2019 Energy Code –

Residential Lighting

California Energy Commission

The 2019 Energy Code

- **Effective January 1, 2020**
  - Based on date of application for building permit
- **7% more efficient** than 2016 Code (residential)
- **Applies to occupancy groups:**
  - A, B, E, F, H, I, M, R, S, and U
  - I-1 and I-2 (healthcare facilities)
  - **Does not apply to** I-3, I-4, L (Institution and Labs)
- **Sections applicable to nonresidential buildings**
  - 110.9, 110.12, 130.0-130.4, 140.6-140.8, 141.0(b)2I-L
- **Sections applicable to residential buildings**
  - 110.9, 130.0, 150.0(k)

HEALTHCARE FACILITIES

For the first time, energy efficiency standards extend to newly constructed healthcare facilities and incorporates the appropriate application of standards.

LIGHTING

Update indoor and outdoor lighting values to assume the use of LED lighting. LED lights use little energy and will save money on monthly electricity bills meaning smaller operating budgets for commercial buildings. Maintenance costs are reduced because bulbs do not need to be changed as often. The standards also add occupancy sensing requirements for restrooms.

Residential Lighting in Nonresidential Buildings

- Which lighting must **meet the residential requirements** in nonresidential buildings?
  - High-rise residential dwelling units
  - Hotel and motel guestrooms
    - Additional controlled receptacle and captive card key or auto shut-off control requirements
  - Fire station dwelling accommodations
  - Dormitory and senior housing dwelling accommodations
  - Outdoor lighting attached to high-rise residential or hotel and motel buildings that is separately controlled from inside the dwelling or guest room

Residential Lighting Measures

10-103 Lighting Schedule

- Builder must provide interior lighting/lamp schedule
- Include with maintenance info provided to homeowner
- Intended to help homeowners replace with high efficacy compliant lamps
- May be provided in paper OR electronic format

	Space Information			Existing Fixture			Retrofit Description		
Ref No	Floor	Room Number	Room Description	Fixture Code	Fixture Type	QTY	Retrofit Description	QTY	Notes from Auditor, Etc.
1	1	110	Office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	6	2F17T8XL with GE Ultrastart program start ballast	6	
2	1	100A	Entrance/Hallway	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	2	2F17T8XL with GE Ultrastart program start ballast	2	Office currently vacant
3	1	100B	Waiting Area	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	6	2F17T8XL with GE Ultrastart program start ballast	6	Reception area, may not want occupancy sensors if a way to turn off lights during off hours.
4	1	100C	Private office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	2	2F17T8XL with GE Ultrastart program start ballast	2	
5	1	100D	Open office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	13	2F17T8XL with GE Ultrastart program start ballast	13	
6	1	100E	Storage	V	2x2 troffer or surface mount with 2 FB34T12 lamps	2	2F17T8XL with GE Ultrastart program start ballast & 2-cove white reflector	2	Both fixtures have U-bulbs. (only U-bulbs in building)
7	1	105A	Open office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	18	2F17T8XL with GE Ultrastart program start ballast	18	
8	1	105B	Private office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	3	2F17T8XL with GE Ultrastart program start ballast	3	
9	1	105C	Private office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	2	2F17T8XL with GE Ultrastart program start ballast	2	
10	1	120A	Storage	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	1	2F17T8XL with GE Ultrastart program start ballast	1	
11	1	120B	Open Office with high partitions	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	13	2F17T8XL with GE Ultrastart program start ballast	13	
12	1	130A	Private office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	3	2F17T8XL with GE Ultrastart program start ballast	3	
13	1	130B	Private office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	3	2F17T8XL with GE Ultrastart program start ballast	3	
14	1	130C	Private office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	2	2F17T8XL with GE Ultrastart program start ballast	2	
15	1	130D	Open office and reception area	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	30	2F17T8XL with GE Ultrastart program start ballast	30	Reception area, may not want occupancy sensors, unless some way to turn lights off during off hours
16	1	130E	Conference Room	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	6	2F17T8XL with GE Ultrastart program start ballast	6	
17	1	130F	Hallway	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	3	2F17T8XL with GE Ultrastart program start ballast	3	
18	1	130G	Open office	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	30	2F17T8XL with GE Ultrastart program start ballast	30	
19	1	130H	Storage	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	6	2F17T8XL with GE Ultrastart program start ballast	6	
20	1	130I	File Storage	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	6	2F17T8XL with GE Ultrastart program start ballast	6	
21	1	130J	Storage	A	2x2 lensed troffer with 2 F17T8s, .88 BF IS ballast & specular reflector	4	2F17T8XL with GE Ultrastart program start ballast	4	
22	1	141	Lunch/Waiting Area with tables	ASM	2x2 lensed surface mount with 2 F17T8s, .88 BF IS ballast & specular reflector	11	2F17T8XL with GE Ultrastart program start ballast	11	Area has no room number, arbitrarily assigned
23	1	142	Hallway	K	3' corridor wrap w th 2 F25T8s & white lens	5	1F17T8C, custom centering kit & clear prismatic lens	5	Area has no room number, arbitrarily assigned, hallway has occupancy sensor
24	1	143	Break Room	H	4' wrap around with 2 F32T8s	1	1F32T8C & centering kit	1	Area has no room number, arbitrarily assigned; room has local manual switch
25	1	143	Break Room	H8	8' wrap around with 4 F32T8s	2	2F32T8C & centering kits	2	Area has no room number, arbitrarily assigned; room has local manual switch
26	1	144	Restroom	E	1x4 troffer with 2 F32T8s	2	1F32T8C & 1-cove white reflector	2	Area has no room number, arbitrarily assigned; restroom has occupancy sensor
27	1	145	Storage	J	4' wrap around with 3 F32T8s	2	2F32T8S in center lamp holders	2	Area has no room number, arbitrarily assigned; room has local manual switch
28	1	146A	Mail Room	J	4' wrap around with 3 F32T8s	2	2F32T8S in center lamp holders	2	Area has no room number, arbitrarily assigned; room has local manual switch
29	1	146A	Mail Room	J8	8' wrap around with 6 F32T8s	1	4F32T8S in center lamp holders	1	Area has no room number, arbitrarily assigned; room has local manual switch
30	1	146B	Storage	J8	8' wrap around with 6 F32T8s	2	4F32T8S in center lamp holders	2	Area has no room number, arbitrarily assigned; room has local manual switch
31	1	146C	Private office	J	4' wrap around with 3 F32T8s	2	2F32T8S in center lamp holders	2	Area has no room number, arbitrarily assigned; room has local manual switch
32	1	147A	Office/Workshop	G8	8' hooded industrial with 4 F32T8s	2	2F32T8C in alternating sides	2	Area has no room number, arbitrarily assigned; room has local manual switch
33	1	147A	Office/Workshop	G8TG	8' hooded industrial with 4 F32T8s & tube guards	2	2F32T8C in alternating sides & tube guards	2	Area has no room number, arbitrarily assigned; room has local manual switch
34	1	147A	Office/Workshop	R	4' strip fixture with 1 F32T8	1	1F32T8L	1	Area has no room number, arbitrarily assigned; light rarely turned on
35	1	148A	Storage/Old Cafeteria	ASM	2x2 lensed surface mount with 2 F17T8s, .88 BF IS ballast & specular reflector	8	2F17T8XL with GE Ultrastart program start ballast	8	Area has no room number, arbitrarily assigned; room has local manual switch
36	1	148A	Storage/Old Cafeteria	J	4' wrap around with 3 F32T8s	3	2F32T8S in center lamp holders	3	Area has no room number, arbitrarily assigned; room has local manual switch
37	1	148B	Open Storage	G8TG	8' hooded industrial with 4 F32T8s & tube guards	3	2F32T8C in alternating sides & tube guards	3	Area has no room number, arbitrarily assigned; room has local manual switch
38	1	148B	Open Storage	GTG	4' hooded industrial with 2 F32T8s & tube guards	2	1F32T8C in right or left lamp holders & tube guard	2	Area has no room number, arbitrarily assigned; room has local manual switch
39	1	148C	Storage Closet	J	4' wrap around with 3 F32T8s	1	2F32T8S in center lamp holders	1	Area has no room number, arbitrarily assigned; room has local manual switch
40	1	149A	Trash Area	G8TG	8' hooded industrial with 4 F32T8s & tube guards	1	2F32T8C in alternating sides & tube guards	1	Area has no room number, arbitrarily assigned; room has local manual switch
41	1	149B	Electric Meter Room	G8TG	8' hooded industrial with 4 F32T8s & tube guards	2	2F32T8C in alternating sides & tube guards	2	Area has no room number, arbitrarily assigned; room has local manual switch
42	1	149C	Gas Meter Room	W	explosion proof fixture with assumed 75W A19 incandescent	1	no retrofit	0	Area has no room number, arbitrarily assigned; room has local manual switch; Light fixture is a single incandescent bulb in an explosion-proof fixture.
43	1	150	Elevator Room	H8	8' wrap around with 4 F32T8s	2	2F32T8C & centering kits	2	Area has no room number, arbitrarily assigned; room has local manual switch
44	1	151	Elevator Pit Access	R	4' strip fixture with 1 F32T8	1	1F32T8L	1	Area has no room number, arbitrarily assigned
45	1	1At	Atrium- S Stairwell Entrance	T	exit sign with 2 F8T5 lamps	1	new universal mount green LED exit sign with battery backup	1	Area has no room number, arbitrarily assigned
46	1	1At	Atrium- N Stairwell Entrance	U	exit sign with 2 F8T5 lamps	1	new universal mount green LED exit sign with battery backup	1	Area has no room number, arbitrarily assigned
47	1	1At	Atrium- Elevator Entrance	M	recessed can with 70W HPS (interior)	2	new 2x2 surface mount fixture with angled interior sides, clear prismatic lens & 2F17T8C	2	Area has no room number, arbitrarily assigned
48	1	1At	Atrium Area	B	1x4 parabolic troffer with 1 F32T8	15	1F32T8L	15	Area has no room number, arbitrarily assigned
49	1	1At	Atrium Area	B12	1x12 parabolic troffer with 3 F32T8s	12	3F32T8L	12	Area has no room number, arbitrarily assigned
50	1	1At	Atrium Area	B8	1x8 parabolic troffer with 2 F32T8s	3	2F32T8L	3	Area has no room number, arbitrarily assigned; restrooms have occupancy sensor

150.0(k)1A Luminaire Efficacy

- All luminaires or light sources must be high efficacy
- Luminaire efficacy determined by TABLE 150.0-A
  - High efficacy by source types; or
  - Certified to Reference Joint Appendix JA8
    - May be certified to JA8 2016 or 2019

TABLE 150.0-A CLASSIFICATION OF HIGH EFFICACY LIGHT SOURCES

High Efficacy Light Sources Light sources shall comply with one of the columns below:	
Light sources in this column other than those installed in ceiling recessed downlight luminaires are classified as high efficacy and are **not** required to comply with Reference Joint Appendix JA8	Light sources in this column are only considered to be high efficacy if they are certified to the Commission as High Efficacy Light Sources in accordance with Reference Joint Appendix JA8 and marked as required by JA8.
1. Pin-based linear fluorescent or compact fluorescent light sources using electronic ballasts. 2. Pulse-start metal halide light sources. 3. High pressure sodium light sources. 4. Luminaires with hardwired high frequency generator and induction lamp. 5. LED light sources installed outdoors. 6. Inseparable SSL luminaires containing colored light sources that are installed to provide decorative lighting.	8. All light sources installed in ceiling recessed downlight luminaires. Note that ceiling recessed downlight luminaires shall not have screw bases regardless of lamp type as described in Section 150.0(k)1C. 9. Any light source not otherwise listed in this table.

150.0(k)1A Luminaire Efficacy cont.

High Efficacy Light Sources	
High Efficacy Light Sources	**Must be JA8 Certified**
Pin-based linear fluorescent or compact fluorescent light sources using electronic ballasts	Light sources installed in ceiling recessed downlights
Pulse-start metal halide light sources	Lamps and separable light sources installed in enclosed luminaires
High pressure sodium light sources	Screw-base lamps
Luminaires with hardwired high frequency generator and induction lamp	Light sources not otherwise listed in TABLE 150.0-A
LED light sources installed outdoors	
Inseparable SSL luminaires containing colored light sources that are installed to provide decorative lighting	

Reference Joint Appendix JA8 Requirements

JA8-2019 Requirements	
Category	**Requirements**
Color Rendering Index (CRI)	≥ 90
Luminous Efficacy	≥ 45 lumens per watt
Power Factor	≥ 0.90 at full output
Start Time	Turn on within 0.5s
Correlated Color Temperature (CCT)	≤ 4000K

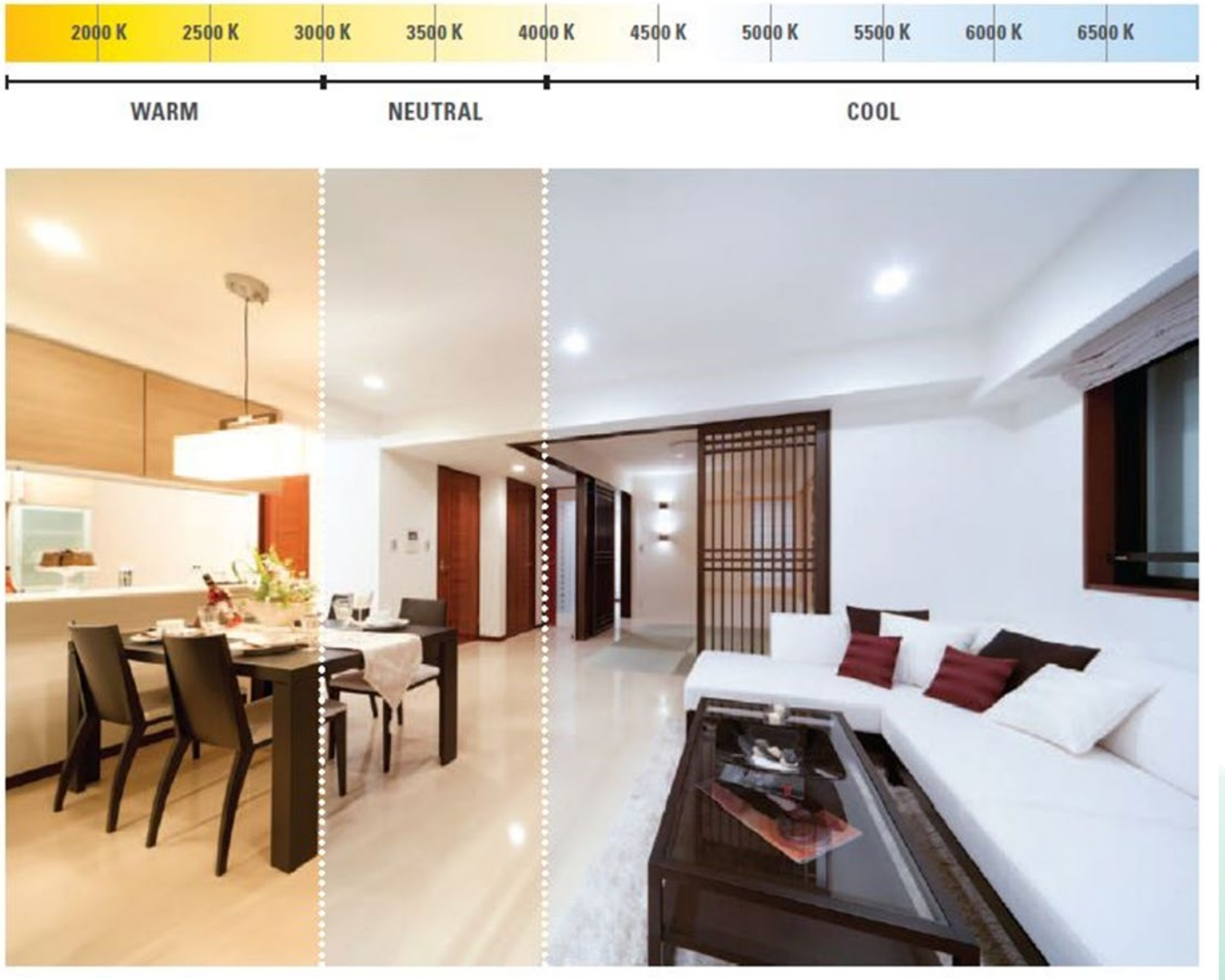
Reference Joint Appendix JA8 Requirements cont.

JA8-2019 Requirements	
Category	**Requirements**
R9	> 50
Rated Life	> 15,000 Hours
Minimum Dimming Levels	≤ 10%
Flicker	< 30% for frequencies of 200 Hz or below
Audible Noise	< 24 dBa at 1 meter from light source
Marking	JA8-2019 or JA8-2019-E

Color Rendering Index (CRI)

Source: California Lighting Technology Center

Correlated Color Temperature (CCT)



Source: California Lighting Technology Center

150.0(k)1B Blank Electrical Boxes

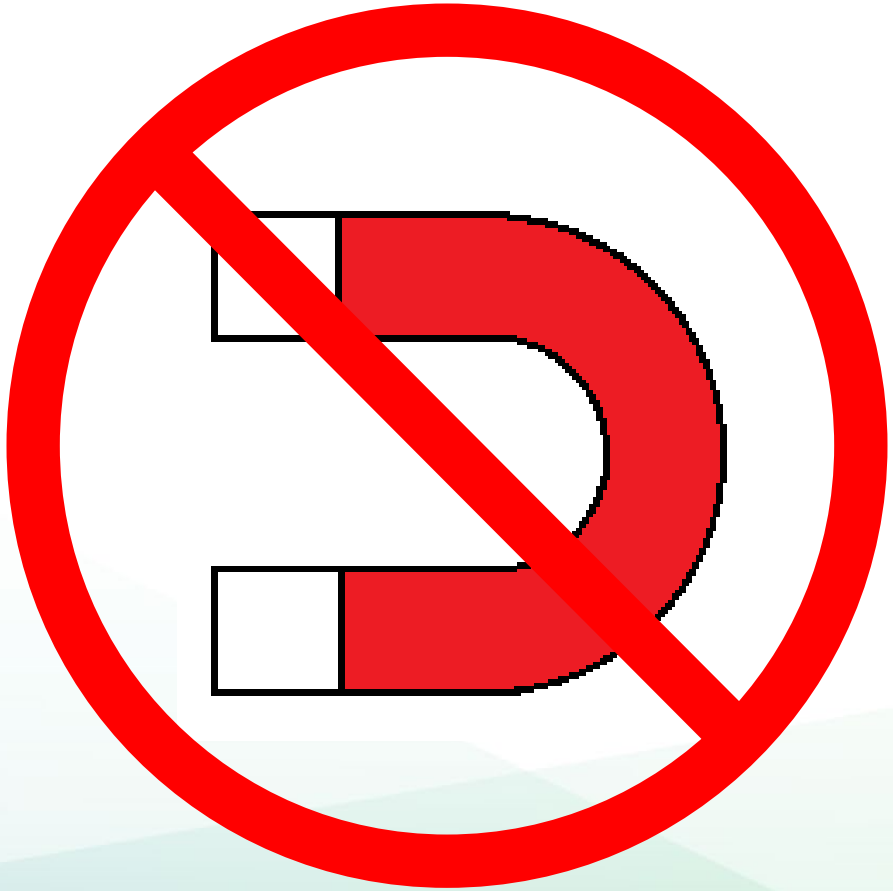
- **Blank electrical boxes more than 5 feet above the floor**
  - Limited to the total number of bedrooms
  - Must be served by a dimmer, vacancy sensor, or fan speed control

150.0(k)1C Recessed Downlights

- Insulation contact (IC) and air tight (AT) listed
- Gasketed and sealed
- Allow ballast or driver maintenance from below ceiling
- Cannot have a screw base socket
- Must utilize a JA8 light source

150.0(k)1D Electronic Ballasts

- Ballasts for fluorescent lamps rated 13 watts or greater
  - Electronic; and
  - Output frequency ≥ 20kHz



150.0(k)1E, I Other Lighting Applications

- Night lights, step lights, and path lights **greater than 5 watts or 150 lumens**
  - Meet Table 150.0-A; and
  - Controlled by vacancy sensor
- Light sources internal to drawers, cabinets, or linen closets **greater than 5 watts or 150 lumens or not controlled to automatically turn off when closed**
  - Meet Table 150.0-A; and
  - Controlled by a vacancy sensor

150.0(k)1F Lighting Integral to Exhaust Fans

- Lighting integral to exhaust fans must meet all applicable lighting requirements
  - Exception: lighting installed by the manufacturer in kitchen exhaust hoods

150.0(k)1G Screw Base Luminaires

- Shall not be recessed downlight luminaires in ceilings
- Shall contain lamps that comply with JA8
- Lamps shall be marked with “JA8-2019” or “JA8-2019-E” (or 2016 marking)
- **Exception:** Luminaires with hard-wired ballasts for high intensity discharge lamps (HID)

150.0(k)1H Enclosed and Recessed Luminaires

- **Lamps and separable light sources**
  - Must comply with JA8 elevated temperature requirements
  - Marked “JA8-2019-E” (or JA8-2016-E)
- **Indoor and outdoor**
- **Enclosed luminaire:** ventilation opening < 3 in^2 per lamp

100.1 Lighting Control Definitions

Lighting Control Type	What does it do?
Dimmer	• Varies luminous flux of electric lighting system by changing power delivered to the system
Occupant Sensor (indoor and outdoor)	• Auto-off after 20 minutes • Auto-on based on occupancy (motion)
Vacancy Sensor	• Auto-off after 20 minutes • Manual-on
Photo Control	• Auto-on/off based on available daylight
Astronomical Time-Switch Control (outdoor)	• Controls light based on time of day • Based on astronomical events like sunset, sunrise • Accounts for geographic location & calendar date

150.0(k)2 Interior Lighting Controls

Control Types	Requirements
LED Dimmers	All forward phase cut dimmers must comply with NEMA SSL 7A
Exhaust Fans & Lighting	Exhaust fans shall be switched separately from lighting systems
Manual ON/OFF	All lights must have readily accessible manual on/off control
No bypass	No control shall bypass a dimmer, occupant, or vacancy sensor
Under-cabinet lighting	Must be switched separately from other lighting

150.0(k)2 Interior Lighting Controls cont.

- **Bathrooms, garages, laundry rooms, and utility rooms**
  - **At least one luminaire** must be controlled by an occupant or vacancy sensor providing automatic-off functionality
- **Luminaires that are, or contain light sources that meet JA8 requirements**, and are not controlled by an occupancy or vacancy sensor must have dimming controls
  - Exception: Luminaires in closets less than 70 square feet
  - Exception: Luminaires in hallways

150.(k)6 Low-rise Multifamily Interior Common Areas

Common Area is ≤ 20% of Total Building Floor Area	Common Area is > 20% of Total Building Floor Area
Luminaires shall be high efficacy	Luminaires shall comply with nonresidential requirements
Controlled by occupancy sensor	Lighting in corridors and stairwells must be controlled by occupancy sensors that reduces power by at least 50%

150.0(k)3A Single-Family Outdoor Lighting

- Must be high efficacy
- Manual control; and
  - Photocell with motion sensor; or
  - Photocell with automatic time switch; or
  - Astronomical time-switch; or
  - EMCS
- Only lighting attached to the building must comply

150.0(k)3B Multifamily Outdoor Lighting

- Private patios, entrances, balconies, porches for low-rise residential with four or more dwelling units
  - Meet single-family lighting requirements (150.0(k)3A); or
  - Meet nonresidential lighting requirements
- Residential parking lots/carports with less than 8 vehicles per site
  - Meet single-family requirements; or
  - Meet nonresidential lighting requirements

150.0(k)3C Multifamily Outdoor Lighting

- Parking lots/carports with 8 or more cars
  - Meet nonresidential lighting requirements
- Lighting not regulated by 150.0(k)3B
  - Meet nonresidential lighting requirements
  - Includes lighting not attached to building on the residential site

150.0(k)4, 5 Address Signs, Garages for Eight or More Vehicles

- **Internally illuminated address signs**:
  - Comply with the nonresidential sign requirements of 140.8; or
  - Consume no more than 5 watts
- **Garages for Eight or More Vehicles**
  - Meet nonresidential indoor lighting requirements

Outdoor Lighting Summarized

Residential [2] Versus Nonresidential [3] Lighting Requirements				
Space type	Single-Family	Low-rise multifamily		High-rise Multifamily and Hotels
		1-3 Dwelling units	4 or more Dwelling units	
Private patios, entrances, balconies, porches; parking lots carports with fewer than eight vehicles per site	Residential	Residential or Nonresidential		Residential, if the lighting is separately controlled from the inside of a dwelling unit or guest room. Otherwise, nonresidential
Residential parking garages[1], lots and carports with more than eight vehicles per site	Nonresidential			
Other outdoor lighting attached to the building	Residential		Nonresidential	
Outdoor lighting not attached to a building	Not regulated		Nonresidential	

1. Residential parking garages with seven or fewer vehicles are covered by the indoor residential lighting requirements.
2. "Residential" means that the lighting shall comply with §150.0(k)9A
3. "Nonresidential" means that the lighting shall comply with §110.9, §130.0, §130.2, §130.4, §140.7, and §141.0 as applicable.

Figure 6-10 – Applicability of Standards to Outdoor Lighting in Different Residential Building Types

150.2(a), (b) Additions & Alterations

- All newly installed lights must meet applicable requirements
- Same high efficacy requirements
- Control requirements applicable when controls are altered or added

Residential Lighting for the Plans Examiner

- Verify lighting and controls on electrical plans:
  - All lighting must be high efficacy
  - Under cabinet lighting must be separately switched
  - Vacancy sensor in bathrooms, garages, laundry, utility rooms
  - Controls for outdoor lighting

Residential Lighting for the Building Inspector

- Verify at rough frame:
  - IC/AT rated cans
  - GU-24 sockets
- Verify at Final:
  - All lighting is high efficacy
  - JA8 lamps are labeled and controlled by dimmer or vacancy sensor
  - No screw base in recessed cans
  - Vacancy sensor in bathroom, garage, laundry, utility rooms
  - All general lighting LEDs on dimmer or occupancy or vacancy sensor
  - Controls for outdoor lighting

Resources

Approved Compliance Software

Residential

- CBECC-Res
- EnergyPro
- Right-Energy Title 24

Nonresidential

- CBECC-Com
- EnergyPro

- More information and up to date list of approved software

Blueprint Newsletter

- Published quarterly
- Clarifies frequently asked questions on all topics related to the Energy Code
- Highlights new resources, clarifications, and more on the Energy Code
- Sign up for our list server and receive Blueprint Newsletter email quarterly
- More information about the Blueprint Newsletter

Issue 126 | April - June 2019

BLUEPRINT

CALIFORNIA ENERGY COMMISSION

EFFICIENCY DIVISION

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- 2019 Energy Code: Nonresidential, Hotel and Motel, High-rise Residential Summary of Major Changes
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- Q&A
  - Outdoor Electric Heating
  - Flag Pole Lighting
  - Continuous Insulation and Z-Clips
- Energy Code Ace Class Schedule
- Energy Code Ace 2019 Reference Ace

2019 ENERGY CODE: LOW-RISE RESIDENTIAL SUMMARY OF MAJOR CHANGES

The most significant change in the 2019 Building Energy Efficiency Standards (Energy Code) for low-rise residential buildings is the introduction of photovoltaic (PV) requirements in the prescriptive standards. There are also significant changes related to the indoor air quality requirements. This is a summary of these and other major changes:

Mandatory Measures

1. Walls with 2x6 framing require R-20 minimum insulation for wood-framed; or 0.071 maximum U-factor. **§ 150.0(c)2**

2. Modifications to the indoor air quality requirements of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 62.2 are included for various building and dwelling unit configurations such as horizontally attached buildings, or central ventilation systems. Balanced or continuously operating supply or exhaust ventilation system required. Home Energy Rating System (HERS) verification required when kitchen range hoods are installed. **§ 150.0(o)**

3. Minimum efficiency reporting value (MERV) 13 air filters (or equivalent) are required for heating, cooling, and on the supply side of ventilation systems. **§ 150.0(m)12**

4. Fan efficacy requirements are 0.45 watts/cubic feet per minute (CFM) or less for gas furnace air-handling units; or 0.58 watts/CFM or less for air-handling units that are not gas furnaces. New fan efficacy requirement for small-duct high-velocity forced-air systems. **§ 150.0(m)13B, C, D**

Prescriptive Compliance

1. New PV solar electric generation requirement. **§ 150.1(c)14**

2. New prescriptive **Table 150.1-B** for multifamily buildings. **§ 150.1(c)**

3. Wall U-factors in climate zones 1-5 and 8-16 reduced to 0.048 maximum in single-family buildings; climate zones 6-7 remain at 0.065 maximum. **§ 150.1(c)1B**

4. New exterior door U-factor 0.20 maximum and National Fenestration Rating Council (NFRC) labeling requirements. **§ 150.1(c)5, § 110.6(a)5**

5. Quality insulation installation (QII) for all single-family buildings in all climate zones, and multifamily buildings in all climate zones except climate zone 7. HERS verification required. **§ 150.1(c)1E**

6. New prescriptive options for heat pump water heaters for newly constructed buildings, additions, and alterations. **§ 150.1(c)8, § 150.2(a)1D, § 150.2(b)1H**

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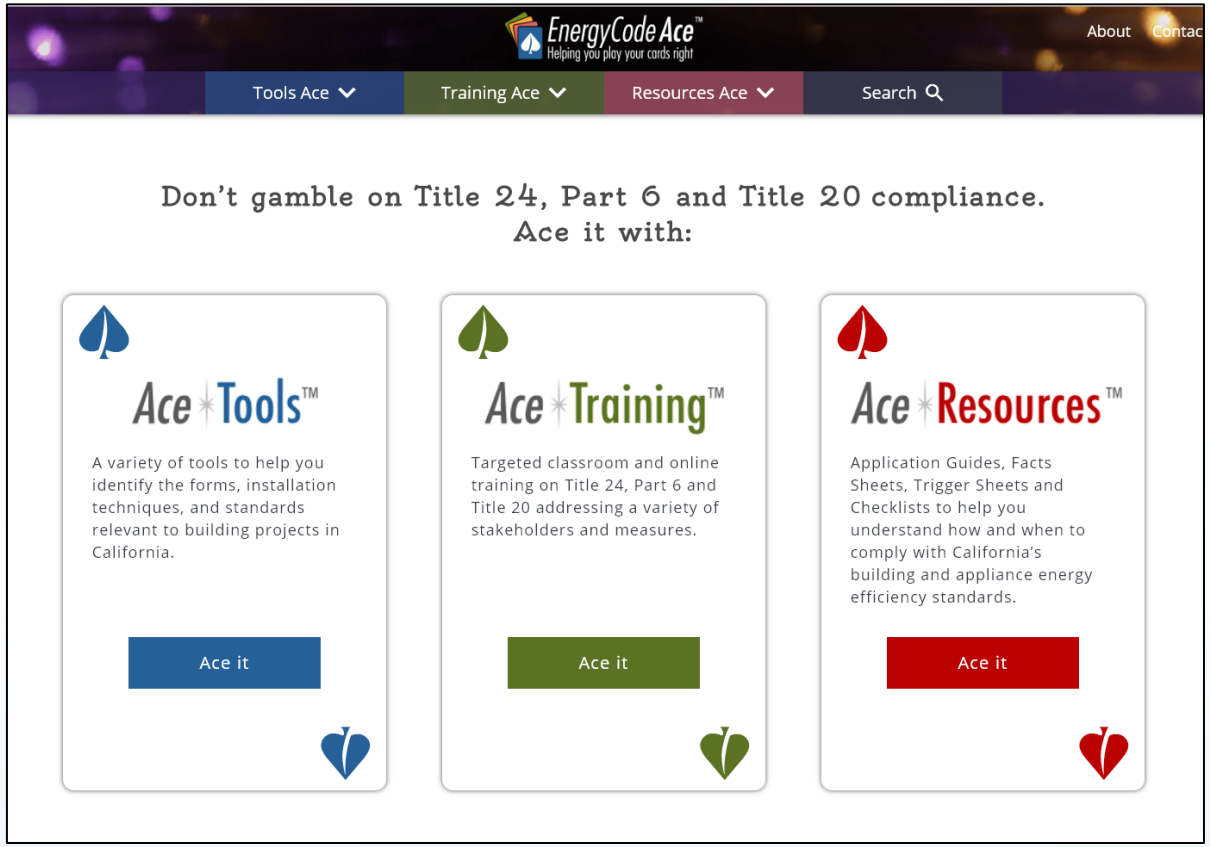
Online Resource Center

Online Resource Center webpage

Energy Code Ace



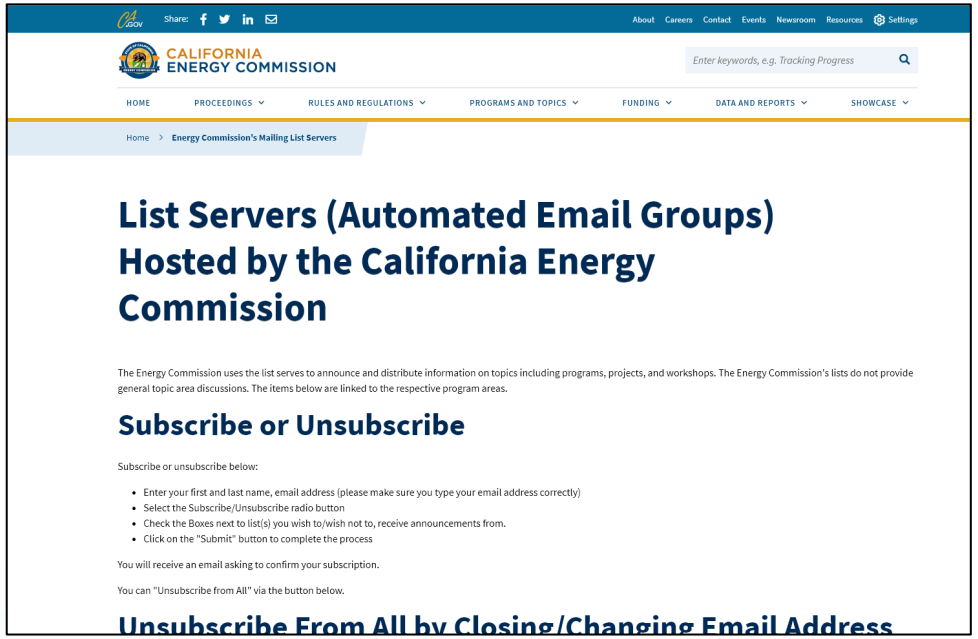
- Forms & Resource tools
- Free training (in person and online)
- Checklists, Trigger Sheets for building departments
- Energy Code Ace webpage

Hotline

- Open Monday through Friday
  - 8:00 a.m. to noon
  - 1:00 p.m. to 4:30 p.m.
- Call at:
  - 1-800-772-3300 (In CA, toll free)
  - 1-916-654-5106 (Outside CA)
- Email at: Title24@energy.ca.gov

E-mail Lists

- **Main conduit for communicating with stakeholders**
- **Sign up on CEC listserver webpage**
- **Subscribe to the following Efficiency Lists:**
  - Building Standards
  - Blueprint
- **Respond to confirmation email within 24 hours**



Thank You!