



ANSI C82.16-2020

American National
Standard for Light-
Emitting Diode Drivers
—Methods of
Measurement



National Electrical Manufacturers Association
1300 North 17th Street, Suite 900 • Rosslyn, VA 22209
www.NEMA.org





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*American National Standard for Light-Emitting Diode Drivers—
Methods of Measurement*

Secretariat:

National Electrical Manufacturers Association

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Foreword

This foreword is not part of ANSI C82.16-2020.

This is a revision of ANSI C82.16-2015.

Suggestions for improvement on this Standard will be welcome. They should be sent to the following address:

Secretary of ASC C82
National Electrical Manufacturers
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

This Standard was developed and approved for submittal to ANSI by the Accredited Standards Committee (ASC) on Lamp Ballasts, C82. Approval of this Standard is not meant to imply that all committee Members voted to approve it.

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1. General

1.1. Purpose

This document complements Standards and specifications that set performance limits, such as NEMA SSL 1, and provides testing methods.

1.2. Scope

This Standard describes the procedures to be followed and the precautions to be taken in measuring performance of LED drivers commonly used in general lighting, exterior lighting, and roadway lighting, and similar applications. The scope includes LED drivers that may have these characteristics:

- a. Input supply voltage up to 600 VDC or 600 VAC (60 or 50/60 Hz)
- b. Output open-circuit voltage of 600 V or less
- c. Constant-current or constant-voltage direct current (DC) output
- d. Fixed, pulse-width modulation, or programmable (tunable or dimmable) output power
- e. External (standalone) or internal (enclosed in luminaire)

2. References

2.1. Normative References

The following publications contain provisions that, through reference in this text, constitute provisions of this American National Standard. 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 C82.11 | <i>American National Standard for Lamp Ballasts—High-Frequency Fluorescent Lamp Ballasts</i> |
| ANSI C82.77-5 | <i>American National Standard for lighting equipment—Voltage Surge Requirements</i> |
| ANSI C82.77-10 | <i>American National Standard for Lighting Equipment—Harmonic Emission Limits—Related Power Quality Requirements</i> |
| FCC Title 47 | Title 47 of the Code of Federal Regulations, Part 15 |
| IEC Guide 115 | <i>Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector</i> |
| JCGM 100 | <i>Evaluation of measurement data—Guide to the expression of uncertainty in measurement</i> |
| NEMA 410 | <i>Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts</i> |
| UL 8750 | <i>Standard for Light-Emitting Diode (LED) Equipment for Use in Lighting Products</i> |

2.2. Informative References

| | |
|--------------|---|
| NEMA SSL 1 | <i>Electronic Drivers for LED Devices, Arrays, or Systems</i> |
| NIST TN-1297 | <i>Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results</i> |