AS 2644—1990

Australian Standard®

Capacitors for use in discharge lamp circuits

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Association of Consulting Engineers, Australia
Australian Electrical and Electronic Manufacturers' Association
Confederation of Australian Industry
Consumer Electronics Suppliers Association
Department of Administrative Services
Electrical Contractors Associations of Australia
Electricity Supply Association of Australia
Illuminating Engineering Societies of Australia
Ministry of Housing and Construction, Vic.
Public Works Department, N.S.W.
Railways of Australia Committee
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PREFACE

This Standard was prepared by the Standards Australia Committee on Auxiliaries for Discharge Lamps to supersede AS 2644—1983.

This Standard closely follows IEC 556, *Capacitors for use in tubular fluorescent, high-pressure mercury and low-pressure sodium vapour, discharge lamp circuits* (1982). However, some requirements of that publication have been modified to take account of local conditions. These modifications include a general reference to AS 3100 for safety requirements; the identification of the safety clauses for approvals purposes (specifically the cross-reference from AS 3168); and the requirement that discharge resistors be fitted for capacitors having a rating of more than 0.5 μF.

This edition of this Standard was prepared in line with IEC 566 (1982) and other recently issued proposals from IEC Subcommittee 34C. It provides updated versions of the endurance and destruction tests (the destruction test being modified to suit Australian conditions), and incorporates an optional test (of Australian origin) to provide a service life objective of 10 years' continuous operation. Since ballast life (thermal endurance test of AS 3168) is expected to be at least 10 years' continuous operation, this tests allows for a 10-year life expectancy of a ballast and capacitor combination.

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STANDARDS AUSTRALIA

Australian Standard

Capacitors for use in discharge lamp circuits

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies requirements for self-healing and non-self-healing continuously rated a.c. capacitors, of up to and including 2.5 kvar and not less than 0.1 μF and having a rated voltage not exceeding 1000 V, which are intended for use in discharge lamp circuits operating at 50 Hz a.c. at altitudes up to 3000 m.

This Standard applies to capacitors intended for connection in shunt or in series with the lamp circuit or an effective combination of these. It covers only impregnated or unimpregnated capacitors having a dielectric of paper, plastics film, or a combination of both, either metallized or with metal foil electrodes.

This Standard applies, in particular, to capacitors for use in those discharge lamp circuits or ballasts to which the relevant Australian Standard or Approval and Test Specification refers to reference hereto.

This Standard does not apply to radio-interference suppressor capacitors, the requirements for which are given in AS 3145.

NOTES:

1. Requirements for capacitors having a capacitance not greater than 0.1 μF, for use with fluorescent lamp ballasts, are given in AS 3168.
2. Discharge lamp circuits within the scope of this Standard are as follows:
   (a) Tubular fluorescent.
   (b) High-pressure mercury vapour.
   (c) Low-pressure sodium vapour.
   (d) High-pressure sodium vapour.
   (e) Metal halide.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

STANDARDS

AS
1099 Basic environmental testing procedures for electrotechnology
1099.2Ca: Damp heat, steady state
1099.2Na: Rapid change of temperature, two-chamber method

APPROVAL AND TEST SPECIFICATIONS

AS
3100 Definitions and general requirements for electrical materials and equipment
3135 Semi-enclosed fuses for a.c. circuits
3145 Radio interference suppression devices
3168 Fluorescent lamp ballasts

IEC
241 Fuses for domestic and similar purposes

1.3 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

1.3.1 Rated voltage (U_n)—r.m.s. value of the sinusoidal voltage which the capacitor is designed to withstand continuously, and from which the test conditions are derived.

1.3.2 Rated maximum temperature (t_c)—that temperature which must not be exceeded by the hottest part of the capacitor surface during service.

NOTE: The internal losses in a capacitor, though small, will cause its surface temperature to rise, and due allowance for this should be made. This temperature rise will depend upon the nature of the capacitor casing and service environment.

1.3.3 Rated minimum temperature (t_c min)—that temperature of any part of the surface of the capacitor below which the capacitor must not be energized.

1.3.4 Discharge resistor—resistor connected across the terminals of a capacitor to reduce shock hazard from the charge stored in the capacitor.