NEMA Standards Publication

ANSI C136.2-2018

American National Standard for Roadway and Area Lighting Equipment—Dielectric Withstand and Electrical Transient Immunity Requirements

National Electrical Manufacturers Association

National Electrical Manufacturers Association
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American National Standard for Roadway and Area Lighting Equipment— Dielectric Withstand and Electrical Transient Immunity Requirements

Secretariat:

National Electrical Manufacturers Association

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Foreword

At the time this Standard was approved the ANSI C136 committee was composed of the following members:

Acuity Brands
Alabama Power Company
American Electric Lighting
Atlas Lighting Products, Inc.
California Lighting Technology Center, University Of California, Davis
CIMCON Lighting
City of Kansas City, Missouri
City of Los Angeles Bureau of Street Lighting
Cree, Inc.
Current powered by GE
Dominion Energy
Duke Energy
Duke Energy Florida
E J Kramer Consulting
Eaton's Lighting Solutions
Echelon Corporations
Electric Power Research Institute (EPRI)
Excellence Opto, Inc.
EYE Lighting International of N.A., Inc.
Florida Power & Light Company
Gateway International 360.
GE Lighting Systems
Georgia Power Company
GreenStar Products, Inc.
Gulf Power Company
Hancock Consulting
Hapco Aluminum Pole Products
Holophane
Hubbell Lighting, Inc.
Inovus Solar
Intelligent Illuminations Inc.
Intermatic Incorporated
Intertek USA, Inc.
Itron, Inc.
JEA
Kauffman Consulting, LLC
LED Roadway Lighting Ltd.
Legrand, North America
Leotek Electronics USA Corp.
Light Smart
Littelfuse, Inc.
Mississippi Power Company
National Grid
OSRAM SYLVANIA Inc.
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PSEG Power
Radian Research, Inc
Ripley Lighting Controls
ROAM/DTL
SELC Lighting
Sensus Metering
Signify
South Carolina Electric & Gas
SouthConn Technologies, Inc.
Stresscrete/King Luminaire
Sunrise Technology
TE Connectivity
Telematics Wireless
Valmont Composite Structures
Vandal Shields
Westire Technology Limited
Xcel Energy

1 General

1.1 Scope

This Standard covers luminaires and control devices classified for up to 600-volt operation[1] and intended for use in roadway and area lighting applications.

This Standard contains the minimum performance requirements and test procedures for evaluating luminaire and control devices under test (DUTs) for the following:

a. Dielectric withstand
b. Electrical transient immunity

1.2 Limitations

The test procedures contained in this Standard are designed to evaluate the performance of luminaires, control devices, and (as applicable) combinations of luminaires and control devices, for the purpose of facilitating consistent performance reporting of such equipment. The results of a given test procedure, including whether or not the DUT achieved the minimum performance requirements specified in this Standard, are only valid for the DUT configuration evaluated.

Users are warned that different combinations of luminaires and control devices may perform differently, and specification or knowledge of the independent performance of both a specific luminaire and a specific control device does not necessarily predict or guarantee any level of performance for the specific combination of luminaire and control device. While DUT manufacturers may attempt to identify and report test results for combinations of luminaires and control devices that represent typical, or perhaps worst-case conditions according to some logic, these results should be viewed as informative only, as specific combinations of a luminaire and control device may perform better or worse.

The test procedures contained in this Standard are not designed to evaluate the performance of components, such as Surge Protection Devices (SPDs) or other varistor-based modules. Test procedures for components are contained in other Standards (e.g., UL 1449) that evaluate parameters related to electrical transient immunity performance and, importantly, require over-voltage testing.

1.3 Compliance Reporting

DUT manufacturers that choose to claim compliance with this Standard in their literature shall note the DUT configuration and environmental conditions, including the following:

a. Three-wire (hot, neutral, protective earth) or two-wire (hot, neutral) electrical configuration[2]
b. Permanently installed (not intended to be removed) in-line fuses
c. Lamp, light engine, or other modular light source part number, if applicable
d. Modular ballast or driver part number, if applicable
e. Optional modular device part number(s), as applicable
f. Ambient temperature and relative humidity

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[1] Previous versions of ANSI C136.2 included separate requirements for luminaires classified for 250-volt and 5kV operation. Luminaires classified for 250 volt operation are considered to be under the purview of this Standard. For recommendations and/or requirements for 5kV (i.e., series wired) luminaires, see other ANSI C136 Standards, as appropriate, or continue to refer to ANSI C136.2-2004 (R2009).
[2] A DUT designed or otherwise intended for two-wire operation typically either does not have a protective earth connection or electrically shorts the protective earth and neutral connections within the DUT.