IECC 2015: Application Summary

LUTRON

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. ASHRAE 90.1 2013 can also be used as a compliance option in meeting IECC 2015 requirements.

Diagram key:

◉ = New construction ⚙ = Lighting retrofit[1] ⚙ = New construction and retrofit[1]

		Atrium	Classroom, Lecture Hall, Training Room	Conference, Break Room	Corridor[2]	Lobby	Open Office (>300 sq. ft.)	Parking Garage[4]	Private Office (<300 sq. ft)	Restroom	Stairwell[2]	Storage Room	Facade/ Landscape	Parking Lot/Other Exterior[4]
Manual Control	Switch		⚙	⚙					⚙	⚙		⚙		
	Dimmer or scene control	⚙			⚙	⚙	⚙				⚙			
Automatic ON/OFF Control	Timeclock	⚙						⚙					⚙	⚙
	Occupancy sensor		⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙		
Settings	Full ON				⚙	⚙		⚙		⚙	⚙		⚙	⚙
	Partial ON	⚙					⚙	⚙					⚙	⚙
	Manual ON		⚙	⚙					⚙			⚙		
	Full OFF	⚙	⚙	⚙		⚙	⚙	⚙	⚙	⚙		⚙	⚙	⚙
	Partial OFF				⚙[5]			⚙			⚙[5]		⚙	⚙
Other	Daylight responsive control	⚙	⚙[6]	⚙	⚙	⚙	⚙[6]	⚙	⚙[6]	⚙	⚙	⚙	⚙	⚙
	Receptacle control													
	Demand response													

1 All retrofits altering more than 50% of the luminaires, or 10% with alterations to controls and/or circuits, must comply with all new construction requirements.

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 Timeclock ensures the lights are on when typically occupied. Occupancy sensor controls lights when typically unoccupied.

4 Astronomical timeclock shall ensure all lights are off during daylight hours. Lights should be scheduled to Partial OFF during night hours. See section C405.2.5 for scheduling times.

5 Not a code requirement. Lutron recommends this solution for spaces designated as a path of egress.

6 These spaces require continuous daylight dimming to OFF.

Go to lutron.com/energycodes for complete details

Energy Code Lookup Tool ..... lutron.com/energycodes
Energy Code Application Guides ..... lutron.com/appguides
Rebate Lookup Tool ..... lutron.com/rebates
24/7 Energy Code Hotline 1THINKCODE0 (1.844.652.6330)
Energy Codes Email ..... energycodes@lutron.com

IECC 2015: Application Summary

Code requirement summary

	Minimum control type		Description	Code provision
Manual Control	Switch		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.	C405.2.2.3
	Dimmer or scene control		Lighting shall be capable of being reduced by at least 50% of maximum lighting power. There shall be a manual device allowing an occupant to reduce lighting by at least 50% of maximum lighting power within a space. See code for spaces that allow remote location of control. Automatic daylight control may be used instead of manual control.	C405.2.2.2
Automatic ON/OFF Control	Timeclock		**Interior:** Scheduled control, based on time-of-day, turns lighting ON or OFF based on typical occupancy. Occupancy sensors also comply as an alternate to using a timeclock. **Exterior:** Scheduled control, based on time-of-day and sunrise/sunset (requires astronomical timeclock), turns lighting ON or OFF based on typical occupancy and daylight.	C405.2.2 C405.2.5
	Occupancy sensor		Automatic control turns lighting ON upon occupancy or OFF after a vacancy of 30 minutes or less.	C405.2.1
	Settings	Full ON	When initiated by a timeclock or occupancy sensor, lighting is automatically turned ON to maximum lighting power.	C405.2.1.1 Exception
		Partial ON	When initiated by a timeclock or occupancy sensor, lighting is automatically turned ON to 50% or less of maximum lighting power.	C405.2.1
		Manual ON	Lighting is turned ON manually by an occupant.	C405.2.1.1
		Full OFF	When initiated by a timeclock or occupancy sensor, lighting is automatically turned OFF.	C405.2.1
		Partial OFF	When initiated by a timeclock or occupancy sensor, lighting is automatically reduced by at least 50% of maximum lighting power (30% for parking garages). Automatic full OFF also complies.	C405.2, Exception C405.2.5
Other	Daylight responsive control		**Interior:** A sensor which adjusts lighting in response to available daylight is required for sidelight and skylight zones. Some spaces, including offices and classrooms require dimming. See the “Daylight Zone Requirements” diagrams for more information. **Exterior:** A photosensor can be used as an alternate to the dawn/dusk operation of an astronomical timeclock.	C405.2.3 C405.2.5
	Receptacle control		Receptacle control is not required by this energy code.	N/A
	Demand response		Demand response is not required by this energy code.	N/A

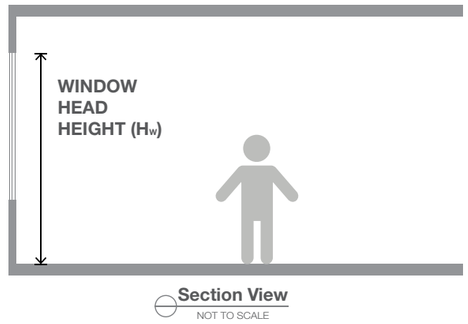
For areas being used as a path of egress or fixtures being used for emergency, verify compliance with your local authority having jurisdiction. Acceptance (functional) testing is required for all new construction applications to ensure that control hardware and software are calibrated, programmed and functioning properly (Code provision C408.3).

Daylight zone requirements

Daylight Zone Requirements:
Sidelighted daylight zones must be controlled separately from toplighted zones. North, South, East, and West zones must also be controlled separately.

Daylight Exceptions:
Daylight control is not required when the total lighting power of a daylight zone is 150 W or less, or when the total glazing area is 24 sq. ft. or less. Other exceptions exist, based on space type, window area, neighboring obstructions, and glass transmittance.

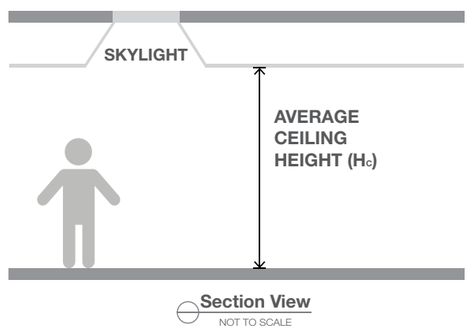
Sidelighting (Window)



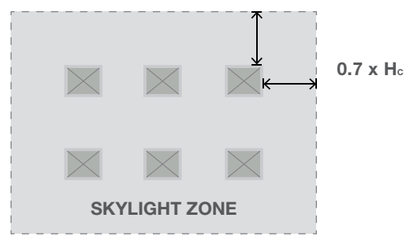
Section View
NOT TO SCALE

Plan View
NOT TO SCALE

Toplighting (Skylight)



Section View
NOT TO SCALE



Plan View
NOT TO SCALE

This document summarizes the lighting and receptacle control requirements for commercial buildings. It is for information purposes only. It is not meant to replace your state’s or local jurisdiction’s official energy code. Please refer to your local building energy code or authority having jurisdiction for your precise requirements. Only the authority having jurisdiction can guarantee code compliance.

LUTRON