AS/NZS 1158.6:2010

Australian/New Zealand Standard™

Lighting for roads and public spaces

Part 6: Luminaires

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 16 December 2009 and on behalf of the Council of Standards New Zealand on 23 December 2010.
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The following are represented on Committee LG-002:

Astronomical Society of Australia
Australian Industry Group
Australian Local Government Association
CIE Australia Inc.
Energy Networks Association
IES: The Lighting Society
Ingenium
Lighting Council of Australia
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Part 6: Luminaires

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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, as a revision of AS/NZS 1158.6—2004, *Lighting for roads and public spaces*, Part 6: *Luminaries*.

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

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
1158.3.1 Part 3.1: Pedestrian area (Category P) lighting—Performance and design requirements
1158.4 Part 4: Lighting at pedestrian crossings
1158.5 Part 5: Tunnels and underpasses
1158.6 Part 6: Luminaires (this Standard)

The objective of this Standard is to set out the requirements for the design, construction, performance and testing of road lighting luminaires to ensure that they will be suitable for the operating and environmental conditions to which they will be subjected in service.

Road lighting luminaires must withstand, and be capable of operating under, adverse conditions, including the effects of salt spray, industrially contaminated atmospheres, fog, smoke, dust storms, snow, ultraviolet radiation, driving rain, wind and traffic-induced vibration.

The requirements of this Standard have been formulated on the basis that luminaires will have a target service life of at least 20 years. These requirements specify the use of materials recognized at the time of writing to be effective for the relevant application. This is not intended to discourage the introduction of new technology, but new materials and methods of construction will be considered for future inclusion only after evidence of satisfactory long-term performance has been provided.

The significant technical change made in this Standard is to include specifications for other than what have been, until recently, the traditional road lighting luminaires. There is a growing emphasis on energy efficiency in road lighting and the consequential reduction in greenhouse gas emissions. Of particular interest is the availability of luminaires with T5 linear or compact fluorescent lamps. The use of these lamps and the associated electronic control gear offers significant energy savings in Category P lighting schemes. Major trials of these luminaires suggest that these luminaires are as reliable as those currently installed and that there is no technical reason preventing their wide-scale installation*.

Other emerging technology, not yet proven for general use by field experience, is discussed in Appendix A. These include new generation metal halide and LED lamps, and centralised electronic internet based road lighting control systems for monitoring lighting schemes.

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* Alec Fisher, Michael Brien and Karman Wang. *Energy efficient luminaires for local road lighting—a trial*, (IESANZ,28,4,2008).

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.

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1.1 SCOPE

This Standard applies to all luminaires, with or without integral control gear, that are intended for use in Category V lighting schemes in accordance with AS/NZS 1158.1.1 and in Category P schemes in accordance with AS/NZS 1158.3.1.

The requirements set out are, in general, based on engineering practices, construction materials and components that practical experience in the field over many years has shown to be most conducive to luminaires achieving their target service life. An example of this approach is the inclusion in this Standard of luminaires with T5 linear or compact fluorescent lamps and the associated electronic control gear after satisfactory performance over several years in a major trial.

It should be noted that departure from these requirements can affect the life of the luminaire, in some cases significantly. Careful evaluation of newer approaches is required to ensure that the expected performance outcomes are realistic and that the risks of implementation are well considered.

NOTE: Guidance on some alternative materials and technologies is given in Appendix A.

1.2 APPLICATION

Reference is made in a number of places in this Standard to AS/NZS 60598.1. Where any conflict arises between AS/NZS 60598.1 and this Standard, the requirements of this Standard shall apply.

1.3 REFERENCED DOCUMENTS

The documents referred to in this Standard are listed in Appendix B.

1.4 DEFINITIONS

For the purpose of this Standard, the definitions given in AS/NZS 1158.0 and, where applicable, AS/NZS 60598.1 apply. If it occurs that the relevant definitions in these two Standards conflict, those in AS/NZS 1158.0 shall take precedence.

1.5 ENVIRONMENTAL CONDITIONS

It is anticipated that a luminaire conforming to this Standard will be capable of having an effective service life of at least 20 years under the following environmental conditions:

(a) Ambient temperature (shade)

(i) In Australia from –10°C to 40°C.

(ii) In New Zealand from –10°C to 25°C.

NOTE: In Australia summer temperatures may exceed 40°C in some locations.