

Australian/New Zealand Standard™

Lighting for roads and public spaces

**Part 3.1: Pedestrian area (Category P)
lighting—Performance and design
requirements**



AS/NZS 1158.3.1:2020

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The following are represented on Committee LG-002:

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Centre for Pavement Engineering Education
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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 1158.3.1:2018.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee LG-002, Lighting for Roads and Public Spaces, to supersede AS/NZS 1158.3.1:2005, *Lighting for roads and public spaces, Part 3.1: Pedestrian area (Category P) lighting—Performance and design requirements*.

This Standard forms Part 3.1 of the AS/NZS 1158 series, which covers lighting schemes for the generality of roads and outdoor public areas.

The AS/NZS 1158 series consists of the following:

AS/NZS

- 1158 Lighting for roads and public spaces
- 1158.0 Part 0: Introduction
- 1158.1.1 Part 1.1: Vehicular traffic (Category V) lighting—Performance and design requirements
- 1158.1.2 Part 1.2: Vehicular traffic (Category V) lighting—Guide to design, installation, operation and maintenance
- 1158.2 Part 2: Computer procedures for the calculation of light technical parameters for Category V and Category P lighting
- 1158.3.1 Part 3.1: Pedestrian area (Category P) lighting—Performance and design requirements (this Standard)
- 1158.4 Part 4: Lighting of pedestrian crossings
- 1158.5 Part 5: Tunnels and underpasses
- 60598 Luminaires
- 60598.2.3 Part 2.3: Particular requirements—Luminaires for road and street lighting (IEC 60598-2-3, Ed.3.1 (2011) MOD)

SA/SNZ TS

- 1158 Lighting for roads and public spaces
- 1158.6 Part 6: Luminaires—Performance

The significant technical changes that have been made in this Standard in relation to the 2005 edition include the following:

- (a) Separation of previous Table 2.6 into the differing requirements for lighting of ‘local roads’ and ‘cyclist paths’.
- (b) Clarification of glare requirements for high intensity discharge luminaires and new requirements for SSL light sources.
- (b) Additional and revised layout rules for typical road layouts.
- (d) Additional information relating to SSL light sources.
- (e) Additional requirements for surround illuminance.
- (f) Updated data on the specification of minimum ingress protection requirements for various maintenance factors and requirements regarding assumed and actual maintenance regimes and maintenance intervals.
- (g) Additional lighting level for lighting of external car parking areas.
- (h) New requirements relating to energy measures if required.
- (i) Additional option for specifying minimum environmental spill levels for local roads.

This joint Standard is intended to be applied in its entirety in Australia and New Zealand; however, a number of differences exist with respect to the requirements that apply in each country. These are indicated by the qualification 'In Australia' or 'In New Zealand', or similar.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Statements expressed in mandatory terms in footnotes to tables are deemed to be requirements of this Standard.

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FOREWORD

The performance criteria for road and public space lighting schemes can include any or all of the three basic aims of—

- (a) facilitation of safe movement;
- (b) reduction of the fear of crime at night; and
- (c) contributing to the amenity of an area through increased aesthetic appeal.

However, as the most common primary aim of a scheme is that of safe movement of people, the series divides road and public space lighting into two broad categories — Category V lighting and Category P lighting, as defined in AS/NZS 1158.0.

This Standard sets out performance and design requirements for Category P lighting schemes having regard to the safe movement of pedestrians, degree of activity (of pedestrians and vehicles), the fear of crime and the need to enhance the amenity of the locality. It should be read in conjunction with AS/NZS 1158.2, which sets out calculation procedures.

Category P lighting is acknowledged to be an effective counter measure to the fear of crime.

The effects that blue light can have on human melatonin suppression and circadian rhythm disruption have begun to be explored extensively in the literature. However, there seems to be no definitive levels of amount, duration and timing which would give guidance to this document.

For each lighting subcategory described in this Standard, the light technical parameters (LTPs) and their prescribed values are both necessary and sufficient for the particular application. Conformance to this Standard will be achieved by meeting all the required values of the LTPs for the designated subcategory. A higher quality of lighting scheme can be achieved within a subcategory by, for example, increasing the minimum level of uniformity or reducing the glare allowable, or both.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE AND APPLICATION**1.1.1 Scope**

This Standard specifies performance and design requirements for Category P lighting schemes as described in AS/NZS 1158.0. It also specifies the luminaire data and other data that is needed to facilitate the lighting design and the assessment of conformance to the requirements of this Standard.

This Standard assigns various levels of required performance based on an assessment of degree of activity, fear of crime and the required aesthetic appeal (i.e. ‘amenity’). In achieving the required performance, attention is paid to minimizing adverse effects on the night time environment.

This Standard does not apply to roads in which one or a number of luminaires may be installed at irregular intervals on an otherwise unlit road, nor to additional luminaires installed in lit roads for reasons of increased security, including instances where such luminaires are typical of those used in Category P lighting schemes.

This Standard does not cover lighting intended specifically as security lighting for building exteriors, nor does it cover lighting for video surveillance. However, where video surveillance is provided, the lighting principles and performance requirements expressed in this Standard still apply.

This Standard does not cover lighting requirements for ‘wayfinding’ or ‘waypoint’ lighting where lights are intended to provide a guide rather than to provide a particular level of illumination.

This Standard does not apply in Australia to public transport areas where the mandatory requirements of the *Disability Discrimination Act 1992 (Cth)* and subordinate instruments including the *Disability Standards for Accessible Public Transport 2002 (Cth)* (DSAPT) and the *Disability (Access to Premises – Buildings) Standards 2010 (Cth)* (Premises Standards) are applicable. See Clause 2.1.

This Standard is intended to be read in conjunction with AS/NZS 1158.0, AS/NZS 1158.2, AS/NZS 1158.1.1, AS/NZS 60598.2.3 and SA/SNZ TS 1158.6, which specify related provisions that may require consideration.

1.1.2 Application

Subject to the requirements of applicable laws, the choice of whether to install a scheme of road or public space lighting in conformance to this Standard and, if so, which subcategory of lighting is appropriate, rests with the client (usually the applicable road controlling authority). This decision is typically based on factors such as night-time pedestrian traffic flows and other patterns of use.