

**(Effective until July 1, 2023)**

**WAC 51-11C-405021 Section C405.2.1—Occupant sensor controls.**

**C405.2.1 Occupant sensor controls.** Occupant sensor controls shall be installed to control lights in the following space types:

1. Classrooms/lecture/training rooms.
2. Conference/meeting/multipurpose rooms.
3. Copy/print rooms.
4. Lounges/breakrooms.
5. Enclosed offices.
6. Open plan office areas.
7. Restrooms.
8. Storage rooms.
9. Locker rooms.
10. Other spaces 300 square feet (28 m<sup>2</sup>) or less that are enclosed by floor-to-ceiling height partitions.
11. Warehouse storage areas.
12. Enclosed fire rated stairways.
13. Service corridors.
14. Covered parking areas.

Occupant sensor controls in warehouse storage areas, corridors, and library stacks, shall comply with Section C405.2.1.2. Occupant sensor controls in fire rated stairways shall comply with Section C405.2.1.5. Occupant sensor controls in open plan office areas shall comply with Section C405.2.1.3. Occupant sensor controls in covered parking areas shall comply with Section C405.2.1.4. Occupant sensor controls for all other spaces shall comply with Section C405.2.1.1.

- EXCEPTIONS:
1. Corridors in manufacturing facilities.
  2. General lighting and task lighting in shop and laboratory classrooms.
  3. Digital timer switch controls may be provided in lieu of occupant sensor controls in the following space types if under 300 square feet: Copy/print rooms, storage rooms, and janitorial closets. Digital timer switches shall comply with the following:
    - 3.1. Turn lights on or off with operation of a button, switch or other manual means.
    - 3.2. Automatically turn lights off within 15 minutes of the lights being turned on. The means for setting the time delay shall not be visible on the front of the switch.
    - 3.3. The switch shall provide both audible and visual indication of impending time-out of the switch. Audible and visual indication shall be given at least once within 5 minutes of time-out of the switch. Visual indication shall consist of turning the lights momentarily off, and then back on.

**C405.2.1.1 Occupant sensor control function.** Occupant sensor controls shall comply with all of the following:

1. They shall be configured to automatically turn off lights within 20 minutes of all occupants leaving the space.
2. They shall be manual on or configured to automatically turn the lighting on to not more than 50 percent power.

EXCEPTION: Full automatic-on controls shall be permitted to control lighting in public corridors, stairways, restrooms, primary building entrances areas and lobbies, and areas where manual-on operation would endanger the safety or security of the room or building occupants.

3. They shall incorporate a manual control to allow occupants to turn lights off.

**C405.2.1.2 Occupant sensor control function in warehouses, storage areas and service corridors.** Occupant sensor controls shall be configured to comply with all of the following:

1. Automatically reduce lighting power by not less than 50 percent within 20 minutes of all occupants leaving the area.
2. Control lighting in each aisleway and corridor independently, and shall not control lighting beyond the aisleway or corridor being controlled by the sensor.

3. Automatically turn lighting off within 20 minutes of all occupants leaving the space, or comply with Section C405.2.2 to turn lighting off when the building is vacant.

4. Restore lighting to full power when occupants enter the space.

**C405.2.1.3 Occupant sensor control function in open plan office areas.**

Occupant sensor controls in open plan office spaces less than 300 square feet (28 m<sup>2</sup>) in area shall comply with Section C405.2.1.1. Occupant sensor controls in all other open plan office spaces shall be configured to comply with all of the following:

1. General lighting is controlled separately in control zones with floor areas not greater than 600 square feet (55 m<sup>2</sup>) within the open plan office space.

2. Automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the open plan office space.

3. General lighting power in each control zone is reduced by not less than 80 percent of the full zone general lighting power within 20 minutes of all occupants leaving that control zone. Control functions that switch control zone lights completely off when the zone is unoccupied meet this requirement.

4. Daylight responsive controls activate open plan office space general lighting or control zone general lighting only when occupancy for the same area is detected.

**C405.2.1.4 Occupant sensor control function in parking garages.** Occupant sensor controls shall be configured to comply with all of the following:

1. Lighting power of each *luminaire* shall be automatically reduced by a minimum of 30 percent when there is no vehicle or pedestrian activity detected within a lighting zone for 20 minutes. Lighting zones for this requirement shall be no larger than 3,600 square feet.

**Exceptions:**

1.1. Lighting in daylight transition zones and ramps without parking.

1.2. Covered parking garages with a total lighting power less than 0.07 watts per square foot.

2. Where time switch controls in accordance with Section C405.2.2 are not installed, the occupant sensor shall automatically turn all the lighting off within 20 minutes of all occupants leaving the space and restore lighting to full power when occupants enter the space.

**C405.2.1.5 Occupant sensor control function in enclosed fire rated stairways.**

Occupant sensor controls shall be configured to automatically reduce lighting power by not less than 50 percent when no occupants have been detected in the stairway for a period not exceeding 20 minutes and restore lighting to full power when occupants enter the stairway. All portions of stairways shall remain illuminated to meet the requirements of Section 1009 of the *International Building Code* when the lighting power is reduced.

[Statutory Authority: RCW 19.27A.025, 19.27A.045 and chapter 19.27 RCW. WSR 20-21-080, § 51-11C-405021, filed 10/19/20, effective 2/1/21. Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, § 51-11C-405021, filed 11/26/19, effective 7/1/20. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-405021, filed 1/19/16, effective

7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-405021, filed 2/1/13, effective 7/1/13.]

**(Effective July 1, 2023)**

**WAC 51-11C-405021 Section C405.2.1—Occupant sensor controls.**

**C405.2.1 Occupant sensor controls.** Occupant sensor controls shall be installed to control luminaires in the space types listed in Table C405.2.1, and shall comply with the requirements listed in the table.

- EXCEPTIONS:
1. Corridors in manufacturing facilities.
  2. *General lighting* and task lighting in shop and laboratory classrooms.
  3. Luminaires that are required to have specific application controls in accordance with Section C405.2.6 unless specifically required to comply with this section by Section C405.2.6.

**Table C405.4.2(1)  
Interior Lighting Power Allowances—Building Area Method**

<b>Space Type</b>	<b>Comply with Section</b>
Classrooms/lecture/training rooms	C405.2.1.1
Conference/meeting/multipurpose rooms	C405.2.1.1
Copy/print rooms	C405.2.1.1
Lounge/breakrooms	C405.2.1.1
Enclosed offices	C405.2.1.1
Open plan office areas	C405.2.1.3
Restrooms	C405.2.1.1
Storage rooms	C405.2.1.1
Locker rooms	C405.2.1.1
Other spaces 300 square feet (28 m <sup>2</sup> ) or less that are enclosed by floor-to-ceiling height partitions	C405.2.1.1
Warehouse storage areas	C405.2.1.2
Library stacks	C405.2.1.2
Enclosed fire rated stairways	C405.2.1.5
Corridors	C405.2.1.6

**C405.2.1.1 Occupant sensor control function.** Occupant sensor controls for the space types listed in Section C405.2.1 shall comply with all of the following:

1. They shall be configured to automatically turn off lights within 20 minutes of all occupants leaving the space.
2. They shall be manual on or configured to automatically turn the lighting on to not more than 50 percent power.
3. They shall incorporate a manual control to allow occupants to turn lights off.

EXCEPTION: Full automatic-on controls with no manual control shall be permitted in corridors, interior parking areas, stairways, restrooms, locker rooms, library stacks, lobbies, and areas where manual operation would endanger occupant safety or security.

4. They shall incorporate a manual control to allow occupants to turn lights off.

**C405.2.1.2 Occupant sensor control function in warehouse storage areas and library stacks.** Lighting in library stacks and warehouse storage areas shall be controlled as follows.

1. Lighting in each aisleway shall be controlled independently of lighting in all other aisleways and open areas.

2. Occupant sensors shall automatically reduce lighting power within each controlled area to an unoccupied setpoint of not more than 50 percent within 20 minutes after all occupants have left the controlled area.

3. Lights which are not turned off by occupant sensors shall be turned off by time schedule sweep to turn lighting off within 20 minutes of all occupants leaving the space, or comply with Section C405.2.2 to turn lighting off when the building is vacant.

4. Restore lighting to full power or target light level when occupants enter the space.

5. A *manual* control shall be provided to allow occupants to turn off lights in the space.

**C405.2.1.3 Occupant sensor control function in open plan office areas.**

Occupant sensor controls in open plan office spaces less than 300 square feet (28 m<sup>2</sup>) in area shall comply with Section C405.2.1.1. Occupant sensor controls in all other open plan office spaces shall be configured to comply with all of the following:

1. *General lighting* is controlled separately in control zones with floor areas not greater than 600 square feet (55 m<sup>2</sup>) within the open plan office space.

2. *General lighting* in each control zone shall be permitted to automatically turn on upon occupancy within the control zone. *General lighting* in other unoccupied zones within the open plan office space shall be permitted to turn on to not more than 20 percent of full power or remain unaffected.

3. Automatically turn off *general lighting* in all control zones within 20 minutes after all occupants have left the open plan office space.

4. *General lighting* in each control zone shall turn off or uniformly reduce lighting power to an unoccupied setpoint of not more than 20 percent of full power within 20 minutes after all occupants have left the control zone.

5. Lighting controls in open plan office areas larger than 5,000 square feet must also comply with Section C405.2.8.

**C405.2.1.4 Occupant sensor control function in enclosed fire rated stairways.**

Occupant sensor controls shall be configured to automatically reduce lighting power by not less than 50 percent when no occupants have been detected in the stairway for a period not exceeding 20 minutes and restore lighting to full power when occupants enter the stairway. All portions of stairways shall remain illuminated to meet the requirements of Section 1009 of the *International Building Code* when the lighting power is reduced.

**C405.2.1.5 Occupant sensor control function in corridors.** Occupant sensor controls in *corridors* shall uniformly reduce lighting power to an unoccupied setpoint of not more than 50 percent of full power within 20 minutes after all occupants have left the space.

EXCEPTION: *Corridors* provided with less than two foot-candles of illumination on the floor at the darkest point with all lights on.

[Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapters 19.27A and 19.27 RCW. WSR 22-14-091, § 51-11C-405021, filed 7/1/22, effective 7/1/23. Statutory Authority: RCW 19.27A.025, 19.27A.045 and chapter 19.27 RCW. WSR 20-21-080, § 51-11C-405021, filed 10/19/20, effective 2/1/21. Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, §

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