BS 5489-2:2016

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Code of practice for the design of road lighting —

Part 2: Lighting of tunnels

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Publishing and copyright information

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 36, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 5489 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 April 2016. It was prepared by Subcommittee EL/1/3,*Tunnel lighting,* under the authority of Technical Committee EL/1, *Light and lighting*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This part of BS 5489 supersedes BS 5489-2:2003+A1:2008, which is withdrawn.

Relationship with other publications

BS 5489 consists of two parts:

- Part 1: *Lighting of roads and public amenity areas*;
- Part 2: *Lighting of tunnels*.

Information about this document

This is a full revision of the standard to align the standard with current best practice.

The aim of this standard is to promote wider understanding of the lighting of tunnels for motorized and mixed traffic and to give guidance on the design decisions that need to be made. It contains recommendations that are essential to the design process and that will enable production of designs that are appropriate and justifiable.

Use of this document

As a code of practice, this part of BS 5489 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this part of BS 5489 is expected to be able to justify any course of action that deviates from its recommendations.

It has been assumed in the preparation of this part of BS 5489 that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

The design of lighting for tunnels is a complex process with many different aspects and therefore it is important that this standard is read thoroughly to ensure that all relevant issues are taken into account.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

The word "should" is used to express recommendations of this standard. The word "may" is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word "can" is used to express possibility, e.g. a consequence of an action or an event.

Notes and commentaries are provided throughout the text of this standard. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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1 Scope

This part of BS 5489 gives recommendations for the design of the lighting of tunnels for motorized and mixed traffic. It is applicable to all types of road, including motorways.

This standard is applicable to those aspects of lighting that are concerned with traffic safety, such as arrangements, levels and other parameters including daylight.

This standard is not applicable to aspects of lighting that concern aesthetics.

This part of BS 5489 is not applicable to the lighting of underpasses or subways reserved for pedestrians or cyclists, which is covered in BS 5489-1.

NOTE 1 This part of BS 5489 is based on photometric considerations, and all values of luminance and illuminance are maintained levels.

NOTE 2 In this standard "lamp" and "lamps" also include LED light sources.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 667, *Illuminance meters – Requirements and test methods*

BS 7920, *Luminance meters – Requirements and test methods*

BS EN 12665, *Light and lighting – Basic terms and criteria for specifying lighting requirements*

BS EN 13201-2, *Road lighting – Part 2: Performance requirements*

BS EN 13201-3:2015, *Road lighting – Part 3: Calculation of performance*

BS EN 13201-4, *Road lighting – Part 4: Methods of measuring lighting performance*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this part of BS 5489, the terms and definitions given in BS EN 12665, BS EN 13201-2, BS EN 13201-3 and the following apply.

3.1.1 access zone

part of the open road immediately in front of an entrance portal, covering the distance over which an approaching driver can see into a tunnel

3.1.2 access zone length

distance between the stopping sight distance point ahead of an entrance portal and the entrance portal itself

3.1.3 access zone luminance

average luminance contained in a conical field of view, subtending an angle of 20° with the apex at the position of the eye of an approaching driver and aimed at the centre of the entrance portal

NOTE Access zone luminance is assessed from a point at a distance equal to the stopping sight distance from the entrance portal and 1.5 m above the middle of the relevant carriageway or traffic lane.