



Residential Lighting Requirements

Introduction

For residential buildings, all of the lighting requirements are mandatory measures. There are no tradeoffs between lighting and other building features. Lighting requirements apply to alterations and additions (including replacements) as well as newly-constructed buildings. All new luminaires (lighting fixtures) that are permanently installed must be high efficacy, but existing fixtures need not be replaced. The Standards apply only to permanently installed fixtures (i.e., plug-in fixtures are not required to meet these requirements).

High Efficacy Luminaires

A high efficacy fixture is one that contains only high efficacy lamps and must not contain a conventional (medium) screw-based socket. Typically, high efficacy fixtures contain, pin-based sockets, like compact or linear fluorescent lamp sockets. Almost all fluorescent lamps equipped with electronic ballasts qualify as high efficacy light sources. Fixtures with modular components that allow conversion between screw-based and pin-based sockets without changing the fixture housing or wiring are not considered high efficacy fixtures. The following are examples of lighting fixtures used for residential lighting:

Luminaire Type	Notes
Bath Bar	Bath bar incandescent lamps must be controlled by a manual-on occupant sensor.
Ceiling Fixture (ie., for a bathroom application)	Fluorescent surface-mounted ceiling fixtures with electronic ballast.
Fluorescent Recessed Can (ie., for a Kitchen application)	Fluorescent recessed can with pin-based compact fluorescent lamp, electronic ballast, rated for direct insulation contact (IC rated), and meeting the minimum efficacy and air-tight requirements.
Incandescent Recessed Can. (ie., for a Kitchen application)	Incandescent recessed can with a maximum relamping wattage of 75 watts, IC rated and meeting minimum efficacy and air-tight requirements.
Incandescent Recessed Can (ie., for a Dining Room application)	Incandescent recessed can meeting the IC rating and air-tight requirements and controlled by a dimmer switch.
Chandelier	Chandelier controlled by dimmer switch.
Occupant Sensor	Manual-on occupant sensor.

Permanently Installed Luminaires

1. Permanently installed luminaires (lighting fixtures) include, but are not limited to those fixtures installed in, on, or hanging from the ceilings or walls (including ceiling fan lights); in or on built-in cabinets (including kitchen, nook, wet bar, and other built-in cabinets); and those mounted to the outside of the buildings.

2. Permanently installed fixtures do not include lighting that is installed in appliances by the manufacturers. For example, lighting in refrigerators, stoves, microwave ovens, or exhaust hoods.
3. Recessed luminaries shall be:
 - a. Approved for zero clearance insulation cover.
 - b. Air tight. All air leak paths through the fixture assembly or through the ceiling opening must be sealed, caulked or gasketed.
 - c. Equipped with electronic ballast.
4. More than one circuit of fixture may be attached to the same manual-on occupant sensor. At least one high-efficacy fixture should be installed so that it can be left off the occupant sensor circuit to ensure that all of the fixtures don't switch off while someone is, for example, in the bath.

Note: It is important that fixtures are described fully in the specifications and on drawings so that contractors and subcontractors provide and install residential lighting systems that comply with the Title 24 Residential Lighting Standards.

Kitchens

1. At least 50% of the lighting watts in a kitchen must be high efficacy luminaries. The applicant may use the attached Form WS-5R, Residential Kitchen Lighting Worksheet, to determine if kitchen lighting complies with the Standards.
2. High-efficacy fixtures and non-high efficacy fixtures are required to be switched separately.
3. The following are examples of layers of lighting that code allows to be switched together. However, it is recommended that each layer that can serve a unique function should be switched separately.
 - Recessed Downlights
 - Linear fluorescent fixtures mounted on the ceiling.
 - Under-cabinet lighting.
 - In uplights (mounted on walls or on top of cabinets).

Note: Lighting in areas adjacent to the kitchen, such as dining and nook areas and even family rooms, is considered to be kitchen lighting if it is not separately switched from the kitchen lighting.

Bathrooms, Garages, Laundry Rooms and Utility Rooms

Lighting in bathrooms, garages, laundry rooms and/or utility rooms must be high efficacy, or must be controlled by a manual-on occupant sensor with no over-ride that allows the luminaries to be always on.

Other Rooms

1. Permanently installed lighting in other rooms (hallways, dining rooms, family rooms and bedrooms) must be high efficacy, or a manual-on occupant sensor or a dimmer must control it.
2. Permanently installed fixtures that are not high efficacy are allowed in closets less than 70 square feet. These fixtures may be controlled by a simple toggle switch, manual-on occupant sensor, or an automatic-on occupant sensor.

Porches and Outdoor Areas

Permanently installed outdoor lighting mounted on residential buildings or other buildings on the same lot must be high efficacy fixtures or be controlled by motion sensors with integral photocell control. Lighting not attached to buildings, such as low voltage landscape lighting, lighting fixtures installed in or around swimming pools, spas, or similar water features need not be high efficacy or controlled by motion sensors.

KITCHEN EXAMPLES

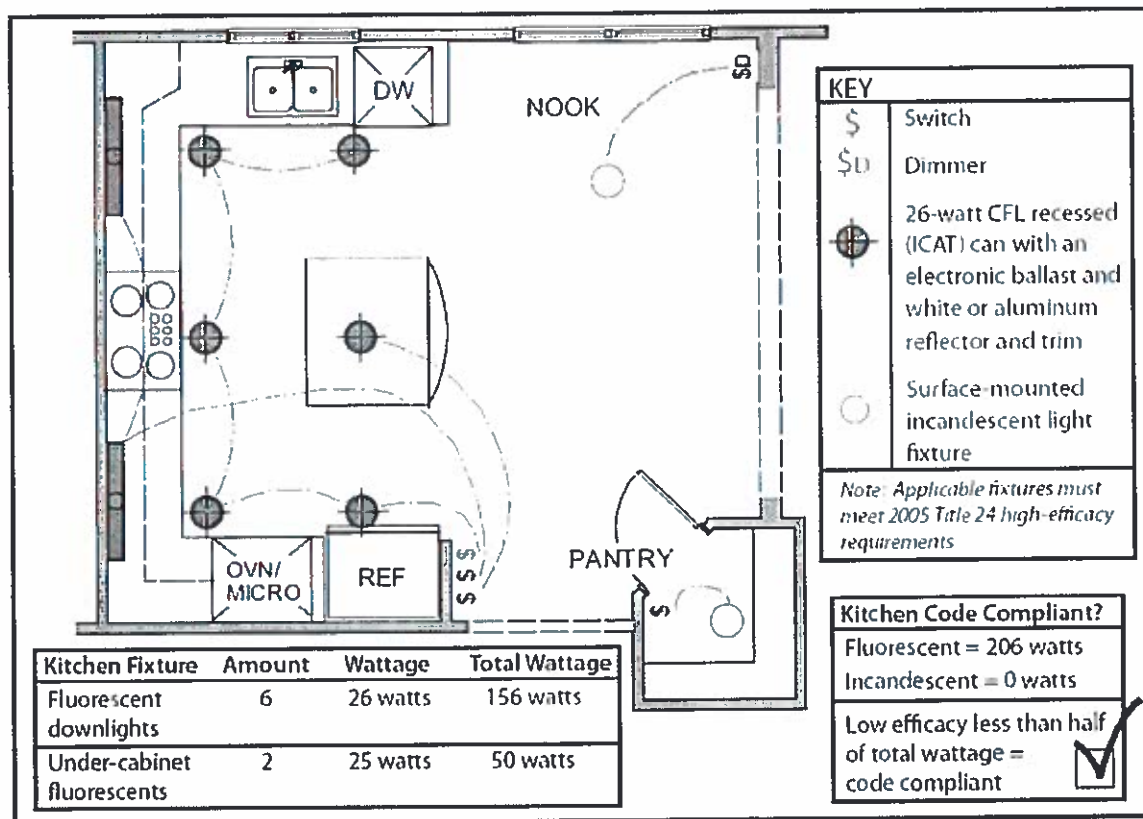
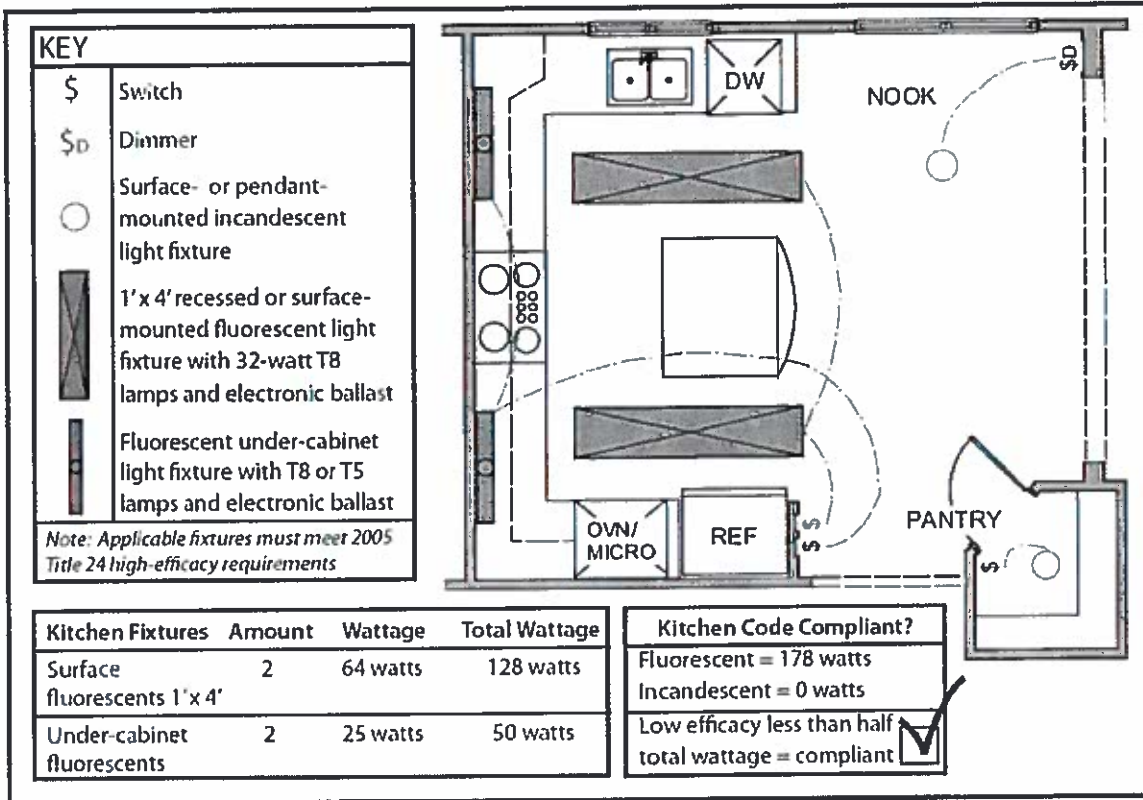
KEY

- \$ Switch
- \$o Dimmer
- Surface- or pendant-mounted incandescent light fixture
- ⊕ 26-watt CFL recessed can with electronic ballast and white or aluminum reflector and trim
- ▬ Fluorescent under-cabinet and/or over-cabinet light fixture with T8 or T5 lamps and electronic ballast

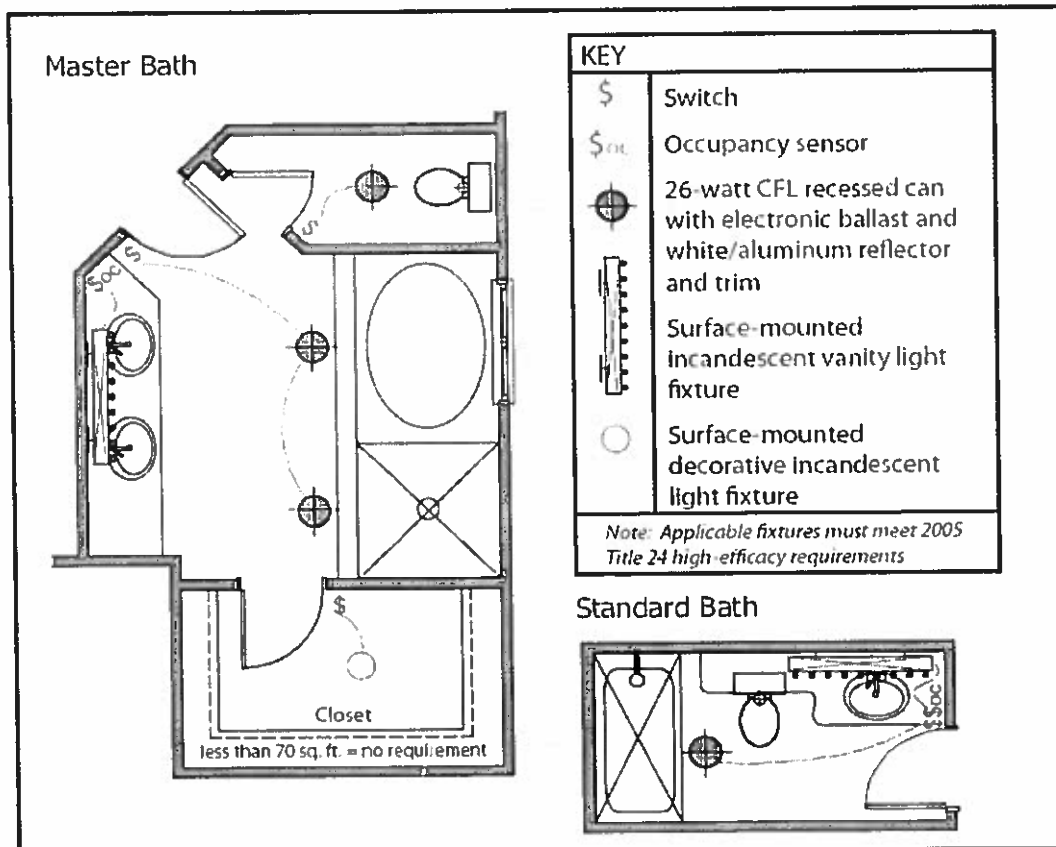
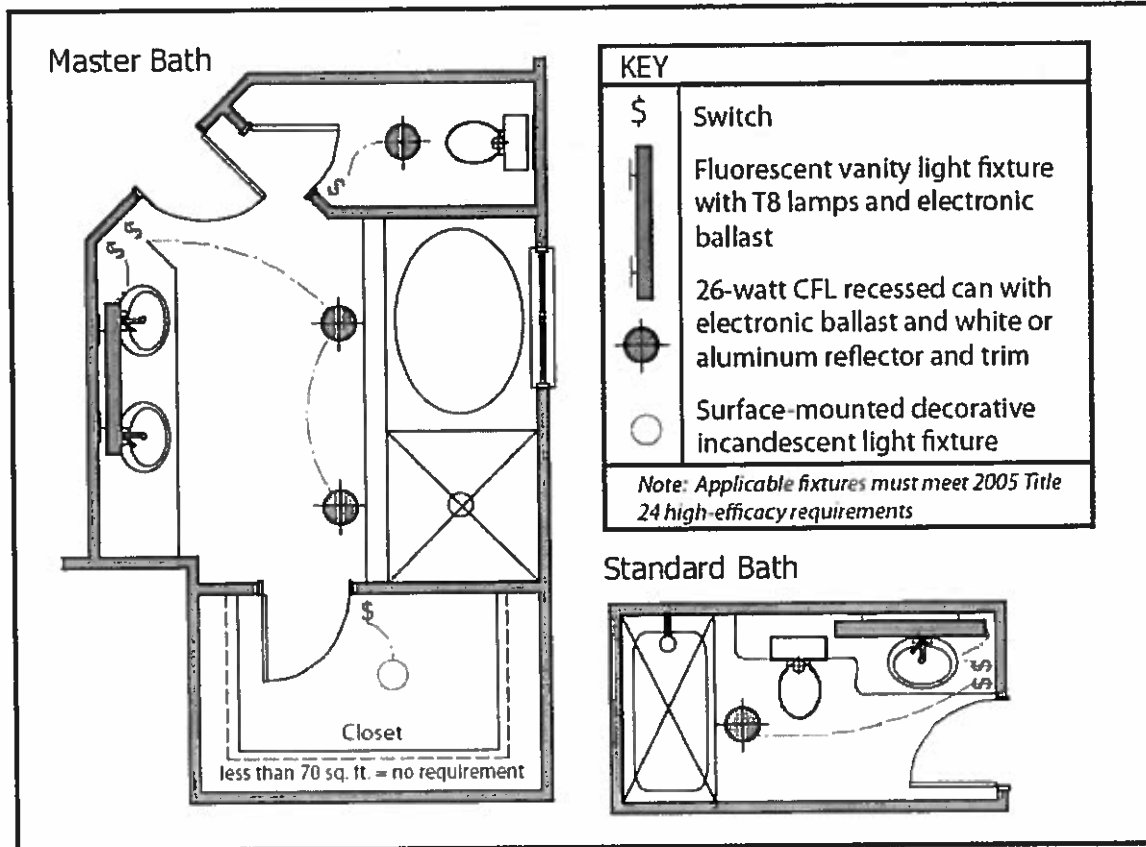
Note: Applicable fixtures must meet 2005 Title 24 high-efficacy requirements

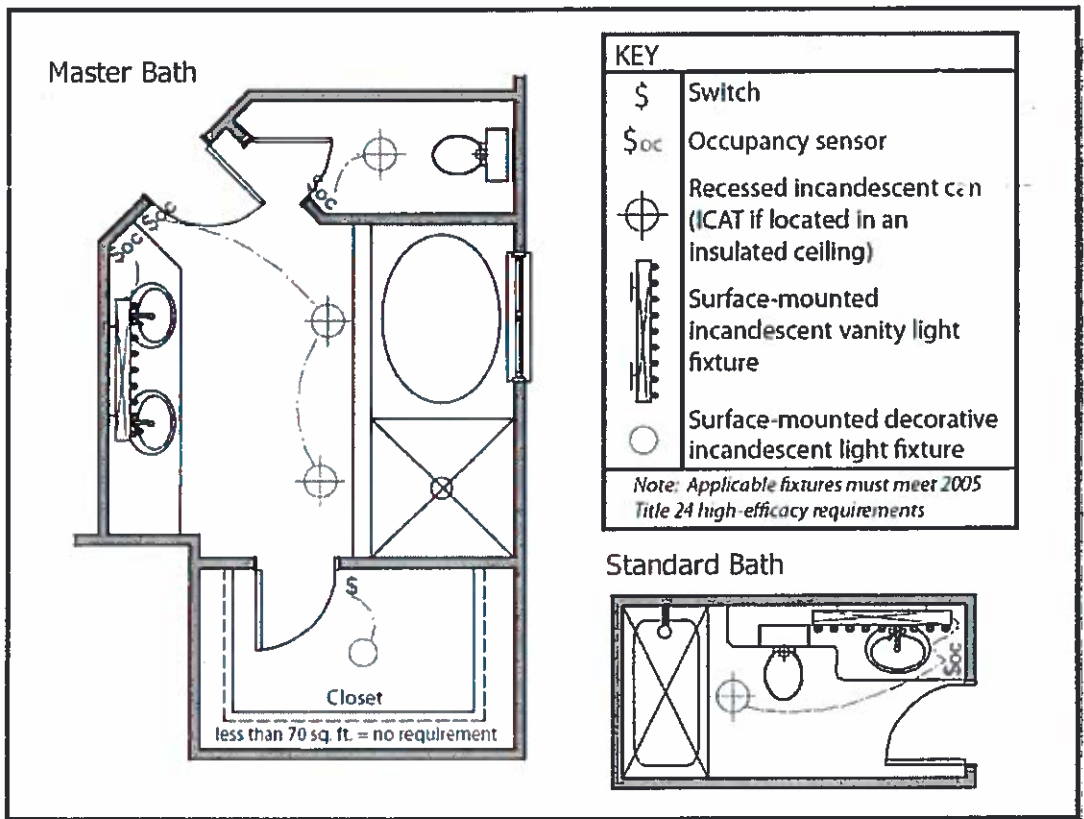
Kitchen Fixtures	Amount	Wattage	Total Wattage
Fluorescent downlights	5	26 watts	130 watts
Under-cabinet fluorescents	2	25 watts	50 watts
Incandescent pendants	2	60 watts	120 watts

Kitchen Code Compliant?
Fluorescent = 180 watts
Incandescent = 120 watts
Low efficacy less than half of total wattage = <input checked="" type="checkbox"/> code compliant



BATHROOM EXAMPLES





BEDROOM EXAMPLE

