CITY OF MILPITAS
Building & Safety Department
455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240
www.ci.milpitas.ca.gov

RESIDENTIAL LIGHTING, SWITCHES AND RECEPTACLES

1. PERMIT INFORMATION:

- ❑ The repair of or installation of new lighting, switches or receptacles requires an electrical permit.
- ❑ A Building Permit may be issued only to a State of California Licensed Contractor or the Homeowner.
- ❑ If the work is performed by the Homeowner personally or by his/her workers, and an inspection indicates the work cannot be completed satisfactorily, then a licensed contractor must perform the work.
- ❑ If the Homeowner hires workers, State Law requires the Homeowner to obtain Worker's Compensation Insurance. Proof of this insurance is required prior to inspection.

2. INSTALLATION REQUIREMENTS:

- ❑ **Building Codes:** All work must comply with the 2013 California Residential Code (CRC) or 2013 California Building Code, 2013 California Electrical Code (CEC), 2010 California Energy Code based upon 2008 Building Energy Efficiency Standards (CEnC) (2013 becomes effective 7/1/14), 2013 California Green Building Code and 2013 Milpitas Municipal Code (MMC).
- ❑ Equipment must be installed in accordance with it's listing and the manufacturer's installation instructions.
- ❑ New lighting or receptacles may not overload existing circuits.
- ❑ Branch circuits shall be designed in accordance with CEC Article 210.
- ❑ If new circuits or additional loads are being added, including adding new outlets, and the service is less than 100 amps, the service panel must be upgraded to a minimum 100 amps, 3-wire [CEC 230.79(C)].
- ❑ LIGHTING:
  - Exterior lighting shall be shielded to prevent glare or direct illumination on public streets or adjacent properties (MMC XI-10-54.17).
  - All fixtures installed in wet locations shall be marked "Suitable for Wet Locations. All fixtures installed in damp locations shall be marked "Suitable for Wet Locations" or "Suitable for Damp Locations". [CEC 410.10(A)]
  - Cord-connected fixtures, chain, cable or cord-suspended fixtures, lighting track, pendants, or ceiling-suspended (paddle) fans shall not be located within a zone measured 3 feet horizontally and 8 feet vertically from the top of the bathtub rim or shower stall threshold. This zone is all encompassing and includes the zone directly over the tub or shower stall. Fixtures located within the actual outside dimension of the bathtub or shower to a height of 8 feet vertically from the top of the bathtub rim or shower threshold shall be marked for damp locations, or marked for wet locations where subject to shower spray. [CEC 410.10(D)]

- Fixtures installed in clothes closets shall comply with the following: (CEC 410.16)
  - Fixtures shall be listed and one of the following types:
    - A surface-mounted or recessed incandescent fixture with a completely enclosed lamp.
    - A surface-mounted or recessed fluorescent fixture.
    - Surface-mounted fluorescent or LED fixtures identified as suitable for installation within the storage area.
  - Incandescent fixtures with open or partially enclosed lamps and pendant fixtures or lampholders shall not be permitted.
  - The minimum clearance between fixtures installed in clothes closets and the nearest point of a storage space shall be as follows:
    - 12 inches for surface-mounted incandescent or LED fixtures with a completely enclosed light source installed on the wall above the door or on the ceiling.
    - 6 inches for surface-mounted fluorescent fixtures installed on the wall above the door or on the ceiling.
    - 6 inches for recessed incandescent or LED fixtures with a completely enclosed light source installed in the wall or ceiling.
    - 6 inches for recessed fluorescent fixtures installed in the wall or the ceiling.
    - Surface-mounted fluorescent or LED fixtures shall be permitted to be installed within the storage space where identified for this use.

❑ RECEPTACLES:

- In every kitchen, family room, dining room, living room, parlor, library, den, sunroom, bedroom, recreation room, or similar room or area of dwelling units, receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6 feet, measured horizontally, from an outlet in that space. Wall space shall include the following: [CEC 210.52(A)]
  - Any wall 2 feet or more in width (including space measured around corners) and unbroken along the floor line by doorways, fireplaces, and similar openings.
  - The space occupied by fixed panels in exterior walls, excluding sliding panels.
  - The space afforded by fixed room dividers such as freestanding bar-type counters or railings.
  - Receptacles in floors shall not be counted as part of the required number of receptacle outlets unless located within 18 inches of the wall.
  - See page 3 for a plan view of the location of dwelling unit receptacles in a typical room meeting the requirements of CEC Section 210.52(A).
- Receptacles installed in the following locations must be GFI protected: [CEC 210.8(A)]
  - Bathrooms.
  - Garages, and also accessory buildings not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use.

- Outdoors.
- Crawl spaces.
- Kitchens where the receptacles are installed to serve countertop surfaces.
- Laundry, utility and wet bar sinks where the receptacles are installed within 6 feet of the outside edge of the sink.

- Outlets (including receptacles, switches, lights, and hard-wired smoke detectors) installed in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas of dwelling units shall be protected by a listed arc-fault circuit interrupter, combination-type, installed to provide protection of the branch circuit {210.12(B)].
  - Exception #1: Where RMC, IMC, EMT or steel armored cable, Type AC, meeting the requirements of CEC 250.118 using metal outlet and junction boxes is installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a combination AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.
  - Exception #2: Where a branch circuit to a fire alarm system installed in accordance with CEC 760.41(B) and 760.121(B) is installed in RMC, IMC, EMT, or steel armored cable, Type AC, meeting the requirements of CEC 250.118, with metal outlet and junction boxes, AFCI protection shall be permitted to be omitted.
- All 120 volt, 15 and 20 amp receptacles shall be listed tamper-resistant.
- See Kitchen Remodel and Bathroom Remodel handouts for additional information regarding electrical work in these rooms.

3. ENERGY REQUIREMENTS:

- ❑ All lighting must comply with all applicable mandatory measures of the California Energy Code. Refer to the attached form MF-1R for a list of the mandatory requirements.
- ❑ Outdoor lighting permanently mounted to the building shall be high efficacy fixtures (e.g. fluorescent) or controlled by a motion sensor in addition to one of the following: a photocontrol, astronomical time clock or Energy management control system (EMCS). Photocontrol, astronomical clock and EMCS shall not have an override or bypass switch (CEnC Section 150(k)).
- ❑ If adding or replacing lighting in the kitchen, a minimum of 50% of the total rated lighting wattage (based on the maximum allowed for each fixture) shall be high efficacy fixtures (e.g. fluorescent) switched separately from any low efficacy lighting.
- ❑ If adding or replacing lighting in garages, laundry & utility rooms, closets over 70 square feet or bathrooms, the lighting shall be high efficacy fixtures (e.g. fluorescent) or be controlled by a manual-on occupant sensor complying with CEnC Section 119(j). Such occupant sensor shall not have a control that allows the luminaire to be turned on automatically or that has an override allowing the luminaire to be always on. Permanently installed luminaries, that are not high efficacy luminaries, shall be allowed in closets less than 70 square feet.

- ❑ If adding or replacing lighting in other rooms (hallways, dining rooms, family rooms, living rooms and bedrooms), the lighting shall be high efficacy fixtures (e.g. fluorescent) or a controlled by a manual-on occupant sensor complying with CEnC Section 119(j) or dimmer switch complying with CEnC Section 119(k). Such motion sensor shall not have a control that allows the luminaire to be turned on automatically or that has an override allowing the luminaire to be always on.

- ❑ Recessed lighting in insulated ceilings must be rated for direct insulation contact (IC), certified as airtight construction (AT), and must have a sealed gasket or caulking between the housing and ceiling to prevent the flow of heated or cooled air out of the living areas and into the ceiling cavity (CEnC 150(k)12).

- ❑ **Title 24 Energy Compliance Reports:** The following forms must be filled out and attached to the permit prior to inspection:

  - Mandatory Measures form MF-1R.
  - Installation Certificate CF-6R-LTG-01.

4. SMOKE ALARMS, CARBON MONOXIDE ALARMS & SPARK ARRESTERS:

- ❑ In single family and multi-family residences (including townhomes, condominiums and apartments), installation of smoke alarms, carbon monoxide alarms and spark arresters is required prior to the final inspection as follows:

  Smoke Alarms shall be listed and labeled in accordance with UL 217 and installed in accordance with the provisions of the code and the household fire warning equipment provisions of NFPA 72. Systems and components shall be California State Fire Marshal listed and approved. Alarms shall be tested and maintained in accordance with the manufacturer's instructions. Alarms that no longer function shall be replaced. Conventional ionization smoke alarms that are solely battery powered shall be equipped with a ten-year battery and have a silence feature. **Alarms installed in one and two-family dwellings shall be replaced after 10 years from the date of manufacture marked on the unit, or if the date of manufacture cannot be determined.** (CRC R314)

  Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an approved supervising station and be maintained in accordance with NFPA 72.

  Location. Smoke alarms shall be installed in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms and on each story of the dwelling. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level. Apartment complexes and other multiple-dwelling complexes shall have a smoke detector installed in the common stairwells. For R-3.1 occupancies (Residential Care Facilities), refer to CBC Section 907.2.11.2. The installation of smoke alarms and smoke detectors shall also comply with the following requirements:

  1. Smoke alarms shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.
  2. Smoke alarms shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40°F or exceed 100°F.
  3. Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, alarms shall be mounted on an inside wall.

4. Smoke alarms shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance, except Ionization smoke alarms with an alarm-silencing switch or Photoelectric smoke alarms shall be permitted to be installed 10 feet or greater from a permanently installed cooking appliance and Photoelectric smoke alarms shall be permitted to be installed greater than 6 feet from a permanently installed cooking appliance where the kitchen or cooking area and adjacent spaces have no clear interior partitions and the 10 foot distances would prohibit the placement of a required smoke alarm or smoke detector. Smoke alarms listed for use in close proximity to a permanently installed cooking appliance can be installed in accordance with their listing.
5. Smoke alarms shall be installed not less than a 3 foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by the code.
6. Smoke alarms shall not be installed within a 36 inch horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.
7. Smoke alarms shall not be installed within a 36 inch horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan.
8. Where stairs lead to other occupied levels, alarm shall be located so that smoke rising in the stairway cannot be prevented from reaching the alarm by an intervening door or obstruction.
9. For stairways leading up from a basement, alarms shall be located on the basement ceiling near the entry to the stairs.
10. For tray-shaped ceilings (coffered ceilings), alarms shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 inch vertically down from the highest point.
11. Smoke alarms installed in rooms with joists or beams shall comply with the requirements of NFPA 72, Section 17.7.3.2.4.
12. Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of NFPA 72, Section 17.6.3.

Carbon Monoxide Alarms: An approved carbon monoxide alarm listed as complying with UL 2034, approved and listed by the California State Fire Marshal, installed and maintained in accordance with NFPA 720 and the manufacturer's instructions shall be installed if they do not already exist in existing dwellings or sleeping units having a fossil fuel-burning heater or appliance, fireplace or an attached garage as follows: **outside each separate dwelling unit sleeping area in the immediate vicinity of bedroom(s) and on every level of dwelling unit.** Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained as required for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. (CRC R315)

Power supply: Smoke and carbon monoxide alarms shall receive their primary power from the building wiring and shall be equipped with a battery back-up. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Smoke and carbon monoxide alarm wiring shall be directly connected to the permanent building wiring without a disconnecting switch other than as required for overcurrent protection. Smoke and carbon monoxide alarms are permitted to be solely battery operated (carbon monoxide alarms can also be plug-in with battery back-up) in existing buildings where no construction is taking place; in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure unless there is an attic or crawl space available which could provide access for building wiring without the removal of interior finishes; where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck; or when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure: and, for carbon monoxide alarms, when other power sources recognized for use by NFPA 720 are used.

Interconnection: Where more than one smoke or carbon monoxide alarm is required to be installed within an individual dwelling or sleeping unit, the alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit, except interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind; where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure unless there is an attic or crawl space available which could provide access for interconnection without the removal of interior finishes and no previous method for interconnection existed; where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck; or when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

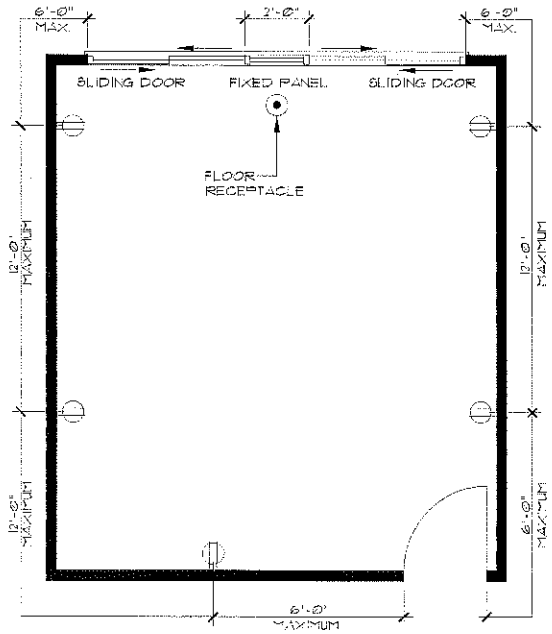
Spark arresters: When a permit has been issued and the value of the work exceeds $1,000, a spark arrester must be installed on all fireplace chimneys, if one does not already exist, per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CRC Section 1003.9.2.

5. INSPECTION PROCEDURES:

- ❑ At least two inspections are required. The rough inspection should be scheduled when the new fixtures are located, but before power is supplied to them AND before any wiring inside walls/ceilings are covered. The final inspection should be scheduled after all the work is complete. For each inspection, the Permit Card with the Energy Compliance Report forms completely filled and out attached, and the Approved Job Copy of the Drawings (if any) must be presented to the inspector. Permits expire 180 days after issuance or last inspection passed, whichever is the latest.

6. QUESTIONS:

- ❑ If you have any questions regarding your project contact the Building & Safety Department at (408) 586-3240.



SAMPLE RECEPTACLES SPACING

EPA
Renovation, Repair and Painting Rule

Does the RRP Rule apply to you?

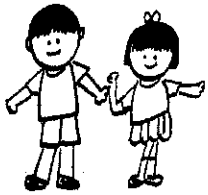
The rule applies to all jobs in pre-1978 housing (i.e. "Target Housing") and child occupied facilities where more than 6 square feet per room or 20 square feet outside will be "disturbed" by worker(s) being compensated for the job. This includes landlords.

Where does the RRP Rule Apply?

The rule applies in Target Housing and Child-Occupied Facilities*

Target Housing - A house or apartment (including mobile homes) built before January 1, 1978 except for:

1) 0-bedroom units (like dorm rooms or studio apartments)
2) housing that is officially designated for the elderly or the handicapped
3) housing that has been tested by a State Certified Lead Inspector and found to be free of lead based paint.



Child Occupied Facility - A building, or portion of a building, constructed prior to 1978, visited by the same child, 6 years of age or under, on at least 2 different days within any week, provided that each day's visit lasts at least 3 hours, the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Such facilities may include, but are not limited to, day-care centers, preschools and kindergarten classrooms.

What does the RRP Rule Require? *California Law requires lead-safe work practices for all pre-1978 buildings.

1. **Pamphlet Distribution**—Contractors must give clients a pamphlet called "Renovate Right" and get a signed receipt before beginning a job.
2. **Individual Certification**—At least one RRP Certified Renovator is required at each job site. Certification involves taking a 1-day class from an EPA Accredited Training Provider.
3. **Firm Certification**—In addition to individual certification, each firm, agency or non-profit must also become RRP certified.
4. **On-the-Job-Training**—RRP Certified Renovators are required to train all non-certified people at the job site. Note: Contractors who work on buildings receiving Federal assistance, including Section 8, must have everyone trained in the classroom, or have a state-certified lead in construction supervisor present.
5. **Paint Testing**—The rule requires contractors to either test paint they will disturb BEFORE beginning a job, or assume that it is lead-based. In California contractors may not test paint. Instead, current law requires that they must assume that all surfaces in all structures built before 1978 contain lead based paint. The only people who can test for lead-based paint in California are State Certified Lead Inspectors/Risk Assessors.
6. **Use Lead Safe Work Practices**—The RRP Rule requires that "Lead Safe Work Practices" be used when disturbing more than six (6) square feet per room inside or more than twenty (20) square feet of painted surfaces outside.
7. **Cleaning Verification**—At the end of each job, contractors are required to do a "cleaning verification" to make sure they cleaned up properly.

FOR ADDITIONAL INFORMATION, VISIT

The Environmental Protection Agency www.epa.gov/getleadsafe

Get the Lead Out Coalition www.getleadout.org

CERTIFICATE OF INSTALLATION		CF2R-LTG-01-E
Lighting – Single Family Dwellings		(Page 1 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City	Zip Code

	A. Types of Installed Lighting and Controls Select Yes or No according to whether your work on the project includes each of the following types of lighting and controls.	Y or N
01	Controls for any interior or outdoor lighting	
02	Luminaires in any interior room or outdoor	
03	luminaires recessed into ceilings	
04	Light Emitting Diode (LED) luminaires	
05	Kitchen lighting scope	
06	Lighting internal to cabinets	
07	Bathroom lighting	
08	Lighting in garages, laundry rooms, or utility rooms	
09	Lighting in rooms other than a kitchen, bathroom, garage, laundry room, or and utility room	
10	Outdoor lighting for single family residential	
11	Internally illuminated address signs	
12	Lighting in garages for 8 or more vehicles	

	B. Lighting Controls
01	150.0(k)2A: High efficacy luminaires are switched separately from low efficacy luminaires.
02	150.0(k)2B: Exhaust fans are switched separately from lighting systems, or can be switched OFF in accordance with EXCEPTION
03	150.0(k)2C: Luminaires are switched with readily accessible controls that permit luminaires to be manually switched ON and OFF
04	150.0(k)2D: Lighting controls and equipment are installed in accordance with manufacturer's instructions
05	150.0(k)2E: No controls are installed that bypass a dimmer or vacancy sensor function where that dimmer or vacancy sensor has been installed to comply with Section 150.0(k)
06	150.0(k)2F: Lighting control devices have been Certified to the Energy Commission as applicable; lighting control systems comply with the applicable requirements in Section 110.9.
07	150.0(k)2G: Energy Management Control Systems used to comply with dimmer requirements provide the functionality of a dimmer in accordance with Section 110.9, meet the installation certificate requirements in Section 130.4, the EMCS requirements in Section 130.5, and comply with all other applicable requirements in Section 150.0(k)2.
08	150.0(k)2H: Energy Management Control Systems used to comply with vacancy sensor requirements in Section 150.0(k) provide the functionality of a vacancy sensor in accordance with Section 110.9, meet the installation certificate requirements in Section 130.4, the EMCS requirements in Section 130.5, and comply with all other applicable requirements in Section 150.0(k)2.
09	150.0(k)2I: A multi-scene programmable controller used to comply with dimmer requirements provides the functionality of a dimmer in accordance with Section 110.9, and complies with all other applicable requirements in Section 150.0(k)2.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

	C. Luminaires (Lighting Fixtures)
01	150.0(k)1(A-C): For compliance with Section 150.0(k), all installed luminaires have been classified as high efficacy or low efficacy in accordance with the applicable requirements in Section 130.0(c), and in accordance with TABLE 150.0-A or TABLE 150.0-B
02	150.0(k)1D: Ballasts for fluorescent lamps rated 13 watts or greater are electronic.
03	150.0(k)1E: Night lights are rated to consume no more than five watts of power
04	150.0(k)1F: Lighting integral to exhaust fans meets all applicable requirements of Section 150.0(k)
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

CERTIFICATE OF INSTALLATION		CF2R-LTG-01-E
Lighting – Single Family Dwellings		(Page 2 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City	Zip Code

D. Recessed Luminaires in ceilings	
01	150.0(k)8A: Listed for zero clearance insulation contact (IC)
02	150.0(k)8B: Has label certifying air tight
03	150.0(k)8C: Sealed with a gasket or caulk between the luminaire housing and ceiling, and all air leak paths between conditioned and unconditioned spaces are sealed with a gasket or caulk; and
04	150.0(k)8D: Ballasts for compact fluorescent luminaires certified to the Commission in accordance with Section 110.9; and
05	150.0(k)8E: Allows ballast maintenance and replacement to be readily accessible to building occupants from below the ceiling without requiring the cutting of holes in the ceiling.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

E. LED Luminaires	
01	TABLE 150.0-A: The LED luminaires are classified as low efficacy because they have NOT been Certified to the Energy Commission, or they do not comply with all of the following requirements, as applicable: Sections 110.9(e), 130.0(c)9, 150.0(k)1A, TABLE 150.0-A, and Reference Joint Appendix JA8.
02	150.0(k)1A: The LED luminaires are classified as high efficacy because they ARE Certified to the Energy Commission by the manufacturer in accordance with all of the following requirements, as applicable: Sections 110.9(e), 130.0(c)9, 150.0(k)1A, TABLE 150.0-A, and Reference Joint Appendix JA8.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

F. Kitchen Lighting	
01	150.0(k)1C: The wattage of permanently installed luminaires should be determined as specified in Section 130.0(c).
02	150.0(k)1C: In the kitchen, Any electrical boxes finished with a blank cover count as 180 watts of low efficacy lighting.
03	Method <(a), (b), or (c) as selected above> from Section 150(k)3A: Compliance demonstrated using Method (a) because only high efficacy luminaires have been installed in the kitchen. Compliance demonstrated using Method (b). At least 50% of the installed watts from permanently installed high efficacy. Total A ≥ Total B in Installed Wattage Calculation Table (below) Compliance demonstrated with additional low efficacy wattage allowance of EXCEPTION to 150(k)3
04	<If method (c) is selected, this additional field will be displayed> EXCEPTION to 150.0(k)3: Additional low efficacy watts may be allowed when all luminaires in the kitchen are controlled by a vacancy sensor or dimmers, and 1. See 150.0(k)2A where high efficacy and low efficacy luminaires must be separately controlled. 2. See 150.0(k)2G where EMCS may be used as a dimmer; Section 150.0(k)2H where EMCS may be used as a vacancy sensor; or, 150.0(k)2I where multi-scene programmable controller may be used as a dimmer. NOTES: Compliance demonstrated using Method (c). Kitchen lighting qualifies for additional low efficacy lighting and as demonstrated in Installed Wattage Calculation Table in Method (b) (above) in addition to Additional Low Efficacy Wattage Calculation Table (below).
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

CERTIFICATE OF INSTALLATION		CF2R-LTG-01-E
Lighting – Single Family Dwellings		(Page 3 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City	Zip Code

This Table is applicable only if Kitchen Lighting using Method (b) or (c) is selected in Table A above

Method (b) Total Wattage Calculation							
	Luminaire (Fixture)					Total Watts	
Luminaire Type	High Efficacy Watts	Low Efficacy Watts		Quantity		High Efficacy	Low Efficacy
			x		=	0	0
			x		=	0	0
			x		=	0	0
			x		=	0	0
			x		=	0	0
			x		=	0	0
	Complies with method (b) if Total A ≥ Total B					0	0
						A ≥	B

Method (c) Total Additional Low Efficacy Wattage Calculation			
Watts From Method (b)		Additional Watts Low Efficacy (see footnote)	Total Low Efficacy Watts Allowd
High Efficacy	Low Efficacy		
0	0	0	0

1. Insert 50 if house is ≤ 2,500 square feet; Insert 100 if house is > 2,500 square feet.

CERTIFICATE OF INSTALLATION		CF2R-LTG-01-E
Lighting – Single Family Dwellings		(Page 4 of 5)
Project Name:	Enforcement Agency:	Permit Number:
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G. Lighting Internal to Cabinets	
01	150.0(k)4: Permanently installed lighting internal to cabinets uses ≤ 20 watts of power per linear foot of illuminated cabinet.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

H. Lighting in Bathrooms	
01	150.0(k)5A: A minimum of one high efficacy luminaire is installed in each bathroom; and
02	150.0(k)5B: All other lighting installed in each bathroom is high efficacy or controlled by vacancy sensors.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

I. Lighting in Garages, Laundry Rooms, and Utility Rooms	
01	150.0(k)6: All installed luminaires are high efficacy AND controlled by vacancy sensors
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

J. Lighting other than in Kitchens, Bathrooms, Garages, Laundry Rooms, and Utility Rooms	
01	150.0(k)7: Installed lighting is high efficacy
02	150.0(k)7: Installed lighting is low efficacy and controlled by dimmers or vacancy sensors
03	150.0(k)7: Exempt lighting is in closets that are < 70 sq ft.
04	150.0(k)7: Exempt lighting is in detached storage buildings that are < 1,000 sq ft.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

K. Address Signs	
01	150.0(k)10A: Internally illuminated address signs. Internally illuminated address signs shall either: A. Comply with Section 140.8. Applicable nonresidential sign lighting compliance forms shall also be submitted, or B. Consume no more than 5 watts of power, determined according to Section 130.0(c).
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

L. Single Family Outdoor Lighting	
01	150.0(k)9A: High efficacy outdoor lighting is installed
02	150.0(k)9A: Low efficacy outdoor lighting is installed, and meets all of the lighting control requirements as specified in Section 150.0(k)9A, as summarized below: i. Controlled by a manual ON and OFF switch; and ii. Controlled by a motion sensor; and iii. Controlled by Photocontrol, Astronomical time clock, or EMCS.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

CERTIFICATE OF INSTALLATION		CF2R-LTG-01-E
Lighting – Single Family Dwellings		(Page 5 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City	Zip Code

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Documentation Author Company Name:	Date Signed:
Address:	CEA/HERS Certification Identification (If applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations, and the installation conforms to the requirements given on the plans and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I will ensure that a registered copy of this Certificate of Installation shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone	Date Signed:

Instructions

There are two version of the residential lighting certificate of installation. This version, the CF2R-LTI-01-E, is primarily used for demonstrating compliance with the residential lighting standards for single family dwellings.

The LTI-01 shall also be used to demonstrate compliance with the residential lighting requirements for high-rise residential dwelling units; outdoor lighting that is attached to a high-rise residential or hotel/motel building, and is separately controlled from the inside of a dwelling unit or guest room; fire station dwelling accommodations; hotel and motel guest rooms; and, dormitory and senior housing dwelling accommodations. When using the CF2R-LTI-01-E to demonstrate compliance with the lighting in the dwelling units, compliance with lighting that is not in the dwelling units, such as lighting in common areas, shall be demonstrated using the nonresidential lighting compliance documentation.

The other version of the residential lighting certificate of installation, the CF2R-LTI-02-E, is used for demonstrating compliance with the residential lighting standards for low-rise multi-family dwellings. The primary difference between the LTI-02 and the LTI-01 is that the LTI-02 includes additional requirements for demonstrating compliance with residential outdoor lighting, and common areas associated with low-rise multi-family dwelling units.

Table A
This table is used to identify the scope of the work being covered by the responsible person signing this document. One person may be responsible for all of the measures in this table, or several people may each be responsible for only a portion of the measures. If several people are responsible, each person must separately fill out this certificate of installation for those measures for which they are responsible. In some situations, such as for alterations and additions, only some of the measures may be included in the total scope of work.

For rows 1 through 4 and rows 6 through 12 - insert 'Y' for each measure that is included in the scope of work, and insert 'N' for each measure that is not included in the scope of work.

Row 5, if the scope of the work includes kitchen lighting, identify which method(s) are used to comply, as follows:

- Pick from the list "only high efficacy luminaires (method a)" if appropriate. If this method is picked, do not pick either of the other two pick options; or,
- Pick from the list "at least 50% of installed watts from permanently installed high efficacy lighting (Method (b), and,
- If also appropriate, pick "an additional low efficacy lighting allotment (Method (c)"

Table B
This table is a list of mandatory residential lighting control requirements. Any lighting controls installed must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document.

Table C
This table is a list of mandatory residential luminaire requirements. Any luminaires installed must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document. Additionally, some luminaires, covered in Tables D and E, have additional mandatory requirements.

Table D
This Table is displayed only if residential recessed lighting is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for residential recessed luminaires, which are in addition to the applicable residential luminaire requirements listed in Table C. Any recessed luminaires installed must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document.

Table E
This Table is displayed only if residential LED lighting is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for residential LED luminaires, which are in addition to the applicable residential luminaire requirements listed in Tables C and D. Any LED luminaires installed must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document.

Table F
This Table is displayed only if residential kitchen lighting is selected in Table A as being included in the scope of work. This table includes a list of mandatory requirements for Kitchen lighting. Any Kitchen lighting installed must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document.

For the residential kitchen lighting power requirements, this certificate of installation provides three different methods for demonstrating compliance, as follows:

- Method (a) is used when only high efficacy luminaires have been installed in the kitchen.
- Method (b) is used when at least 50% of the installed watts from permanently installed high efficacy
- Method (c) is used when additional low efficacy watts are allowed because all luminaires in the kitchen are controlled by a vacancy sensor or dimmers, in addition to separately controlling the high efficacy and low efficacy luminaires.

Method (a) does not require a calculation table because only high efficacy luminaires have been installed. Therefore, there are no requirements to demonstrate that at least 50% of the installed lighting power is from high efficacy luminaires.

Method (b) requires the Installed Wattage Calculation Table to be filled out, as follows:

- Use a separate row for each different type of lighting installed in the kitchen.
- Luminaire Type – is an identifying name for the type of luminaire
- High Efficacy Watts – use this cell only if the luminaire on this row is classified as high efficacy according to Tables 150-A or B. Luminaire wattage shall be determined in accordance with Section 130.0(c).
- Low Efficacy Watts – use this cell only if the luminaire on this row is classified as low efficacy according to Tables 150-A or B. Luminaire wattage shall be determined in accordance with Section 130.0(c).
- Quantity – is the number of the type of luminaire being described on this row.
- Total Watts, High Efficacy – if the luminaire described on this row is high efficacy, multiply the high efficacy watts times the quantity. Add the sum total of all of the rows of total high efficacy lighting together on the bottom of this column.
- Total Watts, Low Efficacy – if the luminaire described on this row is low efficacy, multiply the low efficacy watts times the quantity. Add the sum total of all of the rows of total low efficacy lighting together on the bottom of this column.

The kitchen lighting complies with the lighting power requirements if the sum total watts of high efficacy lighting is ≥ the sum total watts of low efficacy lighting. However, the kitchen may qualify for additional watts of low efficacy lighting, if also demonstrated by filling out the Method (c) table.

Method (c) requires the Total Additional Low Efficacy Wattage Calculation Table to be filled out, as follows:

- Use only one row for this calculation.
- Watts from Method (b), High Efficacy – is the sum total high efficacy watts taken from Method (b), Installed Wattage Calculation Table.
- Watts from Method (b), Low Efficacy – is the sum total low efficacy watts taken from Method (b), Installed Wattage Calculation Table.
- Additional Watts Low Efficacy – Enter 50 if the house is ≤ 2,500 square feet, or enter 100 if the house is > 2,500 square feet
- Total Low Efficacy watts allowed is the sum total of high efficacy watts taken from Method (b), plus the additional watts of low efficacy lighting documented in this table.

The residential kitchen lighting complies with the lighting power requirements if the sum total of all low efficacy watts installed is ≤ total low efficacy watts allowed.

By signing this document the installer certifies that the requirements for residential kitchen lighting wattage allowances have been met.

Table G

This Table is displayed only if internal cabinet lighting is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for internal cabinet lighting. Any permanently installed lighting internal to cabinets must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document.

Table H

This Table is displayed only if residential bathroom lighting is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for bathroom lighting. Lighting for each bathroom applicable to the scope of the work being covered by the responsible person signing this document must separately meet these requirements.

Table I

This Table is displayed only if residential garage, laundry room and utility room lighting is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for garage, laundry room and utility room lighting. Lighting for each garage, laundry room and utility room applicable to the scope of the work being covered by the responsible person signing this document must separately meet these requirements.

Table J

This Table is displayed only if lighting in rooms other than kitchen, bathroom, residential garage, laundry room and utility room is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for lighting in residential rooms other than kitchen, bathroom, garage, laundry room and utility room. These mandatory requirements apply to any room not defined in Section 100.1 of the Standards as a residential kitchen, residential bathroom, residential garage, residential laundry room or residential utility room. Lighting for each

room that is other than a kitchen, bathroom, garage, laundry room or utility room utility room applicable to the scope of the work being covered by the responsible person signing this document must separately meet these requirements.

Table K

This Table is displayed only if lighting for residential internally illuminated address signs is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for internally illuminated address signs. Lighting for each internally illuminated address sign applicable to the scope of the work being covered by the responsible person signing this document must separately meet these requirements.

Table L

This Table is displayed only if residential outdoor lighting is selected in Table A as being included in the scope of work. This table is a list of mandatory requirements for single family outdoor lighting. Any installed outdoor lighting must meet those requirements which are applicable to the scope of the work being covered by the responsible person signing this document.