of the vehicle's intended movement should be allowed to swivel in "totally-swivelled" passing beam system, we think.

#### AMENDMENT for ECE R.00 (GRE/2001/14)

Amend for paragraph 6.2.9.

- 6.2.9. In case of bend lighting where it is obtained by
- 6.2.9.1. swivelling the passing beam headlamp the illumination shall be measured additionally in the extreme swivelling positions. After swivelling to the extreme position the headlamp has to be reaimed horizontally ( for example by means of the goniometer). In this position, **a maximum of the illumination of 1.3 lux on line U25cm/VV to L329cm (R329cm for lefthand traffic) which replaces point HV, on and above line H/H2, or on and above line H/H3/H4 shall not be exceeded.**
- 6.2.9.2. moving one or more optical part(s) of the headlamp or where it is obtained by means of one additional lightsource, the illumination shall be measured additionally in the **intended** extreme swivelling positions. **After swivelling to the extreme position, the reference axis of the head lamp has to be turned round horizontally as far to the extreme swivelling angle as declared by the manufacturer** ( for example by means of the goniometer). In this position, **a maximum of the illumination of 1.3 lux on line U25cm/VV to L329cm (R329cm for lefthand traffic)which replaces point HV, on and above line H/H2, or on and above line H/H3/H4 shall not be exceeded.**

Justification:

So far as the illumination in its normal position (without bending) is confirmed, it is sufficient if measurement is taken to check the glare increase after swivelling to the extreme position.

#### AMENDMENT for ECE R.98 (GRE/2001/16)

Amend for para. 6.2.3. as follows:

6.2.3. ... paragraph 6.2.5. to ~~6.2.7.~~ **6.3.2.3.** ...

Justification:

Paragraphs 6.2.5.to 6.3.2.3. should be referenced.

Amend for para. 6.2.5. as follows:

6.2.5. ... headlamp. One additional light source ~~inside~~ **grouped, combined or reciprocally incorporated with** the passing beam headlamp according to Regulation 37 may be used to

transform the passing beam pattern into a bend lighting pattern. Bend lighting may be produced by activating one additional light-source according to Regulation No.37 being part of the passing beam headlamp.

Justification:

Current wording of the proposal “inside the passing beam” should be clearly stated using the words exactly defined in the regulation.

Add new para. 6.2.5.1.

**6.2.5.1. The headlamp shall be checked by means of an uncoloured standard (etalon) filament lamp designed for a rated voltage of 12V. During the checking of the headlamp, the voltage at the terminals of the filament lamp shall be regulated so as to obtain the reference luminous flux as indicated at the relevant data sheet of Regulation No.37.**

Justification:

In case of the additional light source that is approved to ECE Regulation No.37 and used to transform the passing beam pattern into a bend lighting function, measurement shall be conducted at the reference luminous flux as indicated at the data sheet of Regulation No.37.

Amend for paragraph 6.2.7.for R98, and 6.2.9. for R00

**6.2.7. In case of bend lighting where it is obtained by**

**6.2.7.1.** swivelling the passing beam headlamp the illumination shall be measured additionally in the extreme swivelling positions. After swivelling to the extreme position the headlamp has to be reaimed horizontally ( for example by means of the goniometer). In this position, **a maximum of the illumination of 1.3 lux on line U25cm/VV to L329cm (R329cm for lefthand traffic) which replaces point HV, on and above line H/H2, or on and above line H/H3/H4 shall not be exceeded.**

**6.2.7.2.** moving one or more optical part(s) of the headlamp or where it is obtained by means of one additional lightsource, the illumination shall be measured additionally in the **intended** extreme swivelling positions. **After swivelling to the extreme position, the reference axis of the head lamp has to be turned round horizontally as far to the extreme swivelling angle as declared by the manufacturer** ( for example by means of the goniometer). In this position, **a maximum of the illumination of 1.3 lux on line U25cm/VV to L329cm (R329cm for lefthand traffic)which replaces point HV, on and above line H/H2, or on and above line H/H3/H4 shall not be exceeded.**

Justification:

So far as the illumination in its normal position (without bending) is confirmed, it is sufficient if measurement is taken to check the glare increase after swivelling to the extreme position.

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