

Australian/New Zealand Standard™

**Lighting for roads and public spaces**

**Part 2: Computer procedures for the  
calculation of light technical parameters  
for Category V and Category P lighting**



## **AS/NZS 1158.2:2005**

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 13 May 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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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 either Standards Australia or Standards New Zealand at the address shown on the back cover.

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*This Standard was issued in draft form for comment as DR 04282.*

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# Australian/New Zealand Standard™

## Lighting for roads and public spaces

### Part 2: Computer procedures for the calculation of light technical parameters for Category V and Category P lighting

Originated as AS 1158.2—1986.  
Revised and redesignated AS/NZS 1158.2:2005.  
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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 1158.2:1986, *Street lighting, Part 2: Computer procedures for the calculation of light technical parameters for Category A lighting*.

*This Standard incorporates Amendment No. 1 (August 2008). 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 2 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.

The AS/NZS 1158 series is currently being revised and, when that process is complete, it will consist 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 installation design requirements
1158.1.3	Part 1.3: 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 (this Standard)
1158.3.1	Part 3.1: Pedestrian area (Category P) lighting—Performance and installation design requirements
1158.4	Part 4: Supplementary lighting at pedestrian crossings
1158.6	Part 6: Luminaires

NOTE: Until the revision of this series is complete, some of the above Standards might have as a main title 'SAA Public Lighting Code' or 'Road lighting'.

For each lighting subcategory described in this Series of Standards the light technical parameters (LTPs) and their prescribed values are both necessary and sufficient for the particular application. Compliance with the relevant 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) Updating from Category A to Category V classification and expansion of scope to include Category P lighting.
- (b) Relocation of the observer position to—
  - (i) in Australia—the centre of traffic flow for all relevant light technical parameters; and
  - (ii) in New Zealand—the centre of each lane for all relevant light technical parameters

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.

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

**Part 2: Computer procedures for the calculation of light technical parameters  
 for Category V and Category P lighting**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard specifies the computer-based design procedures applicable to Categories V and P lighting for the calculation of light technical parameters (LTPs), as required, for the design or evaluation of road lighting in accordance with the requirements of AS/NZS 1158.1.1 and AS/NZS 1158.3.1.

It gives the basic formulae for the LTPs and the associated grid of points, (i.e. the calculation field), over which the calculation is to be made. The source code of one computer program, designated SAA STAN, together with a shell program designated STANSHELL, are given for the calculation of the LTPs for Category V lighting on straight sections of road.

This source code and shell program are available on a CD ROM provided in a pocket inside the back cover of this Standard.

Also given are general requirements for computer programs used to calculate LTPs for other road and public space elements in both Category V and P lighting, luminaire light distribution and road surface reflection input data and computer program test data.

## NOTES:

- 1 See AS/NZS 1158.1 and AS/NZS 1158.3.1 for information on the types of road for which Category V and Category P lighting, respectively, are appropriate.
- 2 It is expected that persons using this Standard will have some expertise in lighting design and be familiar with the nature of computer generated data.
- 3 The requirements regarding the use of the program SAA STAN are described in Section 4 and other relevant information is given in Appendices A, B and C.

**1.2 REFERENCED DOCUMENTS**

The following Standards and other documents are referred to in this Standard:

## 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 installation design requirements
1158.1.3	Part 1.3: Vehicular traffic (Category V) lighting—Guide to design, installation, operation and maintenance
1158.3.1	Part 3.1: Pedestrian area (Category P) lighting—Performance and installation design requirements
3827	Lighting system performance—Accuracies and tolerances
3827.1	Part 1: Overview and general recommendations