

Australian/New Zealand Standard™

**Lighting for roads and public spaces**

**Part 1.1: Vehicular traffic (Category V)  
lighting—Performance and design  
requirements**



## **AS/NZS 1158.1.1:2005**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee LG-002, Lighting for Roads and Public Spaces. It was approved on behalf of the Council of Standards Australia on 29 April 2005 and on behalf of the Council of Standards New Zealand on 6 May 2005. This Standard was published on 7 September 2005.

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The following are represented on Committee LG-002:

Astronomical Society of Australia  
Australian Electrical and Electronic Manufacturers Association  
Australian Industry Group  
Australian Local Government Association  
Energy Supply Association of Australia  
IES: The Lighting Society  
Ingenium  
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# Australian/New Zealand Standard™

## Lighting for roads and public spaces

### Part 1.1: Vehicular traffic (Category V) lighting—Performance and design requirements

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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 1158.1.1:1997, *Road lighting*, Part 1.1: *Vehicular traffic (Category V) lighting—Performance and installation design requirements*.

*This Standard incorporates Amendment No. 1 (February 2009), Amendment No. 2 (June 2013) and Amendment No. 3 (October 2015). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

This Standard forms Part 1.1 of the AS/NZS 1158 series, which covers lighting schemes for the generality of roads and outdoor public areas. The series title has recently been changed from ‘Road lighting’ to reflect an expansion in the scope of the series.

A3 | 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
- 1158.4 Part 4: Lighting of pedestrian crossings
- 1158.5 Part 5: Tunnels and underpasses

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) the discouragement of illegal acts; 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 lighting into the two following broad categories:

- (i) *Category V lighting* Lighting that is applicable to roads on which the visual requirements of motorists are dominant, e.g. traffic routes.
- (ii) *Category P lighting* Lighting that is applicable to roads and other outdoor public spaces on which the visual requirements of pedestrians are dominant, e.g. local roads, outdoor shopping precincts, outdoor car parks.

This Standard sets out performance and design requirements for Category V lighting schemes, having regard to the presence, volume and speed of both pedestrians and vehicles. A3 | It should be read in conjunction with AS/NZS 1158.1.2 and with AS/NZS 1158.2 for calculation procedures.

A1 | The requirements set out in this Standard include limitations on the lamp type that may be used in any given application, and on the maximum allowable wattage loss of the associated lamp ballasts. These requirements are part of measures to make road lighting more efficient in energy use and hence to minimize the associated greenhouse gas emissions.

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Category V lighting is acknowledged to be an effective accident counter-measure. It has been demonstrated that Category V lighting can provide significant community benefits and that the costs involved in providing the lighting can be offset by the financial returns from the reduction in road accidents. Studies in Australia and New Zealand, and in other countries, have led to the conclusion that Category V traffic route lighting is likely to reduce night time casualty accidents by about 30%, taken over the road network. See References 6, 12 and 16 in Appendix B. Further information regarding this is given in AS/NZS 1158.1.2.

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. Compliance with 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.

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

- (A) Clarification of scope regarding single-luminaire lighting schemes.
- (B) Clarification of the application of the Standard.
- (C) Recommendations regarding the colour of lamps and requirements regarding lamp lumen values used.
- (D) Specification of minimum ingress protection requirements for various maintenance factors and requirements regarding assumed and actual maintenance regimes and maintenance intervals.
- (E) Alteration of the observer positions in Australia and New Zealand.
- (F) Minor revisions and clarifications to the treatment of curves.
- (G) Revision of the design approach to be used for intersections involving raised medians and similar.
- (H) Consideration of energy consumption and efficiency.
- (I) Closer co-ordination of the Standard content and format with that of AS/NZS 1158.3.1 (P Category lighting).

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 notes to tables and figures are deemed to be requirements of this Standard.

## CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	5
1.2 APPLICATION .....	5
1.3 REFERENCED DOCUMENTS.....	5
1.4 DEFINITIONS.....	5
1.5 SYMBOLS AND ABBREVIATIONS.....	5
SECTION 2 OBJECTIVES AND LIGHT TECHNICAL PARAMETERS	
2.1 ROAD CLASSIFICATION .....	6
2.2 GENERAL OBJECTIVE.....	6
2.3 DESIGN OBJECTIVES.....	6
2.4 LIGHTING SUBCATEGORIES AND THEIR APPLICATION .....	7
2.5 LIGHT TECHNICAL PARAMETERS.....	10
2.6 LUMINAIRE REQUIREMENTS .....	11
2.7 DESIGN LAMP LUMEN VALUE.....	12
2.8 <b>'Text deleted'</b>	
2.9 ENERGY AUDIT .....	13
2.10 MAINTENANCE OF LIGHT TECHNICAL PARAMETERS .....	13
2.11 BASIS OF COMPLIANCE.....	14
SECTION 3 DESIGN METHODS AND RULES	
3.1 BASIS OF DESIGN.....	16
3.2 STRAIGHT SECTIONS .....	18
3.3 CURVES .....	25
3.4 INTERSECTIONS AND OTHER SPECIFIED LOCATIONS .....	29
3.5 ISOLATED INTERSECTIONS.....	37
SECTION 4 PROVISION OF LUMINAIRE DATA .....	40
APPENDICES	
A REFERENCED DOCUMENTS.....	40
B BIBLIOGRAPHY .....	41
C DESIGN BRIEF .....	42
D DOCUMENTATION REQUIRED FOR DEMONSTRATING COMPLIANCE OF THE DESIGN WITH THIS STANDARD .....	43
E LUMINAIRE MAINTENANCE FACTORS .....	45

## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard**  
**Lighting for roads and public spaces**

Part 1.1: Vehicular traffic (Category V) lighting—Performance and design requirements

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

A1 | This Standard specifies performance and design requirements, including requirements relating to the energy efficiency of the lamps and ballasts used, for Category V lighting schemes as described in AS/NZS 1158.0. It also specifies the luminaire data and other design data that is needed to facilitate the lighting design and the assessment of compliance with the requirements of this Standard.

In general, with the exception of lighting for isolated intersections (refer to Clause 3.5) this Standard does not apply to single-luminaire schemes in otherwise unlit roads, 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 V lighting schemes.

A3 | This Standard is intended to be read in conjunction with AS/NZS 1158.0, AS/NZS 1158.1.2 and AS/NZS 1158.2.

NOTE: Computer based calculation procedures applicable to the design of Category V lighting are given in AS/NZS 1158.2. Guidance on the design, installation, operation and maintenance of Category V lighting is provided in AS/NZS 1158.1.2.

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**1.2 APPLICATION**

Subject to the requirements of applicable laws, the choice of whether to install a road lighting scheme in compliance with 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 traffic flows and other patterns of use.

**1.3 REFERENCED DOCUMENTS**

A list of the Standards and other documents referred to in this Standard is given in Appendix A.

NOTE: A number of additional documents which are considered useful sources of information are listed in Appendix B.

**1.4 DEFINITIONS**

For the purpose of this Standard, the definitions given in AS/NZS 1158.0 apply.

**1.5 SYMBOLS AND ABBREVIATIONS**

For the purpose of this Standard, the symbols and abbreviations given in AS/NZS 1158.0 apply.