

6 August 2013

Agreement

Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions*

(Revision 2, including the amendments which entered into force on 16 October 1995)

Addendum 112 – Regulation No. 113

Revision 3 - Amendment 2

Supplement 2 to the 01 series of amendments – Date of entry into force: 15 July 2013

Uniform provisions concerning the approval of motor vehicle headlamps emitting a symmetrical passing-beam or a driving-beam or both and equipped with filament, gas-discharge light sources or LED modules



UNITED NATIONS

* Former title of the Agreement: Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

Paragraph 1.3., amend to read:

- "1.3. "Headlamps of different types" mean headlamps which differ in such essential respects as:
- 1.3.1. The trade name or mark;
 - 1.3.2. The characteristics of the optical system;
 - 1.3.3. The inclusion or elimination of components capable of altering the optical effects by reflection, refraction, absorption and/or deformation during operation;
 - 1.3.4. The kind of beam produced (passing-beam, driving-beam or both);
 - 1.3.5. The category of filament lamp(s), the gas-discharge light source or the light source module specific identification code(s);"

Insert a new paragraph 1.9., to read:

- "1.9. "Additional lighting unit" means the part of a headlamp system that provides the bend lighting. It is independent from the device that provides the principal passing-beam, may consist of optical, mechanical and electrical components, and it may be grouped and/or reciprocally incorporated with other lighting or light-signalling devices."

Paragraph 1.9.(former), renumber as paragraph 1.10.

Insert a new paragraph 2.1.6., to read:

- "2.1.6. For additional lighting unit(s), the additional lighting unit identification code(s), if any."

Paragraph 2.2.1., amend to read:

- "2.2.1. Drawings in triplicate in sufficient detail to permit identification of the type and representing a frontal view of the headlamp, with details of lens ribbing if any, and the cross-section; the drawings shall indicate the space reserved for the approval mark and, if applicable,
- (a) In the case of LED module(s), the drawings shall indicate the space(s) reserved for the specific identification code(s) of the module(s);
 - (b) In the case of additional lighting unit(s), the space(s) reserved for the specific identification code(s) on the additional lighting unit(s) and the headlamp(s) producing the principal passing beam;
 - (c) In the case of additional lighting unit(s), the geometrical conditions of installation of the device(s) that meet the requirements of paragraph 6.2.8."

Insert a new paragraph 2.2.2.3., to read:

- "2.2.2.3. In the case of a headlamp designed to provide bend lighting, the minimum bank angle(s) to satisfy the requirement of paragraph 6.2.8.1."

Insert new paragraphs 3.7. to 3.7.3., to read:

- "3.7. LED module(s) submitted along with the approval of the lamp shall bear:
- 3.7.1. The trade name or mark of the applicant. This marking shall be clearly legible and indelible;

3.7.2. The specific identification code of the module. This marking shall be clearly legible and indelible.

This specific identification code ..., but both markings shall be from the same applicant.

3.7.3 If the LED module(s) are non-replaceable, the markings for LED module(s) are not required."

Insert a new paragraph 3.9., to read:

"3.9. In the case of additional lighting unit(s), the headlamps producing the principal passing-beam shall bear specific identification code of the additional lighting unit(s) mentioned in paragraph 3.10.2. below."

Insert new paragraphs 3.10. to 3.10.3., to read:

"3.10. Additional lighting unit(s) shall bear the following markings:

3.10.1. The trade name or mark of the applicant. This marking shall be clearly legible and indelible.

3.10.2. In the case of filament light source, the category(s) of filament lamp(s), and/or

In the case of LED module(s), the rated voltage and rated wattage and the specific identification code(s) of the LED module(s).

3.10.3. The specific identification code(s) of the additional lighting unit(s). This marking shall be clearly legible and indelible.

This specific identification code shall be comprised of starting letters "ALU" for "Additional Lighting Unit" followed by approval marking without the circle as prescribed in paragraph 4.2.1. below (ex. ALU E43 1234) and in the case where several non-identical additional lighting units are used, additional symbols or characters shall follow (ex. ALU E43 1234-A, ALU E43 1234-B). This specific identification code shall be shown in the drawings mentioned in paragraph 2.2.1. above. The approval marking does not have to be the same as the one on the lamp in which the additional lighting unit(s) is used, but both markings shall be from the same applicant."

Insert a new paragraph 5.3., to read:

"5.3. Class A, B, C or D"

Paragraphs 5.3. and 5.3.1.(former), renumber as paragraphs 5.3.1. and 5.3.2., and amend to read:

"5.3.1. Headlamps shall be equipped with filament lamp(s) approved according to Regulation No. 37 and/or, with (an) LED module(s).

In the case of the use of additional light source(s) and/or additional lighting unit(s) to provide bend lighting, only categories of filament lamps covered by Regulation No. 37, provided that no restriction on the use for bending light is made in Regulation No. 37 and its series of amendments in force at the time of application for type approval, and/or LED modules(s) shall be used.

5.3.2. It is possible to use two filament light sources for the principal passing-beam and several filament light sources for the driving-beam.

Any Regulation No. 37 filament lamp may be used, provided that:

- (a) ...
- (b) For Classes A and B, its reference luminous flux at 13.2V for principal dipped-beam does not exceed 900 lm;
- (c) For Classes C and D, its reference luminous flux at 13.2V for principal dipped-beam does not exceed 2,000 lm.

The design of the device shall be such that the filament lamp can be fixed in no other position but the correct one⁸.

The filament lamp holder shall ..."

Paragraphs 5.3.2. and 5.3.2.2.(former), renumber as paragraphs 5.3.3. and 5.3.3.2.

Paragraph 5.3.2.3., renumber as paragraph 5.3.3.3., and amend to read:

"5.3.3.3. The total objective luminous flux of all LED modules producing the principal passing-beam shall be measured as described in paragraph 5. of Annex 12. The following minimum and maximum limits shall apply:

	<i>Headlamps</i>			
	<i>Class A</i>	<i>Class B</i>	<i>Class C</i>	<i>Class D</i>
Principal passing-beam minimum	150 lumen	350 lumen	500 lumen	1 000 lumen
Principal passing-beam maximum	900 lumen	1 000 lumen	2 000 lumen	2 000 lumen

"

Paragraph 5.4.1., amend to read:

"5.4.1. The headlamp shall be equipped with (a) gas-discharge light source(s) approved according to Regulation No. 99 and/or (an) LED module(s).

In the case of the use of additional light source(s) and/or additional lighting unit(s) to provide bend lighting, only categories of filament lamps covered by Regulation No. 37, provided that no restriction on the use for bending light is made in Regulation No. 37 and its series of amendments in force at the time of application for type, and/or LED modules(s) shall be used."

Paragraph 5.4.3.3., amend to read:

"5.4.3.3. The total objective luminous flux of all LED modules producing the principal passing beam shall be measured as described in paragraph 5. of Annex 12. The following minimum limit shall apply:

	<i>Headlamps Class E</i>
Principal passing-beam minimum	2,000 lumen

"

Paragraph 5.7., amend to read:

"5.7. On headlamps designed to provide alternately a driving beam and a passing beam, or headlamp systems including additional light source(s) and/or additional lighting unit(s) used to produce bend lighting, any mechanical, electromechanical or other device incorporated in the headlamp for these purposes shall be so constructed that:"

Paragraphs 5.7.2. and 5.7.3., amend to read:

- "5.7.2. Except for additional light source(s) and additional lighting unit(s) used to produce bend lighting, in the case of failure it must be possible to obtain automatically a passing-beam or a state with respect to the photometric conditions which yields values not exceeding 1,200 cd in Zone 1 and at least 2,400 cd at 0,86D-V by such means as e.g. switching off, dimming, aiming downwards, and/or functional substitution;
- 5.7.3. Except for additional light source(s) and additional lighting unit(s) used to produce bend lighting, either the passing-beam or the driving-beam shall always be obtained without any possibility of the mechanism stopping in between the two positions;"

Insert a new paragraph 6.1.6., to read:

- "6.1.6. In the case of headlamp systems having additional light source(s) and/or additional lighting unit(s) used to produce bend lighting, the additional light source(s) shall be measured according to the paragraphs 6.1.3., 6.1.4. and 6.1.5."

Paragraphs 6.2.1. and 6.2.2., amend to read:

- "6.2.1. For a correct aiming the principal passing-beam shall ... shall be checked on performance.
- 6.2.2. The principal passing-beam shall be aimed so that:"

Paragraph 6.2.6.1., amend to read

- "6.2.6.1. However, the additional light source(s) or additional lighting unit(s) shall not be activated when the bank angle is less than 3 degrees."

Paragraph 6.2.7., amend to read:

- "6.2.7. Either one or two filament light sources (Classes A, B, C, D) or one gas discharge light source (Class E) or one or more LED module(s) (Classes C, D, E) are permitted for the principal passing beam."

Insert new paragraphs 6.2.8. to 6.2.8.3., to read:

- "6.2.8. Additional light source(s) and/or additional lighting unit(s) used to produce bend lighting is (are) permitted, provided that:
- 6.2.8.1. The following requirement regarding illumination shall be met, when the principal passing beam(s) and corresponding additional light source(s) used to produce bend lighting are activated simultaneously:
- (a) Left bank (when the motorcycle is rotated to the left about its longitudinal axis) the luminous intensity values shall not exceed 900 cd in the zone extending from HH to 15 degrees above HH and from VV to 10 degrees left.
 - (b) Right bank (when the motorcycle is rotated to the right about its longitudinal axis) the luminous intensity values shall not exceed 900 cd in the zone extending from HH to 15 degrees above HH and from VV to 10 degrees right.
- 6.2.8.2. This test shall be carried out with the minimum bank angle specified by the applicant simulating the condition by means of the test fixture etc.

6.2.8.3. For this measurement, at the request of the applicant, principal passing beam and additional light source(s) used to produce bend lighting, may be measured individually and the photometric values obtained combined to determine compliance with the specified luminous intensity values."

Annex 1,

Item 9., amend to read (footnotes 2 and 3 remain unchanged):

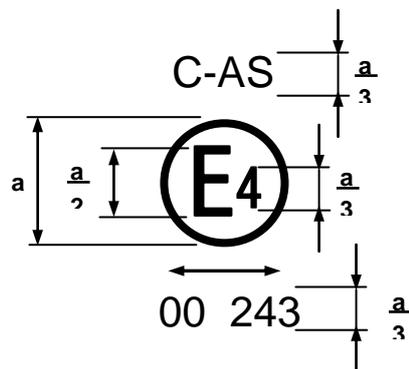
9. Brief description:
- Category as described by the relevant marking³:
- Number and specific identification code(s) of electronic light source control gear(s), if any:
- Number and specific identification code(s) of additional lighting unit(s) and for each LED module a statement whether it is replaceable or not, if any:
- The determination of "cut-off" sharpness yes/no²
- If yes, it was carried out at 10 m / 25 m²
- Trade name and identification number of separate ballast(s) or part(s) of ballast(s):
- The passing-beam light source may/may not² be lit simultaneously with the driving-beam light source and/or another reciprocally incorporated headlamp.
- The minimum bank angle(s) to satisfy the requirement of paragraph 6.2.8.1., if any....."

Annex 2, amend to read:

"Annex 2

Examples of arrangement of approval marks

Figure 1



$a \geq 5$ mm for Class A headlamp

..."

Figure 2



$a \geq 8$ mm (on glass)

$a \geq 5$ mm (on plastic material)

Insert a new Figure 16, to read:

"Figure 16

Additional lighting units designed to provide bend lighting

ALU E43 1234

The additional lighting unit bearing the identification code shown above has been approved together with a headlamp initially approved in Japan (E43) under approval number 1234"

Annex 4,

Insert a new sub-paragraph 1.1.1.1.(e), to read:

- "1.1.1.1. (a) ...
(b) ...
(c) ...
(d) ...
(e) In the case of a headlamp having additional light source(s) used to produce bend lighting, except for additional lighting unit(s), it (they) shall be switched on for one minute, and switched off for nine minutes during the activation of the principal passing-beam.

If the headlamp has several additional light sources used to produce bend lighting, the test shall be carried out with the combination of light source(s) that represents the most severe operating condition."

Annex 8, amend to read:

"Annex 8

Overview of operational periods concerning test for stability of photometric performance

Abbreviations:

P: passing-beam lamp

D: driving-beam lamp (D1 + D2 means two driving-beams)

F: front fog lamp

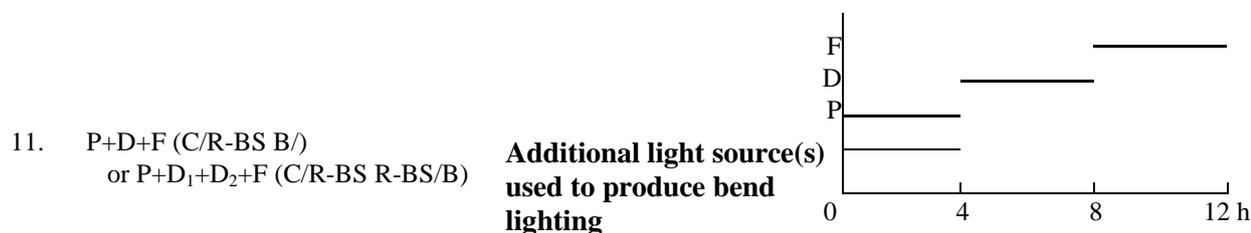
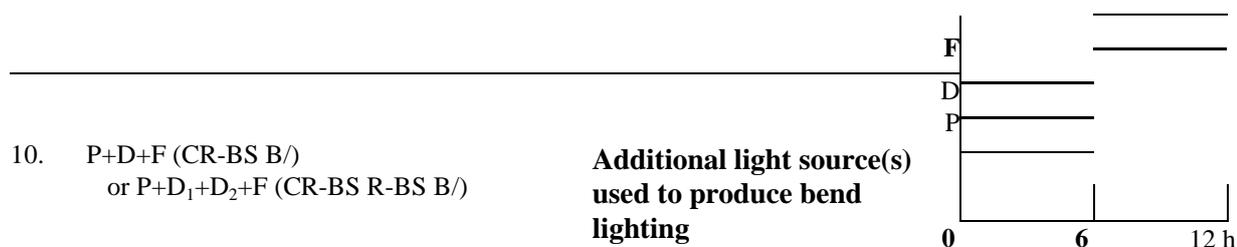
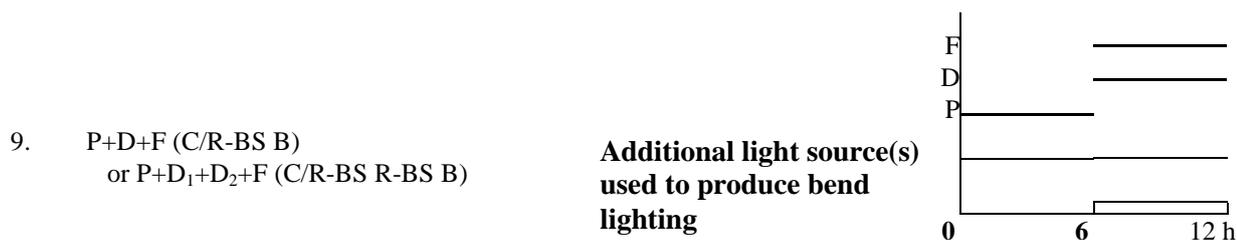
————— : means a cycle of 15 minutes off and 5 minutes lit.

————— : means a cycle of 9 minutes off and 1 minutes lit.

All following grouped headlamps and front fog lamps together with the added class B marking symbols are given as examples and are not exhaustive.

1.	P or D or F (C-BS or R-BS or B)	Additional light source(s) used to produce bend lighting	P, D or F
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2.	P+D (CR-BS) or P+D ₁ +D ₂ (CR-BS R-BS)	Additional light source(s) used to produce bend lighting	
3.	P+D (C/R-BS) or P+D ₁ +D ₂ (C/R-BS R-BS)	Additional light source(s) used to produce bend lighting	
4.	P+F (C-BS B)	Additional light source(s) used to produce bend lighting	
5.	P+F (C-BS B/) or C-BS/B	Additional light source(s) used to produce bend lighting	
6.	D+F (R-BS B) or D ₁ +D ₂ +F (R-BS R-BS B)	Additional light source(s) used to produce bend lighting	
7.	D+F (R-BS B/) or D ₁ +D ₂ +F (R-BS R-BS B/)	Additional light source(s) used to produce bend lighting	
8.	P+D+F (CR-BS B) or P+D ₁ +D ₂ +F (CR-BS R-BS B)	Additional light source(s) used to produce bend lighting	



Annex 12,

Paragraph 4.3.1.1., amend to read:

"4.3.1.1. A photometric measurement of the headlamp shall be made after 1 minute of operation for the specific function at the test point specified below. For these measurements, the aim can be approximate but must be maintained for before and after ratio measurements.

Test points to be measured:

Principal passing beam 50 V

(For the measurement of bend lighting, the test point shall be specified by the manufacture.)

Driving-beam H – V"

Paragraph 5., amend to read:

"5. The measurement of the objective luminous flux of LED module(s) producing the principal passing-beam shall be carried out as follows:

...

The average of the measurements of the three samples of each type of LED module shall be deemed to be its objective luminous flux."