

Australian Standard[®]

Traffic signal lamps

**Part 1: Lamps for 240 V a.c.
operation**

This Australian Standard was prepared by Committee LG/6, Road Traffic Signals. It was approved on behalf of the Council of Standards Australia on 11 February 1993 and published on 17 May 1993.

The following interests are represented on Committee LG/6:

Australian Chamber of Manufactures
Australian Electrical and Electronic Manufacturers Association
Australian Road Research Board
Austroads
Brisbane City Council
Department of Urban Services, A.C.T.
Metal Trades Industry Association of Australia
Roads and Traffic Authority, N.S.W.
VicRoads

Additional interests participating in preparation of standard:

Suppliers of traffic signal lamps
Photometric testing laboratories

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review, and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard' which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 91219.

Australian Standard[®]

Traffic signal lamps

**Part 1: Lamps for 240 V a.c.
operation**

First published as AS 4113.1—1993.

PREFACE

This Standard was prepared by the Standards Australia Committee on Road Traffic Signals. It is one of a number of Standards which set out requirements for the equipment associated with traffic signal installations, namely—

AS 2144	<i>Traffic signal lanterns</i>
AS 2339	<i>Traffic signal posts and attachments</i>
AS 2353	<i>Pedestrian push-button assemblies</i>
AS 2578	<i>Traffic signal controllers</i>
AS 2578.1	Part 1: <i>Physical and electrical compatibility</i>
AS 2703	<i>Vehicle loop detector sensors</i>
AS 2979	<i>Traffic signal mast arms</i>
AS 4113	<i>Traffic signal lamps</i>
AS 4113.1	Part 1: <i>Lamps for 240 V a.c. operation</i> (this Standard)
AS 4113.2	Part 2: <i>Lamps for a.c. operation at extra-low voltage</i>

The photometric performance of a traffic signal lantern is a function of the lantern lamp combination used. Until recently, the lamps used have universally been of the tungsten filament type designed for operation on a 240 V a.c. supply. With the emphasis now given to reducing energy usage in traffic signalling systems, traffic authorities are actively introducing or considering the introduction of lanterns with optical systems based on lamps operated at 10 V a.c. (see AS 4113.2).

This Standard applies to tungsten filament lamps for 240 V a.c. operation. Such lamps will be required for many years for replacement purposes because of the numbers of lanterns in service which utilize lamps of this type.

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	4
1.2 APPLICATION	4
1.3 REFERENCED DOCUMENTS	4
1.4 DEFINITIONS	5
1.5 SAFETY REQUIREMENTS	6
SECTION 2 MECHANICAL AND PHYSICAL REQUIREMENTS	
2.1 PHYSICAL ARRANGEMENT AND DIMENSIONS	7
2.2 MARKING	7
2.3 RESISTANCE TO COMPRESSION	7
2.4 RESISTANCE TO VIBRATION	7
2.5 PACKAGING	7
SECTION 3 ELECTRICAL AND PHOTOMETRIC REQUIREMENTS	
3.1 OPERATING VOLTAGE	9
3.2 WATTAGE	9
3.3 LUMINOUS FLUX	9
3.4 INTERNAL FUSE	9
3.5 LIFE PERFORMANCE	9
APPENDICES	
A PURCHASING GUIDELINES	13
B MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS STANDARD	14
C PROCEDURE FOR THE MEASUREMENT OF LAMP WATTAGE AND LUMINOUS FLUX	16
D COMPRESSION TEST FOR GLASS ENVELOPE	18
E METHOD OF DETERMINING I^2t VALUE FOR INTERNAL FUSE	19
F ACCELERATED LIFE TEST PROCEDURE FOR ROUTINE TESTING	20

STANDARDS AUSTRALIA

Australian Standard

Traffic signal lamps

Part 1: Lamps for 240 V a.c. operation

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for tungsten filament lamps designed for operation on a 240 V, 50 Hz a.c. electric supply for use in road traffic signal systems. It covers requirements for the mechanical and physical characteristics of such lamps, and their electrical and photometric performance and testing. Safety requirements are dealt with by reference to IEC 432 (see Clause 1.5).

NOTES:

- 1 The lamps are intended for use in traffic signal lanterns conforming with AS 2144. It should be noted that the use of a lamp complying with this Standard may not ensure that the selected lamp/lantern combination will satisfy the photometric performance requirements of AS 2144.
- 2 Appendix A gives guidance on the information which should be provided to facilitate the purchase of traffic signal lamps complying with this standard.
- 3 Alternative methods for determining compliance with this Standard are given in Appendix B.

1.2 APPLICATION The lamps specified in this Standard are intended for use in traffic signal lanterns conforming to AS 2144, as follows:

- (a) 67 W lamps—200 mm diameter general purpose lanterns.
- (b) 100 W lamps—300 mm diameter general purpose lanterns.
- (c) 150 W lamps—300 mm diameter extended range lanterns.

The above lamp wattages are maximum rated values; the rated wattage of a particular lamp may be less than these maximum values (see Clause 3.2).

1.3 REFERENCE DOCUMENTS The following documents are referred to in this Standard:

AS	
1199	Sampling procedures and tables for inspection by attributes
1199	Guide to AS 1199—Sampling procedures and tables for inspection by attributes
2144	Traffic signal lanterns
2490	Sampling procedures and charts for inspection by variables for percent defective
3140	Approval and test specification—Edison-type screw lampholders
3900	Quality management and quality assurance standards