SA/SNZ TS 1158.6:2015
(Incorporating Amendment No. 1)

SA/SNZ TS 1158.6:2015

Technical Specification

Lighting for roads and public spaces

Part 6: Luminaires - Performance

STANDARDS Australia

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

This Joint Australian/New Zealand Technical Specification 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 25 September 2015 and on behalf of the Council of Standards New Zealand on 24 September 2015.
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The following are represented on Committee LG-002:

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PREFACE

This Technical Specification was prepared by the Joint Standards Australia/Standards New Zealand Committee LG-002, Lighting for Roads and Public Spaces, to supersede product specification information formerly in the superseded AS/NZS 1158.6:2010, *Lighting for roads and public places*, Part 6: *Luminaires*. Its primary function is for procurement guidance. AS/NZS 60598.2.3 supersedes AS/NZS 1158.6:2010 for safety requirements.

This Standard incorporates Amendment No. 1 (January 2018). 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.

The principal difference between this Technical Specification and AS/NZS 1158.6:2010 is this separation of the safety requirements to AS/NZS 60598.2.3 and the creation of an Australian and New Zealand Technical Specification (i.e. this document) for product performance. In addition, within this Technical Specification are requirements for solid state lighting (SSL) light sources.

The minimum safety requirements for road lighting luminaires are provided in AS/NZS 60598.2.3, *Luminaires*, Part 2.3: *Particular requirements—Luminaires for road and street lighting*.

This Technical Specification was developed to provide a document that defines enhanced luminaire performance and durability provisions to ensure effective luminaire performance in the varying operating and environmental conditions to which they may be subjected in service in Australia and New Zealand. Luminaires need to withstand, and be capable of operating under, adverse conditions, including the effects of salt spray, high temperatures, industrially contaminated atmospheres, fog, smoke, dust storms, snow, ultraviolet radiation, driving rain, wind and traffic-induced vibration.

This Technical Specification 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 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
SA/SNZ TS		
1158.6	Part 6:	Luminaires—Performance (this Technical Specification)

The terms ‘normative’ and ‘informative’ have been used in this Technical Specification. A ‘normative’ reference is an integral part of a Technical Specification, whereas an ‘informative’ reference is only for information and guidance.

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FOREWORD

The development of solid state lighting (SSL) as a source for road lighting has been rapid and is continuing.

The creation of this Technical Specification is intended to facilitate the implementation of SSL light sources in luminaires for road and public space lighting.

Some important issues concerning SSL luminaires, such as luminaire lifetime and luminaire maintenance factors, have not been addressed in the revision because of a lack of international consensus about their treatment. It is expected that this Technical Specification will undergo further revision as consensus about the treatment of these issues is reached and other factors influencing service life become clear.

Industry expectations consider that luminaires will have a target service life of at least 20 years. This requirement nominates recommended materials recognized at the time of writing to be effective for the relevant application. The introduction of new technologies is encouraged with appropriate caution.

Emerging technologies are discussed in Appendix A. This includes autonomous centralized, and adaptive road lighting control systems for monitoring lighting schemes.

The requirements set out in this Technical Specification are, in general, based on engineering practices, construction materials and components that practical experience in the field over many years in Australia and New Zealand has shown to be most conducive to luminaires achieving their target service life.

Departure from the requirements of this Technical Specification may affect the life of the luminaire, in some cases significantly. Careful evaluation of newer approaches is necessary to ensure that the expected performance outcomes are realistic and that the risks of implementation are well considered.

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Australian/New Zealand Technical Specification
Lighting for roads and public spaces

Part 6: Luminaires—Performance

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Technical Specification sets out requirements for luminaires that are intended for use in Category V lighting schemes in accordance with AS/NZS 1158.1.1, and in Category P lighting schemes in accordance with AS/NZS 1158.3.1. This Technical Specification covers the durability requirements necessary to meet service life, performance and marking, as an aid to installation and maintenance of luminaires, and the provision of supporting documentation. Whilst this Technical Specification is not mandatory, requirements of this specification are in addition to the safety requirements of AS/NZS 60598.2.3. This Technical Specification includes recommendations and requirements for solid state lighting (SSL) light sources.

This Technical Specification does not apply to active on-road markers.

1.2 REFERENCED DOCUMENTS

The documents referred to in this Technical Specification are listed in Appendix B.

NOTE: Documents that provide additional information are listed in the Bibliography.

1.3 DEFINITIONS

For the purpose of this Technical Specification, the definitions given in AS/NZS 1158.0 and, where applicable, AS/NZS 60598.2.3 apply, in addition to the definitions below.

1.3.1 Light-emitting diode (LED)

Solid state device embodying a p-n junction, emitting visible radiation when excited by an electric current.

NOTES:

1 This definition does not include enclosure(s) and terminals.

2 The output of an LED is a function of its physical construction, material used and exciting current. The optical emission may be in the ultraviolet, visible, or infrared wavelength regions.

3 The term ‘LED’ normally refers to the LED die (or chip), or LED package. It is also used as a generic term representing the technology.

4 Instead of using the general term ‘LED’, a specific brand and model needs to be used when reporting product performance (such as luminous flux, colour rendering, lifetime etc.).

[IEC 60050-845, 845-04-40, modified and CIE S 017/E: 2011 ILV, 17-662, modified]

1.3.2 Luminaire efficacy rating (LER)

The ratio of the total luminaire luminous flux, in lumens, and the total luminaire power input, in watts. (Unit: lm/W).