



**ANSI C78.55-2020**

*American National Standard for Electric Lamps—  
LED Lamp Specification Sheets for  
HID Replacement and Retrofit Applications*

Secretariat:

**National Electrical Manufacturers Association**

Approved: March 27, 2020

**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.

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 The American National Standards Institute, Inc. (ANSI) that the requirements for due process, consensus, and other criteria for approval have been met by the Standards developer. An American National Standard implies a consensus of those substantially concerned with its scope and provisions. 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 existence of an American National Standard does not in any respect preclude anyone, whether s/he has approved the Standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the Standards. It is intended as a guide to aid the manufacturer, the consumer, and the general public.

The American National Standards Institute, Inc., 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, Inc. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on this title page.

**CAUTION NOTICE:** This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute, Inc., 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, Inc.

*Published by*

**National Electrical Manufacturers Association**

1300 North 17<sup>th</sup> Street, Suite 900  
Rosslyn, Virginia 22209

© 2020 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 prior written permission of the publisher.

Printed in the United States of America

**Foreword** (This foreword is not a part of ANSI C78.55-2020)

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

Suggestions for improvement of this Standard are welcomed. They should be sent to:

Secretary, ASC C78  
National Electrical Manufacturers Association  
1300 North 17<sup>th</sup> Street, Suite 900  
Rosslyn, VA 22209

This Standard was processed and approved for submittal to ANSI by Accredited Standards Committee on Electric Lamps, C78. Approval of the Standard is not meant to imply that all Committee Members voted to approve it.

**CONTENTS**

Introduction \_\_\_\_\_ iv

1. Scope \_\_\_\_\_ 1

2. Normative References \_\_\_\_\_ 1

3. Informative References \_\_\_\_\_ 2

4. Definitions \_\_\_\_\_ 2

5. General Information for All Lamps \_\_\_\_\_ 3

6. Information for Type A Lamps \_\_\_\_\_ 4

7. Information for Type B Lamps \_\_\_\_\_ 5

8. Information for Type C Lamps \_\_\_\_\_ 5

9. Information for Hybrid Type Lamps \_\_\_\_\_ 6

Annex A (Informative) \_\_\_\_\_ 7

## **Introduction**

With the rapidly changing light-emitting diode (LED) light sources for general illumination, there is a need for standardized LED lamp specification sheets for HID replacement and retrofit applications in a format that allows for the direct comparison of common characteristics across manufacturers.

Currently, many specification sheets contain different sets of data and information that can cause confusion when users compare products. Therefore, it is necessary for the American National Standards Institute (ANSI) to provide guidelines for manufacturers when creating specification sheets.

The purpose of this standardized specification sheet format is to communicate the features and performance of LED lamps for HID replacement and retrofit applications to users in a consistent manner throughout the industry.

In the context of this Standard, LED replacement lamps are intended to replace HID lamps or to be used in the retrofit of an existing fixture. Currently, there are many different lamp options in the market, with various form factors, light distributions, and wattage equivalency claims, some of which are not optimized for use in all existing fixtures.

This document specifies the performance, operational, physical, and electrical characteristics for reporting as part of any LED Lamp specification sheet for HID replacement and retrofit applications. Manufacturers have the flexibility to provide supplemental information in order to further assist users. Standardizing the features and performance data to be reported by manufacturers is intended to enable comparisons of these LED light sources.

For information related to compatible ballasts or drivers (as applicable), internet addresses, or hyperlinks within the specification sheet to supporting documents is an accepted practice.

## 1. Scope

The purpose is to standardize LED Lamp specification sheets for HID Replacement and Retrofit Applications, as the means of communication of critical lamp characteristics such as:

- a. Intended use ballasts (if applicable)
- b. Reference circuit (if applicable)
- c. Identify input voltage requirements (for use with mains voltage)
- d. Light Distribution
- e. Other characteristics—may include physical dimensions and/or temperature ratings for operation.

This Standard will cover all types of HID replacement and retrofit applications using LED lamps. The minimum contents and format of the specification sheet will be provided. Manufacturers can include additional information.

This includes ballast driven (commonly referred to as Type A), mains voltage driven (commonly referred to as Type B), external driver driven (commonly referred to as Type C), or hybrid type replacements. Lamps that do not fit existing replacement sockets, i.e., new lamp configurations, are not part of this Standard. Required contents and format of the specification sheet are provided. Manufacturers can include additional information.