NEMA Standards Publication

ANSI/NEMA C78.376-2001

American National Standard for Specifications for the Chromaticity of Fluorescent Lamps

National Electrical Manufacturers Association

National Electrical Manufacturers Association
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American National Standard

ANSI C78.376-2001
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American National Standard

for electric lamps—
Specifications for the
Chromaticity of
Fluorescent Lamps

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Foreword (This Foreword is not part of ANSI C78.376-2001.)

Suggestions for improvement of this standard should be submitted to the Secretariat C78, American National Standards Lighting Group of the National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

This standard was processed and approved by Accredited Standards Committee on Electric Lamps, C78, and its Subcommittee, C78-2. Committee approval of the standard does not necessarily imply that all committee members voted for that approval. At the time it approved this standard, the C78 Committee had the following members:

Al Rousseau, Chair C78
David T. Mullen and Al Rousseau, Technical Coordinators
Randolph N. Roy, Secretariat
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AMERICAN NATIONAL STANDARD

for electric lamps -

Specifications for the Chromaticity of Fluorescent Lamps

1. Scope

This standard covers the objectives and tolerances for the chromaticity of T8, T10 and T12 fluorescent lamps with a nominal loading of from 5 to 10 watts per foot at their normal 100 hour rating point. This standard also covers some compact lamps, where noted. The colors included are 2700K, 3000K/warm white, 3500K/white, 4000K/4100K/cool white, 5000K, and 6500K/daylight. The lamp under test shall be operated under reference conditions as specified in ANSI C78.375 Guide for Operation of Fluorescent Lamps and in the relevant C78 lamp standard.

2. Color specification basis

The x and y coordinates used in this specification are based on the 1931 CIE* Chromaticity Diagram. Lamps shall be rated in terms of the measurements standards established by the National Institute of Standards and Technology. Tolerances are based on the ellipses defined by David L. MacAdam in his paper "Specification of Small Chromaticity Differences" printed in *Journal of the Optical Society of America*, vol 33, no.1, Jan 1943, pp 18-26.

* International Committee on Illumination

3. Nominal color temperature

Values of correlated color temperature (CCT) will vary within a chromaticity tolerance ellipse since they are a function of color coordinates. For colors which are designated by nominal color temperature, the value shall be based on the CCT of the objective chromaticity.

For new colors, the nominal value of the color temperature shall differ from the CCT of the objective chromaticity by less than 100K. For a color with a nominal color temperature generally established prior to this standard, the value may be retained when it differs from the CCT of the objective chromaticity by a slightly greater amount.

4. Objective chromaticities

The objective chromaticities are shown in Table 1.