

**Economic and Social Council**Distr.: General
7 August 2019

Original: English

Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Lighting and Light-Signalling****Eighty-second session**

Geneva, 22-25 October 2019

Item 7 (b) of the provisional agenda

Other UN Regulations:**UN Regulation No. 53 (Installation of lighting and light-signalling devices for L₃ vehicles)****Proposal for a new Supplement to the 03 series of amendments to UN Regulation No. 53****Submitted by the expert from the International Motorcycle Manufacturers Association (IMMA)***

The text reproduced below was prepared by the expert from IMMA with the aim to align the 03 series of amendments to UN Regulation No. 53 with the latest proposals adopted by the Working Party on Lighting and Light-Signalling (GRE) regarding the 01 and 02 series. The modifications to the draft 03 series of amendments to UN Regulation No. 53 (ECE/TRANS/WP.29/GRE/2018/50, as amended by ECE/TRANS/WP.29/GRE/2019/12) are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21/Add.1, cluster 3.1), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate

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I. Proposal

Paragraph 2, amend to read:

"2. Definitions

For the purpose of this Regulation, **the definitions given in the latest series of amendments to UN Regulation No. 48 in force at the time of application for type approval shall apply, unless otherwise specified in this Regulation.**

~~2.1.~~ ~~"Approval of a vehicle" means the approval of a vehicle type with regard to the number and mode of installation of the lighting and light signalling devices;~~

~~2.2.2.1.~~ "*Vehicle type*" means a category of vehicles which do not differ from each other in such essential respects as:

~~2.2.1.2.1.1.~~ The dimensions and external shape of the vehicle;

~~2.2.2.2.1.2.~~ The number and position of the devices;

~~2.2.3.2.1.3.~~ The following shall likewise not be deemed to be "vehicles of a different type":

~~2.2.3.1.2.1.3.1.~~ Vehicles which differ within the meaning of paragraphs ~~2.2.1.2.1.1.~~ and ~~2.2.2.2.1.2.~~ above but not in such a way as to entail a change in the kind, number, position and geometric visibility of the lamps prescribed for the vehicle type in question; and

~~2.2.3.2.2.1.3.2.~~ Vehicles on which lamps approved under one of the Regulations annexed to the 1958 Agreement, or lamps allowed in the country in which the vehicles are registered, are fitted, or are absent where their fitting is optional;

~~2.3.~~ ~~"Transverse plane" means a vertical plane perpendicular to the median longitudinal plane of the vehicle;~~

~~2.4.2.2.~~ "*Unladen vehicle*" means a vehicle without a driver, or passenger, and unladen, but with its fuel tank full and its normal complement of tools;

~~2.5.2.3.~~ "*Lamp*" means a device designed to illuminate the road or to emit a light signal to other road users. Rear registration plate lamp and retro-reflectors are likewise to be regarded as lamps;

~~2.5.1.2.3.1.~~ "*Equivalent lamps*" means lamps having the same function and authorised in the country in which the vehicle is registered; such lamps may have different characteristics from those of the lamps with which the vehicle is equipped at the time of approval, on condition that they satisfy the requirements of this Regulation;

~~2.5.2.2.3.2.~~ "*Independent lamp*" means devices having separate apparent surfaces, separate light sources and separate lamp bodies;

~~2.5.3.2.3.3.~~ "*Grouped lamps*" means devices having separate apparent surfaces and separate light sources, but a common lamp body;

~~2.5.4.2.3.4.~~ "*Combined*" means devices having separate apparent surfaces, but a common light source and a common lamp body;

~~2.5.5.2.3.5.~~ "*Reciprocally incorporated*" means devices having separate light sources or a single light source operating under different conditions (for example, optical, mechanical, electrical differences), totally or partially common apparent surfaces and a common lamp body;

- ~~2.5.6.~~ "~~Driving beam (main beam) headlamp~~" means the lamp used to illuminate the road over a long distance ahead of the vehicle;
- ~~2.5.7.~~ "~~Passing beam (dipped beam) headlamp~~" means the lamp used to illuminate the road ahead of the vehicle without dazzling or causing undue discomfort to oncoming drivers and other road users;
- ~~2.5.7.1.~~ "~~Principal passing beam (principal dipped beam)~~" means the dipped beam produced without the contribution of infrared (IR) emitters and/or additional light sources for bend lighting.
- ~~2.5.8.2.3.6.~~ "~~Direction indicator lamp~~" means the lamp used to indicate to other road-users that the driver intends to change direction to the right or to the left;
- A direction indicator lamp or lamps may also be used according to provisions of UN Regulation No. 97.
- ~~2.5.9.~~ "~~Stop lamp~~" means the lamp used to indicate to other road users to the rear of the vehicle that its driver is applying the service brake;
- ~~2.5.10.~~ "~~Rear registration plate illuminating device~~" means the device used to illuminate the space reserved for the rear registration plate; such a device may consist of several optical components;
- ~~2.5.11.2.3.7.~~ "~~Front position lamp~~" means the lamp used to indicate the presence of the vehicle when viewed from the front;
- ~~2.5.12.2.3.8.~~ "~~Rear position lamp~~" means the lamp used to indicate the presence of the vehicle when viewed from the rear;
- ~~2.5.13.2.3.9.~~ "~~Retro-reflector~~" means a device used to indicate the presence of a vehicle by the reflection of light emanating from a light source not connected to the vehicle, the observer being situated near the source;
- For the purpose of this Regulation, retro-reflecting number plates are not considered as retro-reflectors;
- ~~2.5.14.~~ "~~Hazard warning signal~~" means the simultaneous operation of all of a vehicle's direction indicator lamps to show that the vehicle temporarily constitutes a special danger to other road users;
- ~~2.5.15.~~ "~~Front fog lamp~~" means the lamp used to improve the illumination of the road in case of fog, snowfall, rainstorms or dust clouds;
- ~~2.5.16.~~ "~~Rear fog lamp~~" means the lamp used to make the vehicle more easily visible from the rear in dense fog;
- ~~2.5.17.~~ "~~Daytime running lamp~~" means a lamp facing in a forward direction used to make the vehicle more easily visible when driving during daytime.
- ~~2.5.18.~~ "~~Interdependent lamp system~~" means an assembly of two or three interdependent lamps providing the same function.
- ~~2.5.18.1.~~ "~~Interdependent lamp marked 'Y'~~" means a device operating as part of an interdependent lamp system. Interdependent lamps operate together when activated, have separate apparent surfaces in the direction of the reference axis and separate lamp bodies, and may have separate light source(s).
- ~~2.5.19.~~ "~~Lamps marked 'D'~~" means independent lamps, approved as separate devices in such a way that they are allowed to be used either independently or in an assembly of two lamps to be considered as a "single lamp".

2.6.2.4. "Light-emitting surface" of a "lighting device", "light-signalling device" or a retro-reflector means all or part of the exterior surface of the transparent material as declared in the request for approval by the manufacturer of the device on the drawing, see Annex 3;

2.7.2.5. "Illuminating surface" (see Annex 3);

2.7.1.2.5.1. "Illuminating surface of a lighting device" (**driving-beam (main-beam) headlamp, passing-beam (dipped-beam) headlamp, front fog lamp** paragraphs 2.5.6., 2.5.7. and 2.5.15. above) means the orthogonal projection of the full aperture of the reflector, or in the case of headlamps with an ellipsoidal reflector of the "projection lens", on a transverse plane. If the lighting device has no reflector, the definition of paragraph 2.7.2.2.5.2. below shall be applied. If the light emitting surface of the lamp extends over part only of the full aperture of the reflector, then the projection of that part only is taken into account.

In the case of a passing-beam headlamp, the illuminating surface is limited by the apparent trace of the cut-off on to the lens. If the reflector and lens are adjustable relative to one another, the mean adjustment should be used;

In the case where any combination of a headlamp producing the principal passing-beam and additional lighting units or light sources designed to produce bend lighting are operated together, the individual illuminating surfaces, taken together, constitute the illuminating surface.

2.7.2.2.5.2. "Illuminating surface of a light-signalling device other than a retro-reflector" (**direction indicator lamp, stop lamp, front position lamp, rear position lamp, hazard warning signal, rear fog lamp**) paragraphs 2.5.8., 2.5.9., 2.5.11., 2.5.12., 2.5.14. and 2.5.16. above) means the orthogonal projection of the lamp in a plane perpendicular to its axis of reference and in contact with the exterior light-emitting surface of the lamp, this projection being bounded by the edges of screens situated in this plane, each allowing only 98 per cent of the total luminous intensity of the light to persist in the direction of the axis of reference. To determine the lower, upper and lateral limits of the illuminating surface, only screens with horizontal or vertical edges shall be used;

2.7.3.2.5.3. "Illuminating surface of a retro-reflector" (para. 2.5.13.2.3.9. above) means the orthogonal projection of a retro-reflector in a plane perpendicular to its axis of reference and delimited by planes continuous to the outermost parts of the retro-reflector's optical system and parallel to that axis. For the purposes of determining the lower, upper and lateral edges of the device, only horizontal and vertical planes shall be considered;

2.8.2.6. The "apparent surface" for a defined direction of observation means, at the request of the manufacturer or his duly accredited representative, the orthogonal projection of:

Either the boundary of the illuminating surface projected on the exterior surface of the lens (a-b),

Or the light-emitting surface (c-d),

In a plane perpendicular to the direction of observation and tangential to the most exterior point of the lens (see Annex 3 to this Regulation);

~~2.9.~~ "Axis of reference" (or "reference axis") means the characteristic axis of the lamp determined by the manufacturer (of the lamp) for use as the direction of reference ($H=0^\circ$, $V=0^\circ$) for angles of field for photometric measurements and for installing the lamp on the vehicle;

- 2.10.2.7. "*Centre of reference*" means the intersection of the axis of reference with the exterior light-emitting surface; it is specified by the manufacturer of the lamp;
- 2.11. ~~"Angles of geometrie visibility" means the angles which determine the field of the minimum solid angle in which the apparent surface of the lamp shall be visible. That field of the solid angle is determined by the segments of the sphere of which the centre coincides with the centre of reference of the lamp and the equator is parallel with the ground. These segments are determined in relation to the axis of reference. The horizontal angles β , correspond to the longitude and the vertical angles α to the latitude;~~
- 2.12.2.8. "*Extreme outer edge*", on either side of the vehicle means the plane parallel to the median longitudinal plane of the vehicle and touching the lateral extremity of the vehicle, disregarding the projection or projections:
- 2.12.1.2.8.1. Of rear-view mirrors,
- 2.12.2.2.8.2. Of direction indicator lamps,
- 2.12.3.2.8.3. Of front and rear position lamps and retro-reflectors;
- 2.13.2.9. "*Over-all width*" means the distance between the two vertical planes defined in paragraph 2.12.2.8. above;
- 2.14. ~~"A single lamp" means:~~
- (a) ~~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 two or more distinct parts; or~~
 - (b) ~~Any assembly of two lamps marked "D", whether identical or not, having the same function, or~~
 - (c) ~~Any assembly of two independent retro reflectors, whether identical or not, that have been approved separately; or~~
 - (d) ~~Any interdependent lamp system composed of two or three interdependent lamps marked "Y" approved together and providing the same function.~~
- 2.15. ~~"Distance between two lamps" which face in the same direction means the shortest distance between the two apparent surfaces in the direction of the reference axis. Where the distance between the lamps clearly meets the requirements of the Regulation, the exact edges of apparent surfaces need not be determined;~~
- 2.16. ~~"Operating tell tale" means a visual or auditory signal (or any equivalent signal) indicating that a device has been switched on and whether or not it is operating correctly;~~
- 2.17. ~~"Circuit closed tell tale" means a visual (or any equivalent signal) indicating that a device has been switched on, but not indicating whether or not it is operating correctly;~~
- 2.18. ~~"Optional lamp" means a lamp, the installation of which is left to the discretion of the manufacturer;~~
- 2.19. ~~"Ground" means the surface on which the vehicle stands which should be substantially horizontal;~~
- 2.20. ~~"Device" means a component or combination of components used in order to perform one or several functions.~~

- ~~2.21.2.10.~~ "*Colour of the light emitted from the device*". The definitions of the colour of the light emitted given in UN Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation.
- ~~2.22.2.11.~~ "*Gross vehicle mass*" or "maximum mass" means the technically permissible maximum laden mass as declared by the manufacturer.
- ~~2.23.2.12.~~ "*Laden*" means so loaded as to attain the gross vehicle mass as defined in paragraph ~~2.22.2.11.~~ above.
- ~~2.24.2.13.~~ "*Horizontal inclination*" means the angle created between the beam pattern when the motorcycle is set as specified in paragraph 5.4. of this Regulation, and the beam pattern when the motorcycle is banked (see drawing in Annex 6);
- ~~2.25.2.14.~~ "*Horizontal inclination adjustment system (HIAS)*" means a device that adjusts the horizontal inclination of the headlamp towards zero;
- ~~2.26.2.15.~~ "*Bank angle*" means the angle made with the vertical by the vertical longitudinal median plane of the motorcycle, when the motorcycle is rotated about its longitudinal axis (see drawing in Annex 6);
- ~~2.27.2.16.~~ "*HIAS signal*" means any control signal or, any additional control input to the system or, a control output from the system to the motorcycle;
- ~~2.28.2.17.~~ "*HIAS signal generator*" means a device, reproducing one or more of the HIAS signals for system test;
- ~~2.29.2.18.~~ "*HIAS test angle*" means the angle δ created by the headlamp cut-off line and HH line (in case of an asymmetrical beam headlamp, the horizontal part of the cut-off shall be used), (see drawing in Annex 6).
- 2.19.** "*Device*" means a component or combination of components used in order to perform one or several functions.
- 2.20.** "***Exterior courtesy lamp***" means a lamp used to provide supplementary illumination to assist the mounting and dismounting of the vehicle driver and passenger or in loading operations."

Paragraph 3.2.1., amend to read:

- 3.2.1. A description of the vehicle type with regard to the items mentioned in paragraphs ~~2.2.1.2.1.1.~~ to ~~2.2.3.2.1.3.~~ above; the vehicle type duly identified shall be specified;"

Paragraphs 3.2.4. and 3.2.5., amend to read:

- 3.2.4. If necessary, in order to verify the conformity to the prescriptions of the present regulation, a layout drawing or drawings of each lamp showing the illuminating surface, as defined in paragraph 2.7.1. above, the light-emitting surface as defined in paragraph ~~2.6.2.4.~~ above, the axis of reference as defined in ~~paragraph 2.9. above~~ UN Regulation No. 48 and the centre of reference as defined in ~~paragraph 2.10. above~~ UN Regulation No. 48. This information is not necessary in the case of the rear registration plate lamp (~~paragraph 2.5.10. above~~ as defined in UN Regulation No. 48).
- 3.2.5. A statement of the method used for the definition of the apparent surface (see paragraph ~~2.8.2.6.~~);"

Insert a new paragraph 3.2.6., to read:

- "3.2.6. At the discretion of the manufacturer, a statement indicating whether lamps approved for and equipped with LED substitute light sources are**

allowed to be installed on the vehicle or not and, if this is allowed, which lamps.”

Paragraphs 5.6.2.1., 5.6.2.2. and 5.6.2.3., amend to read:

"5.6.2.1. Single lamps as defined in paragraph ~~2.14.~~ **2.16.1. of UN Regulation No. 48**, subparagraph (a), composed of two or more distinct parts, shall be installed in such a way that:

- (a) Either the total area of the projection of the distinct parts on a plane tangent to the exterior surface of the outer lens and perpendicular to the reference axis shall occupy not less than 60 per cent of the smallest quadrilateral circumscribing the said projection; or
- (b) The minimum distance between the facing edges of two adjacent/tangential distinct parts shall not exceed 75 mm when measured perpendicularly to the reference axis.

These requirements shall not apply to a single retro-reflector.

5.6.2.2. Single lamps as defined in paragraph ~~2.14.~~**2.16.1. of UN Regulation No. 48**, subparagraph (b) or (c), composed of two lamps marked "D" or two independent retro reflectors, shall be installed in such a way that:

- (a) Either the projection of the apparent surfaces in the direction of the reference axis of the two lamps or retro reflectors occupies not less than 60 per cent of the smallest quadrilateral circumscribing the projections of the said apparent surfaces in the direction of the reference axis; or
- (b) The minimum distance between the facing edges of the apparent surfaces in the direction of the reference axis of two lamps or two independent retro reflectors does not exceed 75 mm when measured perpendicularly to the reference axis.

5.6.2.3. Single lamps as defined in paragraph ~~2.14.~~**2.16.1. of UN Regulation No. 48**, subparagraph (d), shall fulfil the requirements of paragraph 5.6.2.1.

Where two or more lamps and/or two or more separate apparent surfaces are included into the same lamp body and/or have a common outer lens, these shall not be considered as an interdependent lamp system.

However, a lamp in the shape of a band or strip may be part of an interdependent lamp system."

Paragraph 5.8.1., amend to read:

"5.8.1. The photometric characteristics of a direction indicator lamp except for categories 5 and 6 specified in UN Regulation No. 6 **or [148]**, and of a direction indicator lamp specified in UN Regulation No. 50 **or [148]** may be varied during a flash by sequential activation of light sources as specified in paragraph 5.6. of UN Regulation No. 6 **or paragraph 5.6.11. of UN Regulation No. [148]** or in paragraph 6.8. of UN Regulation No. 50.

This provision shall not apply when direction indicator lamps of categories 2a and 2b of UN Regulation No. 6 **or [148]** or category 12 of UN Regulation No. 50 **or [148]** are operated as emergency stop signal according to paragraph 6.14. of this Regulation."

Paragraph 5.9., amend to read:

"5.9. No red light shall be visible towards the front and no white light shall be visible towards the rear. Compliance with this requirement shall be verified as shown hereunder **No red light which could give rise to confusion shall be emitted from a lamp as defined in paragraph 2.3. in a forward direction and no white light which could give rise to confusion, shall be emitted from a lamp as defined in paragraph 2.3. in a rearward direction. No account shall be taken of lighting devices fitted for the interior lighting of the vehicle. In case of doubt, this requirement shall be verified as follows** (see drawing in Annex 4)..."

Paragraph 5.13., amend to read:

"5.13. Colours of the lights
 ...
 Emergency stop signal: amber or red
Exterior courtesy lamp: white"

Paragraph 5.14.4., amend to read:

"5.14.4. Stop lamp, S1 category device specified in UN Regulation No. 7 **or [148]** or stop lamp specified in UN Regulation No. 50 (paragraph 6.4.) **or stop lamp for category L vehicles in UN Regulation No [148];"**

Paragraph 5.15.4., amend to read:

"5.15.4. Stop lamp, S3 category device specified in UN Regulation No. 7 (paragraph 6.4.) **or [148];"**

Insert a new paragraph 5.15.6., to read:

"5.15.6. Exterior courtesy lamp (paragraph 6.15)."

Paragraph 5.19.2., amend to read:

"5.19.2. In the case where the functions referred to in paragraph 5.19. are obtained by an assembly of two lamps marked "D" (see paragraph ~~2.14.2.16.1.~~ **2.16.1. of UN Regulation No. 48**), only one of the lamps needs to meet the position, geometric visibility and photometric requirements for those lamps at all fixed positions of the movable components."

Insert a new paragraph 5.21., to read:

"5.21. A device type approved according to any preceding series of amendments to UN Regulations **Nos. [148] and/or [149] and/or [150]** [~~LSD, RID and/or RRD~~] is deemed equivalent to one approved according to the latest series of amendments to the pertinent UN Regulations **Nos. [148] and/or [149] and/or [150]** (~~[148], [149] and [150]~~), when the change indexes (defined in ~~paragraph 2.1.6.~~ **paragraph 2.1.6. of UN Regulation No. 48**) related to each individual lamp (function) do not differ. In this case **such a device may be fitted on the vehicle to be type approved without any update of there is no necessity to update** the device type approval documents and device markings."

Insert a new paragraph 5.22., to read:

"5.22. The use of lamps approved for and equipped with LED substitute light source(s), is allowed exclusively in the case where the statement indicated in paragraph 3.2.6. is present and positive.

To verify that this statement is respected, both at the type approval and in the conformity of production verification, the presence of the marking on the lamps related to the use of LED substitute light source(s) shall be checked."

Paragraph 6.1.1.1., amend to read:

"6.1.1.1. For motorcycles having a cylinder capacity $\leq 125 \text{ cm}^3$

...

(i) Class A, B, D, CS, DS or ES of UN Regulation No. [149]"

Paragraph 6.1.1.2., amend to read:

"6.1.1.2. For motorcycles having a cylinder capacity $> 125 \text{ cm}^3$

One or two of approved type according to:

(a) Class D or E of UN Regulation No. 113;

(b) UN Regulation No. 112;

(c) UN Regulation No. 1;

(d) UN Regulation No. 8;

(e) UN Regulation No. 20;

(f) UN Regulation No. 72;

(g) UN Regulation No. 98;

(h) Class A, B, D, DS or ES of UN Regulation No. [149]

Two of approved type according to:

(i) Class C of UN Regulation No. 113;

(j) Class CS of UN Regulation No. [149]"

Paragraph 6.2.1.1., amend to read:

"6.2.1.1. For motorcycles having a cylinder capacity $\leq 125 \text{ cm}^3$

...

(i) Class A, B, D, CS, DS or ES of UN Regulation No. [149]"

Paragraph 6.2.1.2., amend to read:

"6.2.1.2. For motorcycles having a cylinder capacity $> 125 \text{ cm}^3$

One or two of approved type according to:

(a) Class D or E of UN Regulation No. 113;

(b) UN Regulation No. 112;

(c) UN Regulation No. 1;

(d) UN Regulation No. 8;

(e) UN Regulation No. 20;

(f) UN Regulation No. 72;

(g) UN Regulation No. 98;

(h) Class A, B, D, DS or ES of UN Regulation No. [149]

Two of approved type according to:

- (i) Class C of UN Regulation No. 113;
- (j) **Class CS of UN Regulation No. [149]**"

Paragraph 6.2.3.1.4., amend to read:

"6.2.3.1.4. If installed, additional lighting unit(s) which provide bend lighting, type approved as part of the passing-beam according to UN Regulation No. 113 **or [149]**, shall be installed under the following conditions:

In the case of (a) pair(s) of additional lighting units, they shall be installed so that their reference centre(s) are symmetrical in relation to the median longitudinal plane of the vehicle.

In the case of a single additional lighting unit, its reference centre shall be coincident with the median longitudinal plane of the vehicle."

Paragraph 6.2.4., amend to read:

"6.2.4. Geometric visibility

Defined by angles α and β as specified in paragraph ~~2.11.2.13.~~ **2.13.** of ~~this~~ UN Regulation No. **48**:

..."

Paragraph 6.2.5.7., amend to read:

"6.2.5.7. Additional light source(s) or additional lighting unit(s) may be activated only in conjunction with the principal passing-beam or the driving-beam to produce bend lighting. The illumination provided by the bend lighting shall not extend above the horizontal plane that is parallel with the ground and containing the reference axis of the headlamp producing the principal passing-beam for all bank angles as specified by the manufacturer during type approval of the device according to UN Regulation No. 113 **or [149]**."

Paragraph 6.2.5.8., amend to read:

"6.2.5.8. The requirement in paragraph 6.2.5.7. above shall be tested as follows:

The test vehicle shall be set as specified in paragraph 5.4. of this Regulation. Measure the bank angles on both sides of the vehicle under every condition where the bend lighting is activated. The bank angles to measure are the bank angles specified by the manufacturer during type approval of the device according to UN Regulation No. 113 **or [149]**.

The handlebar may be fixed in the straight ahead position so as not to move during the vehicle inclination.

For the test, the bend lighting may be activated by means of a signal generator provided by the manufacturer.

The system is considered to satisfy the requirements of paragraph 6.2.5.7. above, if all measured bank angles on both sides of the vehicle are greater than or equal to the minimum bank angles given in the communication form for the type approval of the device according to UN Regulation No. 113 **or [149]**.

Conformity to paragraph 6.2.5.7. above may be demonstrated by the manufacturer using other means accepted by the Type Approval Authority responsible for type approval."

In case of continuous indication:

Duration: 5 minutes maximum

Frequency: (2 ± 1) Hz

On time: Off time ± 10 per cent

This indication shall be allowed only when the device which starts and/or stops the engine (propulsion system) is set in a position which makes it impossible for the engine (propulsion system) to operate."

Paragraph 6.3.7., to be deleted:

"6.3.7. ~~May not be "reciprocally incorporated" with any other lamp, except amber front position lamp."~~

Paragraphs 6.3.8. to 6.3.9.4. (former), renumber as paragraphs 6.3.7. to 6.3.8.4., respectively.

Paragraph 6.4.1., amend to read:

"6.4.1. Number

One or two approved as a category S1 device according to UN Regulation No. 7 **or [148]** or stop lamp according to UN Regulation No. 50 **or stop lamp for category L vehicles of UN Regulation No. [148]**.

Optional one approved as a category S3 device according to UN Regulation No. 7 **or [148]**."

Paragraph 6.4.3., amend to read:

"6.4.3. Position

6.4.3.1. For category S1 device specified in UN Regulation No. 7 **or UN Regulation No. [148]** or stop lamp specified in UN Regulation No. 50 **or [148]**

In height: not less than 250 mm nor more than 1,500 mm above the ground;

In length: at the rear of the vehicle.

6.4.3.2. For the category S3 device specified in UN Regulation No. 7 **or [148]**

In height: The horizontal plane tangential to the lower edge of the apparent surface shall not be less than 850 mm above the ground.

However, the horizontal plane tangential to the lower edge of the apparent surface shall be above the horizontal plane tangential to the upper edge of the apparent surface of the category S1 device specified in UN Regulation No. 7 or [148] or stop lamp specified in UN Regulation No. 50 **or stop lamp for category L vehicles of UN Regulation No. [148]**.

In length: at the rear of the vehicle."

Paragraph 6.4.4., amend to read:

"6.4.4. Geometric visibility

For category S1 device specified in UN Regulation No. 7 **or [148]** or stop lamp specified in UN Regulation No. 50 **or stop lamp for category L vehicles of UN Regulation No. [148]**

Horizontal angle: 45° to left and to right for a single lamp;

45° outwards and 10° inwards for each pair of lamps;

Vertical angle: 15° above and below the horizontal.

However, where a lamp is mounted below 750 mm (measured according to the provisions of paragraph 5.7.), the downward angle of 15° may be reduced to 5°.

For category S3 device specified in UN Regulation No. 7 **or [148]**

Horizontal angle: 10° to the left and to the right of the longitudinal axis of the vehicle.

Vertical angle: 10° above and 5° below the horizontal."

Paragraph 6.4.6., amend to read:

"6.4.6. Electrical connections

6.4.6.1. All **the** stop lamps shall light up simultaneously ~~at any service brake application~~ ~~Shall light up at any service brake application.~~ **when the braking system provides the braking signal defined in UN Regulation No. 78.**

6.4.6.2. The stop lamps need not to function if the device, which starts and/or stops the engine (propulsion system), is in a position that makes it impossible for the engine (propulsion system) to operate."

Paragraph 6.5.1., amend to read:

"6.5.1. Number

One, approved as a category 2 device according to UN Regulation No. 50 **or [148]**. The device may consist of several optical components designed to illuminate the space reserved for the registration plate."

Paragraph 6.7.4., amend to read:

"6.7.4. Geometric Visibility

Horizontal angle: 80° to left and to right for a single lamp:

the horizontal angle may be 80° outwards and ~~45-20°~~ inwards for each pair of lamps:

Vertical angle: 15° above and below the horizontal.

However, where a lamp is mounted below 750 mm (measured according to the provisions of paragraph 5.7.), the downward angle of 15° may be reduced to 5°."

Paragraph 6.10.4., amend to read:

"6.10.4. Geometric visibility

Defined by angles α and β as specified in paragraph ~~2.11.2.13.~~ **of UN Regulation No. 48:**

..."

Paragraph 6.11.4., amend to read:

"6.11.4. Geometric visibility

Defined by angles α and β as specified in paragraph ~~2.11.2.13.~~ **of this UN Regulation No. 48:**

..."

Paragraph 6.13.2., amend to read:

- "6.13.2. Number
One or two of approved type according to UN Regulation No. 87 or [148]."

Insert a new paragraph 6.15., to read:

- 6.15. Exterior courtesy lamp**
- 6.15.1. Presence**
Optional for motorcycles.
- 6.15.2. Number**
One or two; however further exterior courtesy lamps to illuminate footrest are permitted. Each footrest shall be illuminated by not more than one lamp.
- 6.15.3. Arrangement**
No special requirement, however the requirements of paragraph 6.15.9.3. apply.
- 6.15.4. Position**
No special requirement.
- 6.15.5. Geometric visibility**
No special requirement.
- 6.15.6. Orientation**
No special requirement.
- 6.15.7. Electrical connections**
No special requirement.
- 6.15.8. Tell-tale**
No special requirement.
- 6.15.9. Other requirements**
- 6.15.9.1. The exterior courtesy lamp shall not be activated unless the vehicle is stationary and one or more of the following conditions is satisfied:**
- (a) The device which starts and/or stops the engine (propulsion system) is set in a position which makes it impossible for the engine (propulsion system) to operate; or**
 - (b) A load compartment is opened for access.**
- The provisions of paragraph 5.9. shall be met in all fixed positions of use.**
- 6.15.9.2. Approved lamps emitting white light with the exception of main beam headlamps and day time running lamps may be activated as courtesy lamp function. They may also be activated together with the exterior courtesy lamps and the condition of paragraphs 5.10. and 5.11. above may not apply.**
- 6.15.9.3. The technical service shall, to the satisfaction of the Type Approval Authority, perform a visual test to verify that there is no direct visibility of the apparent surface of the exterior courtesy lamps, if viewed by an**

observer moving on the boundary of a zone on a transverse plane 10 m from the front of the vehicle, a transverse plane 10 m from the rear of the vehicle, and two longitudinal planes 10 m from each side of the vehicle; these four planes to extend from 1 m to 3 m above and perpendicular to the ground as shown in Annex 7.

In addition to the conditions described in paragraph 5.4., the requirements prescribed above shall be verified in the following vehicle conditions:

Stand: On a prop stand or a centre stand, and both if applicable

Steering: Straight ahead, and locked in each available position

At the request of the applicant and with the consent of the Technical Service this requirement may be verified by a drawing or simulation."

Annex 1

Insert a new item 9.22., to read:

"9.22. Exterior courtesy lamp: yes/no²"

Insert a new item 9.23., to read:

"9.23. Lamps approved for and equipped with LED substitute light source(s) are allowed to be installed on this vehicle type: yes/no^{2,4}

.....
⁴ If yes, list the applicable lamps."

Annex 5

Paragraph 1.2.1., amend to read:

"1.2.1. The angles of geometric visibility shall be checked in accordance with paragraph ~~2.11.2.13.~~ **2.13.** of ~~this~~ UN Regulation **No. 48**. The values measured for the angles shall be such that the individual specifications applicable to each lamp are fulfilled except that the limits of the angles may have an allowance corresponding to the $\pm 3^\circ$ variation permitted in paragraph 5.3. of this Regulation for the mounting of the light-signalling devices."

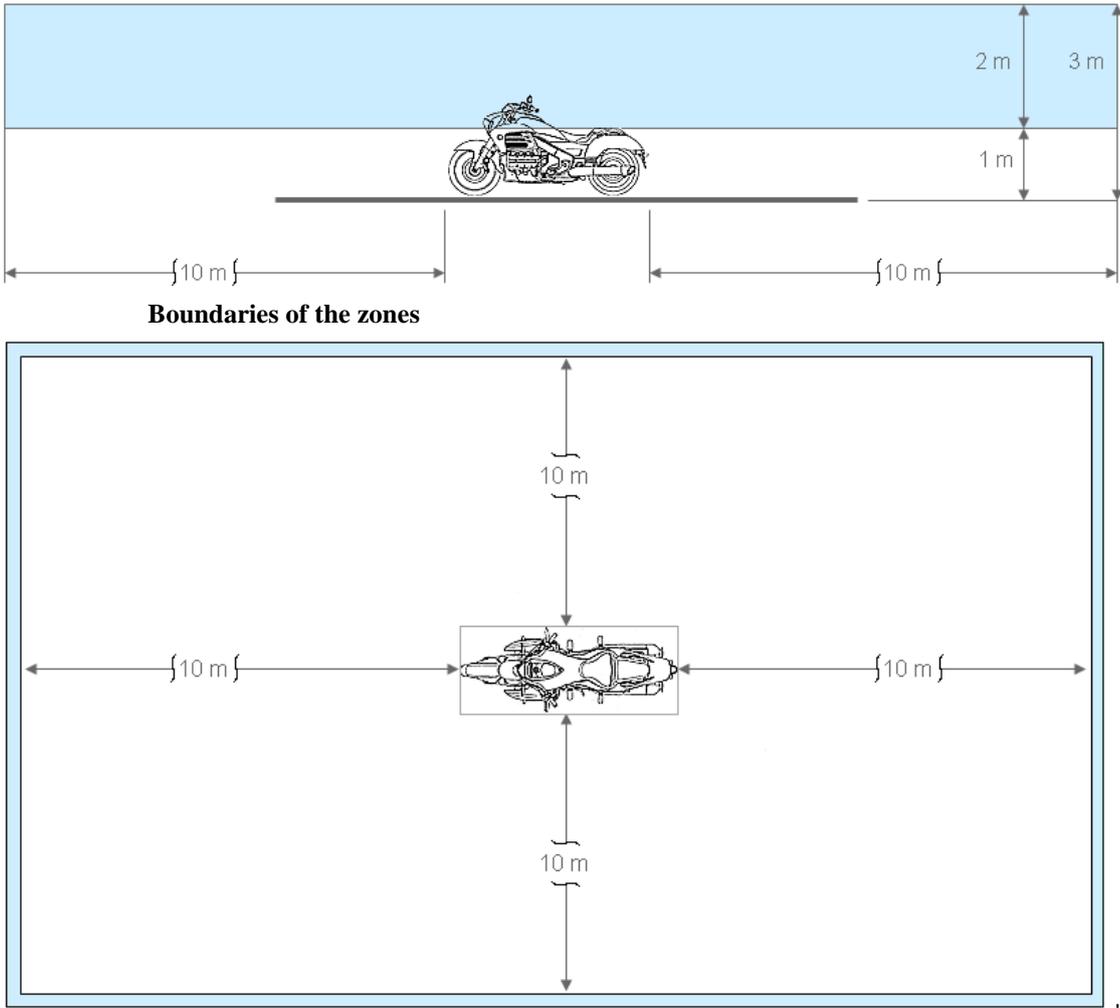
Insert a new Annex 7, to read:

"Annex 7

Observing area towards the apparent surface of exterior courtesy lamps

Zones of observation

This drawing shows the zone from one side, the other zones are from the front, the rear and from the other side of the vehicle.



II. Justification

The objective of this proposal is to align the 03 series of amendments to UN Regulation No. 53 as adopted at the eighty-first session of GRE (ECE/TRANS/WP.29/GRE/2018/50, as amended by ECE/TRANS/WP.29/GRE/2019/12) with the latest proposals for amendment to the 01 and 02 series, already adopted by GRE but not yet in force at the time of preparation of the present proposal, aimed at:

1. Including references to the simplified UN Regulations Nos. [148], [149] and [150] in UN Regulation No. 53 (ECE/TRANS/WP.29/2018/104/Rev.1 as amended by WP.29-177-07, and ECE/TRANS/WP.29/2018/105); as well as implementing the change index and amending the definitions (taking into consideration informal document GRE-80-05).
2. Aligning Regulations Nos. [148] and 53 regarding the inward geometric visibility requirements for rear position lamps (ECE/TRANS/WP.29/GRE/2018/28).
3. Clarifying the use of direction indicators to show the status of the device for protection of a vehicle against unauthorised use and allowing exterior courtesy lamps being fitted on motorcycles (ECE/TRANS/WP.29/2019/17 as amended by paragraph 107 of ECE/TRANS/WP.29/1145 and ECE/TRANS/WP.29/2019/18 as amended by paragraph 108 of ECE/TRANS/WP.29/1145).
4. Aligning the text of UN Regulation No. 53 with UN Regulation No. 48 and correcting a mistake in a previous amendment process (ECE/TRANS/WP.29/2018/86/Rev.1 and ECE/TRANS/WP.29/2018/87/Rev.1).
5. Allowing the use of different stop lamp activation methods, aligning the definition of “stop lamp” with UN Regulation No. 48 (ECE/TRANS/WP.29/GRE/2018/29).
6. Introducing requirements for light emitting diode (LED) substitute light sources into UN Regulation Nos. 48, 53, 74 and 86 (ECE/TRANS/WP.29/GRE/2018/41).
