



INTERNATIONAL STANDARD

**ISO
9987**

First edition
1990-12-15

Motorcycles — Measurement of variation of dipped beam inclination as a function of load

*Motorcycles — Mesurage des variations d'inclinaison du faisceau de
croisement en fonction de la charge*



Reference number
ISO 9987:1990(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9987 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

Annex A forms an integral part of this International Standard. Annexes B and C are for information only.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Motorcycles — Measurement of variation of dipped beam inclination as a function of load

1 Scope

This International Standard specifies a method of measuring the variation of motorcycle dipped beam inclination, with respect to its initial inclination, caused by the changes in vehicle attitude due to loading.

NOTE 1 The loading conditions of the vehicle are specified in annex A.

It applies to two-wheeled motorcycles as defined in ISO 3833.

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 3833:1977, *Road vehicles — Types — Terms and definitions*.

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 following definitions apply.

3.1 dipped beam inclination: Inclination, for measuring the dipped beam variation for which it is necessary to choose only one reference point within the luminous distribution in the beam, defined

- either as the angle, expressed in milliradians, between the direction of a characteristic point, chosen by the manufacturer, in the luminous distribution of the headlamp and the horizontal plane;
- or by the tangent of that angle, expressed in percent inclination (since the angles are small 1 % is equal to 10 mrad).

If the inclination is expressed in percent inclination [with negative values denoting downward inclination and positive values denoting upward inclination (see figure 1)], it can be calculated from the following formula:

$$\frac{h_1 - h_2}{l} \times 100$$

where

h_1 is the height above the ground, in millimetres, of a characteristic point of the cut-off on the opposite side to traffic¹⁾, measured on a vertical screen perpendicular to the vehicle longitudinal median plane, placed at a horizontal distance l ;

h_2 is the height above the ground, in millimetres, of the reference centre of the headlamp;

l is the distance, in millimetres, from the screen to the centre of the headlamp.

NOTE 2 If the headlamp is fixed to the handlebars or to the frame of the vehicle and has not been reset after load variation, the variation of the dipped beam inclination is

1) For European-type dipped beams, this part of the cut-off is therefore independent of the characteristic point chosen.