

Specification for

Cycle rear lamps

Co-operating organizations

The Automobile Engineering Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- British Road Services
- D.S.I.R. — Road Research Laboratory*
- Institution of Mechanical Engineers
- Institution of Mechanical Engineers (Automobile Division)
- Ministry of Transport*
- Municipal Passenger Transport Association (Incorporated)
- Public Transport Association (Incorporated)
- Society of Motor Manufacturers and Traders, Ltd.*
- War Office

The Government departments and industrial organization marked with an asterisk in the above list, together with the following, were directly represented on the Committee entrusted with the preparation of this standard:

- Association of Dry Battery Manufacturers
- British Cycle and Motor Cycle Industries Association, Ltd.
- British Plastics Federation
- Cyclists' Touring Club
- Electric Lamp Industry Council
- Glass Manufacturers' Federation
- Illuminating Engineering Society
- National Physical Laboratory (D.S.I.R.)
- Royal Society for the Prevention of Accidents

This British Standard, having been approved by the Automobile Engineering Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 9 September 1963

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Foreword

This standard makes reference to the following British Standards:

BS 12, *Portland cement (ordinary and rapid hardening)*.

BS 397, *Primary cells and batteries*.

BS 941, *Filament lamps for automobiles and cycles*.

BS 1224, *Electroplated coatings of nickel and chromium*.

In response to a request from the Ministry of Transport for the preparation of a British Standard for vehicle rear lamps to which the regulations made under the Road Transport Lighting Acts could refer, BS 2516¹⁾ was prepared and published in 1954.

In the preparation and during the operation of this standard it has become clear that pedal cycle rear lamps are a special case, owing to the nature of the sources of power and the special needs for a vehicle moving more slowly than the general traffic stream. At the same time the rider is more vulnerable in the event of an accident. Accordingly, a separate standard has been prepared specifically to deal with this subject.

The specification requires that battery lamps now provide the requisite luminous intensity for a minimum period from a battery. Dynamo sets must provide the requisite luminous intensity when the speed of the cycle is 9 mile/h (14.5 km/h).

Certain combinations of existing batteries and filament lamps are known to enable luminous intensity and life requirements to be met. These are listed in Appendix B. The use of these combinations is not mandatory for compliance with the standard. The Committee preparing this standard considered making it so, but it was felt that the other provisions were adequate without restricting possible developments of design.

NOTE 1 Where metric equivalents are stated, the figures in British units are to be regarded as standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, "*Conversion factors and tables*".

NOTE 2 In place of the customary, but incorrect, use of the pound and kilogramme as units of force, the units called pound-force (abbreviation lbf) and kilogramme-force (abbreviation kgf) have been used in this standard. These are forces which, when acting on a body of mass one pound, or kilogramme respectively, give it an acceleration equal to that of standard gravity.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ BS 2516:1954, "*Tail lights for vehicles including cycles*".

1 Scope

This British Standard is concerned with requirements for electric rear lamps for pedal cycles, viz. the colour of the light, its intensity at various angles, switch performance, resistance to vibration, corrosion, dust, oil and the penetration of moisture.

For primary cell battery lamps a minimum period is specified during which the luminous intensities from the same battery must not fall below stated values. Combinations of filament lamps and batteries are given which are known to be capable of meeting the requirements when used in conjunction with a suitable optical system.

For secondary (rechargeable) cell battery lamps, a test method and requirements are specified concerning the duration for which the luminous intensities are maintained before recharging is necessary, and the instructions for use and maintenance.

2 Definitions

For the purpose of this standard, the following definitions apply:

rear lamp

a lamp which denotes the rear of a cycle by emission of red warning light. It usually consists of a body, a lens of red transparent material, a light source with a reflector and may include a switch. In many cases, the energy supply for the light source is incorporated within the body. In such cases, this supply is regarded as part of the lamp

sample unit

a rear lamp, as used, including energy supply (e.g. battery or dynamo) and switch if appropriate, submitted to the tests of this standard

rear lamp axis

a line through the lamp which, when the lamp is mounted in its intended orientation on the cycle, is parallel to the longitudinal axis of the cycle and passes through the centre of the light source

system

a system comprises front lamp, rear lamp, battery and/or dynamo, and interconnecting cable

3 Components to be specified

The maker of a battery-operated rear lamp shall declare the battery or batteries with which it is designed to be used and the filament lamp appropriate to each battery.

For dynamo lamps a filament lamp shall be declared with which the luminous intensity requirement can be met for a given minimum road speed.

Any additional load (e.g. front lamp), which is normally connected to the power supply, shall also be declared.

4 Luminous intensity

The observed values in candelas shall be not less than those shown in Table 1 within the solid angle defined by planes joining test points at which equal intensities are required. These shall be achieved, in the case of a battery lamp, with the voltage measured at the end of the test given in 5.1 or 5.3, as relevant, and in the case of a dynamo lamp, with 1.5 lumens output from the filament lamp.

In defining angles the geometric centre of the incandescent filament shall be taken as the light source.

In locating the test points, the following nomenclature shall apply. The line formed by the intersection of a vertical plane through the filament of the filament lamp with the test screen is designated "V".

The line formed by the intersection of a horizontal plane through the filament of the filament lamp with the test screen is designated "H".

The point of intersection of these two lines is designated "H-V". The rear lamp axis shall pass through H-V.

The other points on the screen are designated by similar symbols to indicate the number of degrees of arc above or below H and the number of degrees of arc to the left and to the right of V when the screen is viewed from the position of the rear lamp.