

Specification for

Railway signalling lamps

ICS 29.140.99; 45.040

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee CPL/34/1, Electric lamps, upon which the following bodies were represented:

- British Lighting Association for the Preparation of Standards (BRITLAPS)
- Chartered Institution of Building Services Engineers
- Consumer Policy Committee of BSI
- Electricity Association
- Engineering Equipment and Materials Users' Association
- Institution of Lighting Engineers
- Lighting Industry Federation Ltd.
- London Regional Transport
- Society of Motor Manufacturers and Traders Ltd.

The following body was also represented in the drafting of the standard, through sub-committee CPL/34/1/9:

British Railways Board

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Foreword

This British Standard has been prepared by Technical Committee CPL/34/1 and it supersedes BS 469:1960 which is withdrawn.

This revision has taken the opportunity of changing the presentation of the information to reflect current international practice by the introduction of lamp data sheets in Section 2, and of updating cross-references and drawings.

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.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 18, an inside back cover and a back cover.

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Section 1. General

1 Scope

This British Standard specifies the requirements for railway signalling lamps and gives the testing procedures required to establish conformity to the requirements, based upon statistical evaluation against an acceptable non-conformity level.

2 Normative references

This British Standard incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on page 18. Subsequent amendments to, or revisions of, any of these publications apply to this British Standard only when incorporated in it by updating or revision.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1

rated value

the value specified in the relevant lamp standard or assigned by the manufacturer or responsible supplier

3.2

double-pole lamp

a double-filament lamp in which both filaments are connected permanently in parallel

3.3

triple-pole lamp

a double-filament lamp in which one end of each filament is connected to the cap shell and the other ends of the filaments are connected one to each contact plate

3.4

light centre

the geometrical centre of the incandescent part of a filament (main or auxiliary) or, in the case of bow filaments, the centre of the enclosing rectangle

3.5

reference plane

a plane defined with reference to the cap or base and with respect to which the position of certain parts of the lamp are measured

3.6

reference axis

an axis defined with reference to the cap or base and with respect to which the position of certain parts of the lamp are measured

3.7

light centre length

the distance between the centre of the rectangle enclosing the luminous filament section or a defined point of the filament and the reference plane

3.8

axial error (lateral deviation)

in lamps other than those with offset filaments, the perpendicular distance of the light centre from the axis of the cap

3.9

initial readings

the photometric and electrical values measured at the end of the ageing period

3.10

life

the total time for which a lamp has been operated before it becomes useless, or, according to specific criteria, is considered to be so

3.11**batch**

all the lamps of a single type manufactured by a single manufacturer, within the same production time frame and under environmental and production conditions which can be considered to be uniform

3.12**inspection test quantity (ITQ)**

the sample of lamps required to be inspected for conformity to mechanical and physical requirements

3.13**rating test quantity (RTQ)**

the sample of lamps required to be tested for electrical and photometric values

3.14**life test quantity (LTQ)**

the sample of lamps required to be tested for conformity to the life requirement

3.15**reference number**

an identification number defining a type of lamp, with regard to the particular requirements of this specification

4 Requirements**4.1 General**

Lamps shall be so designed and constructed that in normal use they present no danger to the user or their surroundings.

4.2 Marking

The following information shall be marked on the lamps, and shall remain legible when tested in accordance with **A.2.2**:

- a) reference number;
- b) rated voltage;
- c) rated wattage;
- d) trade name or mark of the manufacturer or responsible vendor;
- e) month and year of manufacture¹⁾;
- f) where specified on the lamp data sheet, the letter “M” shall also appear on the lamp cap adjacent to the main filament contact plate.

Any additional marking shall be such as to allow no confusion with these markings.

Where, on some types of lamps, limited space is available for marking, the reference number and month and year of manufacture shall appear on the immediate lamp wrapping or container.

4.3 Dimensions and filament arrangements

The dimensions and filament arrangements shall be as specified in the respective lamp data sheets (see Section 2).

4.4 Caps

Where applicable, the dimensions of caps of finished lamps shall conform to BS EN 60061-1 or BS 1050.

The shell of bayonet caps shall be of brass or nickel plated brass. Caps shall be so constructed and attached to the bulbs that during the inspection test and on completion of the life test they shall withstand a torsion of either 2.8 N·m in the case of B22 (3-pin) caps, or 1.1 N·m in the case of B15 caps, in both cases when these torsions are applied using the holders shown in Figure 1 and Figure 2 respectively.

¹⁾ It is permissible to use an abbreviated code.

4.5 Insulation resistance

Except in the case of the triple-pole lamps, the insulation resistance between the contact plates and the shell of the cap shall be not less than 50 M Ω in the case of B22 (3-pin) caps and 10 M Ω in the case of B15 caps.

4.6 Cap solder

The cap solder shall be applied in such quantity as to allow proper engagement of the cap in the lampholder. Contact plates shall be evenly soldered to ensure satisfactory electrical contact in the appropriate lampholder.

If hard solder is used, it shall have a softening point in excess of 290 °C.

NOTE 1 The use of hard solder should be by agreement between the manufacturer or responsible vendor and the user.

NOTE 2 It is not essential that the surface of the contact plate should be completely covered with solder.

4.7 Initial readings

The electrical and photometric ratings shall conform to the values given on the relevant data sheets (see Section 2).

4.8 Life

The life shall conform to the values given on the relevant data sheets (see Section 2).



