



ANSI/NEMA C82.77-5-2017

American National
Standard for
Lighting
Equipment—
Voltage Surge
Requirements



National Electrical Manufacturers Association
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ANSI C82.77-2-2017

*American National Standard for Lighting Equipment—
Voltage Surge Requirements*

Secretariat

National Electrical Manufacturers Association

Approved: December 21, 2017

American National Standards Institute, Inc.

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Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, Virginia 22209

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Printed in the United States of America

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.

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CONTENTS

Foreword ii

1 Scope 1

 1.1 General 1

 1.2 Surge Testing 1

 1.3 Failure Criteria 1

 1.4 Location Category Criteria 1

 1.5 Exposure Levels 2

2 Specific Lighting Equipment Surge Voltage Limits by Product Type and Application 3

 2.1 Residential Lighting Equipment 3

 2.1.1 Integrally Ballasted Medium Screw Based Light Sources 3

 2.1.2 Indoor Hard-wired Luminaires and Indoor Portable Luminaires 4

 2.2 Commercial Lighting Equipment 5

 2.2.1 Integrally Ballasted and Medium Screw Based Light Sources 5

 2.2.2 Indoor Hard-wired Luminaires and Indoor Portable Luminaires (Typically Office Lighting Luminaires) 6

 2.2.3 Task Lighting, Down Lighting, and Modular Office Furniture Luminaires 7

 2.2.4 Outdoor Luminaires 8

 2.2.5 High Bay Luminaires 9

 2.3 Industrial Lighting Equipment 10

 2.3.1 Indoor Hard-wired Non-High Bay Luminaires 10

 2.3.2 Outdoor Hard-wired Non-roadway Luminaires 11

 2.3.3 High Bay Luminaires 12

 2.3.4 Sports, Convention and Roadway Lighting Equipment 13

 2.3.5 Roadway Lighting Luminaires 14

 2.3.6 Stage and Studio Lighting Equipment 15

 2.3.7 Stage and Studio Lighting Applications Using Indoor Hard-wired Luminaires 16

Annex Selection of Peak Values of Standard Waveforms (ANSI C62.41) 16

Tables

Table 1 Failure Criteria 1

Table 2 Location Category Criteria 2

Table 3 Exposure Level Criteria for Category C Locations in Table 2 2

Table 4 Surge Voltage Limits for Integrally Ballasted Medium Screw Base, Residential Compact Light Sources 3

Table 5 Surge Voltage Limits for Indoor Hard-wired and Indoor Portable Luminaires 4

Table 6 Surge Voltage Limits for Integrally Ballasted Medium Screw Base, Commercial Compact Light Sources 5

Table 7 Surge Voltage Limits for Indoor Hard-wired and Indoor Portable Luminaires 6

Table 8 Surge Voltage Limits for Task Lighting, Down Lighting and Modular Office Furniture Luminaires 7

Table 9 Surge Voltage Limits for Outdoor Luminaires 8

Table 10 Surge Voltage Limits for High Bay Luminaires 9

Table 11 Surge Voltage Limits for Indoor Hard-wired Non-High Bay Luminaires 10

Table 12 Surge Voltage Limits for Outdoor Non-roadway Luminaires 11

Table 13	Surge Voltage Limits for High Bay Luminaires	12
Table 14	Surge Voltage Limits for Sports Arenas and Convention Center Luminaires	13
Table 15	Surge Voltage Limits for Roadway Lighting Luminaires	14
Table 16	Surge Voltage Limits for Stage and Studio Luminaires with Integrally Ballasted Medium Screw Compact Light Sources for Indoor or Outdoor Use.....	15
Table 17	Surge Voltage Limits for Stage and Studio Lighting Applications Using Indoor Hard-wired Luminaires.....	16

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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.