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Item 6 (a) of the provisional agenda

Installation UN Regulations:

UN Regulation No. 48 (Installation of Lighting and Light-Signalling Devices)

Proposal for a Supplement to the 06, 07 and 08 series of amendments to UN Regulation No. 48

Submitted by the experts from the International Automotive Lighting and Light-Signalling Expert Group*

This document was prepared by the experts from the International Automotive Lighting and Light-Signalling Expert Group (GTB) with the aim to correct some mistakes identified in the text. The proposed modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (Sect.20), para 20.76), 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.



I. Proposal

A. Proposal for a new Supplement to the 06 series of amendments to UN Regulation No. 48

Paragraph 6.1.8.1., amend to read:

“6.1.8.1. If the control of the main-beam headlamps is automatic as described in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above an indication shall be provided to the driver that the automatic control of the main-beam function is activated. This information shall remain displayed as long as the automatic operation is activated.”

Paragraph 6.1.9.3.1., amend to read:

“6.1.9.3.1. The sensor system used to control the automatic activation and deactivation of the main-beam headlamps, as described in paragraph ~~6.1.7.1.~~ **6.1.7.2.**, shall comply with the following requirements:

6.1.9.3.1.1. The boundaries of the minimum fields in which the sensor is able to detect light emitted from other vehicles defined in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above are defined by the angles indicated below.

6.1.9.3.1.1.1. Horizontal angles: 15° to the left and 15° to the right.

Vertical angles:

Upward angle	5°		
Mounting height of the sensor (centre of sensor aperture above the ground)	Less than 2 m	Between 1.5 m and 2.5 m	Greater than 2.0 m
Downward angle	2°	2° to 5°	5°

These angles are measured from the centre of the sensor aperture relative to a horizontal straight line through its centre and parallel to the longitudinal median plane of the vehicle.”

Paragraph 6.1.9.3.2., amend to read:

“6.1.9.3.2. The transition from main-beam to dipped-beam and vice versa according to the conditions indicated in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above may be performed automatically and shall not cause discomfort, distraction or glare.”

Paragraph 6.1.9.3.4., amend to read:

“6.1.9.3.4. The control of the main-beam headlamps may be such that the main-beam headlamps are switched ON automatically only when:

- (a) No vehicles, as mentioned in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above, are detected within the fields and distances according to paragraphs 6.1.9.3.1.1. and 6.1.9.3.1.2.; and
- (b) The detected ambient lighting levels are as prescribed in paragraph 6.1.9.3.5. below.”

Paragraph 6.1.9.3.5., amend to read:

“6.1.9.3.5. In the case where main-beam headlamps are switched ON automatically, they shall be switched OFF automatically when oncoming or preceding vehicles, as mentioned in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above, are detected within the fields and distances according to paragraphs 6.1.9.3.1.1. and 6.1.9.3.1.2.

Moreover, they shall be switched OFF automatically when the illuminance produced by ambient lighting conditions exceeds 7,000 lx.

Compliance with with this requirement shall be demonstrated by the applicant, using simulation or other means of verification accepted by the Type Approval Authority. If necessary the illuminance shall be measured on a horizontal surface, with a cosine corrected sensor on the same height as the mounting position of the sensor on the vehicle. This may be demonstrated by the manufacturer by sufficient documentation or by other means accepted by the Type Approval Authority.”

Paragraph 6.3.5., footnote 13, delete.

Paragraph 6.3.6.1.1., reference to footnote 13, delete.

Paragraph 6.5.8., reference to footnote 13, delete.

Paragraph 6.19.7.3, footnote 14, delete.

Paragraph 6.20. amend to read:

“6.20. Cornering lamp (UN Regulation No. 119 or ~~148~~**149**)”

Paragraph 6.22.4.1.2., footnote 15, amend to read:

“**13** In case of additional "two symmetrically placed lighting units" the horizontal distance may be 200 mm (C in the figure)”

Paragraph 6.22.7.4.3., amend to read:

“6.22.7.4.3. The class E mode(s) of the passing-beam shall not operate unless the vehicle's speed exceeds 60 km/h and one or more of the following conditions is/are automatically detected:

- (a) The road characteristics correspond to motorway conditions¹⁶¹⁴ or the vehicle's speed exceeds 110 km/h (E-signal applies);
- (b) In case of a class E mode of the passing-beam which, according to the system's approval documents /communication sheet, complies with a "data set" of UN Regulation No. 123, Annex 3, Table 6, or of UN Regulation No. 149, Table 14 only.

~~Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);~~

~~Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);~~

~~Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies).~~

Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);

Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);

Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies).”

Paragraph 6.22.7.4.5., footnote 17, amend to read:

“**15** This provision does not apply for passing-beam lighting when bend lighting is produced for a right turn in right hand traffic (left turn in left-hand traffic).”

Paragraph 6.22.9.1., amend to read:

“6.22.9.1. An AFS shall be permitted only in conjunction with the installation of headlamp cleaning device(s) according to UN Regulation No. 45¹⁶¹⁶ for at least those lighting units, which are indicated under item 9.2.3. of the communication form conforming to the model in Annex 1 to UN Regulation No. 123 or under item ~~9.3.3.~~ **9.3.2.3. of the communication form conforming to the model** in Annex 1 to the **00 series of amendments to UN Regulation No. 149, or under item 9.2.2.3. of the communication form conforming to**

the model in Annex 1 to the 01 series of amendments to UN Regulation No. 149, if the total objective luminous flux of the light sources of these units exceeds 2,000 lm per side, and which contribute to the class C (basic) passing-beam.”

Paragraph 12.2., footnote 19, amend to read:

“17 Note by the secretariat: for paragraph 6.21.4.1.3., please refer to the text of the 03 series of amendments as contained in document E/ECE/324/Rev.1/Add.47/Rev.6 - E/ECE/TRANS/505/Rev.1/Add.47/Rev.6.”

B. Proposal for a new Supplement to the 07 series of amendments to UN Regulation No. 48

Paragraph 2.3.11., amend to read:

“2.3.11. “Park condition of a vehicle” means:

2.3.11.1. For a motor vehicle, when the vehicle is at standstill and its propulsion system is not running and its movable components are in the normal position(s) as defined in paragraph 2.3.9.;

2.3.11.2. And for a trailer, when the trailer is connected to a drawing motor vehicle in the condition as described in paragraph 2.3.11.1. and its movable components are in the normal position(s) as defined in paragraph 2.3.9.”

Paragraph 5.9.2., amend to read:

“5.9.2. The photometric characteristics of any lamp may vary:

- (a) In relation to the ambient light;
- (b) As a consequence of other lamps being switched ON or OFF; or
- (c) When the lamps is being used to provide another lighting function; ~~provided that any variation in the photometric characteristics is in compliance with the technical provisions for the lamp concerned.~~

provided that any variation in the photometric characteristics is in compliance with the technical provisions for the lamp concerned.”

Paragraph 5.21.1., amend to read:

“5.21.1. Additional lamps satisfying all the position, geometric visibility, colorimetric and photometric requirements for the above indicated lamps shall be switched ON when the apparent surface in the direction of the reference axis of these lamps is more than 50 per cent hidden by the movable component; **or**”

Paragraph 6.1.8.1., amend to read:

“6.1.8.1. If the control of the main-beam headlamps is automatic as described in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above an indication shall be provided to the driver that the automatic control of the main-beam function is activated. This information shall remain displayed as long as the automatic operation is activated. ”

Paragraph 6.1.9.3.1., amend to read:

“6.1.9.3.1. The sensor system used to control the automatic activation and deactivation of the main-beam headlamps, as described in paragraph ~~6.1.7.1.~~ **6.1.7.2.**, shall comply with the following requirements:

6.1.9.3.1.1. The boundaries of the minimum fields in which the sensor is able to detect light emitted from other vehicles defined in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above are defined by the angles indicated below.

6.1.9.3.1.1.1. Horizontal angles: 15° to the left and 15° to the right.

Vertical angles:

Upward angle	5°		
Mounting height of the sensor (centre of sensor aperture above the ground)	Less than 2 m	Between 1.5 m and 2.5 m	Greater than 2.0 m
Downward angle	2°	2° to 5°	5°

These angles are measured from the centre of the sensor aperture relative to a horizontal straight line through its centre and parallel to the longitudinal median plane of the vehicle.”

Paragraph 6.1.9.3.2., amend to read:

“6.1.9.3.2. The transition from main-beam to dipped-beam and vice versa according to the conditions indicated in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above may be performed automatically and shall not cause discomfort, distraction or glare.”

Paragraph 6.1.9.3.4., amend to read:

“6.1.9.3.4. The control of the main-beam headlamps may be such that the main-beam headlamps are switched ON automatically only when:

- No vehicles, as mentioned in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above, are detected within the fields and distances according to paragraphs 6.1.9.3.1.1. and 6.1.9.3.1.2.; and
- The detected ambient lighting levels are as prescribed in paragraph 6.1.9.3.5. below.”

Paragraph 6.1.9.3.5., amend to read:

“6.1.9.3.5. In the case where main-beam headlamps are switched ON automatically, they shall be switched OFF automatically when oncoming or preceding vehicles, as mentioned in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above, are detected within the fields and distances according to paragraphs 6.1.9.3.1.1. and 6.1.9.3.1.2.

Moreover, they shall be switched OFF automatically when the illuminance produced by ambient lighting conditions exceeds 7,000 lx.

Compliance with with this requirement shall be demonstrated by the applicant, using simulation or other means of verification accepted by the Type Approval Authority. If necessary the illuminance shall be measured on a horizontal surface, with a cosine corrected sensor on the same height as the mounting position of the sensor on the vehicle. This may be demonstrated by the manufacturer by sufficient documentation or by other means accepted by the Type Approval Authority.”

Paragraph 6.2.9., amend to read:

“6.2.9. Other requirements

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

6.2.9.2. Dipped-beam headlamps with a light source or LED module(s) producing the principal dipped-beam ~~and~~ having a total objective luminous flux **for each headlamp** which exceeds 2,000 lumens shall only be installed in conjunction with the installation of headlamp cleaning device(s) according to Regulation No. 45¹¹.

6.2.9.3. With respect to vertical inclination the provisions of paragraph 6.2.6.2.2. above shall not be applied for dipped-beam headlamps with a light source or LED module(s) producing the principal dipped beam and having an objective luminous flux **for each headlamp** which exceeds 2,000 lumens.

In the case of filament lamps for which more than one test voltage is specified, the objective luminous flux which produces the principal dipped-beam, as indicated in the communication form for the type approval of the device, is applied.

In the case of dipped-beam headlamps equipped with an approved light source, the applicable objective luminous flux is the value at the relevant test voltage as given in the relevant data sheet in the Regulation, according to which the applied light source was approved, without taking into account the tolerances to the objective luminous flux specified on this datasheet.

6.2.9.4. Only dipped-beam headlamps according to Regulation Nos. 98, 112 or 149 may be used to produce bend lighting.

If bend lighting is produced by a horizontal movement of the whole beam or the kink of the elbow of the cut-off, it shall be switched ON only if the vehicle is in forward motion; this shall not apply if bend lighting is produced for a right turn in right hand traffic (left turn in left hand traffic)."

Paragraph 6.3.5., footnote 13, delete.

Paragraph 6.3.6.1.1., reference to footnote 13, delete.

Paragraph 6.5.7., amend to read:

"6.5.7. Electrical connections

Direction-indicator lamps shall switch ON independently of the other lamps. All direction-indicator lamps on one side of a vehicle shall be switched ON and OFF by means of one control and shall flash in phase.

On M₁ and N₁ vehicles less than 6 m in length, with an arrangement complying with paragraph 6.5.5.2. above, the amber side-marker lamps, when mounted, shall also flash at the same frequency (in phase) with the direction-indicator lamps.

A direction indicator capable of being activated in different modes (static or sequential), shall not switch between both modes once activated.

If two optional lamps (category 2a or 2b) are installed on vehicles in categories M₂, M₃, N₂, N₃, they shall be operated in the same mode as the other mandatory rear direction indicator lamps (category 2a or 2b); i.e. static or sequential."

Paragraph, 6.5.8., reference to footnote 13, delete.

Paragraph 6.18.9., amend to read:

"6.18.9. Other requirements

When the rearmost side-marker lamp is combined with the rear position lamp reciprocally incorporated with the rear fog-lamp or stop lamp, the photometric characteristics of the side-marker lamp may be modified during the entire time of the rear fog lamp or stop lamp are switched ON.

Rear side-marker lamps shall be amber if they flash with the rear direction-indicator lamp.

When an optional side-marker lamp is grouped or combined with a position lamp that is reciprocally incorporated or grouped with the direction indicator, the electrical connection of the side-marker lamp on the relevant side of the vehicle may be such that it is switched OFF during the entire period (both ON and OFF cycle) of activation of the direction indicator lamp."

Paragraph 6.19.7.2., amend to read:

"6.19.7.2. The daytime running lamps may be switched OFF manually ~~when~~, provided they switch ON automatically when the vehicle speed exceeds 15 km/h or

when the vehicle has travelled more than 100 m and they remain ON until deliberately switched OFF again.”

Paragraph 6.20. amend to read:

“6.20. Cornering lamp (UN Regulation No. 119 or ~~148~~**149**)”

Paragraph 6.22.4.1.2., footnote 14, amend to read:

“**13** In case of additional "two symmetrically placed lighting units" the horizontal distance may be 200 mm (C in the figure)”

Paragraph 6.22.7.4.3., amend to read:

“6.22.7.4.3. The class E mode(s) of the passing-beam shall not operate unless the vehicle's speed exceeds 60 km/h and one or more of the following conditions is/are automatically detected:

- (a) The road characteristics correspond to motorway conditions¹⁵¹⁴ or the vehicle's speed exceeds 110 km/h (E-signal applies);
- (b) In case of a class E mode of the passing-beam which, according to the system's approval documents /communication sheet, complies with a "data set" of UN Regulation No. 123, Annex 3, Table 6, or of UN Regulation No. 149, Table 14 only.

~~Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);~~

~~Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);~~

~~Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies).~~

Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);

Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);

Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies).”

Paragraph 6.22.7.4.5., footnote 16, amend to read:

“**15** This provision does not apply for passing-beam lighting when bend lighting is produced for a right turn in right hand traffic (left turn in left-hand traffic).”

Paragraph 6.22.9.1., amend to read:

“6.22.9.1. An AFS shall be permitted only in conjunction with the installation of headlamp cleaning device(s) according to UN Regulation No. 45¹⁷¹⁶ for at least those lighting units, which are indicated under item 9.2.3. of the communication form conforming to the model in Annex 1 to UN Regulation No. 123 or under item ~~9.3.3.~~ **9.3.2.3. of the communication form conforming to the model in Annex 1 to the 00 series of amendments to UN Regulation No. 149, or under item 9.2.2.3. of the communication form conforming to the model in Annex 1 to the 01 series of amendments to UN Regulation No. 149,** if the total objective luminous flux of the light sources of these units exceeds 2,000 lm per side, and which contribute to the class C (basic) passing-beam.”

Paragraph 6.24.9.1., amend to read:

“6.24.9.1. The exterior courtesy lamp shall not be switched ON unless the vehicle is stationary and one or more of the following conditions is satisfied:

- (a) The propulsion system is stopped; or
- (b) A driver or passenger door is opened; or
- (c) A load compartment door is opened.

~~The provisions of paragraph 5.10. shall be met in all fixed positions of use.~~

The provisions of paragraph 5.10. shall be met in all fixed positions of use.”

Paragraph 12.2., footnote 18, amend to read:

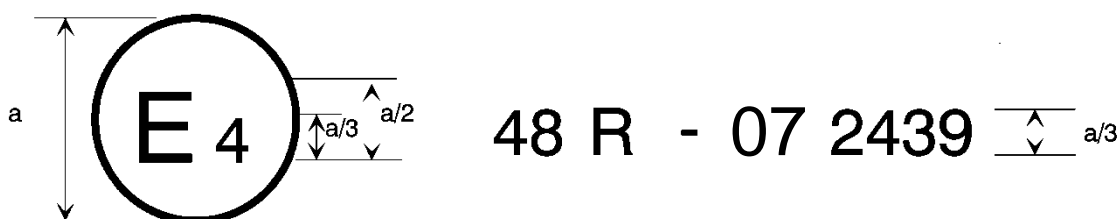
“17 Note by the secretariat: for paragraph 6.21.4.1.3., please refer to the text of the 03 series of amendments as contained in document E/ECE/324/Rev.1/Add.47/Rev.6 - E/ECE/TRANS/505/Rev.1/Add.47/Rev.6.”

Annex 2, amend to read:

“Arrangements of approval marks

Model A

(See paragraph 4.4. of this Regulation)

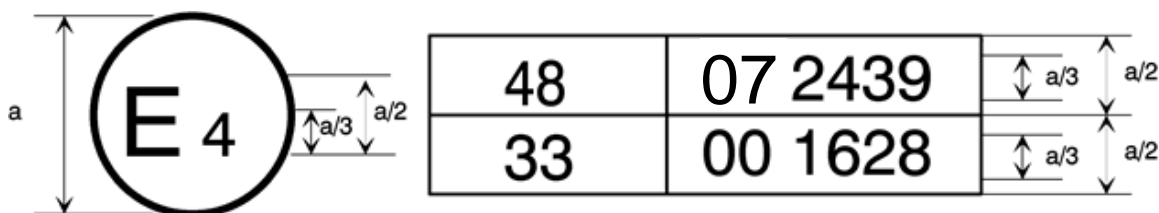


a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to the installation of lighting and light-signalling devices, been approved in the Netherlands (E4) pursuant to UN Regulation No. 48 as amended by the 07 series of amendments. The approval number indicates that the approval was granted in accordance with the requirements of UN Regulation No. 48 as amended by the 07 series of amendments.

Model B

(See paragraph 4.5. of this Regulation)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E4) pursuant to UN Regulation No. 48 as amended by the 07 series of amendments and UN Regulation No. 33.¹ The approval number indicates that, at the dates when the respective approvals were given, Regulation No. 48 was amended by the 07 series of amendments and UN Regulation No. 33 was still in its original form.

¹ The second number is given merely as an example.”

Annex 6, paragraph 5.4.3., amend to read:

“5.4.3. Vehicles with non-conventional suspension, where the propulsion system has to be running.

Before making any measurement wait until the vehicle has assumed its final attitude with the engine running.”

C. Proposal for a new Supplement to the 08 series of amendments to UN Regulation No. 48

Paragraph 2.3.11., amend to read:

- "2.3.11. "Park condition of a vehicle" means:
- 2.3.11.1. For a motor vehicle, when the vehicle is at standstill and its propulsion system is not running and its movable components are in the normal position(s) as defined in paragraph 2.3.9.;
- 2.3.11.2. And for a trailer, when the trailer is connected to a drawing motor vehicle in the condition as described in paragraph 2.3.11.1. and its movable components are in the normal position(s) as defined in paragraph 2.3.9."**

Paragraph 5.9.2., amend to read:

- "5.9.2. The photometric characteristics of any lamp may vary:
- (a) In relation to the ambient light;
- (b) As a consequence of other lamps being switched ON or OFF; or
- (c) When the lamps is being used to provide another lighting function; ~~provided that any variation in the photometric characteristics is in compliance with the technical provisions for the lamp concerned.~~
- provided that any variation in the photometric characteristics is in compliance with the technical provisions for the lamp concerned."**

Paragraph 5.21.1., amend to read:

- "5.21.1. Additional lamps satisfying all the position, geometric visibility, colorimetric and photometric requirements for the above indicated lamps shall be switched ON when the apparent surface in the direction of the reference axis of these lamps is more than 50 per cent hidden by the movable component; **or**"

Paragraph 6.1.8.1., amend to read:

- "6.1.8.1. If the control of the main-beam headlamps is automatic as described in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above an indication shall be provided to the driver that the automatic control of the main-beam function is activated. This information shall remain displayed as long as the automatic operation is activated. "

Paragraph 6.1.9.3.1., amend to read:

- "6.1.9.3.1. The sensor system used to control the automatic activation and deactivation of the main-beam headlamps, as described in paragraph ~~6.1.7.1.~~ **6.1.7.2.**, shall comply with the following requirements:
- 6.1.9.3.1.1. The boundaries of the minimum fields in which the sensor is able to detect light emitted from other vehicles defined in paragraph ~~6.1.7.1.~~ **6.1.7.2.** above are defined by the angles indicated below.
- 6.1.9.3.1.1.1. Horizontal angles: 15° to the left and 15° to the right.

Vertical angles:

Upward angle	5°		
Mounting height of the sensor (centre of sensor aperture above the ground)	Less than 2 m	Between 1.5 m and 2.5 m	Greater than 2.0 m
Downward angle	2°	2° to 5°	5°

These angles are measured from the centre of the sensor aperture relative to a horizontal straight line through its centre and parallel to the longitudinal median plane of the vehicle.”

Paragraph 6.1.9.3.2., amend to read:

“6.1.9.3.2. The transition from main-beam to dipped-beam and vice versa according to the conditions indicated in paragraph ~~6.1.7.4.~~ **6.1.7.2.** above may be performed automatically and shall not cause discomfort, distraction or glare.”

Paragraph 6.1.9.3.4., amend to read:

“6.1.9.3.4. The control of the main-beam headlamps may be such that the main-beam headlamps are switched ON automatically only when:

- (a) No vehicles, as mentioned in paragraph ~~6.1.7.4.~~ **6.1.7.2.** above, are detected within the fields and distances according to paragraphs 6.1.9.3.1.1. and 6.1.9.3.1.2.; and
- (b) The detected ambient lighting levels are as prescribed in paragraph 6.1.9.3.5. below.”

Paragraph 6.1.9.3.5., amend to read:

“6.1.9.3.5. In the case where main-beam headlamps are switched ON automatically, they shall be switched OFF automatically when oncoming or preceding vehicles, as mentioned in paragraph ~~6.1.7.4.~~ **6.1.7.2.** above, are detected within the fields and distances according to paragraphs 6.1.9.3.1.1. and 6.1.9.3.1.2.

Moreover, they shall be switched OFF automatically when the illuminance produced by ambient lighting conditions exceeds 7,000 lx.

Compliance with with this requirement shall be demonstrated by the applicant, using simulation or other means of verification accepted by the Type Approval Authority. If necessary the illuminance shall be measured on a horizontal surface, with a cosine corrected sensor on the same height as the mounting position of the sensor on the vehicle. This may be demonstrated by the manufacturer by sufficient documentation or by other means accepted by the Type Approval Authority.”

Paragraph 6.2.9., amend to read:

“6.2.9. Other requirements

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

6.2.9.2. Dipped-beam headlamps with a light source or LED module(s) producing the principal dipped-beam ~~and~~ having a total objective luminous flux **for each headlamp** which exceeds 2,000 lumens shall only be installed in conjunction with the installation of headlamp cleaning device(s) according to Regulation No. 45¹¹.

6.2.9.3. With respect to vertical inclination the provisions of paragraph 6.2.6.2.2. above shall not be applied for dipped-beam headlamps with a light source or LED module(s) producing the principal dipped beam and having an objective luminous flux **for each headlamp** which exceeds 2,000 lumens.

In the case of filament lamps for which more than one test voltage is specified, the objective luminous flux which produces the principal dipped-beam, as indicated in the communication form for the type approval of the device, is applied.

In the case of dipped-beam headlamps equipped with an approved light source, the applicable objective luminous flux is the value at the relevant test voltage as given in the relevant data sheet in the Regulation, according to which the applied light source was approved, without taking into account the tolerances to the objective luminous flux specified on this datasheet.

- 6.2.9.4.** Only dipped-beam headlamps according to UN Regulations Nos. 98, 112 or 149 may be used to produce bend lighting.

If bend lighting is produced by a horizontal movement of the whole beam or the kink of the elbow of the cut-off, it shall be switched ON only if the vehicle is in forward motion; this shall not apply if bend lighting is produced for a right turn in right hand traffic (left turn in left hand traffic)."

Paragraph 6.3.5., footnote 13, delete.

Paragraph 6.3.6.1.1., reference to footnote 13, delete.

Paragraph 6.5.7., amend to read:

- "6.5.7. Electrical connections

Direction-indicator lamps shall switch ON independently of the other lamps. All direction-indicator lamps on one side of a vehicle shall be switched ON and OFF by means of one control and shall flash in phase.

On M₁ and N₁ vehicles less than 6 m in length, with an arrangement complying with paragraph 6.5.5.2. above, the amber side-marker lamps, when mounted, shall also flash at the same frequency (in phase) with the direction-indicator lamps.

A direction indicator capable of being activated in different modes (static or sequential), shall not switch between both modes once activated.

If two optional lamps (category 2a or 2b) are installed on vehicles in categories M₂, M₃, N₂, N₃, they shall be operated in the same mode as the other mandatory rear direction indicator lamps (category 2a or 2b); i.e. static or sequential."

Paragraph 6.5.8., reference to footnote 13, delete.

Paragraph 6.18.9., amend to read:

- "6.18.9. Other requirements

When the rearmost side-marker lamp is combined with the rear position lamp reciprocally incorporated with the rear fog-lamp or stop lamp, the photometric characteristics of the side-marker lamp may be modified during the entire time of the rear fog lamp or stop lamp are switched ON.

Rear side-marker lamps shall be amber if they flash with the rear direction-indicator lamp.

When an optional side-marker lamp is grouped or combined with a position lamp that is reciprocally incorporated or grouped with the direction indicator, the electrical connection of the side-marker lamp on the relevant side of the vehicle may be such that it is switched OFF during the entire period (both ON and OFF cycle) of activation of the direction indicator lamp."

Paragraph 6.20., amend to read:

- "6.20. Cornering lamp (UN Regulation No. 119 or ~~148~~149)"

Paragraph 6.22.4.1.2., footnote 14, amend to read:

- "**13** In case of additional "two symmetrically placed lighting units" the horizontal distance may be 200 mm (C in the figure)"

Paragraph 6.22.7.4.3., amend to read:

- "6.22.7.4.3. The class E mode(s) of the passing-beam shall not operate unless the vehicle's speed exceeds 60 km/h and one or more of the following conditions is/are automatically detected:

- (a) The road characteristics correspond to motorway conditions⁴⁵¹⁴ or the vehicle's speed exceeds 110 km/h (E-signal applies);
- (b) In case of a class E mode of the passing-beam which, according to the system's approval documents /communication sheet, complies with a "data set" of UN Regulation No. 123, Annex 3, Table 6, or of UN Regulation No. 149, Table 14 only.

~~Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);~~

~~Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);~~

~~Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies).~~

Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);

Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);

Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies)."

Paragraph 6.22.7.4.5., footnote 16, amend to read:

"15 This provision does not apply for passing-beam lighting when bend lighting is produced for a right turn in right hand traffic (left turn in left-hand traffic)."

Paragraph 6.22.9.1., amend to read:

"6.22.9.1. An AFS shall be permitted only in conjunction with the installation of headlamp cleaning device(s) according to UN Regulation No. 45⁴⁷¹⁶ for at least those lighting units, which are indicated under item 9.2.3. of the communication form conforming to the model in Annex 1 to UN Regulation No. 123 or under item ~~9.3.3.~~ **9.3.2.3. of the communication form conforming to the model in Annex 1 to the 00 series of amendments to UN Regulation No. 149, or under item 9.2.2.3. of the communication form conforming to the model in Annex 1 to the 01 series of amendments to UN Regulation No. 149**, if the total objective luminous flux of the light sources of these units exceeds 2,000 lm per side, and which contribute to the class C (basic) passing-beam."

Paragraph 6.24.9.1., amend to read:

"6.24.9.1. The exterior courtesy lamp shall not be switched ON unless the vehicle is stationary and one or more of the following conditions is satisfied:

- (a) The propulsion system is stopped; or
- (b) A driver or passenger door is opened; or
- (c) A load compartment door is opened.

~~The provisions of paragraph 5.10. shall be met in all fixed positions of use.~~

The provisions of paragraph 5.10. shall be met in all fixed positions of use."

Paragraph 12.2., footnote 18 amend to read:

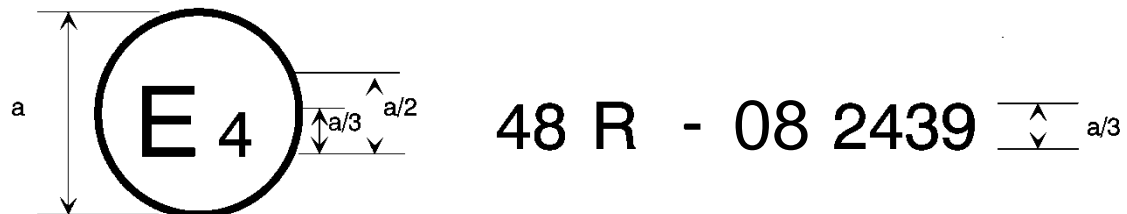
"17 Note by the secretariat: for paragraph 6.21.4.1.3., please refer to the text of the 03 series of amendments as contained in document E/ECE/324/Rev.1/Add.47/Rev.6 - E/ECE/TRANS/505/Rev.1/Add.47/Rev.6"

Annex 2, amend to read:

“Arrangements of approval marks

Model A

(See paragraph 4.4. of this Regulation)

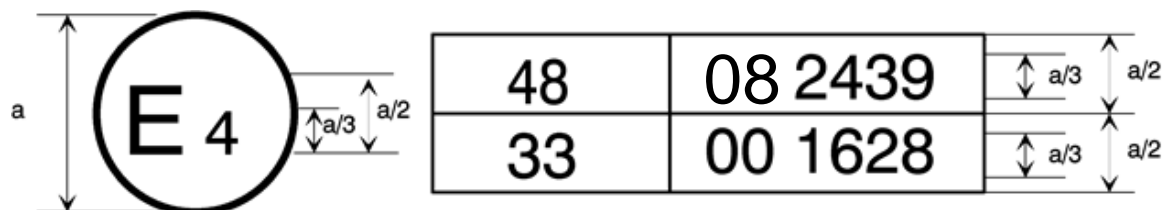


$a = 8 \text{ mm min.}$

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to the installation of lighting and light-signalling devices, been approved in the Netherlands (E4) pursuant to UN Regulation No. 48 as amended by the 08 series of amendments. The approval number indicates that the approval was granted in accordance with the requirements of UN Regulation No. 48 as amended by the 08 series of amendments.

Model B

(See paragraph 4.5. of this Regulation)



$a = 8 \text{ mm min.}$

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E4) pursuant to UN Regulation No. 48 as amended by the 08 series of amendments and UN Regulation No. 33.¹ The approval number indicates that, at the dates when the respective approvals were given, Regulation No. 48 was amended by the 08 series of amendments and UN Regulation No. 33 was still in its original form.

¹ The second number is given merely as an example."

Annex 6, paragraph 5.4.3., amend to read:

“5.4.3. Vehicles with non-conventional suspension, where the propulsion system has to be running.

Before making any measurement wait until the vehicle has assumed its final attitude with the engine running.”

II. Justification

A. Supplement to the 06 series of amendments to UN Regulation No. 48

1. In paragraph 6.1.8. and 6.1.9., the automatic high beam activation refers to the wrong paragraph 6.1.7.1. instead of 6.1.7.2.
2. In paragraph 6.20. “Cornering lamp”, the reference to UN Regulation No. 148 is replaced with 149.

3. In paragraph 6.22.7.4.3. the data set have been realigned in order to clarify that they apply only to sub-paragraph (b).
4. In paragraph 6.22.9.1., correction of wrong references to the communication form of the 00 series of amendments to UN Regulation No. 149 and addition of a missing reference to correct a paragraph in the 01 series of amendments to UN Regulation No. 149 series have been done.
5. Deletion of footnote 13 in paragraphs 6.3.5., 6.3.6.1.1., 6.5.8. and footnote 14 in paragraph 6.19.7.3. is due to the footnote content being obsolete. The subsequent footnotes are renumbered accordingly.

B. Supplement to the 07 series of amendments to UN Regulation No. 48

1. The goal of this amendment proposal is to correct the errors introduced in the 07 series of amendments to UN Regulation No. 48 adopted in March 2020 (document ECE/TRANS/WP.29/2020/36), in comparison to the latest supplement 14 of the 06 series of amendments.
2. In paragraph 2.3.11., subparagraph 2.3.11.2. was missing (which was originally present in Supplement 12 to the 06 series of amendments to UN Regulation No. 48).
3. The structure of paragraph 5.9.2. is modified back to its original shape in order to clarify the application scope for the allowed variation of photometric characteristics. The current structure may lead to misinterpretation and restrict compliance with the technical provisions for the lamp concerned with (c) only.
4. In paragraph 5.21.1., an editorial mistake is corrected ('or' was missing at the end of the sentence).
5. In paragraphs 6.1.8. and 6.1.9., the automatic high beam activation refers to the wrong paragraph 6.1.7.1. instead of 6.1.7.2.
6. Amendment to paragraph 6.2.9. of the 07 series of amendments to UN Regulation No. 48 is done in order to align the requirements with the latest supplement 14 of the 06 series of amendments to UN Regulation No. 48. The current text in paragraph 6.2.9. of the 07 series of amendments to UN Regulation No. 48 does not reflect the change introduced by Supplement 11 to the 06 series of amendments (ECE/TRANS/WP.29/2018/84), entered into force on 28 May 2019.
7. In paragraph 6.5.7., the second part about static/sequential direction indicators is missing (it was originally present in Supplement 9 to the 06 series of amendments to UN Regulation No. 48).
8. In paragraph 6.18.9., the second part concerning optional side marker lamps is missing (it was originally present in Supplement 11 to the 06 series of amendments to UN Regulation No. 48).
9. In paragraph 6.19.7.2., the word "when" was not removed in the amendment proposal for the 07 series of amendments to UN Regulation No. 48.
10. In paragraph 6.20. "Cornering lamp", the reference to UN Regulation No. 148 is replaced with 149.
11. In paragraph 6.22.7.4.3., the data set have been realigned in order to clarify that they apply only to sub-paragraph (b).
12. In paragraph 6.22.9.1., correction of wrong references to the communication form of the 00 series to UN Regulation No. 149 and addition of a missing reference to correct a paragraph in the 01 series of amendments have been made.
13. The structure of paragraph 6.24.9.1. is modified back to its original shape in order to clarify that all sub-clauses (a), (b) and (c) shall be met in all fixed positions of use. The current structure may lead to misinterpretation and restrict compliance with the technical provisions for (c) open load compartment door only.

14. In Annex 2, in Model A, the position of '07' is corrected, in order to replace the '02'.
15. In Annex 6, paragraph 5.4.3., the second sentence was missing in the original text of the 07 series of amendments to UN Regulation No. 48. It is added here.
16. Deletion of footnote 13 in paragraphs 6.3.5., 6.3.6.1.1., 6.5.8. is due to the footnote content being obsolete. Footnote 14 contained the same text and was deleted in March 2020 (see document ECE/TRANS/WP.29/2020/36).

C. Supplement to the 08 series of amendments to UN Regulation No. 48

1. In paragraph 2.3.11., subparagraph 2.3.11.2. was missing (it was originally present in Supplement 12 to the 06 series of amendments to UN Regulation No. 48).
2. The structure of paragraph 5.9.2. is modified back to its original shape in order to clarify the application scope for the allowed variation of photometric characteristics. The current structure may lead to misinterpretation and restrict compliance with the technical provisions for the lamp concerned with (c) only.
3. In paragraph 5.21.1., an editorial mistake is corrected ('or' was missing at the end of the sentence).
4. In paragraphs 6.1.8. and 6.1.9., the automatic high beam activation refers to the wrong paragraph 6.1.7.1. instead of 6.1.7.2.
5. An amendment to paragraph 6.2.9. of the 07 series of amendments to UN Regulation No. 48 is done in order to align the requirements with the latest supplement 14 to the 06 series of amendments to UN Regulation No. 48. The current text in paragraph 6.2.9. of the 07 series of amendments to UN Regulation No. 48 does not reflect the change introduced by Supplement 11 to the 06 series of amendments (ECE/TRANS/WP.29/2018/84), entered into force on 28 May 2019.
6. In paragraph 6.5.7., the second part about static/sequential direction indicators is missing (it was originally present in Supplement 9 to the 06 series of amendments to UN Regulation No. 48).
7. In paragraph 6.18.9., the second part concerning optional side marker lamps is missing (it was originally present in Supplement 11 to the 06 series of amendments to UN Regulation No. 48).
8. In paragraph 6.20. "Cornering lamp", the reference to UN Regulation No. 148 is replaced with 149.
9. In paragraph 6.22.7.4.3. the data set have been realigned in order to clarify that they apply only to sub-paragraph (b).
10. In paragraph 6.22.9.1., correction of wrong references to the communication form of UN Regulation No. 123 and the 00 series of amendments to UN Regulation No. 149 and addition of a missing reference to correct a paragraph in the 01 series of amendments to UN Regulation No. 149 series have been made.
11. The structure of paragraph 6.24.9.1. is modified back to its original shape in order to clarify that all sub-clauses (a), (b) and (c) shall be met in all fixed positions of use. The current structure may lead to misinterpretation and restrict compliance with the technical provisions for (c) open load compartment door only.
12. In Annex 2, in Model A, the position of '08' is corrected, in order to replace the '02'.
13. In Annex 6, paragraph 5.4.3., the second sentence was missing in the original text of the 07 series of amendments to UN Regulation No. 48. It is added here.
14. Deletion of footnote 13 in paragraphs 6.3.5., 6.3.6.1.1., 6.5.8. is due to the footnote content being obsolete.