AS 3168—1991

Australian Standard®

Approval and test specification — Fluorescent lamp ballasts

[Title allocated by Defence Cataloguing Authority: Ballast, lamp (Approval and test specification; fluorescent lamps) NSC 6250]

This Australian Standard was prepared by Committee LG/3, Auxiliaries for Discharge Lamps. It was approved on behalf of the Council of Standards Australia on 11 September 1990 and published on 11 February 1991.

The following interests are represented on Committee LG/3:

Association of Consulting Engineers, Australia

Australian Electical and Electronic Manufacturers Association

Confederation of Australian Industry

Consumer Electronics Suppliers Association

Department of Administrative Services

Electricity Supply Association of Australia

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This Standard was issued in draft form for comment as DR 88031.

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First published as AS C168—1963.
Second edition 1970.
Revised and redesignated AS 3168—1983.
Second edition 1991.

Incorporating:
Amdt 1—1991

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 6565 9

PREFACE

This Standard was prepared by the Standards Australia Committee on Auxiliaries for Discharge Lamps to supersede AS 3168—1983.

It is one of a series of approval and test specifications issued by the Association. These specifications are accompanied by a general specification AS 3100, *Definitions and general requirements for electrical materials and equipment*. The purpose of these specifications is to outline conditions which must be met to secure approval for the sale and use of electrical equipment in Australia. Only safety matters and related conditions are covered.

This Standard, other than in editorial presentation, closely follows IEC 920, *Ballasts for tubular fluorescent lamps—General and safety requirements*; however, some of the requirements of that publication have been modified to take account of local conditions. Also, this edition of this Standard includes requirements for ballasts of the electronic type.

Alignment of this Standard with IEC 920 includes the use of wooden blocks to determine the limitation of ballast heating, which replaces the former method of a test hood.

Modifications from IEC 920 include the rated maximum operating temperature of a ballast case (t_k) for electronic ballasts, and the addition of a requirement that capacitors in excess of 0.1 μF must comply with the relevant requirements of AS 2644, *Capacitors for use in discharge lamp circuits.*

All requirements for electronic ballasts, appearing throughout this Standard, are to be DELETED and reference made to AS 3134 (Int)

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STANDARDS AUSTRALIA

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Approval and test specification — Fluorescent lamp ballasts

This Specification shall be read in conjunction with AS 3100 (see also Clause 4 below).

1 SCOPE This specification prescribes safety requirements for reactive ballasts designed for use on a.c. supplies up to 1000 V at 50 Hz, associated with tubular fluorescent lamps having rated wattages, dimensions and characteristics as specified in AS 1201, and operated with or without a starter switch. It applies to the complete ballasts and to such components as reactors, transformers and capacitors having a capacitance of not more than 0.1 μF, which are incorporated in the ballasts or supplied as separate elements essential to the functioning of ballasts in fluorescent lamp circuits.

This specification does not apply to the following:

(a) Electronic ballasts designed for use on a.c. supplies up to 1000 V at 50 Hz, associated with tubular fluorescent lamps, requirements for which are specified in AS 3134(Int).

NOTE: As from the publication date of this amendment, all requirements prescribed throughout this Standard, for electronic ballasts associated with tubular fluorescent lamps, no longer apply.

(b) Ballasts designed for use with cold-cathode fluorescent lamps, requirements for which are specified in AS 3143.

(c) Capacitors which are incorporated in starters.

(d) Ballasts of the resistive type.

NOTES:

1. It is emphasized that only safety matters and closely allied conditions are specified herein. Attention is drawn to AS 2643 which contains requirements intended to ensure the satisfactory performance of ballasts in fluorescent lamp circuits.
2. Attention is drawn to Clause 12, which specifies requirements for capacitors having a capacitance greater than 0.1 μF, and used in tubular fluorescent lamp circuits.

2 REFERENCED DOCUMENTS The following documents are referred to in this Specification:

STANDARDS

AS
1201 Tubular fluorescent lamps for general lighting service
1931 High voltage testing techniques
1931.1 Part 1: General definitions, test requirements, test procedures and measuring devices
2420 Fire test methods for solid insulating materials and non-metallic enclosures used in electrical equipment
2643 Fluorescent lamp ballasts of the reactive type—Performance requirements
2644 Capacitors for use in discharge lamp circuits

IEC
216 Guide for the determination of thermal endurance properties of electrical insulating materials

IEEE
101 Report on guide for statistical analysis of test data (1972)

APPROVAL AND TEST SPECIFICATIONS

AS
3100 Approval and test specification—General requirements for electrical equipment
3134(Int) Approval and test specification — a.c. supplied electronic ballasts for tubular fluorescent lamps
3137 Luminaires (lighting fittings)
3143 Transformers for cold-cathode electric discharge lamps and lighting systems
3147 Radio interference suppression devices
3191 Electric flexible cords

3 DEFINITIONS For the purpose of this Specification, the definitions given in AS 1201 and those below apply.

3.1 Ballast—unit inserted between the supply and one or more fluorescent lamps, which serves mainly to control the current of the lamp(s) to the required value.

It may also include means for transforming the supply voltage and arrangements which help to provide starting voltage and preheating current, prevent cold starting, reduce stroboscopic effects, correct the power factor, or suppress radio interference.