



ANSI C136.16-2014

---

American National  
Standard for Roadway  
and Area Lighting  
Equipment - Enclosed,  
Post Top-Mounted  
Luminaires





**ANSI C136.16-2014**  
Revision of ANSI C136.16-2009

*American National Standard for  
Roadway and Area Lighting Equipment—Enclosed,  
Post Top–Mounted Luminaires*

Secretariat:

**National Electrical Manufacturers Association**

Approved September 11, 2014

**American National Standards Institute**

## NOTICE AND DISCLAIMER

The information in this publication was considered technically sound by the consensus of persons engaged in the development and approval of the document at the time it was developed. Consensus does not necessarily mean that there is unanimous agreement among every person participating in the development of this document.

American National Standards Institute, Inc. (ANSI) standards and guideline publications, of which the document contained herein is one, are developed through a voluntary consensus standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. While NEMA administers the process to promote fairness in the development of consensus, it does not write the document and it does not independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in its standards and guideline publications.

NEMA disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. NEMA disclaims and makes no guaranty or warranty, expressed or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any of your particular purposes or needs. NEMA does not undertake to guarantee the performance of any individual manufacturer or seller's products or services by virtue of this standard or guide.

In publishing and making this document available, NEMA is not undertaking to render professional or other services for or on behalf of any person or entity, nor is NEMA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances. Information and other standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

NEMA has no power, nor does it undertake to police or enforce compliance with the contents of this document. NEMA does not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health- or safety-related information in this document shall not be attributable to NEMA and is solely the responsibility of the certifier or maker of the statement.

# AMERICAN NATIONAL STANDARD

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

**CAUTION NOTICE:** This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of approval. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published by

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

© 2014 National Electrical Manufacturers Association. All rights, including translation into other languages, reserved under the Universal Copyright Convention, the Berne Convention for the Protection of Literary and Artistic Works, and the International and Pan American copyright conventions.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

Printed in the United States of America

## Foreword

At the time this standard was approved, the ANSI C136 committee was composed of the following voting members:

Alabama Power Company	Kauffman Consulting, LLC
American Electric Lighting	LED Roadway Lighting Ltd.
Caltrans	LITES
Ceravision	LUXIM Corp.
City of Kansas City, Missouri	Mississippi Power
City of Los Angeles, Bureau of Street Lighting	National Grid
Cree, Inc.	OSRAM SYLVANIA Inc.
Duke Energy	Philips HADCO
Duke Energy Florida	Philips Lumec
Eaton's Cooper Lighting	PNNL-Battelle
Edison Electric Institute	ROAM/DTL
EPRI	SELC Lighting
EYE Lighting International of N.A., Inc.	Sensus Metering
Florida Power & Light Company	Shakespeare Composite Structures
FP Outdoor Lighting Controls	Silver Spring Networks
FRE Composites (2005) Inc.	Sollux Consulting
GE Lighting Systems	South Carolina Electric & Gas
Georgia Power Company	SouthConn Technologies, Inc.
Gulf Power Company	Stresscrete/King Luminaire
Hapco Aluminum Pole Products	TE Connectivity
Holophane An Acuity Brands Company	Utility Metals Division of Fabricated Metals, LLC
Hubbell Lighting, Inc.	Valmont Industries, Inc.
Inovus Solar	Vamas Engineering and Consultants
Intelligent Illuminations Inc.	Xcel Energy
Intertek USA, Inc.	
JEA	

## Table of Contents

Foreword .....	ii
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative References.....</b>	<b>1</b>
<b>3 Informative References.....</b>	<b>2</b>
<b>4 General Requirements .....</b>	<b>2</b>
4.1 Basic Insulation Level (BIL).....	2
4.2 Surge Test Waveforms.....	2
4.3 Vibration Requirements .....	2
<b>5 Voltage Classifications .....</b>	<b>2</b>
<b>6 Mounting Provisions .....</b>	<b>2</b>
<b>7 Assembly Features.....</b>	<b>3</b>
<b>8 Materials and Protective Coatings.....</b>	<b>3</b>
<b>9 Latching and Hinging.....</b>	<b>3</b>
<b>10 Refractor and Lens Replacement.....</b>	<b>3</b>
<b>11 Barriers.....</b>	<b>3</b>
<b>12 Labeling.....</b>	<b>3</b>
<b>13 Supply connections .....</b>	<b>3</b>
13.1 Terminal block.....	3
13.2 Supply leads.....	3
13.3 Wiring and Grounding .....	4
<b>14 Lamp Socket/Optical Assembly Electrical Connector .....</b>	<b>4</b>
14.1 High Intensity Discharge (HID) Lamps .....	4
14.2 Compact Fluorescent Lamps .....	4
14.3 Induction Lamps.....	4
14.4 Solid State Lighting Systems .....	4
<b>15 Photocontrol.....</b>	<b>4</b>
<b>16 Ballast.....</b>	<b>5</b>
<b>17 Starter .....</b>	<b>5</b>
<b>18 Light Distribution .....</b>	<b>5</b>

**This page intentionally left blank.**

## 1 Scope

This standard covers dimensional, maintenance, and light distribution features that permit the interchange of enclosed, post top-mounted high-intensity discharge (HID), solid state light (SSL) source (also referred to as LED (Light Emitting Diode), compact fluorescent, and induction luminaires whose center of mass is approximately over the mounting tenon. Luminaires of similar size, shape, and weight meeting the requirements of this standard may be used interchangeably within a system with assurance that:

- they will fit the mounting tenon,
- pole strength requirements will not change,
- light distribution will be similar, and
- similar maintenance procedures can be used.

## 2 Normative References

This standard incorporates by undated reference provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed below. For undated references, the latest edition of the publication referred to applies (including amendments).

ANSI C81.61-2009, *American National Standard for Electric Lamp Bases—Specifications for Bases (Caps) for Electric Lamps*

ANSI C136.10-2010, *American National Standard for Roadway and Area Lighting Equipment—Locking-type Photocontrol Devices and Mating Receptacles—Physical and Electrical Interchangeability*

ANSI C136.11-2011, *American National Standard for Roadway and Area Lighting Equipment—Multiple Sockets*

ANSI C136.15-2011, *American National Standard for Roadway and Area Lighting Equipment—Luminaire Field Identification*

ANSI C136.2-2004 (R2009), *American National Standard for Roadway and Area Lighting Equipment—Luminaire Voltage Classification*

ANSI C136.22-2004 (R2009), *American National Standard for Roadway and Area Lighting Equipment—Internal Labeling of Luminaires*

ANSI C136.24-2004 (R2010), *American National Standard for Roadway and Area Lighting Equipment—Non-Locking (Button) Type Photo Controls*

ANSI C136.3-2005 (R2009), *American National Standard for Roadway and Area Lighting Equipment—Luminaire Attachments*

ANSI C136.31-2004 (R2010), *American National Standard for Roadway and Area Lighting Equipment—Luminaire Vibration*

ANSI/IESNA RP-8-05, *National Standard Practice for Roadway Lighting*

ANSI/IESNA TM-15-11, *Luminaire Classification System for Outdoor Luminaires*

NFPA 70-2014, *National Electrical Code*<sup>®</sup>