



See the [Nonresidential Outdoor Lighting Trigger Sheet](#) for more information on Energy Standards for exterior lighting



## What Are Mandatory Lighting Controls?

Lighting controls automatically regulate the lighting power and illumination levels of connected lighting in a given space. There are several types of lighting controls triggers including sensors, time clocks, schedules, presence of daylight, occupancy/vacancy, as well as occupant-operated controls. California's Building Energy Efficiency Standards (Energy Standards), Title 24, Part 6 regulates the installation of lighting controls to reduce waste or unnecessary lighting, thus reducing energy consumption.

There are several sections in the Energy Standards that require the installation of lighting controls. This fact sheet is designed to be used in tandem with Energy Code Ace's [Nonresidential Lighting Controls for Credit Fact Sheet](#), as you have to comply with the Prescriptive or Performance method as well as meet the mandatory requirements outlined here.

### Why?

Energy savings can be achieved from the reduced use of artificial lighting by installing controls to dim/switch electric lights automatically.



### Relevant Code Sections

- [Section 110.9](#) – Mandatory Requirements for Lighting Controls and Systems, Ballasts, and Luminaires
- [Section 130.0\(d\)](#) – Lighting Systems and Equipment and Electrical Power Distribution Systems, Lighting Controls
- [Section 130.1](#) – Mandatory Indoor Lighting Controls
- [Section 130.2](#) – Outdoor Lighting Controls and Equipment
- [Section 130.3](#) – Sign Lighting Controls
- [Section 130.4](#) – Lighting Control Acceptance and Installation Certificate Requirements
- [Section 130.5](#) – Electrical Power Distribution Systems
- [Section 141.0\(b\)2I](#) – Entire Luminaire Alterations
- [Section 141.0\(b\)2J](#) – Luminaire Component Modifications
- [Section 141.0\(b\)2K](#) – Lighting Wiring Alterations
- [Nonresidential Reference Appendix NA7 \(NA7.6 - NA7.9\)](#) – Installation and Acceptance Requirements for Nonresidential Buildings and Covered Processes

### Relevant Compliance Forms

- [NRCC-LTI-02-E](#): Indoor Lighting Controls Worksheet
- [NRCC-LTO-02-E](#): Outdoor Lighting Controls
- [NRCC-LTS-01-E](#): Sign Lighting
- [NRCI-LTI-01-E](#): Indoor Lighting
- [NRCI-LTI-02-E](#): EMC System Control or Lighting Control System
- [NRCA-LTI-02-E](#): Lighting Controls
- [NRCA-LTI-03-A](#): Automatic Daylighting Control
- [NRCA-LTI-04-A](#): Demand Responsive Lighting Control
- [NRCA-LTI-05-A](#): Institutional Tuning PAF
- [NRCA-LTO-02-E](#): Outdoor Lighting Controls
- Which NRCI and NRCA forms are required is based on controls installed and will vary by project

# Compliance Requirements

The installation of lighting controls is mandatory as required by the Energy Standards. All lighting controls and equipment must comply with the applicable requirements in [Section 110.9](#), and must be installed in accordance with the manufacturer’s instructions ([Section 130.0\(d\)](#)). [Section 130.1](#) covers Mandatory Lighting Controls, [Section 130.2](#) covers outdoor lighting controls and [Section 130.3](#) covers sign lighting.

All lighting controls (indoor and outdoor) are required to comply with the following requirements regardless of the compliance approach chosen for the project:

- Certification of manufactured lighting control devices and systems
- Compliance with California’s Appliance Efficiency Regulations (Title 20)
- Installation of the indoor lighting controls listed below in the spaces that require them
- Compliance with all lighting control installation requirements
- Submittal of all required forms for certificates of compliance and installation

The designer should specify lighting controls and luminaires that meet these requirements. The installer should confirm that installed products are approved for use by the Energy Commission by filling out and signing the required installation certificates.

## Certification Requirements

Lighting control devices (consisting of a single component) are regulated by the Title 20 Appliance Efficiency Regulations. Approved stand-alone lighting controls are listed in the Energy Commission’s Modernized Appliance Efficiency Database System (MAEDBS).

Lighting control systems (consisting of two or more components) are not regulated by Title 20. These are regulated by Title 24, Part 6 and are certified through the NRCI-LTI-02-E completed by the installing contractor. This form certifies that the lighting control system meets all applicable requirements for the lighting control application for which it is installed. Only those products certified to the Energy Commission (according to Title 20 or Title 24, Part 6) should be installed. Table 1 outlines equipment manufacturer requirements covered under both Title 20 and Title 24.

Equipment Manufacturer Requirements		
	Regulated by Title 20	Regulated by Title 24, Part 6
Time-Switch Controls	<ul style="list-style-type: none"> <li>• Automatic time-switch control</li> <li>• Astronomical time-switch control</li> <li>• Multi-level Astronomical time-switch control</li> <li>• Outdoor Astronomical time-switch control</li> </ul>	Part Night Outdoor Lighting Control
Daylighting Controls	<ul style="list-style-type: none"> <li>• Automatic daylighting control</li> <li>• Photo control</li> </ul>	Track Lighting Integral Current Limiter
Occupant Sensing Controls	<ul style="list-style-type: none"> <li>• Occupant sensors</li> <li>• Vacancy Sensors</li> <li>• Motion Sensors</li> </ul>	Track Lighting Supplementary Overcurrent Protection Panel
Dimmers	—	—

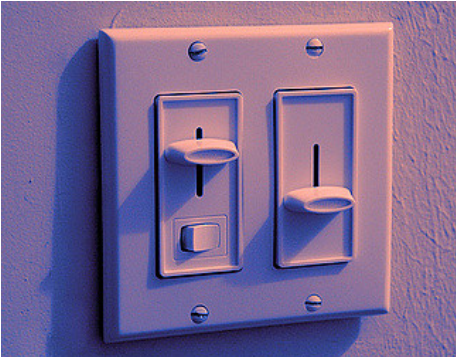
Table 1: Lighting Controls: Equipment Manufacturer Requirements



## Mandatory Indoor Lighting Controls Section 130.1

The following lighting controls must be installed:

- **Area Controls** - Controls for all luminaires, required for every enclosed area, must have ON/OFF functionality. Exception: Egress lighting up to  $0.2\text{W}/\text{ft}^2$ 
  - Each enclosed space must be independently controlled and the switch must be readily accessible
    - Exception: Public restrooms having two or more stalls, parking areas, stairwells, and corridors may use a manual control not accessible to unauthorized personnel, per [Section 130.1\(a\)2](#)
    - Exception: In larger spaces such as malls, atria, auditorium areas, retail merchandise sales areas, wholesale showroom areas, commercial and industrial storage areas, general commercial and industrial work areas, convention centers, and arenas, the lights controlled must be visible from the lighting controls switch
- **Multi-level Controls** - General lighting in enclosed spaces greater than  $100\text{ft}^2$  and exceeding  $0.5\text{W}/\text{ft}^2$  with more than one luminaire, or with one luminaire that has more than 2 lamps must have multi-level controls enabling occupants to control all or some of the lights
  - The number of control steps depends on the type of light source and must meet the multi-level lighting control and uniformity requirements in [Table 130.1-A](#) of the standards
  - Dimmable luminaires must be controlled by a dimmer that satisfies all control steps in [Table 130.1-A](#) and has manual ON/OFF functionality
    - Exception: Classrooms less than or equal to  $0.7\text{W}/\text{ft}^2$  and all public restrooms shall have bi-level lighting with one step between 30% and 70% of full rated power. Additional exceptions for multi-level lighting controls in areas in which full or partial OFF occupancy sensors are required per [Sections 130.1\(c\)6](#) and [7](#)
- **Shut-Off Controls** - All indoor lighting must have Shut-Off controls that automatically shut off or reduce light output when the space is typically unoccupied
  - All installed indoor lighting must be controlled by an occupancy sensor, automatic time-switch, or other control such that all lights can be automatically shut off when the space is unoccupied
  - Separate controls are required for each enclosed space not exceeding  $5,000\text{ft}^2$ , separate controls for lighting in each floor other than stairwells, and for general, display, ornamental and display case lighting
    - Exception: In certain functional areas, area controlled may not exceed  $20,000\text{ft}^2$ , see [Section 130.1\(c\)1C](#)
    - Exception: Emergency egress lighting (up to  $0.1\text{W}/\text{ft}^2$  can be continuously illuminated), emergency lighting or lighting connected to emergency power source or battery, continuous-use lighting (running 24/7), and electric rooms
  - Countdown timers are permissible only in closets and single-stall bathrooms less than  $70\text{ft}^2$  and server rooms. A maximum setting capability of ten minutes is needed to comply with automatic shutoff requirements
  - All automatic time switch controls used to meet Shut-Off control requirements must have functionality for manual override such that lights can remain on for no more than 2 hours
    - Exception: Malls, auditoriums, single tenant retail, industrial, and arenas where captive-key override is utilized may exceed 2 hours
  - All automatic time switch controls in spaces except malls, restaurants, grocery stores, churches, theatres should incorporate an automatic holiday shut-off feature
  - Occupancy sensors or vacancy sensors are required in offices less than or equal to  $250\text{ft}^2$ , multipurpose rooms less than  $1000\text{ft}^2$ , classrooms and conference rooms of any size. Controls should be programmed to turn OFF all or part of lighting a maximum of 20 minutes after space is vacated per [Section 130.1\(c\)5](#) (Vacancy sensors perform the occupancy sensor function when unoccupied but require a manual on)



- If a space triggers multi-level controls per [Section 130.1\(b\)](#), then either a partial-ON occupant sensor turning on only 50%-70% of lighting power **OR** a vacancy sensor with manual on is required
- If a space does not trigger multi-level controls, then either a normal occupancy sensor, partial-on occupancy sensor, or vacancy sensor is required
  - In addition, occupant sensing controls are required in these spaces
- Full or partial OFF occupant sensing controls are required in aisle ways and open areas in warehouses, library book stack aisles, corridors and stairwells. If using partial OFF occupant sensors, you must still meet [Section 130.1\(c\)1](#) which requires an automatic shut OFF control to turn lighting off when the space is typically unoccupied
- Partial OFF occupant sensing controls are required in stairwells and common area corridors that provide access to guestrooms and dwelling units in high-rise residential buildings and hotel/motels, parking garages, parking areas, loading and unloading areas
- **Automatic Daylighting Controls** – Daylit areas require separate automatic controls controlling lights in the daylit zones. There are three types of daylit zones- Skylit daylit zone, Primary Sidelit daylit zone and Secondary Sidelit daylit zone
  - Mandatory automatic daylight controls are required for Skylit and Primary Sidelit daylit zones
  - When combined total installed power of general lighting in a room's Skylit and Primary Sidelit daylit zones is 120W or greater, automatic daylighting controls are required
    - Exception: Parking garages with glazing and opening area less than 36ft<sup>2</sup> or other spaces whose rooms have a glazing area less than 24ft<sup>2</sup>
  - Separate controls are required for the luminaires controlling Skylit and Primary Sidelit zones. If a luminaire falls in both these zones, it must be controlled as part of the Skylit daylit zone
  - Photo sensors shall not be accessible to unauthorized personnel
  - Automatic daylighting controls must have the number of control steps as per [Table 130.1-A](#) of the Energy Standards and must achieve lighting power reductions as per [Section 130.1\(d\)](#)
    - Exception: If lighting power of the controlled lighting is less than 0.3W/ft<sup>2</sup> multilevel lighting controls are not required
  - In areas served by lighting that is daylight controlled, when the daylight illuminance is greater than 150% of the design illuminance received from the general lighting system at full power, the general lighting power in that daylight zone must be reduced by a minimum of 65%
  - General lighting in combined Primary and Secondary Sidelit daylit zone must have automatic daylighting controls
    - Separate automatic daylighting controls are required for luminaires in the Primary and Secondary Sidelit daylit zones from other parking garage lighting
      - Automatic daylighting controls should be either multi-level, continuous dimming or On/Off
    - Controlled lighting power consumption must be zero if the illuminance level measured at the farthest edge of the Secondary Sidelit zone from the opening is greater than 150% of the controlled lighting when no daylight is available
      - Exception: Parking garages with opening area greater than 36ft<sup>2</sup> that do not fall in the daylight transition zone or dedicated ramps with lighting power in Primary Sidelit zone greater than 60W



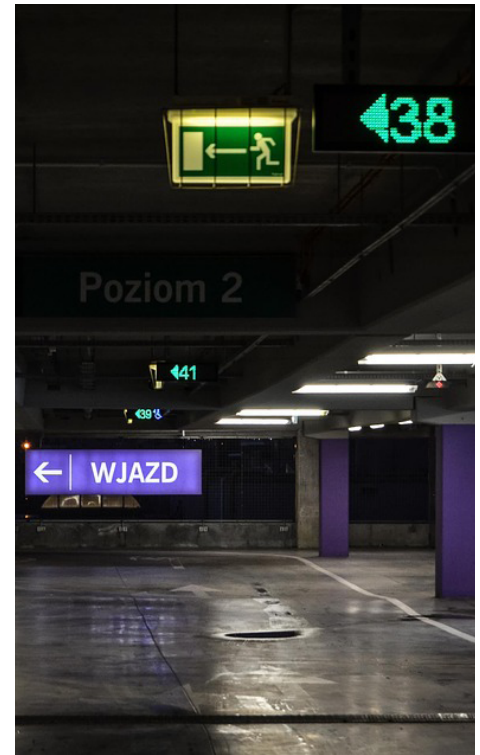
- **Demand Responsive Lighting Controls** – Must have controls that can receive and automatically respond to at least one standards-based messaging protocol (see [NA7.6.3](#) for acceptance testing procedure)
  - All buildings greater than 10,000ft<sup>2</sup>, excluding spaces with LPD 0.5W/ft<sup>2</sup> or less, must be capable of automatically reducing lighting power in response to a Demand Response Signal, such that total lighting power can be reduced by at least 15%. Lighting reduction should meet requirements in [Table 130.1-A](#)
  - Exception: Lighting not permitted to be reduced per health and life safety requirements

## Mandatory Sign Lighting Controls Section 130.3

- **Indoor Sign Lighting** - All indoor sign lighting must be controlled with an automatic time-switch control or an astronomical time-switch control
- **Outdoor Sign Lighting** - All outdoor sign lighting must be controlled with a photo sensor and an automatic time-switch or astronomical time switch control
  - Outdoor signs that are illuminated at night and for more than one hour during daylight hours are considered to be ON both day and night. Outdoor signs that are ON both day and night must have dimmers capable of automatically dimming light output by 65% during nighttime hours
    - Exception: Outdoor signs in tunnels and large covered areas that are intended to be illuminated both day and night do not require dimming controls
- **Demand Responsive EMC Control** - Electronic Message Center (EMC) with greater than 15 kW of new connected lighting power must have controls capable of reducing lighting power by 30% in response to a demand response signal
  - Exception: Lighting for EMCs that is not permitted to be reduced due to health and safety regulations

## Mandatory Outdoor Lighting Controls Section 130.2

- All outdoor incandescent lights greater than 100W must have a motion sensor installed
- All outdoor lighting must be capable of automatically shutting off lights when daylight is available using photo control or an astronomical time switch
- Outdoor lighting must comply with BUG requirements in CALGreen (Title 24, Part 11)
- Outdoor lighting must be controlled independently from other electric loads
- All outdoor luminaires mounted at a height less than or equal to 24 feet from the ground must have motion sensors or other automatic lighting controls capable of reducing light output between 40% and 90% when the area is unoccupied and must have Auto-On functionality when the space becomes occupied
  - Exceptions: Lighting for building façade, ornamental hardscape, outdoor dining, pole mounted luminaires less than 75W and non-pole mounted luminaire less than 30W
- Lighting for outdoor sales frontage must have a part-night outdoor lighting control, or motion sensor capable of reducing light by at least 40% but not more than 90% with an Auto-On function
- Lighting for building façade, ornamental hardscape, outdoor dining must have a part-night outdoor lighting control, or motion sensor capable of reducing light by at least 40% but not more than 90% with an Auto-On function, or a centralized time-based zone lighting control that can reduce light by 50%



# Forms: Which and When

Along with a Building Permt Application, the following forms are required.

## During Design:

### Indoor Lighting

- **NRCC-LTI-02-E** – Indoor Lighting Controls Worksheet
  - Completed and signed by permit applicant (designer, installing contractor or building owner)
  - Submitted by permit applicant at permit application or plan check

### Outdoor Lighting

- **NRCC-LTO-02-E** – Outdoor Lighting Controls
  - Completed and signed by permit applicant (designer, installing contractor or building owner)
  - Submitted by permit applicant at permit application or plan check

### Sign Lighting

- **NRCC-LTS-01-E** – Sign Lighting
  - Completed and signed by permit applicant (designer, installing contractor or building owner)
  - Submitted by permit applicant at permit application or plan check

## During Construction:

### Indoor Lighting

- **NRCI-LTI-01-E**
  - Completed by the installing contractor and available for Inspector when onsite
- **NRCI-LTI-02-E** – EMC System or Lighting Control System
  - Completed by the installing contractor and available for the Inspector when onsite
- **NRCA-LTI-02-E** – Indoor Lighting Controls
  - Completed and signed by Acceptance Test Technician
  - Submitted at final inspection
- **NRCA-LTI-03-E** – Automatic Daylighting Controls
  - Completed and signed by Acceptance Test Technician
- **NRCA-LTI-04-E** – Demand Responsive Lighting Controls
  - Completed and signed by Acceptance Test Technician
- **NRCA-LTI-05-E** – Institutional Tuning PAF Acceptance Document
  - Completed and signed by Acceptance Test Technician

### Outdoor Lighting

- **NRCI-LTO-02-E** – EMC System or Lighting Control System
  - Completed and signed by installing contractor
- **NRCA-LTO-02-E** – Outdoor Lighting Controls
  - Completed and signed by Acceptance Test Technician
  - Submitted at final inspection

### Sign Lighting

- **NRCI-LTS-01-E** – Sign Lighting
  - Completed and signed by installing contractor
  - Submitted at initial inspection or final inspection

## Notes:

- Which NRCI and NRCA forms are required is based on controls installed and will vary by project

STATE OF CALIFORNIA  
ENERGY CODE COMPLIANCE  
CERTIFICATE OF COMPLIANCE  
Indoor Lighting - Lighting Controls  
NRCC-LTI-02-E  
(Page 1 of 3)

**A. Mandatory Lighting Control Declaration Statements** (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
		Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 130.9.
		Lighting shall be controlled by a lighting control system or energy management control system in accordance with §130.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
		One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §130.9 and §130.10. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
		A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 130.9 and Section 130.10. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
		All lighting controls and equipment shall comply with the applicable requirements in §130.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
		All luminaires shall be functionally controlled with manual On and Off lighting controls in accordance with Section 130.1(a).
		General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.1(b).
		The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
		All installed indoor lighting shall be equipped with controls that meet the applicable Shut-Off control requirements in Section 130.1(c).
		Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylight zones are shown on the plans.
		Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
		Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting control serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4 (a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-off controls, and demand responsive controls.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA  
ENERGY CODE COMPLIANCE  
CERTIFICATE OF INSTALLATION  
Energy Management Control System or Lighting Control System  
NRCA-LTI-02-E  
(Page 1 of 6)

**GENERAL INFORMATION**

DATE OF BUILDING PERMIT: \_\_\_\_\_ PERMIT # \_\_\_\_\_

BUILDING TYPE: ☐ Nonresidential ☐ High-Rise (Common Area) ☐ Hotel/Motel (Common Area)

PHASE OF CONSTRUCTION: ☐ New Construction ☐ Addition ☐ Alteration ☐ Unconditional

**SCOPE OF RESPONSIBILITY**

Enter the date of approval by enforcement agency of the Certificate of Compliance that provides the specifications for the energy efficiency measures for the scope of responsibility for this Installation Certificate. \_\_\_\_\_ Date: \_\_\_\_\_

Requirements in the Standards:

§130.4(b) Before an Energy Management Control System (EMCS), or Lighting Control System can be recognized for compliance with the lighting control requirements in Part 6 of Title 24, the person who is eligible under Division 3 of the Business and Professions Code to accept responsibility for the construction or installation of features, materials, components, or manufactured devices shall sign and submit this Installation Certificate.

If any of the requirements in this Installation Certificate fail the Energy Management Control System or Lighting Control System installation requirements, these systems for controlling lighting shall not be recognized for compliance with the Building Energy Efficiency Standards.

**Check all that apply:**

**PART 1: What type of Lighting Control System has been installed?**

☐ **A. Energy Management Control System (EMCS)** - is a computerized control system designed to regulate the energy consumption of a building by controlling the operation of energy consuming systems, such as the heating, ventilation and air conditioning (HVAC), lighting, and water heating systems, and is capable of monitoring environmental and system loads, and adjusting HVAC operations in order to optimize energy usage and respond to demand response signals.

☐ The Energy Management Control System has been installed to function as a lighting control required by Part 6 and functionally meets all applicable requirements for each application for which it is installed, in accordance with Sections 130.0 through 130.5, 140.6 through 150.2, and complies with Reference Nonresidential Appendix NA7.2.2.

☐ The EMCS has been separately tested for each respective lighting control system for which it is installed to function as:

☐ **B. Lighting Control System** - Requires two or more components to be installed in the building to provide all of the functionality required to make up a fully functional and compliant lighting control.

☐ The installed Lighting Control System complies with the requirements checked below, and all components of the system considered together as installed meet all applicable requirements for the application for which they are installed as required in Sections 130.0 through 130.5, Sections 140.6 through 140.8, Section 141.0, and Section 150.2(b).

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

# For More Information

## Primary Documents

- Energy Standards Section 110.9 – Mandatory Requirements for Lighting Controls and systems, ballasts, and luminaires:  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1109mandatoryrequirementsforlightingcontroldevicesandsyst.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1109mandatoryrequirementsforlightingcontroldevicesandsyst.htm)
- Energy Standards Section 130.1 – Mandatory Indoor Lighting Controls:  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/section1301mandatoryindoorlightingcontrols.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/section1301mandatoryindoorlightingcontrols.htm)
- Energy Standards Section 130.2 - Outdoor Lighting Controls and Equipment:  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/na93section1302outdoorlightingcontrolsandequipment.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/na93section1302outdoorlightingcontrolsandequipment.htm)
- Energy Standards Section 130.3 – Sign Lighting Controls:  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/na94section1303signlightingcontrols.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/na94section1303signlightingcontrols.htm)
- Energy Standards Section 130.4 – Lighting Control Acceptance and Installation Certificate Requirements:  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/na95section1304lightingcontrolacceptanceandinstallationcertifica.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/Documents/na95section1304lightingcontrolacceptanceandinstallationcertifica.htm)
- Energy Standards Section 130.5 – Electrical Power Distribution Systems  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1305electricalpowerdistributionsystems.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1305electricalpowerdistributionsystems.htm)
- Energy Standards Section 141.0(b)2I – Entire Luminaire Alterations  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/sec1410additionsalterationsrepairstoexistingbuildingsthatwillben.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/sec1410additionsalterationsrepairstoexistingbuildingsthatwillben.htm)
- Energy Standards Section 141.0(b)2J – Luminaire Component Modifications  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/sec1410additionsalterationsrepairstoexistingbuildingsthatwillben.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/sec1410additionsalterationsrepairstoexistingbuildingsthatwillben.htm)
- Energy Standards Section 141.0(b)2K – Lighting Wiring Alterations  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/sec1410additionsalterationsrepairstoexistingbuildingsthatwillben.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/sec1410additionsalterationsrepairstoexistingbuildingsthatwillben.htm)
- Energy Standards Nonresidential Reference Appendix NA7 - Installation and Acceptance Requirements for Nonresidential Buildings and Covered Processes:  
[EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/appendixna7installationandacceptancerequirementsfornonresidential.htm](http://EnergyCodeAce.com/site/custom/public/reference-ace-2016/index.html#!Documents/appendixna7installationandacceptancerequirementsfornonresidential.htm)

- Energy Standards Nonresidential Compliance Manual Chapter 5.4 – Mandatory Lighting Controls:  
[energy.ca.gov/2015publications/CEC-400-2015-033/chapters/chapter\\_05\\_indoor\\_lighting.pdf](http://energy.ca.gov/2015publications/CEC-400-2015-033/chapters/chapter_05_indoor_lighting.pdf)
- Energy Standards Nonresidential Compliance Manual Chapter 6.3 – Outdoor Lighting Mandatory Measures  
[energy.ca.gov/2015publications/CEC-400-2015-033/chapters/chapter\\_06\\_outdoor\\_lighting.pdf](http://energy.ca.gov/2015publications/CEC-400-2015-033/chapters/chapter_06_outdoor_lighting.pdf)
- 2015 Title 20 Appliance Efficiency Regulations:  
[energy.ca.gov/2015publications/CEC-400-2015-021/CEC-400-2015-021.pdf](http://energy.ca.gov/2015publications/CEC-400-2015-021/CEC-400-2015-021.pdf)

## California Energy Commission Information & Services

### Title 24, Part 6

- Energy Standards Hotline: 1-800-772-3300 (Free) or [Title24@energy.ca.gov](mailto:Title24@energy.ca.gov)
- Online Resource Center:  
[energy.ca.gov/title24/orc/](http://energy.ca.gov/title24/orc/)
  - The Energy Commission’s main web portal for Energy Standards, including information, documents, and historical information

### Title 20

- Appliances Hotline: (888) 838-1467 or outside California (916) 651-7100
- Questions may also be emailed to [Appliances@energy.ca.gov](mailto:Appliances@energy.ca.gov)
- California Appliance Efficiency Standards Site:  
[www.energy.ca.gov/appliances](http://www.energy.ca.gov/appliances)
- Modernized Appliance Efficiency Database (MAEDBS):  
<https://cacertappliances.energy.ca.gov/Login.aspx>

## Additional Resources

- Energy Code Ace:  
[EnergyCodeAce.com](http://EnergyCodeAce.com)
    - An online “one-stop-shop” providing free resources and training to help appliance and building industry professionals decode and comply with Title 24, Part 6 and Title 20. The site is administered by California’s investor-owned utilities.
  - Of special interest:*
    - Title 24, Part 6 Fact Sheets:  
[EnergyCodeAce.com/content/resources-fact-sheets](http://EnergyCodeAce.com/content/resources-fact-sheets)
      - Nonresidential Lighting Controls for Credit
      - Nonresidential Daylighting and Daylighting Controls
    - Title 24, Part 6 Trigger Sheets:  
[EnergyCodeAce.com/content/resources-trigger-sheets](http://EnergyCodeAce.com/content/resources-trigger-sheets)
      - Nonresidential Interior Lighting Alterations
      - Nonresidential Exterior Lighting
    - Title 20 Lighting FAQ Fact Sheet:  
[EnergyCodeAce.com/content/title-20-resources](http://EnergyCodeAce.com/content/title-20-resources)
- Please register with the site and select an industry role for your profile in order to receive messages about all our free offerings!



This program is funded by California utility customers and administered by Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E®), Southern California Edison Company (SCE), and Southern California Gas Company (SoCalGas®) under the auspices of the California Public Utilities Commission.  
© 2018 PG&E, SDG&E, SoCalGas and SCE. All rights reserved, except that this document may be used, copied, and distributed without modification. Neither PG&E, SoCalGas, SDG&E, nor SCE — nor any of their employees makes any warranty, express or implied; or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any data, information, method, product, policy or process disclosed in this document; or represents that its use will not infringe any privately-owned rights including, but not limited to patents, trademarks or copyrights. Images used in this document are intended for illustrative purposes only. Any reference or appearance herein to any specific commercial products, processes or services by trade name, trademark, manufacturer or otherwise does not constitute or imply its endorsement, recommendation or favoring.