



ANSI C78.60360-2002 (S2016)

Co gtlecp "P cvkqpcn"
Uxcpf ctf "hqt "Gngevtke"
Nco r uô "Uxcpf ctf "
O gyj qf "qh"O gcuwtgo gpv'
qh" "Nco r "Ecr "
Vgo r gtcwtg "Tkug'"



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





ANSI C78.60360-2002 (S2016)

*American National Standard for Electric Lamps—
Standard Method of Measurement of
Lamp Cap Temperature Rise*

Secretariat:

National Electrical Manufacturers Association

Approved: July 12, 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 ANS C78.60360)

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

In chapter II of this standard, the English text and the order of that text is exactly the same as that found in IEC 60360:1998. The reader should note, however, that the page numbers have been changed and French text is not included.

CONTENTS

Foreword..... ii

Chapter 1 1

1 Deviations affecting Clause 3.1 1

Chapter 2 2

1 General 2

1.1 Scope 2

1.2 Normative reference..... 2

2 Definitions 2

3 General conditions for measurements 3

3.1 Ageing and stabilizing 3

3.2 Supply voltage 3

3.3 Ambient and reference temperatures..... 3

4 Test requirements 3

4.1 Test enclosure 4

4.2 Suspension methods..... 4

4.2.1 Cap-up 4

4.2.2 Cap-down 4

5 Test lampholders 5

5.1 General construction 5

5.2 Test lampholder sleeve material specification..... 5

5.2.1 Composition 5

5.2.2 Structure and properties 5

5.2.3 Thickness 5

5.2.4 Quality and finish..... 5

5.3 Spring material specification 5

6 Supply conductors 6

7 Thermocouple..... 6

7.1 Materials..... 6

7.2 Junction 6

7.3 Attachment to lampholder sleeve 6

7.4 Equipment 6

7.5 Calibration 7

8 Assembly of the lamp and the test lampholder in the enclosure..... 7

9 Measurement of temperature rise..... 7

(This language is not part of the American National Standard.)

This Standard is being maintained under the stabilized maintenance option. Proposals for modification or improvement of this Standard are welcome. They should be sent to the National Electrical Manufacturers Association, 1300 N 17th Street, Suite 900, Arlington, VA 22209 or sent via the NEMA website (<http://www.nema.org>).

CHAPTER 1

United States of America's

Deviations to IEC 60360:1998

1 Deviations affecting Clause 3.1

The wording of Clause 3.1, "Ageing and stabilizing", shall be replaced by the following:

All discharge lamps shall be aged for 100 hours prior to use in the test. The lamps must be stabilized as specified in the applicable method of measurements standard.

For incandescent or tungsten halogen lamps no previous aging of the lamp is required. Sufficient stability of the lamp is achieved during the time necessary to reach the equilibrium temperature in the test enclosure.

CHAPTER 2

IEC 60360:1998

1 General

1.1 Scope

This International Standard describes the standard method of measurement of lamp cap temperature rise which is to be used when testing incandescent or discharge lamps for compliance with the limits. Temperature-rise limits for particular lamp types are, for example, listed in IEC 60432.

It covers the method of test and the specifications for test lampholders for lamps fitted with various sizes of Edison screw (ES) and bayonet caps (BC). This method has been used widely for incandescent lamps but its application is not limited to that kind of lamp.

1.2 Normative reference

The following normative document contains provisions which, through reference in this text, constitutes provisions of this International Standard. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60432: *Safety specification for incandescent lamps*

2 Definitions

For the purposes of this International Standard, the following definitions apply:

2.1

temperature rise of cap: Surface temperature rise of a standard test lampholder fitted to the lamp cap, when measured under conditions specified in this standard.

2.2

equilibrium temperature (t_m): Steady-state temperature of a standard test lampholder reached after a sufficient lamp operating time.

NOTE: The measuring accuracy should be $\pm 1^\circ\text{C}$.