

Public Review Draft

Proposed Addendum to Standard 189.1-2017

Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

First Public Review (February 2020)
(Draft Shows Proposed Changes to Current Standard)

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Foreword

This proposal would organize the interior and exterior lighting controls requirements into separate interior and exterior subsections to Section 7.4.6 "Lighting". The new structure would consist of subsections 7.4.6.1 (Lighting Power Allowance), 7.4.6.2 (Interior Lighting Controls), and 7.4.6.3 (Exterior Lighting Controls). This proposal would also require subzone occupancy sensing control in large offices that is modelled after the Section C405.2.1.3 of the 2018 IECC.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum at to 189.1-2017

Add definition to Section 3.2 as follows:

3.2 Definitions

general lighting: see ANSI/ASHRAE/IES Standard 90.1.

Modify and renumber 7.4.6.2 through 7.4.6.5 as follows:

7.4.6 Lighting. The lighting shall comply with ANSI/ASHRAE/IES Standard 90.1, Section 9, with the following modifications and additions.

...

7.4.6.2 Interior Lighting Controls. The interior lighting control requirements in this section are in addition to the control requirements in ANSI/ASHRAE/IES Standard 90.1 Section 9.4.1.1.

7.4.6.2.1 Occupancy Sensor Controls in Commercial and Industrial Storage Stacks ~~with Multilevel Switching or Dimming.~~ The lighting in commercial and industrial storage stack areas shall be controlled by an occupant sensor with multilevel switching or dimming system that reduces lighting power a minimum of 50% within 20 minutes of all occupants leaving the stack area.

Exception to 7.4.6.2.1: Storage stack areas illuminated by high-intensity discharge (HID) lighting with an LPD of 0.8 W/ft^2 (8.6 W/m^2) or less.

7.4.6.2.2 ~~7.4.6.3~~ Automatic Controls for Egress and Security Lighting. Lighting in any area within a building that is required to be continuously illuminated for reasons of building security or emergency egress shall not exceed 0.1 W/ft^2 (1 W/m^2). Additional egress and security lighting shall be allowed, provided it is controlled by an *automatic* control device that turns off the additional lighting.

7.4.6.2.3 Occupancy Sensing Control in Large Office Spaces. *General lighting* in office spaces greater than 250 ft^2 (23 m^2) shall be controlled by occupancy sensing controls that comply with all of the following:

- a. The occupancy sensing controls shall be configured so that *general lighting* shall be controlled separately in control zones with floor areas not greater than 600 ft^2 (56 m^2)
- b. Within 20 minutes of the control zone being unoccupied, the occupancy sensing controls shall turn off or uniformly reduce lighting power to no more than 20 percent of full power.
- c. Within 20 minutes of the entire office space being unoccupied, the occupancy sensing controls shall automatically turn off *general lighting* in all control zones in the space.
- d. *General lighting* in each control zone shall be allowed to automatically turn on to full power upon occupancy within the control zone. When occupancy is detected in any control zone in the space, the *general lighting* in other control zones that are unoccupied shall operate at no more than 20 percent of full power.

7.4.6.3 Exterior Lighting Controls. This section supersedes ANSI/ASHRAE/IES Standard 90.1, Section 9.4.1.4, for all exterior sign lighting, and lighting serving uncovered parking areas and open areas in outdoor sales lots.

7.4.6.3.1 ~~7.4.6.4~~ Controls for Exterior Sign Lighting. This section ~~supersedes ANSI/ASHRAE/IES Standard 90.1, Section 9.4.1.4, for all exterior sign lighting.~~ All exterior sign lighting, including internally illuminated signs and lighting on externally illuminated signs, shall comply with the requirements of Sections 7.4.6.4.1 or 7.4.6.4.2.

Exceptions to 7.4.6.3.1 ~~7.4.6.4~~:

1. Sign lighting that is specifically required by a health or life safety statute, ordinance, or regulation.
2. Signs in tunnels.

7.4.6.3.1.1 ~~7.4.6.4.1~~ All sign lighting that operates more than one hour per day during *daylight hours* shall include controls to automatically reduce the input power to a maximum of 35% of full power for a period from one hour after sunset to one hour before sunrise.

Exception to 7.4.6.3.1.1 ~~7.4.6.4.1~~: Sign lighting using neon lamps with controls to automatically reduce the input power to a maximum of 70% of full power for a period from one hour after sunset to one hour before sunrise.

7.4.6.3.1.2 ~~7.4.6.4.2~~ All other sign lighting shall include the following:

- a. Controls to automatically reduce the input power to a maximum of 50% of full power for a period from midnight or within one hour of the end of business operations, whichever is later, until 6:00 am or business opening, whichever is earlier.
- b. Controls to automatically turn off during *daylight hours*.

7.4.6.3.2 ~~7.4.6.5~~ Parking and Outdoor Sales Lighting. This section ~~supersedes ANSI/ASHRAE/IES Standard 90.1, Section 9.4.1.4, for lighting serving uncovered parking areas and open areas in outdoor sales lots.~~ Outdoor luminaires serving uncovered parking areas and open areas in outdoor sales lots shall be controlled by all of the following:

- a. Luminaires shall be controlled by a device that automatically turns off the luminaire during *daylight hours*.
- b. Luminaires shall be controlled by a timeclock or other control that automatically turns off the luminaire according to a timed schedule.

- c. For luminaires having a rated input wattage of more than 50 W and where the bottom of the luminaire is mounted 24 ft (7.3 m) or less above the ground, the luminaires shall be controlled by one or more devices that automatically reduce lighting power of each luminaire by a minimum of 50% when there is no activity detected in the controlled zone for a period no longer than 15 minutes. No more than 1500 input watts of lighting power shall be controlled together.

Exceptions to 7.4.6.3.2(c) ~~7.4.6.5 (e)~~:

1. Lighting serving street frontage for vehicle sales lots.
2. Lighting for covered vehicle entrances or exits from buildings or parking structures where required for safety, security, or eye adaptation.