ADDENDA

ANSI/ASHRAE/IES Addendum bs to
ANSI/ASHRAE/IES Standard 90.1-2019

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by ASHRAE and the American National Standards Institute on July 29, 2022, and by the Illuminating Engineering Society on July 26, 2022.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (https://www.ashrae.org/continuous-maintenance).

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FOREWORD

Addendum bs updates the lighting power allowances (LPA) in Section 9.3, "Simplified Building Method Compliance Path," to bring them in line with the LPA values in the Building Area Method Compliance Path. The Building Area Method LPAs are multiplied by 0.90 to continue the methodology used during the original development of the Simplified Method in 2015. Per the original Simplified Method proposal "The energy savings of this method is equal to or better than following Building Area Method (Section 9.5.1) or the Space-by-Space Method (Section 9.5.2)."

The alteration exception of just meeting an efficacy reduction is removed, as the vast majority of lighting alterations use new LED luminaires, which was the basis for the efficiency reduction in the exception.

Exterior LPAs match the proposed 2022 LPAs except for the base allowance and façade lighting, which remain at the original lower allowances.

Structurally, the LPA column in the tables is removed and the combined LPA is moved into the text of the first cell of the table. The intent of the Simplified Method is that the LPA is for the entire building and not for individual spaces. The current table shows that each space must meet the same LPA.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum bs to Standard 90.1-2019

Modify Section 9.3 as shown (I-P and SI).

9.3 Simplified Building Method Compliance Path. The Simplified Building Method contains the requirements for interior lighting in Section 9.3.1 and exterior lighting in Section 9.3.2 and shall be allowed to be used where at least 80% of the floor area supports either office *buildings*, retail *buildings*, or school *buildings*. The Simplified Building Method shall be used for new *buildings* or tenant~~s~~ improvements of less than 25,000 ft^2. Interior and exterior wattage allowances shall be calculated and complied with separately.

~~**Exception to 9.3:** *Alterations* involving only *luminaire* and *lamp/ballast* replacements shall be permitted to comply by reducing the installed power by a minimum of 35% for existing T12 *systems*, 20% for existing T8 or T5 *systems*, 45% for existing HID systems, and 75% for existing incandescent *systems*.~~

9.3.1 Simplified Building Method of Calculating Interior Lighting Power Allowance. *Buildings* (new and *alterations*) shall comply with the *lighting power allowance* and *control* requirements of Table~~s~~ 9.3.1-1, Table 9.3.1-2, ~~and~~ or Table 9.3.1-3.

9.3.2 Simplified Building Method of Calculating Exterior Lighting Power Allowance. For all *building* types listed in Section 9.3, exterior areas (new and *alterations*) shall comply with the *lighting power allowance* and *control* requirements of Table 9.3.2.

Table 9.3.1-1 Simplified Building Method for Office *Buildings*

Interior *Space* Type and *LPA*	~~Interior Lighting Power Allowance~~	*Controls* [a]
All *spaces* in office *buildings* other than parking garages~~, stairwells, and corridors~~ The total *LPA* for the *building* other than parking garages shall not exceed 0.56 W/ft^2 (6.0 W/m^2).	~~0.70 W/ft^2 (7.5 W/m^2)~~	All lighting shall be *automatically* controlled to turn off when individual *spaces* are ~~the *building* is~~ either unoccupied or scheduled to be unoccupied. (**Exception:** Lighting load not exceeding 0.02 W/ft^2 multiplied by the gross lighted area of the ~~*building*~~ *space* shall be permitted to operate at all times.) Each *space* shall have a *manual control* device that allows the occupant to reduce lighting power by a minimum of 50% and to turn the lighting off.
Office spaces ≤150 ft^2 (14 m^2)~~ Office spaces less than or equal to 250 ft^2~~, classrooms, conference rooms, meeting rooms, training rooms, storage rooms, and break rooms	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *manual*-ON *occupant sensors*.
Office *spaces* greater than ~~250 ft^2~~ 150 ft^2 (14 m^2) and restrooms	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *occupant sensors*.
Stairwells and corridors in office *buildings* ~~and parking garages~~	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *occupant sensors* that reduce the lighting power by a minimum of 50% when no activity is detected for not longer than ~~20~~15 minutes and be controlled to turn off when the *building* is either unoccupied or scheduled to be unoccupied.
Parking garages The *LPA* shall not exceed 0.14 W/ft^2 (1.5 W/m^2) for the interior parking floors. Uncovered floors of a garage shall use *LPA* and *control* requirements in Table 9.3.2 for parking lots.	~~0.13 W/ft^2 (1.4 W/m^2)~~	~~All lighting shall be *automatically* controlled to turn off during garage nonoperating hours.~~ All ~~L~~lighting shall ~~also~~ be controlled by *occupant sensors*. *Controls* shall reduce the power by a minimum of 50% when no activity is detected for not longer than ~~20~~15 minutes. No device shall control more than 3600 ft^2 (~~334~~336 m^2).

~~a. All lights in the *space* shall be controlled.~~

Table 9.3.1-2 Simplified Building Method for Retail *Buildings*

Interior *Space* Type and *LPA*	~~Interior Lighting Power Allowance~~	*Controls* [a]
All *spaces* in retail *buildings* other than parking garages~~, stairwells, and corridors~~ The total *LPA* for the *building* other than parking garages shall not exceed 0.70 W/ft^2 (7.5 W/m^2).	~~1.00 W/ft^2 (10.8 W/m^2)~~	All lighting shall be *automatically* controlled to turn off when individual *spaces* are ~~the *building* is~~ either unoccupied or scheduled to be unoccupied. (**Exception:** Lighting load not exceeding 0.02 W/ft^2 multiplied by the gross lighted area of the ~~*building*~~ *space* shall be permitted to operate at all times.) Each *space* shall have a *manual control* device that allows the occupant to reduce lighting power by a minimum of 50% and to turn the lighting off.
Sales area	~~1.00 W/ft^2 (10.8 W/m^2)~~	These *spaces* shall also be *automatically* controlled • to reduce the *general lighting* power by a minimum of 75% during nonbusiness hours, • to turn off all lighting other than *general lighting* during non-business hours, and • by *continuous daylight dimming* controls ~~b~~ in *spaces* with *top-lighting*.

~~a. All lights in the *space* shall be controlled.~~
~~b. When the combined input power of the general lights completely or partially within the *daylight areas* is 150 W or greater.~~

Table 9.3.1-2 Simplified Building Method for Retail *Buildings*

Interior *Space* Type and *LPA*	~~Interior Lighting Power Allowance~~	*Controls* [a]
Stock rooms, dressing/fitting rooms, locker rooms, and restrooms	~~1.00 W/ft^2 (10.8 W/m^2)~~	These *spaces* shall also be controlled by; auto-ON or *manual*-ON *occupant sensors*, and *continuous daylight dimming* controls ~~b~~ in *spaces* with *toplighting*.
Office *spaces*, conference rooms, meeting rooms, training rooms, storage rooms, break rooms, and utility *spaces*	~~1.00 W/ft^2 (10.8 W/m^2)~~	These *spaces* shall also be controlled by; *manual*-ON *occupant sensors*, and *continuous daylight dimming* controls ~~b~~ in *spaces* with *toplighting*.
Stairwells and corridors in retail *buildings* ~~and parking garages~~	~~1.00 W/ft^2 (10.8 W/m^2)~~	These *spaces* shall also be controlled by *occupant sensors* that reduce the lighting power by a minimum of 50% when no activity is detected for not longer than ~~20~~15 minutes and be controlled to turn off when the *building* is either unoccupied or scheduled to be unoccupied.
Parking garages The *LPA* shall not exceed 0.14 W/ft^2 (1.5 W/m^2) for the interior parking floors. Uncovered floors of a garage shall use *LPA* and *control* requirements in Table 9.3.2 for parking lots.	~~0.13 W/ft^2 (1.4 W/m^2)~~	~~All lighting shall be *automatically* controlled to turn off during garage nonoperating hours.~~ All ~~l~~lighting shall ~~also~~ be controlled by *occupant sensors*. *Controls* shall reduce the power by a minimum of 50% when no activity is detected for not longer than ~~20~~15 minutes. No device shall control a more than 3600 ft^2 (~~334~~336 m^2).

~~a. All lights in the *space* shall be controlled.~~
~~b. When the combined input power of the general lights completely or partially within the *daylight areas* is 150 W or greater.~~

Table 9.3.1-3 Simplified Building Method for School *Buildings*

Interior *Space* Type and *LPA*	~~Interior Lighting Power Allowance~~	*Controls* [a]
All *spaces* in school *buildings* other than parking garages~~, stairwells, and corridors~~ The total *LPA* for the *building* other than parking garages shall not exceed 0.63 W/ft^2 (6.8 W/m^2)	~~0.70 W/ft^2 (7.5 W/m^2)~~	All lighting shall be *automatically* controlled to turn off when individual *spaces* are ~~the *building* is~~ either unoccupied or scheduled to be unoccupied. (***Exception:*** Lighting load not exceeding 0.02 W/ft^2 multiplied by the gross lighted area of the ~~building~~ *space* shall be permitted to operate at all times.) Each *space* shall have a *manual control* device that allows the occupant to reduce lighting power by a minimum of 50% and to turn the lighting off.
Classrooms, offices *spaces*, conference rooms, meeting rooms, library, storage rooms, and break rooms	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *manual*-ON *occupant sensors*
Gymnasiums and cafeterias	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *occupant sensors*.
Restrooms	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *occupant sensors*.
Stairwells and corridors in school *buildings* and parking garages	~~0.70 W/ft^2 (7.5 W/m^2)~~	These *spaces* shall also be controlled by *occupant sensors* that reduce the lighting power by a minimum of 50% when no activity is detected for not longer than ~~20~~15 minutes and be controlled to turn off when the *building* is either unoccupied or scheduled to be unoccupied.
Parking garages The *LPA* shall not exceed 0.14 W/ft^2 (1.5 W/m^2) for the interior parking floors. Uncovered floors of a garage shall use *LPA* and *control* requirements in Table 9.3.2 for parking lots.	~~0.13 W/ft^2 (1.4 W/m^2)~~	~~All lighting shall be *automatically* controlled to turn off during garage nonoperating hours.~~ All ~~l~~lighting shall ~~also~~ be controlled by *occupant sensors*. *Controls* shall reduce the power by a minimum of 50% when no activity is detected for not longer than ~~20~~15 minutes. No device shall control a more than 3600 ft^2 (~~334~~336 m^2).

~~a. All lights in the *space* shall be controlled.~~

Table 9.3.2 Simplified Building Method for *Building* Exteriors

Exterior Area Type	Exterior Lighting Power Allowance [a,b]	Controls [c]
All exterior areas		All lighting shall be *automatically* controlled to shut off the lighting when daylight is available.
Base allowance	200 W	*Luminaires* shall be turned off or the power reduced by a minimum of 75% during nonoperating hours.
Façade lighting ~~and special feature areas, walkways, plazas~~	0.10 W/ft^2 (1.1 m^2)	*Luminaires* shall be turned off or the power reduced by a minimum of 75% during nonoperating hours.
Roof terraces, special feature areas, walkways, plazas and ramps	0.07 W/ft^2 (0.75 m^2)	*Luminaires* shall be turned off or the power reduced by a minimum of 75% during nonoperating hours.
Landscape	~~0.04~~ 0.036 W/ft^2 (~~0.43~~ 0.39 m^2)	*Luminaires* shall be turned off or the power reduced by a minimum of 75% during nonoperating hours.
Entry doors	14 W/linear foot (46 W/linear metre)	*Luminaires* shall be turned off or the power reduced by a minimum of 75% during nonoperating hours.
Stairs ~~and ramps~~	~~0.7 W/ft^2 (7.5 W/m^2)~~ Exempt	No additional *controls* required.
Parking lots and drives	~~0.05~~ 0.037 W/ft^2 (~~0.54~~ 0.40 m^2)	*Luminaires* mounted 25 ft (7.6 m) or less above grade shall be controlled to reduce the power by at least 50% when no activity is detected for not longer than 15 minutes.
All other areas not listed	0.20 W/ft^2 (2.2 m^2)	*Luminaires* shall be turned off or the power reduced by a minimum of 75% during nonoperating hours.

a. To calculate the exterior allowance, multiply the *space* or area square footage by the allowed W/ft^2 and sum the exterior allowances and the base allowance. Façade lighting shall be calculated separately by multiplying the façade area by the allowed W/ft^2. Façade allowance shall not be traded with other exterior areas or between separate *façade areas*.

b. For buildings in Lighting Zone 2, as defined in Table 9.4.2-1, ~~decrease~~ multiply exterior allowances by 0.7 ~~20%~~. For buildings in Lighting Zone 4, as defined in Table 9.4.2-1, ~~increase~~ multiply exterior allowances by 1.4 ~~25%~~.

~~c. All exterior lighting shall be *automatically* controlled by either a photocell or an astronomical time switch to shut off the lighting when daylight is available.~~

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