

**Scope:** Lighting controls for interior and exterior applications and electrical consumption. Alteration of ≥ 50% luminaire replacement or ≥ 10% of new lighting system luminaires.  
**Exceptions:** Commercial building dwelling units; continuously lit security and emergency areas; exit stairs, ramps, and passageways; emergency egress

**Lighting Auto Off Control – Occupancy Sensor or Time Switch**

<b>SENSOR REQUIREMENTS</b>	<b>C405.2.1</b> <b>Occupancy Sensor Controls</b> <ul style="list-style-type: none"> <li>Lights auto off within 30 minutes (C405.2.1.1.1)</li> <li>Manual turn off (C405.2.1.1.3)</li> </ul>	<b>Required for the Following Space Types:</b> <ul style="list-style-type: none"> <li>Class/lecture/training</li> <li>Conference/meeting</li> <li>Copy/print rooms</li> <li>Lounges</li> <li>Lunch and break rooms</li> <li>Private offices</li> <li>Restrooms</li> <li>Storage rooms</li> <li>Janitorial closets</li> <li>Locker rooms</li> <li>Spaces ≤ 300ft<sup>2</sup></li> <li>Warehouses</li> </ul>	<b>Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Dwelling units, security and emergency areas; exit stairs, ramps and passageways; emergency egress</li> </ul>
	<b>C405.2.1.1</b> <b>Manual On or Partial Auto On</b> <ul style="list-style-type: none"> <li>Manual on or partial auto on ≤ 50% power</li> <li>Full auto on only permitted for select spaces</li> </ul>	<b>Lighting Full Auto On Only Permitted for:</b> <ul style="list-style-type: none"> <li>Public corridors</li> <li>Stairways</li> <li>Where manual on would endanger safety or security</li> <li>Primary entrances</li> <li>Lobbies</li> <li>Restrooms</li> </ul>	<b>Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Where full auto on is permitted, manual on or partial auto on is not required</li> </ul>
	<b>C405.2.1.2</b> <b>Warehouse Aisle and Open Area</b> <ul style="list-style-type: none"> <li>Automatically reduce lighting ≥ 50% when unoccupied</li> </ul>	Each aisle independently controlled, cannot control lighting beyond aisles	<b>Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Need not comply with auto off, manual or partial on, or manual off provisions of C405.2.1.1</li> </ul>

**If Occupancy Sensor Not Required or Preferred, Time Switch Auto Off is Required as Follows**

<b>TIME SWITCH REQUIREMENT</b>	<b>C405.2.2</b> <b>Time Switch Controls</b> <ul style="list-style-type: none"> <li>Provide a manual override switch</li> <li>Override for ≤ 2 hours</li> <li>Control area ≤ 5,000ft<sup>2</sup></li> </ul>	<b>In Malls, Arcades, Auditoriums, Retail, Industrial Facilities, Arenas:</b> <ul style="list-style-type: none"> <li>Override &gt; 2 hours with captive key switch</li> <li>Control area ≤ 20,000ft<sup>2</sup></li> </ul>	<b>Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Where manual reduction provided:                             <ul style="list-style-type: none"> <li>Sleeping units</li> <li>Patient care</li> <li>Where auto off would endanger safety or security</li> <li>24/7 operations</li> <li>Shop and laboratory classrooms</li> </ul> </li> </ul>
	<b>C405.2.2.2</b> <b>Manual Light Reduction Control</b> <ul style="list-style-type: none"> <li>Uniformly dim or switch off ≥ 50% of lighting</li> </ul>	Choose between switching or dimming light reduction controls Note: Warehouse light reduction is automatically controlled under occupancy sensor control, section C405.2.1.2	<b>Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Only one luminaire &lt; 100W</li> <li>Space lighting &lt; 0.6W/ft<sup>2</sup></li> <li>Daylight-responsive control zones</li> <li>The following space types:                             <ul style="list-style-type: none"> <li>Corridors</li> <li>Equipment rooms</li> <li>Public lobbies</li> <li>Elect/mech rooms</li> </ul> </li> </ul>
	<b>C405.2.2.3</b> <b>Manual Lighting Controls</b> <ul style="list-style-type: none"> <li>Readily accessible to occupants</li> <li>Controlled lighting is visible from manual control</li> </ul>	Choose between switching or dimming manual controls	<b>Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Remote control allowed if lighting served is identified and status indicated</li> </ul>
<b>C405.2.3</b> <b>Daylight Responsive Control</b> <ul style="list-style-type: none"> <li>Automatically reduce lighting with daylight contribution</li> <li>Must continuously dim offices, classrooms, labs, library reading rooms to ≤ 15%</li> <li>Either continuous dimming or on/off control for all other space types</li> <li>Capable of complete lighting shut off</li> <li>Authorized calibration access within controlled space</li> </ul>	<div style="text-align: center;"> <p>Primary daylight area lighting ≥ 150W?</p> <p>YES → <b>Daylight Control Required</b> Choose continuous dimming (required for some spaces) or on/off control</p> <p>NO → <b>Daylight Control Not Required</b></p> </div>	<b>Daylight Primary Exceptions:</b> <ul style="list-style-type: none"> <li>Health and patient care spaces</li> <li>Dwelling and sleeping units</li> <li>Specific application lighting</li> <li>Where obstructions block daylight</li> <li>When sidelight transmittance &lt; 0.2</li> <li>When toplight transmittance times opening area divided by zone area ≥ 0.008</li> </ul>	
<b>C405.2.4</b> <b>Specific Application Lighting</b> <ul style="list-style-type: none"> <li>Control independent from other lighting in the space</li> </ul>	<b>Required for the Following Lighting:</b> <ul style="list-style-type: none"> <li>Display and accent</li> <li>Display cases</li> <li>Food warming</li> <li>Lighting for sale</li> <li>Lighting for education</li> <li>Plant growth</li> <li>Supplemental task</li> <li>Under shelf/cabinet</li> </ul>	<b>Primary Exceptions:</b> <p>None</p>	

**Other Lighting Control Requirements**

**C405.2.4.3**

**Hotel/Motel and Guest Suites**  
Master control device turns off all installed luminaires and switched receptacles within 20 minutes of occupants leaving  
**Exceptions:** Lighting and switched receptacles controlled by a captive key system

**C405.2.5**

**Exterior Lighting Controls**

- Auto off when daylight available
- Façade, landscape lights auto off as a function of dusk/dawn and open/close time
- Reduce all other lighting ≥ 30% no later than midnight to 6AM, one hour after closing to one hour before opening, or when no activity is detected for > 15 minutes

**Exceptions:**

- Emergency lighting normally off
- Lighting for health and safety
- Covered vehicle entrances
- Building/parking structure exits for safety, security, or eye adaptation

**C406.1**

**Additional Efficiency Package**  
Comply with one of the following:

- More efficient HVAC performance
- Reduced lighting power density:** Reduce to 90% of Table C405.4.2
- Enhanced digital lighting controls:** Continuous dimming, individually addressable luminaires, daylight responsive, digital reconfigurable, load shedding, individual user control, digital occupancy sensor reconfigurable
- On-site renewable energy
- Dedicated outdoor air provision
- High-efficiency service water heating

**C408.3**

**Lighting System Functional Testing**  
Before final inspection, a *registered design professional* provides evidence that lighting controls have been tested, calibrated, adjusted, programmed, and are in working condition

- Test occupancy sensors (C408.3.1.1)
- Test auto time switch (C408.3.1.2)
- Test daylight responsive (C408.3.1.3)

**Documentation Requirements**  
Provide owner documents certifying lighting controls meet performance criteria within 90 days after certificate of occupancy

Note: This infographic is for informational purposes only. Always refer to the code for specific requirements or contact your local Wattstopper representative. IECC is an acronym for the International Energy Conservation Code.

