Suggested energy code solutions for commercial buildings

The compliant solutions listed below are suggested based on total installed cost, simplicity of design, and basic functional needs for the space. These solutions represent one of multiple compliant options to meet lighting and receptacle control requirements.

**Manual Control**
- Switch
- Dimmer or scene control
- Timeclock
- Occupancy sensor
  - Full ON
  - Partial ON
  - Manual ON
  - Full OFF
  - Partial OFF

**Automatic ON/OFF Control**
- Daylight responsive control
- Receptacle control
- Demand response

**Diagram key:**
- = New construction
- = Lighting retrofit
- = New construction and retrofit

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1. Retrofit requirements indicated are for lighting alterations greater than 10% of the connected load in a space.
2. To comply with some life safety code requirements for egress illumination, automatic full OFF is not suggested. For non-egress areas, the occupancy sensor should turn the lights to full OFF and a switching control may be used.
3. Automatic OFF is required for all luminaires and switched receptacles.
4. When typically occupied, the occupancy sensor provides partial OFF functionality. When typically unoccupied, the sensor provides full OFF functionality.
5. When typically occupied, the sensor provides partial OFF functionality. When typically unoccupied, the sensor provides full OFF functionality. For entrances and exits, daylight responsive control is not required nor recommended, and the maximum light level is set to 50% at night.
6. Astronomical timeclock shall ensure all lights are off during daylight hours. Lights should be scheduled to partial OFF during night hours (not required in lighting retrofits). See section 9.4.1.4 for scheduling times.

Go to lutron.com/energycodes for complete details
At least 50% of the receptacles shall automatically turn OFF based on typical occupancy and daylight (requires astronomical timeclock).

Daylight Exceptions:
Daylight control is not required when the total lighting power of a daylight zone is less than 150W or when the total glazing area is less than 20 sq. ft.

Sidelighting (Window)

Toplighting (Skylight)

Lighting shall be capable of turning ON and OFF. There shall be at least one manual device for control of the lighting within a space. See code for spaces that allow remote location of control.

Manual Control

Switch

Lighting shall be capable of providing at least one level between 30% and 70% of full power, in addition to ON and OFF. There shall be at least one manual device for control of the lighting within a space. See code for spaces that allow remote location of control.

Dimmer or scene control

Mental control

Lighting is turned ON manually by an occupant.

Other

Daylight responsive control

Interior: A sensor which adjusts lighting in response to available daylight is required for sidelight and skylight zones. There must be at least two light levels between ON and OFF. See the "Daylight Zone Requirements" diagrams for more information. The perimeter 20 ft. of parking garages with access to daylight must automatically reduce lighting power in response to daylight.

Exterior: A photosensor can be used as an alternate to the dawn/dusk operation of an astronomical timeclock.

Receptacle control

At least 50% of the receptacles shall automatically turn OFF based on typical occupancy or after a vacancy of 20 minutes or less. Plug-in devices do not comply.

Demand response

Demand response is not required by this energy code.

Daylight zone requirements

Daylight Zone Requirements:
Fixtures in the primary and secondary daylight zones must be independently controlled by zone. Sidelighted zones must be controlled separately from top lighted zones.

Daylight Exceptions:
Daylight control is not required when the total lighting power of a daylight zone is less than 150W or when the total glazing area is less than 20 sq. ft.