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ANSI C78.180-2003 (R2016)

American National Standard for Electric Lamps—Specifications for Fluorescent Lamp Starters

National Electrical Manufacturers Association

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Secretariat:

National Electrical Manufacturers Association

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American National Standards Institute, Inc.

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Foreword (This foreword is not part of American National Standard C78.180)

Suggestions for improvement of this standard should be submitted to the Secretariat C78, American National Lighting Group of the National Electrical Manufacturers Association, 1300 North 17th Street, Suite 900, Rosslyn, VA 22209.

This standard was processed and approved by Accredited Standards Committee on Electric Lamps. Committee approval of the standard does not necessarily imply that all committee members voted for that approval.

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1 Scope

This standard is intended to cover performance of glow switch starters used with preheat-type fluorescent and similar discharge lamps. It does not include starters that are an integral part of a lamp or manually operated switches that may be used for lamp starting.

2 Normative References

The following publications contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the publications indicated below.

ANSI C78.81-2003	*Electric Lamps—Double-based Fluorescent Lamps—Dimensional and Electrical Characteristics*
ANSI C78.901-2001	*Electric lamps—Fluorescent—Single-based types—Dimensional and Electrical Characteristics*
ANSI C82.1-1997	*Line frequency fluorescent lamp ballasts*
UL 542	*Standard for Lampholders, Starters, and Starter Holders for Fluorescent Lamps*

3 Definitions

3.1 General

Starters are devices which initially connect the cathodes, usually in series, of fluorescent or similar discharge lamps directly across the ballast-supply circuit so as to provide cathode preheating. When the starter contacts open, the voltage transient—due to interrupting the current through the ballast—is applied across the lamp to establish an arc. Starters also include a capacitor for the suppression of radio interference during lamp starting and lamp operation. They may also include a circuit-opening device, arranged to disconnect the preheat circuit if the lamp fails to light normally.

3.2 Glow Switch Starters

This type has normally open contacts, in a gaseous atmosphere. One or both is a bimetal strip(s). On starting, the full supply voltage is applied across the open contacts, producing a glow discharge. Heat from the discharge actuates the bimetal strip(s), the contacts close (extinguishing the glow), and cathode preheating begins. When the bimetal strip(s) cool sufficiently, the contacts open. The resulting interruption of the current through the ballast produces a transient which usually starts the lamp. Should the lamp fail to start, the above process repeats.

3.3 Thermal Starters

This type has normally closed contacts, one or both of which is a bimetal strip(s). Also, it has a heating coil in series with the ballast and lamp cathodes. When the supply voltage is first applied to the circuit, cathode preheating begins immediately. The heating coil actuates the bimetal strip(s), causing the normally closed contacts to open after an adequate preheat time, and the lamp starts. During lamp operation, a small amount of energy is consumed by thermal starters—by a heating coil which keeps the contacts from reclosing. This type of starter is no longer commonly available and is not covered in this standard.