



**ANSI C137.2-2019**

*American National Standard—  
Cybersecurity Requirements for  
Lighting Systems—Parking Lots*

**Secretariat: National Electrical Manufacturers Association**

**Approved: February 15, 2019**

**American National Standards Institute, Inc.**

## 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 (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 and establishes rules 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, express 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. ANSI states 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 significantly more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and 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 they have approved the Standards 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 under 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 periodically to reaffirm, revise, or withdraw this Standard. 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**

© 2019 National Electrical Manufacturers Association

All rights reserved 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, and without the prior written permission of the publisher.

Printed in the United States of America.

**< This page left blank intentionally.>**

**CONTENTS**

- 1. Introduction..... 1
- 2. Scope ..... 1
- 3. Normative References ..... 1
- 4. Definitions..... 2
- 5. Parking Lot Lighting Systems and NIST Guide to Industrial Control Systems (ICS) Security SP 800-82 rev 2 ..... 3
- 6. Parking Lot Connected Lighting System..... 5
- 7. Overall Parking Lot Lighting System Risk Management..... 7
  - 7.1. Parking Lot Lighting Systems Cybersecurity Risk Management Framework ..... 7
  - 7.2. Risk Management Framework Steps..... 9
- 8. Parking Lot Lighting Systems Security Controls Application Guidance..... 12
  - 8.1. Access Control ..... 14
  - 8.2. Awareness and Training ..... 15
  - 8.3. Audit and Accountability ..... 15
  - 8.4. Security Assessment and Authorization ..... 15
  - 8.5. Configuration Management..... 16
  - 8.6. Contingency Planning ..... 16
  - 8.7. Identification and Authentication ..... 17
  - 8.8. Incident Response ..... 17
  - 8.9. Maintenance..... 18
  - 8.10. Media Protection ..... 18
  - 8.11. Physical and Environmental Protection ..... 18
  - 8.12. Planning ..... 19
  - 8.13. Personnel Security ..... 19
  - 8.14. Risk Assessment..... 19
  - 8.15. Systems and Services Acquisition ..... 20
  - 8.16. Systems and Communication Protection ..... 21
  - 8.17. System and Information Integrity ..... 21
  - 8.18. Program Management ..... 21
- 9. Parking Lot Lighting System Cybersecurity Integration ..... 22

## Foreword

At the time this Standard was approved the ANSI C137 committee was composed of the following members:

Acuity Brands, Inc.  
American Lighting Association  
Atlas Lighting Products, Inc.  
Cree, Inc.  
CSA Group  
Digital Lumens  
DimOnOff Inc  
DLC  
Duke Energy  
Duke Energy Progress  
Eaton Lighting Solutions  
Energy Focus, Inc.  
ERP Power  
EYE Lighting International of N.A., Inc.  
Florida Power & Light Company  
GE Lighting  
Georgia Power  
Gulf Power Company  
Hubbell Control Solutions  
IALD  
Illuminating Engineering Society  
Intermatic Incorporated  
Intertek  
Lambda 530 Consulting, LLC  
Lawrence Berkeley National Laboratory  
LED Roadway Lighting Ltd.  
Legrand, North America  
Leidos Engineering, LLC  
Leviton Lighting & Energy Solutions  
Lighting Science Group Corporation  
Lumispec Consulting  
Lutron Electronics Company, Inc.  
MaxLite  
OSRAM SYLVANIA Inc.  
Pacific Northwest National Laboratory  
RAB Lighting Inc.  
Sacramento Municipal Utility District  
Schneider Electric  
Signify  
Silver Spring Networks  
TE Connectivity  
Telematics Wireless  
Telensa  
Underwriters Laboratories Inc.  
Universal Lighting Technologies

## Parking Lot Cybersecurity

### 1. Introduction

Many commercial organizations operate a parking lot which is incidental to their core business operations. Typically this type of organization does not have an IT department developing its property tools; they tend to be fully dependent on off-the-shelf solutions and third-party providers. Cybersecurity risk of harm may involve at least two main scenarios: unauthorized access to the organization network and data, and unauthorized access to customers or others visiting the organization (either in person or remotely). This document addresses a recommended cybersecurity practice for the parking lot lighting systems setup. It is recognized that this type of environment has the need to share IT resources with other tasks and functions, to use off-the-shelf solutions, and to outsource IT services. Cybersecurity protection and mitigation measurements can be shared with other activities and functions.

### 2. Scope

The intent of this document is to provide cybersecurity requirements for Lighting Systems used in parking lots with public access. This Standard provides specifications for the protection of signals and data to, from and within the lighting system, potentially including those that may initiate, control or monitor non-lighting functions. This Standard is not intended to address parking lots with enhanced security requirements, such as critical infrastructure sectors. This Standard does not apply to safety-related cybersecurity.