



ANSI C82.16-2015

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





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Methods of Measurement*

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 ANSI C82.16-2015.

This is a new standard and not a revision of a previous standard.

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

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This standard was developed and approved for submittal to ANSI by the Accredited Standards Committee (ASC) on Lamp Ballasts, C82, and its working group, C82WG04. Approval of this standard is not meant to imply that all working group members voted to approve it.

Information concerning approval of this standard is based on the documents listed in the table below.

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## Section 1 General

### 1.1 PURPOSE

This document complements standards and specifications that set performance limits, such as NEMA SSL 1, and provides guidance for testing methods for government specifications and other organizations.

### 1.2 SCOPE

This standard describes the procedures to be followed and the precautions to be taken in measuring performance of LED drivers. The scope includes, but is not limited to, LED drivers with the following characteristics:

- General lighting, exterior lighting, and roadway lighting applications
- Input supply voltage up to 600 VDC or 600 VAC (50 or 60 Hz)
- Output open-circuit voltage of 600 V or less
- Constant-current or constant-voltage direct current (DC) output
- Fixed, variable (dimnable), pulse-width modulation, or programmable (dimnable) output power
- External (standalone) or internal (enclosed in luminaire)

### 1.3 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 C82.11-2011	<i>American National Standard for Lamp Ballasts—High-Frequency Fluorescent Lamp Ballasts</i>
ANSI C82.77-5-2015	<i>American National Standard for lighting equipment—Voltage Surge Requirements</i>
ANSI C82.77-10-2014	<i>American National Standard for Lighting Equipment—Harmonic Emission Limits—Related Power Quality Requirements</i>
NEMA 410-2011	<i>Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts</i>
FCC Title 47	Title 47 of the Code of Federal Regulations, Part 15
NEMA SSL 1-2011	<i>Electronic Drivers for LED Devices, Arrays, or Systems</i>
UL 8750-2 (2015)	<i>Standard for Light-Emitting Diode (LED) Equipment for Use in Lighting Products</i>

### 1.4 DEFINITIONS

#### 1.4.1 LED Driver Operation Points Definitions

See figures 1 and 2. The two figures are to illustrate the concepts of current control and voltage control. They are theoretical frames, rather than actual measurements.