



ANSI/NEMA C78.901-2016

American National
Standard for
Electric Lamps—
Single-Based
Fluorescent
Lamps—
Dimensional and
Electrical
Characteristics



National Electrical Manufacturers Association
1300 North 17th Street, Suite 900 • Rosslyn, VA 22209
www.NEMA.org





ANSI C78.901-2016

*American National Standard for Electric Lamps—
Single-Based Fluorescent Lamps—
Dimensional and Electrical Characteristics*

Secretariat:

National Electrical Manufacturers Association

Approved: August 23, 2016

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**

© 2016 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 C78.901-2016)

Suggestions for improvement of this standard should be submitted to the Secretariat, C78 Committee, National Electrical Manufacturers Association, 1300 North 17th Street, Suite 900, Rosslyn, Virginia 22209.

This standard was processed and approved by Accredited Standards Committee on Electric Lamps, C78. Committee approval of the standard does not necessarily imply that all committee members voted for its approval.

CONTENTS

Foreword	ii
Part I General Information and Requirements	
1 Scope	1
2 General	1
3 Normative References	1
4 Definitions	2
5 Lamp Abbreviations	2
6 Methods of Measurement	2
7 Reference Ballasts	2
8 Product Drawings	3
9 Applications of Lamps on More Than One Type of Circuit	3
10 Lamp Physical and Dimensional Requirements	3
11 Lamp Electrical Characteristics	4
12 Thermal Conditions	5
13 Requirements for Ballast Design	5
14 Information for Luminaire Design	7
Part II Dimensioning Principles and Lamp Outline Drawings	10
Part III Annexes	18
Annex A Bibliography	18
Annex B Guidelines for Establishing Fluorescent Lamp Abbreviations	19
Annex C Generic Designation System for Compact Fluorescent and T5 Twin Fluorescent Lamps	22
Annex D Guidelines for the Establishment of Wattage Ratings on Fluorescent Lamp Data Sheets	23
Part IV Lamp Specification Data Sheets	25
1 General Principles for Numbering of Data Sheets	25
2 Data Sheet List and Sequence	25
3 List of Data Sheets	26
Datasheets	28-144

< This page left blank intentionally. >

Part I General Information and Requirements

1 Scope

This standard sets forth the physical and electrical characteristics required to assure interchangeability and to assist in proper application of single-based fluorescent lamps. Single-based compact fluorescent lamps, both self-supporting and those requiring auxiliary support, including circular-, square-, and U-shaped lamps, are specified. Specifications for the lamp itself and the interactive features of the lamp with the ballast are given. Information for luminaire design is given for certain lamp types.

The lamps covered in this standard are intended for use with external ballasts as described. These lamps are designed for 60 Hz and/or high frequency (HF) operation.

Many of the lamp types covered in this standard are closely comparable to those specified in IEC 60901.

1.1 Important Patent Disclaimer

At the time of publication, it is possible that some of the elements of this document may be the subject of patent rights. When this Standard was approved for publication, the National Electrical Manufacturers Association (NEMA) did not know of any patent applications, patents pending, or existing patents. NEMA shall not be held responsible for identifying any or all such patent rights.

2 General

There are four parts to this standard.

- Part I** Contains requirements and general information. Detailed descriptions, references, and explanations of terms used in the lamp data sheets are given in this part. It also defines the principles of dimensioning lamps, both as finished lamps and for maximum outline purposes.
- Part II** Contains dimensioning principles and lamp outline drawings.
- Part III** Contains the annexes.
- Part IV** Contains all of the lamp data sheets for the lamp classes covered in this standard.

3 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 (R2011) *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 C78.81-2016 *American National Standard for Electric Lamps—Double-Capped Fluorescent Lamps—Dimensional and Electrical Characteristics*

ANSI C78.375A-2014 *American National Standard for Electric Lamps—Fluorescent Lamps—Guide for Electrical Measures*