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American National Standard for Lighting Equipment—Voltage Surge Requirements

National Electrical Manufacturers Association

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Secretariat:

National Electrical Manufacturers Association

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Foreword (This foreword is not part of ANSI C82.77-5-2017.)

Suggestions for improvement of this standard are welcome. They should be submitted to:

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This standard was developed and approved for submittal to ANSI by Accredited Standards Committee C82 on Electric Lamp Ballasts. Approval of this standard is not meant to imply that all Accredited Standards Committee members voted to approve it.

CONTENTS

Tables

1 Scope

This standard specifies voltage surge limits and testing requirements for lighting equipment. It covers all types of lighting equipment used for general illumination (typically found in residential, commercial, and industrial applications) and connected to any of the following commonly distributed 60 Hz alternating current (AC) power line systems:

a) 120 V, Single Phase
b) 220/230 V, Single Phase
c) 208/240 V, Single Phase
d) 277 V, Single Phase
e) 347 V, Single Phase
f) 480 V, Single Phase
g) 480 V, 3 Phase

Note: These line voltages are nominal and include commonly encountered nameplate variations of the above. As an example, products rated at either 117, 120, or 125 V AC would be covered as nominal 120 V systems.

This standard covers lighting equipment in terms of application and wattage (operating input power level).

1.1 General

Unless specified otherwise, limits will apply to an individual piece of lighting equipment.

Normative references and definitions are given in ANSI C82.77-1.

1.2 Surge Testing

Surge Testing shall follow those methods given in IEEE Standard C62.45.

1.3 Failure Criteria

Failure Criteria shall be those given in Table 1.

Table 1
Failure Criteria

Failure Type	Criteria
Criterion A	The lighting product shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer.
Criterion B	The lighting product shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer. A temporary degradation of performance is allowed during the test. However, no change of the actual operating state or stored data is allowed.
Criterion C	Temporary loss of function is allowed, providing the function is self-recoverable or can be restored by operation of the controls.
Criterion D	The lighting product has become permanently damaged, but the failure mode is a safe mode (to a known stage).

1.4 Location Category Criteria

Location Category Criteria shall be those given in Table 2.