

ANSI C78.50-2016 (R2022)

American National Standard for Electric Lamps— Assigned LED Lamp Codes

Secretariat:

National Electrical Manufacturers Association

Approved: April 12, 2022

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 17th Street, Suite 900 Rosslyn, Virginia 22209

© 2022 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 part of ANSI C78.50-2016 [R2022].)

This standard was processed and approved by the C78 Committee. Committee approval of the standard does not necessarily imply that all committee members voted for that approval.

Note: The user's attention is called to the possibility that compliance with this standard could require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain such a license, then details may be obtained from the Secretary, or the NEMA website.

CONTENTS

Part I General Information

1 2 3 4 5 6 7 8 9 10	Scope Normative References Definitions and Abbreviations Lamp Designations Lamp Shape Designations Beam Photometry and Classification for Directional Sources Lamp Drawings Electrical Characteristics Requirements Information on Luminaire Design	1 2 2 3 3 3 3 3 3 3
Part II	Lamp Classes	
Table 1 Table 2 Table 3	Lamp Data Sheet Manufacturer Data Sheet Content Requirements (if necessary) Common SSL Replacement Lamp Voltage Ratings	
Part III	Lamp Drawings	
Figure 1 Figure 2 Figure 3 Figure 4 Figure 5 Figure 6 Figure 7	MRX1 PAR16 with GU10 Base MR16 with GU10 Base PAR20 with GU24 Base and Typical Lamp Outline (dashed line) PAR30S with GU24 Base and Typical Lamp Outline (dashed line) PAR30L with GU24 Base and Typical Lamp Outline (dashed line) PAR38 with GU24 Base and Typical Lamp Outline (dashed line)	
Annex Annex A	Informative References	16

< This page left blank intentionally. >

Part I General Information

1 Scope

This standard provides physical and electrical characteristics of the group of integrally ballasted solid state lighting (SSL) lamps that have standardized characteristics. Lamps with clear, frosted, opaque, and lens end windows, and with various reflector and/or emitting coatings, are covered. Lamps covered in this standard contain LED-based light sources.

2 Normative References

The following standards contain provisions, which through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI C78.30-1997	American National Standard for Electric Lamps—Procedure for Use in Preparation of Lamp Space Drawings
ANSI C78.79-2014	American National Standard for Electric Lamps—Nomenclature for Envelope Shapes Intended for Use with Electric Lamps
ANSI C78.379-2006 (R2015)	American National Standard for Electric Lamps—Classification of the Beam Patterns of Reflector Lamps
ANSI C78.60360-2002 (S2016)	American National Standard for Electric Lamps—Standard Method of Measurement of Lamp Cap Temperature Rise
ANSI C78.60432:1-2007	American National Standard for Electric Lamps—Incandescent Lamps—Safety Specifications, Part 1: Tungsten Filament Lamps for Domestic and Similar General Lighting Purposes
ANSI C78.60432:2-2007	American National Standard for Electric Lamps—Safety Specifications, Part 2: Tungsten Halogen (TH) Lamps for Domestic and Similar General Lighting Purposes
ANSI C81.61-2017	American National Standard for Electrical Lamp Bases—Specifications for Bases (Caps) for Electric Lamps
ANSI C81.63-2007 (R2014)	American National Standard for Gauges for Electric Lamp Bases and Lampholders
ANSI/IESNA RP-27.1-05	Photobiological Safety for Lamps and Lamp Systems—General Requirements
ANSI/IESNA RP-27.2-00	Photobiological Safety for Lamps and Lamp Systems— Measurement Systems
ANSI/IESNA RP-27.3-96	Photobiological Safety for Lamps—Risk Group Classification and Labeling
IEC 60061-1:1969	Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 1: Lamp caps