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**Two-wheeled motorcycles — Positioning
of lighting and light-signalling devices**

*Motocycles à deux roues — Position des dispositifs d'éclairage et de
signalisation lumineuse*

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Foreword

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International Standard ISO 11460 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Sub-Committee SC 22, *Motorcycles*.

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Two-wheeled motorcycles — Positioning of lighting and light-signalling devices

1 Scope

This International Standard specifies the requirements for the positioning of lighting and light-signalling devices when fitted to a two-wheeled motorcycle.

It does not specify the installation of any of these devices.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6726:1988, *Mopeds and motorcycles with two wheels — Masses — Vocabulary*.

ISO 7227:1987, *Road vehicles — Lighting and light signalling devices — Vocabulary*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 7227 and the following definitions apply.

3.1 transverse plane: Vertical plane perpendicular to the median longitudinal plane of the vehicle.

3.2 vehicle kerb mass: (See ISO 6726:1988, definition 4.1.2.)

3.3 front position lamp: Lamp used to indicate the presence of the vehicle when it is viewed from the front.

NOTE 1 This definition differs from ISO 7227:1987, definition 3.17.

3.4 rear position lamp: Lamp used to indicate the presence of the vehicle when it is viewed from the rear.

NOTE 2 This definition differs from ISO 7227:1987, definition 3.21.

3.5 hazard warning lamp: Light signal obtained by simultaneous operation of all of the vehicle's direction indicator lamps.

NOTE 3 This definition differs from ISO 7227:1987, definition 3.31.

3.6 illuminating surface of reflex-reflecting device: Illuminating surface of a reflex-reflecting device in a plane perpendicular to the reference axis and bounded by planes on the outer edges of the reflex-reflecting device light projection surface and parallel to this axis.

NOTE 4 This definition differs from ISO 7227:1987, definition 3.37.

3.7 distance between two lamps which face in same direction: Distance between the orthogonal projections in a plane perpendicular to the reference axes of the outlines of the two illuminating surfaces as defined in ISO 7227:1987, definitions 3.35, 3.36, 3.37 and 3.38.

4 General requirements

4.1 For all light-signalling devices, including those mounted on the side, the reference axis of the lamp when fitted to the vehicle shall be parallel to the bearing plane of the vehicle on the road. In addition, it shall be perpendicular to the longitudinal median plane of the vehicle in the case of side reflex-reflecting devices, and parallel to that plane in the case of all other devices.

A tolerance of $\pm 3^\circ$ is allowed in each direction.

In addition, if specifications for fitting are provided by the manufacturer, they shall be met.

4.2 In the absence of specific instructions, the height and orientation of the lamp shall be verified with the vehicle unladen and placed on a flat horizontal surface, with its median longitudinal plane vertical and the handlebars in the position corresponding to straight ahead.

4.3 In the absence of specific instructions, lamps constituting a pair and having the same function shall

- a) be mounted symmetrically in relation to the median longitudinal plane;
- b) be symmetrical to one another in relation to the median longitudinal plane.

4.4 In the absence of specific instructions, lamps having different functions may be independent, or grouped, combined or incorporated in one device, on condition that each such lamp satisfies the individual requirements applicable to it.

4.5 The maximum height above ground shall be measured from the highest point and the minimum height from the lowest point of the illuminating surface.

4.6 This International Standard defines the positions of the following lighting and light-signalling devices:

- main-beam headlamp (see 5.1);
- dipped-beam headlamp (see 5.2);
- front position lamp (see 5.3);
- side reflex-reflecting device (see 5.4);
- rear reflex-reflecting device (see 5.5);
- direction-indicator lamp (see 5.6);
- stop lamp (see 5.7);
- rear position lamp (see 5.8);
- rear registration plate lamp (see 5.9);
- hazard warning lamp (see 5.10);
- front fog lamp (see 5.11);
- rear fog lamp (see 5.12).

4.7 If fitted, the positioning of each of the lighting and light-signalling devices given in 4.6 shall be effected in conformity with the relevant requirements in each clause.

5 Individual specifications

5.1 Main-beam headlamp

5.1.1 Position

5.1.1.1 A main-beam headlamp may be either independent or reciprocally incorporated with a dipped-beam headlamp.

In the case of a motorcycle equipped with one lamp, the reference centre of the lamp shall be in the median longitudinal plane of the vehicle.

In the case of a motorcycle equipped with two independent or reciprocally incorporated lamps, or one independent and one reciprocally incorporated lamp, they shall be arranged either one above the other, with the reference centres in the median longitudinal plane of the vehicle, or symmetrically on either side of the median longitudinal plane of the vehicle with the reference centres in the same horizontal plane.

5.1.1.2 In all cases, the edges of the illuminating surfaces of any two headlamps shall be not more than 100 mm away from each other.

5.1.2 Orientation

The main-beam headlamps shall face forward. The lamp may move with the steering.

5.2 Dipped-beam headlamp

5.2.1 Position

5.2.1.1 A dipped-beam headlamp may be either independent or reciprocally incorporated with a main-beam headlamp.

In the case of a motorcycle equipped with one lamp, the reference centre of the lamp shall be in the median longitudinal plane of the vehicle.

In the case of a motorcycle equipped with two independent or reciprocally incorporated lamps, or one independent and one reciprocally incorporated lamp, they shall be arranged either one above the other, with the reference centres in the median longitudinal plane of the vehicle, or symmetrically on either side of the median longitudinal plane of the vehicle with the reference centres in the same horizontal plane.

5.2.1.2 The height of a dipped-beam headlamp shall be not less than 500 mm nor more than 1 200 mm above the ground.

5.2.2 Orientation

The dipped-beam headlamp shall face forward. The lamp may move with the steering.

5.3 Front position lamp

5.3.1 Position

5.3.1.1 In width, the front position lamp reference centre shall be in the median longitudinal plane of the vehicle except where the position lamp is reciprocally incorporated with the main- or dipped-beam headlamp in which case the requirements in 5.1.1.1 or 5.2.1.1 shall apply.

5.3.1.2 The height of a front position lamp shall be not less than 350 mm nor more than 1 200 mm above the ground.

5.3.2 Orientation

The front position lamp shall face forward. The lamp may move with the steering.

5.4 Side reflex-reflecting device

5.4.1 Position

5.4.1.1 For width, there is no special requirement.

5.4.1.2 The height of a side reflex-reflecting device shall be not less than 300 mm nor more than 1 200 mm above the ground.

5.4.1.3 In length, the side reflex-reflecting device should be placed such that under normal conditions it will not be masked by the driver or passenger, or their clothing.

5.4.2 Orientation

The reference axis of the side reflex-reflecting devices shall be perpendicular to the vehicle's median longitudinal plane and directed outwards.

5.5 Rear reflex-reflecting device

5.5.1 Position

5.5.1.1 In width, the rear reflex-reflecting device reference centre shall be in the median longitudinal plane of the vehicle.

5.5.1.2 The height of a rear reflex-reflecting device shall be not less than 350 mm nor more than 900 mm above the ground.

5.5.2 Orientation

The rear reflex-reflecting device shall face rearward.

5.6 Direction indicator lamp

5.6.1 Position

5.6.1.1 In width, direction indicator lamps shall meet the requirements in 5.6.1.1.1 or 5.6.1.1.2 as appropriate.

5.6.1.1.1 For front indicators, the following requirements shall all be met:

- a) there shall be a minimum distance of 300 mm, measured in accordance with 3.7, between illuminating surfaces;
- b) the indicators shall be situated outside the longitudinal vertical planes tangential to the outer edges of the illuminating surface of the dipped-beam headlamp(s);
- c) in accordance with table 1, there shall be a minimum distance between the illuminating surface of the indicators and the dipped-beam headlamp closest to one another.

Table 1

Minimum intensity of direction indicator	Minimum separation distance from headlamp
cd	mm
90	75
175	40
250	20
400	0

5.6.1.1.2 For rear indicators, the clearance between the inner edges of the two illuminating surfaces shall be at least 240 mm.

5.6.1.2 The height of direction indicator lamps shall be not less than 350 mm nor more than 1 200 mm above the ground.

5.6.1.3 In length, the forward distance between the reference centre of the rear indicators and the transverse plane which constitutes the rearmost limit of the vehicle's overall length shall not exceed 300 mm.

5.6.2 Orientation

The front indicators may move with the steering.

5.7 Stop lamp

5.7.1 Position

5.7.1.1 In width, the stop lamp reference centre shall be in the median longitudinal plane of the vehicle.

5.7.1.2 The height of a stop lamp shall be not less than 250 mm nor more than 1 200 mm above the ground.

5.7.1.3 In length, the stop lamp shall be at the rear of the vehicle.

5.7.2 Orientation

The stop lamp shall face rearward.

5.8 Rear position lamp

5.8.1 Position

5.8.1.1 In width, the rear position lamp reference centre shall be in the median longitudinal plane of the vehicle.

5.8.1.2 The height of a rear position lamp shall be not less than 250 mm nor more than 1 200 mm above the ground.

5.8.1.3 In length, the rear position lamp shall be at the rear of the vehicle.

5.8.2 Orientation

The rear position lamp shall face rearward.

5.9 Rear registration plate lamp

The position and orientation of the rear registration plate lamp shall be such that it illuminates the space reserved for the registration plate.

5.10 Hazard warning lamp

The position and orientation of the hazard warning lamp shall be those of the signal given by the simultaneous operation of all of the direction indicator lamps, positioned and oriented in accordance with 5.6.

5.11 Front fog lamp

5.11.1 Position

5.11.1.1 In width, the front fog lamp reference centre shall be in the median longitudinal plane of the vehicle, or the edge of the illuminating surface which is nearest to that plane shall be not more than 250 mm away from it.

5.11.1.2 The height of a front fog lamp shall be not less than 250 mm above the ground. No point on the illuminating surface shall be higher than the highest point of the illuminating surface of the dipped-beam headlamp(s).

5.11.2 Orientation

The front fog lamp shall face forward. The lamp may move with the steering.

5.12 Rear fog lamp

5.12.1 Position

The height of a rear fog lamp shall be not less than 350 mm nor more than 900 mm above the ground.

5.12.2 Orientation

The rear fog lamp shall face rearward.