BSR/ASHRAE/IES Addendum dq
to ANSI/ASHRAE/IES Standard 90.1-2022

Public Review Draft

Proposed Addendum dq to Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

First Public Review (August 2025)
(Draft Shows Proposed Changes to Current Standard)

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FOREWORD

This addendum updates lighting modeling rules in Section 12 and Appendix G to align with the current prescriptive requirements in Section 9. The dwelling units LPD is based on PNNL's 90.1 2022 Final Determination Technical Support Document reflect 90.1 2019 Addendum br. Updates to Section 12.5.2 clarifies that systems and components in the proposed design that do not meet prescriptive requirements in Section 6 must be modeled as minimally compliant with this section unless otherwise prescribed in Figure 12.5.2 and Table 12.5.2-1.

[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 dq to 90.1-2022

12.5.2 HVAC Systems. The *HVAC system* type and related performance parameters for the *budget build- ing design* shall be determined from Figure 12.5.2, the *system* descriptions in Table 12.5.2-1 and accompa- nying notes, and the following rules:

a. ~~**Budget Building Systems**~~ **Parameters** **Not Listed.** Where there are ~~specific~~ requirements in Sections 6.4 and 6.5 applicable to *systems* and components *in* the *budget building design, the budget building design* shall be modeled as meeting these requirements. *Budget design* ~~C~~components and parameters not listed in Figure 12.5.2 and Table 12.5.2-1 or otherwise not specifically addressed in this subsection shall be identical to those in the *proposed design*.

~~**Exception to 12.5.2(a):** Where there are specific requirements in Sections 6.4 and 6.5, the component *efficiency* in the *budget building design* shall be adjusted to the lowest *efficiency* level allowed by the requirement for that component type.~~

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Table 12.5.1 Modeling Requirements for Calculating Design Energy Cost and Energy Cost Budget *(Continued)*

Proposed Design (Column A) **Design Energy Cost (DEC)**	**Budget Building Design (Column B)** **Energy Cost Budget (ECB)**
6. Lighting	
Lighting power in the *proposed design* shall be determined as follows: ……. d. *Lighting system* power shall include all *lighting system* components shown or provided for on plans (including *lamps*, *ballasts*, task *fixtures*, and furniture-mounted *fixtures*). For *dwelling units*, hotel/motel guest rooms, and other *spaces* in which *lighting systems* consist of plug-in light *fixtures* that are not shown or provided for on *design documents*, assume identical	a. Where a complete *lighting system* exists, lighting power in the *budget building* design shall be the same as in the *proposed design*. b. Where a *lighting system* has been designed, the *interior lighting power allowance* shall be determined using either the *Building* Area Method or Space-by-Space Method, and the *space* use classification shall be the same as the *proposed design* with lighting power set equal to the maximum allowed for the

lighting power for the *proposed design* and *baseline building design* in the simulations. …. *f.* *Automatic* daylighting controls included in the *proposed design* may be modeled directly in the *building* simulation or be modeled in the *building* simulation through schedule adjustments determined by a separate analysis approved by the *authority having jurisdiction*. Modeling and schedule adjustments shall separately account for *primary sidelighted areas*, *secondary sidelighted areas*, and toplighted areas and shall account for fenestration VT. *g.* *Automatic* lighting controls included in the *proposed design* but not required by Section 9.4.1 shall be modeled using the following methods for each luminaire under control: 1. *Manual*-ON or partial-auto-ON *occupancy sensors* shall be modeled by reducing the lighting schedule each hour by the *occupancy sensor* reduction factors in Table G3.7-1 and G3.7-2 for the applicable *space* type multiplied by 0.25. ~~2. *Automatic* lighting controls listed in Table 9.5.2.3 shall be modeled using the sum of the applicable control factors (CF). Apply control factors to only the portion of wattage of the *fixtures* in the *space* controlled by said lighting control. Divide each hour of the lighting schedule by (1 + ∑CF), where ∑CF indicates the sum of all applicable control factors for that *space* per Section 9.5.2.3 and Table 9.5.2.3.~~ ……	corresponding method and category in Section 9.5 ~~9.2~~. ~~Additional interior lighting power for nonmandatory controls allowed under Table 9.5.2.3 shall not be included in the *budget building design*.~~ *Lighting power density* in *dwelling units* shall be ~~0.60~~ 0.29 W/ft² (~~6.5~~ 3.1 W/m²) c. Where lighting neither exists nor is submitted with design documents, the lighting power in the *budget building* design shall be the same as in the *proposed design*. d. Power for *fixtures* not included in the lighting power calculation shall be modeled identically in the *proposed design* and *budget building design*. e. Mandatory *automatic* lighting controls required by Section 9.4.1 shall be modeled the same as the *proposed design*. f. Modelling of daylighting controls shall account for fenestration VT

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Table G3.1 Modeling Requirements for Calculating Proposed Building Performance and Baseline Building Performance *(Continued)*

Proposed Building Performance	Baseline Building Performance
6. Lighting	
Lighting power in the *proposed design* shall be determined as follows: …… e. For *dwelling units*, hotel/motel guest rooms, and other *spaces* in which *lighting systems* are connected via receptacles and are not shown on *design documents*, lighting power used in the simulation shall be equal to the lighting power allowance in Tables 9.5.2.1-1 and 9.5.2.1-2 for the appropriate *space* type or as designed, which- ever is greater. For the *dwelling units*, lighting power used in the simulation shall be equal to ~~0.60~~ 0.29 W/ft² (~~6.5~~ 3.1 W/m²) or as designed, whichever is greater. **Exception:** Lighting use can be reduced for the portion of the *space* illuminated by the specified *fixtures* provided that they maintain the same illuminance level as in the baseline. Such reduction shall be demonstrated by calculations.	