ANSI C136.16-2004
Revision of ANSI C136.16-1982 (R1997)

American National Standard

For Roadway and Area Lighting Equipment—Enclosed, Post Top-mounted Luminaires

Approved May 17, 2004 Secretariat: National Electrical Manufacturers Association

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard 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 standard. American National Standards are subject to periodic review and users are cautioned to obtain the latest editions.

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.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time.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, Rosslyn, VA 22209

© Copyright 2004 by National Electrical Manufacturers Association
All rights including translation into other languages are 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

DISCLAIMER: The standards or guidelines presented in a NEMA standards publication are considered technically sound at the time they are approved for publication. They are not a substitute for a product seller's or user's own judgment with respect to the particular product referenced in the standard or guideline, and NEMA does not undertake to guarantee the performance of any individual manufacturer's products by virtue of this standard or guide. Thus, NEMA expressly disclaims any responsibility for damages arising from the use, application, or reliance by others on the information contained in these standards or guidelines.

--`,,`,,`-`-`,,`,,`,`,,`---

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS Not for Resale

CONTENTS

1 Scope 2
2 Normative references 2
3 Informative references 3
4 Mounting provisions 3
5 Supply connections 3
6 Assembly features 4
7 Voltage classification 4
8 Socket 4
9 Refractor or lens replacement 4
10 Optical assembly 4
11 Light distribution 4
12 Ballast and starter 4
13 Starter 5
14 Barriers 5
15 Photocontrol receptacle 5
16 Material and protective coatings 5
17 Labeling 5
18 External indentification of lamp 5
19 Grounding 5

1 Scope

This standard covers dimensional, maintenance, and light distribution features that permit the interchange of enclosed, post top-mounted 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
- 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 C82.4-2002, *American National Standard for Ballast for High-intensity Discharge and Low-pressure Sodium Lamps (Multiple-supply Type).*

ANSI C136.2-1996, *American National Standard for Roadway and Area Lighting Equipment—Luminaire —Voltage Classification.*

ANSI C136.3-1995, *American National Standard for Roadway and Area Lighting Equipment—Luminaire Attachments.*

ANSI C136.4-2003, *American National Standard for Roadway and Area Lighting Equipment—Series Sockets and Series-socket Receptacles.*

ANSI C136.10-1996, *American National Standard for Roadway and Area Lighting Equipment—Locking-type Photocontrol Devices and Mating Receptacles—Physical and Electrical Interchangeability.*

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

ANSI C136.11-1995, *American National Standard for Roadway and Area Lighting Equipment—Multiple Sockets.*

ANSI C136.15-1997, *American National Standard for Roadway and Area Lighting Equipment—High-intensity Discharge and Low-pressure Sodium Lamps in Luminaires—Field Identification.*

ANSI C136.22-1997, *American National Standard for Roadway and Area Lighting Equipment—Internal Labeling of Luminaires.*

ANSI/IESNA RP-8-2000, *Roadway Lighting*

NFPA 70-2002, *National Electrical Code*.

3 Informative reference

This standard is intended to be used in conjunction with the following publication. The latest edition of the publication applies (including amendments).

ANSI C136.21-1997, *American National Standard for Roadway and Area Lighting Equipment—Vertical Tenons Used with Post Top-mounted Luminaires*.

NOTE ANSI Standards are available from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112-5776 Phone: 303/397-7956, Fax 303/397-2740, e-mail: global@ihs.com or www.global.ihs.com.

4 Mounting provisions

Luminaires meeting the requirements in this standard shall:

a) Accept one of the tenon sizes indicated in ANSI C136.3.
b) Provide a stop to limit the depth of insertion.
c) Provide for firmly attaching and plumbing the luminaire on the tenon. Consideration must be given to possible reduction in attachment strength due to cold flow of materials, vibration, or other conditions.
d) Prevent the entrance of wildlife by limiting openings around the tenon mounting area to 6.35 mm (0.25 in.) tenon size. This may be accomplished by the use of supplemental barriers or other suitable means.

5 Supply connections

5.1 Terminal block

If a terminal block is specified, it shall be accessible with the removal of a minimum of luminaire parts, securely mounted in the luminaire and have a minimum of two line-side pressure-type wire connectors with slotted head screws.

5.2 Connector

Each connector shall accept one conductor, either solid or stranded, from 8 to 14 AWG copper and from 6 to 10 AWG aluminum.

5.3 Supply leads

If, instead of a terminal block, supply leads are provided in the luminaire, they shall conform to the color coding of the *National Electrical Code* for the various voltages. Leads shall be properly secured with strain relief suitable for the wires and/or cables to prevent mechanical stress on the connection points in the luminaire.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

5.4 Wiring

All wiring shall be secured firmly to prevent the wires from coming into contact with components operating at temperatures in excess of the thermal rating of the wire insulation.

6 Assembly features

The luminaires shall be constructed to securely attach or retain all components in their proper place without relying on gravity when in a closed position. Provision shall be made for supporting access closures while installing or servicing. Captive devices shall secure all access closures.

7 Voltage classification

The luminaire shall be of the 250 or 600-volt classification as defined in ANSI C136.2.

8 Socket

Luminaires shall be equipped with either a medium-base socket or multiple mogul sockets that meet requirements of ANSI C136.4 and ANSI C136.11.

9 Refractor and lens replacement

The refractor or lens shall be retained so that it may be replaced without tools (preferred) or with a blade-type screwdriver (acceptable). Position-oriented refractors shall be clearly marked. Acorn globes should have 6.35 mm (1/4 in.) or larger bolts with other than slotted heads.

10 Optical assembly

The optical assembly shall be sealed to minimize the entrance of insects and atmospheric contaminates.

11 Light distribution

The light distribution shall be as defined in ANSI/IESNA RP-8.

12 Ballast and starter

12.1 Ballast

The luminaire shall be equipped with a ballast to operate a high-intensity discharge lamp as specified on the nameplate described in the applicable American National Standard for the lamp. It shall also satisfy the dielectric withstand requirements as defined in Section 5 of ANSI C136.2.

12.2 Universal plug/receptacle for HID starter

A universal-type plug/receptacle for an HID starter should be used, and if it is, it should be resistant to atmospheric conditions.

12.3 Additional labeling

In addition to the labeling specified in ANSI C82.4, each component of the ballast system shall have the manufacturer’s name and catalog part number.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

13 Starter

A starter utilized as a component part of a ballast shall be capable of withstanding the temperature and voltage to which it is subjected during normal operation of the ballast.

14 Barriers

Barriers (heat or other), if employed, shall be designed for the life of the luminaire.

15 Photocontrol receptacle

15.1 Individual locking-type receptacle

If an individual receptacle of the locking-type is incorporated into the luminaire, it shall meet the applicable provisions of ANSI C136.10.

15.2 With decorative covering or cupola

When a decorative covering or cupola is employed as a housing for the photocontrol, the internal dimensions of the covering or cupola shall be a minimum diameter of 88.9 mm (3.5 in.) and a minimum height of 76.2 mm (3.0 in.) above the surface of the receptacle to accept photocontrols meeting these requirements. A clear area shall be provided in the covering or cupola to allow operation of the control. Coverings or cupolas may affect the turn-off/turn-on levels of the photocontrol.

16 Material and protective coatings

16.1 Resistance to atmospheric conditions

Materials and protective coatings used for the luminaire shall, individually and as a system, be resistant to atmospheric conditions, including the corrosive and erosive action of conditions of service encountered in industrial and seaboard areas.

16.2 Temperature design limits

All wiring and electrical components, including the photocontrol receptacle and starter, if used, shall not exceed their temperature design limits when the luminaire is operated in draft-free air at an ambient temperature of 25°C (77°F), or as otherwise specified. The plug-receptacle interface temperature as defined in ANSI C136.10 shall not be greater than 90°C when the luminaire is energized in draft-free air at an ambient temperature of 25°C.

17 Labeling

Luminaires shall be labeled in accordance with ANSI C136.22.

18 External identification of lamp

External identification of the lamp used in the luminaire, if specified, shall be in accordance with ANSI C136.15. Unless otherwise specified, this identification shall be on the street side of the luminaire and attached to the slipfitter (if external) or underside of the luminaire.

19 Grounding

If specified, a means shall be provided for grounding the noncurrent-carrying metal parts of the luminaire.

<End of Standard>

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale