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# Australian Standard 2644—1983

# CAPACITORS FOR USE IN DISCHARGE LAMP CIRCUITS

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The following interests are represented on Committee LG/3:

Australian Electrical and Electronic Manufacturers Association
Association of Consulting Engineers Australia
Confederation of Australian Industry
Department of Public Works, N.S.W.
Department of Transport and Construction
Electrical Apparatus Approvals Authorities
Electronic Importers Association
Electricity Supply Association of Australia
Illuminating Engineering Societies of Australia
Public Works Department, Vic.
Railways of Australia Committee
Telecom Australia

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AUSTRALIAN STANDARD

# CAPACITORS FOR USE IN DISCHARGE LAMP CIRCUITS

## AS 2644—1983

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# PREFACE

This standard was prepared by the Association's Committee on Auxiliaries for Discharge Lamps.

It prescribes requirements for self-healing and non-self-healing capacitors having a rated capacitance greater than 0.1 $\mu$F, and intended for use in tubular fluorescent, high-pressure mercury and low-pressure sodium vapour, discharge lamp circuits.

This standard closely follows IEC 566, Capacitors for Use in Tubular Fluorescent, High-pressure Mercury and Low-pressure Sodium Vapour, Discharge Lamp Circuits, 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 mandatory requirement that discharge resistors be fitted for capacitors having a rating of more than 0.5 $\mu$F.

It should be noted that those clauses identified as safety requirements for approvals purposes align with the recommendations of BS 4017, Specification for Capacitors for Use in Tubular Fluorescent, High-pressure Mercury and Low-pressure Sodium Vapour, Discharge Lamp Circuits. BS 4017 is identical with IEC 566.

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STANDARDS ASSOCIATION OF AUSTRALIA

# Australian Standard
# for
# 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 $\mu$F, having a rated voltage not exceeding 1000 V, which are intended for use in discharge lamp circuits operating at 50 Hz a.c. and 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 those discharge lamp circuits or ballasts, for which the relevant Australian standard or SAA approval and test specification makes cross-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 $\mu$F 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 standards are referred to in this standard:

| | |
|---|---|
| AS 1099 | Basic Environmental Testing Procedures for Electrotechnology 1099.2Ca—Damp Heat, Steady State |
| AS 3100 | Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment |
| AS 3135 | Approval and Test Specification for Semi-enclosed Fuses for A.C. Circuits |
| AS 3145 | Approval and Test Specification for Radio Interference Suppression Devices |
| AS 3168 | Approval and Test Specification for Fluorescent Lamp Ballasts |

**1.3 DEFINITIONS.** For the purpose of this standard, the following definitions apply:

**1.3.1 Rated voltage ($U_n$)**—the 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 operation in service.

NOTE: The internal losses in a capacitor, though small, result in the surface temperature being above ambient air temperature and due allowance for this should be made. This temperature rise will depend upon the nature of the enclosure.

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