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# Dimming Ballast Energy Performance



National Electrical Manufacturers Association

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***Dimming Ballast Energy Performance***

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## Foreword

The NEMA Ballast Section has prepared this standard, *Dimming Ballast Energy Performance*. This standard provides a methodology for applying existing test methods for program start ballasts to fluorescent dimming ballasts and provides a way to calculate BLE for fluorescent dimming ballasts.

In the preparation of this standard, input of users and other interested parties has been sought and evaluated. Inquiries, comments, and proposed or recommended revisions should be submitted to the concerned NEMA product subdivision by contacting:

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Section approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development.

At the time the standard was approved, the Ballast Section was composed of the following members:

Acuity Brands Lighting
Atlas Lighting Products, Inc.
Crestron DALI & LED Drivers
Eaton's Cooper Lighting
ELB Electronics, Inc.
GE Lighting
Halco Lighting Technologies
Hubbell Lighting, Inc.
Leviton Lighting & Energy Solutions
Lutron Electronics Company, Inc.
MaxLite
OSRAM SYLVANIA Inc.
Philips Lighting Electronics North America
Sunpark Electronics Corp.
Technical Consumer Products, Inc.
Ultrasave Lighting Ltd.
Universal Lighting Technologies
Venture Lighting International

# Section 1
# GENERAL

## 1.1 SCOPE

This standard provides a methodology for applying existing test methods for program start ballasts to fluorescent dimming ballasts and provides a way to calculate BLE for fluorescent dimming ballasts. NEMA offers this standard to augment and harmonize with the 2014 Department of Energy (DOE) fluorescent ballast regulations. By design, dimming ballasts are already energy saving, but this standard would provide the methodology to also calculate new BLE limits for fluorescent dimming ballasts. This standard offers BLE limits for ballasts of common four foot bi-pin lamps, such as T8 and T5 lamps that are not covered by the most recent Federal rulemaking.

## 1.2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standards publication. By reference herein these publications are adopted in whole or in part as indicated in this standards publication.

Federal Register, Vol 76, No 219, November 14 2011, Table I.1, p. 70549

Federal Register, Vol 76, No 86, May 4, 2011, 10 CFR Part 430, P 25211, *Energy Conservation Program: Test Procedures for Fluorescent Lamp Ballasts*

Federal Register, Vol 76, No 86, May 4, 2011, p. 25244, *Total Test Ballast Lamp Arc Power divided by Ballast Input Power*

NEMA LL 9-2011, *Dimming of T8 Fluorescent Lighting Systems*

IEC 60081 Ed 5 A5, Sheet 6840-5, *Double-capped fluorescent lamps - Performance specifications, July 19, 2013*

IEC 60081 Ed 5 A5, Sheet 6640-6, *Double-capped fluorescent lamps - Performance specifications, July 19, 2013*

## 1.3 DEFINITIONS

**Ballast Luminous Efficiency (BLE)—**the ratio of lamp arc power to ballast input power

**Standby Power**[1]**—**the conditions in which an energy using product is connected to main power source and offers one or more of the following user oriented or protected functions:

- to facilitate the activation or deactivation of other functions (including active mode) by remote switching (including remote control), internal sensor, or timer.
- continuous functions, including information or status displays (including clocks) or sensor-based functions.

[1] Adopted from Federal Register 10 CFR Part 430.2.