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# REFRIGERATION

## 1. Open case to New Reach-in – Low or Medium Temperature

| Measure Code | Measure Name                             | Rebate/Unit |
|--------------|--|-------------|
| R4           | Low Temperature Reach-in Display Case    | \$175/ln ft |
| R5           | Medium Temperature Reach-in Display Case | \$75/ln ft  |

**Requirements:**

- Must replace an existing, open multi-deck display case with a new reach-in unit with doors, Electronically Commutated Motor (ECM) evaporator fan(s), and LED lighting.
- Medium temperature cases must have no heat in the door. Heat is allowed in the frames of medium temperature cases. Low temperature door and frame heaters combined may not consume more than 50 W/ft of case length.
- New case length must be less than or equal to the original case length.
- This measure is only for cases served by a remote refrigeration system.
- Rebate is based on linear footage of new display case.

**Exclusions:**

- Specialty deli cases, custom coolers/freezers and walk-in boxes with reach-in doors do not qualify. Refurbished cases are excluded unless compliant with 2012 Federal Efficiency Standards.

## 2. Low Temp Coffin to New High Efficiency Reach-In

| Measure Code | Measure Name          | Rebate/Unit |
|--------------|-----------------------|-------------|
| RA06         | LT Coffin to Reach-in | \$125/ln ft |

**Requirements:**

The measure is applicable to any coffin base case that is less than or equal to code:

- If the display width is less than 3 feet, the coffins must be replaced by RI cases that are 1/4 the total length of the coffins or less
- If the display width is greater than 3 feet, the coffins must be replaced by RI cases that are 1/3 the total length of the coffins or less
- The replacement case must use triple pane doors with low/no anti-sweat heat or anti-sweat-heat controls.

**Additional details:**

- Spec sheet for new cases must be submitted to the Program for review to confirm eligibility

### 3. Low Temperature Reach-in to High Efficiency Reach-in

| Measure Code | Measure Name                            | Rebate/Unit |
|--------------|---|-------------|
| R87          | LT Reach-in to High Efficiency Reach-in | \$75/ln ft  |

**Requirements:**

- Must replace an existing low temperature self-contained or remote reach-in case with a new high-efficiency remote reach-in case as described in the table below.
- New case length must be equal to, or shorter than, the original case.
- This measure is for remote cases only.
- Rebate is based on linear footage of new display case.

| Existing                    | Replacement   |
|-----------------------------|---|
| T12 lamps, magnetic ballast | T8 lamps, electronic ballast  |
| Shaded-pole fan motor       | ECM fan   |
| Standard glass door         | Total door rail, glass, and frame heater amperage (at 120 volts) cannot exceed 0.925 amps per door. |

**Exclusions:**

- Cannot be used in conjunction with the “Anti-Sweat Heater (ASH) Controls” rebate.
- Deli cases, custom coolers/freezers and walk-in boxes with reach-in doors do not qualify.

**Additional details:**

- Spec sheet for new cases must be submitted to the Program for review to confirm eligibility

### 4. Medium Temp Open Case to High Efficiency Open Case

| Measure Code | Measure Name                    | Rebate/Unit |
|--------------|---------------------------------|-------------|
| RA02         | Open MT to High Efficiency Open | \$20/ln ft  |

**Requirements:**

- Must replace an existing medium temperature open vertical refrigerated display case with a new case of the same style that exceeds federal energy standards through the use of a high efficiency evaporator coil.
- The temperature differential (TD) between the rated evaporator temperature and rated discharge air temperature of the replacement case must be 5°F or less.

**Additional details:**

- Spec sheet for new cases must be submitted to the Program for review to confirm eligibility

### 5. Add Doors to Medium Temp Open Walk-in Cooler

| Measure Code | Measure Name  | Rebate/Unit |
|--------------|---|-------------|
| HB30         | Add Doors to open walk-in, Energy Efficient Fans Baseline | \$75/ln ft  |
| R160         | Add Doors to open walk-in, Standard Fan Baseline          | \$75/ln ft  |

**Requirements:**

- Must replace existing medium temperature open walk-in reach-in refrigerated display case equipped with T8 or less efficient lighting with a medium temperature reach-in door.
- Existing case evaporator coils, fans, and lighting must be removed.
- New reach-in door must have T8 or more efficient lighting and frame heaters, but no anti-sweat heaters.

## 6. Add Doors to Open Medium Temperature Cases

| Measure Code | Measure Name   | Rebate/Unit   |                |
|--------------|--|---------------|----------------|
| RA01         | Add Doors to Open MT Cases                           | Pre 8/31/2017 | Post 8/31/2017 |
|              |  | \$75/ln ft    | \$50/ln ft     |
| HA09         | Add Doors to Open MT Cases, w/ Night Covers Baseline |               |                |

### Requirements:

- Must add glass doors to an existing open vertical medium temp display case.

### Exclusions:

- Total lighting power in the case after the retrofit may not exceed total lighting power in the existing case.
- No anti-sweat heat may be present in the glass doors or door mounting.

### Additional Details:

- Rebate paid based on linear feet of door installed.
- May qualify for additional incentives through "LEDs in Refrigerated Cases" measure

## 7. Anti-Sweat Heater (ASH) Controls

| Measure Code | Measure Name              | Rebate/Unit |
|--------------|---------------------------|-------------|
| R7           | ASH Controls- Medium Temp | \$25/ln ft  |
| HB31         | ASH Controls- Low Temp    | \$25/ln ft  |

### Requirements:

- Must sense the relative humidity in the air surrounding the display case and reduce or turn off the anti-sweat heaters of the glass door (if applicable) and door frame during periods of low humidity.
- Equivalent technologies that reduce or turn off anti-sweat heaters depending on the level of condensation on the inner glass pane may qualify.
- Rebate is based on linear footage of the case.

### Exclusions:

- Cannot be used in conjunction with the "Reach-in Low Temp to High Efficiency Reach -In" rebate.

## 8. Auto-Closers for Walk-In Coolers or Freezers

| Measure Code | Measure Name            | Rebate/Unit |
|--------------|-------------------------|-------------|
| R79          | Auto Closer for Cooler  | \$75/closer |
| R80          | Auto Closer for Freezer | \$75/closer |

### Requirements:

- The auto-closer should be applied to the main insulated opaque door(s) of a walk-in cooler or freezer.
- The auto-closer must be able to firmly close that door when it is within one inch of full closure.

## 9. ECMs for Walk-In Evaporator Fan

| Measure Code | Measure Name                             | Rebate/Unit |
|--------------|--|-------------|
| RF004        | Walk-in Cooler Evaporator Fan ECM Motor  | \$55/motor  |
| RF005        | Walk-in Freezer Evaporator Fan ECM Motor | \$55/motor  |

### Requirements:

- Walk-in coolers and walk-in freezers were manufactured before January 1, 2009.
- Must replace existing standard efficiency shaded-pole or permanent split capacitor evaporator fan motors in refrigerated walk-in coolers and freezers.

### Exclusions:

- Cannot be used in conjunction with the "Evaporative Fan Controller for Walk-In Coolers and Freezers" rebate.

## 10. ECMs for Cases

| Measure Code | Measure Name   | Rebate/Unit   |                |
|--------------|----------------|---------------|----------------|
|              |                | Pre 5/31/2017 | Post 5/31/2017 |
| R76          | ECMs for Cases | \$40/motor    | \$20/motor     |

### Requirements:

- The existing motor must be a shaded-pole motor in fan coil systems in refrigerated display cases.
- Shaded-pole motors must be replaced by Electronically Commutated Motors (ECM).

## 11. Walk-In Evaporator Fan Controller

| Measure Code | Measure Name   | Rebate/Unit |
|--------------|--|-------------|
| R53          | Evaporator Fan Controller for Walk-In Coolers and Freezers | \$25/motor  |

### Requirements:

The following base case conditions must be met:

- The existing evaporator fan must run continuously at full speed, with the exception of defrost cycles.
- The evaporator fan load at full speed operation is at least 1/20 horsepower.
- The evaporator fan motor is single phase.
- The evaporator uses off-cycle or time-off defrost.
- The compressor does not run all the time.

The following measure case conditions must be met:

- Controls must reduce fan power by at least 75% when the compressor cycles off.

## 12. Vending Machine Controller

| Measure Code | Measure Name               | Rebate/Unit   |
|--------------|----------------------------|---------------|
| R86          | Vending Machine Controller | \$100/control |

### Requirements:

- The controller is intended for refrigerated vending machines containing only non-perishable bottled and canned beverages.
- Controller must include a passive infrared occupancy sensor to turn off fluorescent lights and compressor when surrounding area is unoccupied for 15 minutes or longer.
- Control logic should periodically power up machine at two-hour intervals to maintain product temperature and provide compressor protection.

### 13. High Efficiency Multiplex Compressor System

| Measure Code | Measure Name                             | Rebate/Unit |
|--------------|--|-------------|
| R107         | Air-Cooled Multiplex                     | \$75/ton    |
| RF001        | Air-Cooled Multiplex – Early Retirement  | \$560/ton   |
| R108         | Evap-Cooled Multiplex                    | \$150/ton   |
| RF002        | Evap-Cooled Multiplex – Early Retirement | \$500/ton   |

**NOTE: Rebate subject to an engineering review to verify conformity with terms and conditions.**

**Requirements:**

- Must replace stand-alone single compressor system with a high-efficiency multiplex compressor system.
- Must include floating head pressure control to a minimum 70 F set point. Air-cooled condensers must use fan cycling or variable speed fans. Evaporative-cooled condensers must use two-speed or variable-speed fans.
- Only the suction groups that are mechanically subcooled to 50 F will be eligible for rebate

**Exclusion:**

- An additional rebate cannot be claimed for floating head pressure control

**Additional Details:**

- Send completed rebate design checklist form and refrigeration schedule to your Field Energy Analyst or program headquarters to pre-qualify this measure for the rebate.

### 14. Floating Head Pressure Controller

| Measure Code | Measure Name                                    | Rebate/Unit |
|--------------|---|-------------|
| R116         | Floating Head Pressure Controller – Air Cooled  | \$50/hp     |
| R123         | Floating Head Pressure Controller – Evap Cooled | \$50/hp     |

**Requirements:**

- Existing multiplex refrigeration system must have a fixed saturated condensing temperature (SCT) setpoint
- The new SCT setpoint must be controlled by an ambient following strategy by controlling condenser fans with variable- speed drives or by staging condenser fans.
- For air-cooled condensers, the SCT setpoint must be controlled to follow ambient + 12°F TD or less.
- For evaporative cooled condensers, the SCT setpoint must be controlled to follow ambient wetbulb + 17°F TD or less.
- If back-flood controls are present, the setpoint must be 68°F or less.
- The minimum SCT setpoint must be set to 70°F or less.
- Compressor HP units must be based on connected display cases, walk-in coolers and freezers, and prep areas only.

**Exclusions:**

- New construction installations or any retrofits that trigger the requirement to install floating refrigeration controls.
- Floating suction pressure controls on refrigeration systems with variable speed evaporator fans.
- Subcooler loads and air conditioning loads are not eligible for incentives.

**Additional Details:**

- To qualify for rebate, new hardware must be installed. Projects that only reprogram a controller are not eligible for this rebate.

## 15. Floating Suction Pressure Controller

| Measure Code | Measure Name                         | Rebate/Unit |
|--------------|--------------------------------------|-------------|
| R119         | Floating Suction Pressure Controller | \$10/hp     |

### Requirements:

- Existing multiplex refrigeration system must operate with fixed suction setpoints.
- The controls must allow the suction pressure to rise to the highest point that can still maintain setpoint temperatures at the critical case on the suction circuit during periods of low fixture loads.
- Compressor HP units must be based on connected display cases, walk-in coolers and freezers, and prep areas only.

### Exclusions:

- New construction installations or any retrofits that trigger the requirement to install floating refrigeration controls.
- Floating suction pressure controls on refrigeration systems with variable speed evaporator fans.
- Subcooler loads and air conditioning loads are not eligible for incentives.

### Additional Details:

- To qualify for rebate, new hardware must be installed. Projects that only reprogram a controller are not eligible for this rebate.

## 16. Floating Head Pressure on Singles

| Measure Code | Measure Name  | Rebate/Unit |
|--------------|---|-------------|
| R320-321     | Floating Head Pressure on Singles- Condensing Unit  | \$100/hp    |
| R322-323     | Floating Head Pressure on Singles- Remote Condenser | \$60/hp     |

### Requirements:

- This measure is applicable only to refrigeration systems having: A single compressor with a 1 HP motor or larger serving a suction group, either in a condensing unit or with a remote condenser, condenser intake air from outside ambient air, and a fixed head pressure control valve.
- Pre-inspection is required.
- Must replace a fixed head pressure control valve with an adjustable head pressure control valve (flood- back control valve) to lower the minimum condensing head pressure.
- The adjustable valve must be set to a pressure equivalent of 70° F saturated temperature or lower and verified with a calibrated pressure gauge or transducer.
- Must install either:
  - A balanced-port valve or electronic expansion valve sized to meet the load requirement at a 70° F condensing temperature.
  - A device to supplement refrigerant feed to each evaporator attached to the condenser.

### Additional Details:

- Rebate is based on a "per compressor motor nameplate HP" basis.
- Documentation of field adjustments made to the installed valve should be provided by the contractor establishing the set points stated above.



## 17. Advanced Refrigeration Control for Walk-In Coolers and Freezers

| Measure Code | Measure Description                       | Rebate/Unit       |
|--------------|---|-------------------|
| RC117        | Advanced Refrigeration Control – Med Temp | \$300 /Cap - tons |
| RC118        | Advanced Refrigeration Control – Low Temp | \$300 /Cap - tons |

### Requirements:

- Must install an advanced controller on refrigeration system of an existing walk-in cooler or freezer to decrease energy consumption by optimized control.
- The installed programmable logic controller must meet the following requirements:
  - The advanced controller will override control of the compressors, evaporator fans, defrosting, and setpoint temperature, sense the evaporator coil temperature and space temperature, and continuously monitor these temperatures and evaporator fan, defrosting and compressor use.
- Requirements of the control of the evaporator fans:
  - The evaporator fans are controlled by cycling fans on/off.
  - The advanced control can delay the evaporator fans operation. Once the space temperature setpoint is reached, the compressors may be turned off but the evaporator fans can stay on as long as cooling can be extracted from the cooling coil.
  - The minimum duty cycle is 0.1 (i.e. 6 minutes run time per hour if no load).
  - The evaporator fans are turned off during defrosting
- Requirements of the control of defrosting system:
  - Defrosting is controlled based on demand, initiated based on coil temperature/demand, and terminated based on temperature.
- Requirements of the control of compressors:
  - The controller has the option to define the differential temperature, which is the difference between the space temperature setpoint and the temperature that enables the refrigeration cycle.
  - The compressor is enabled when the space temperature increases and reaches setpoint plus differential.
- The advanced refrigeration control must be installed by an authorized product representative, where the installer can verify that the advanced control is compatible with the refrigeration system so that they do not degrade system performance.

### Exclusions:

- This measure cannot be used in conjunction with either evaporator fan control or defrost by demand control.
- Energy savings credit can only be taken if the existing evaporator fans operate 24/7 at constant volume; existing defrosting's controlled by timer.

### 18. LED Lighting in Walk-in Coolers and Freezers

| Measure Code | Measure Name  | Rebate/Unit     |
|--------------|---|-----------------|
| LC109        | LED Lighting in Walk-in Coolers: $\geq 32W$ to $\leq 24W$   | \$10/luminaire  |
| LL52         | LED Lighting in Walk-in Coolers: $\geq 60W$ to $\leq 38W$   | \$15/ luminaire |
| LL54         | LED Lighting in Walk-in Coolers: $\geq 75W$ to $\leq 38W$   | \$20/ luminaire |
| LL56         | LED Lighting in Walk-in Coolers: $\geq 100W$ to $\leq 38W$  | \$30/ luminaire |
| LL58         | LED Lighting in Walk-in Coolers: $\geq 220W$ to $\leq 80W$  | \$55/ luminaire |
| LL51         | LED Lighting in Walk-in Freezers: $\geq 32W$ to $\leq 24W$  | \$15/ luminaire |
| LL53         | LED Lighting in Walk-in Freezers: $\geq 60W$ to $\leq 38W$  | \$20/ luminaire |
| LL55         | LED Lighting in Walk-in Freezer: $\geq 75W$ to $\leq 38W$   | \$25/ luminaire |
| LL57         | LED Lighting in Walk-in Freezers: $\geq 100W$ to $\leq 38W$ | \$35/ luminaire |
| LL59         | LED Lighting in Walk-in Freezers: $\geq 220W$ to $\leq 80W$ | \$60/ luminaire |

**Requirements:**

- The existing luminaire must have a rated wattage greater than or equal to that used in the measure name.
- The installed LED luminaire must demonstrate wattage draw no greater than the level used in the measure name.
- LED lighting system must be a permanently installed luminaire.
- LED luminaires must work with existing controls or controls with equivalent or better functionality must be installed.
- Replaced fixtures must be rendered inoperable after removal.
- Fluorescent magnetic ballasts cannot be used to power the LED system.
- Manufacturer’s warranty must be a minimum of 5 years and must include fixtures, mounting hardware, power supply & light source (i.e. LED).
- LEDs must be rated to maintain no less than 70% of initial lumen output (L70) at 50,000 hours of operation.
- Lumen efficacy of LED luminaire must be greater than or equal to 40 lumens/watt.
- Color Rendering Index (CRI) of LED luminaire must be greater than or equal to 70.
- Total Harmonic Distortion of LED luminaire must be less than or equal to 20%.
- Power Factor of LED luminaire must be greater than or equal to 0.80.
- LED luminaire must comply with UL 8750 – 2009 Light Emitting Diode (LED) Equipment for Use in Lighting Products.

### 19. LED Refrigerated Case Lighting

| Measure Code | LED Category   | Rebate/Unit   |                |
|--------------|--|---------------|----------------|
|              |  | Pre 5/31/2017 | Post 5/31/2017 |
| LB07         | Replacing Single Lamp – $\leq 5$ ft/Lamp Base Case   | \$4/ln ft     | \$2/ln ft      |
| LC09         | Replacing Multiple Lamp – $\leq 5$ ft/Lamp Base Case |               |                |
| LB09         | Replacing Single Lamp – $> 5$ ft/Lamp Base Case      |               |                |
| LC11         | Replacing Multiple Lamp – $> 5$ ft/Lamp Base Case    |               |                |

**Requirements:**

- Horizontal and Vertical Case Lighting must be on the California Statewide Qualified LED Product List. For the most up to date list, visit <http://caioulightingqpl.com>.
- LED lightbar savings are based on the replacement of existing single or multiple lamp fluorescent with a new LED.

**Additional Details:**

- The measure quantity, in linear feet, is determined by the LED lamp length.
- The total length of LEDs incented shall not exceed the total length of fluorescent lamps replaced.

# Lighting

## 1. Low or Reduced Wattage T8 Systems

| Measure Code | Measure Name                                      | Rebate/Unit |
|--------------|---|-------------|
| L730         | Low or Reduced Wattage T8 - Replace 32W with <28W | \$1/lamp    |
| L863         | Low or Reduced Wattage T8 - Replace 32W with <25W | \$1.50/lamp |

### Requirements:

- Rebates are for the installation of 4-ft. low wattage T8 lamps that replace 32 watt T8 lamps. Low wattage lamp rebate can be combined with the T8 retrofit measure.
- These lamps can also be used in existing 32 watt T8 re-lamping projects.
- Approved lamps can be found at [www.cee1.org](http://www.cee1.org) on the most recent spreadsheet listed as "28W & 25W Lamps & Ballasts."

### Exclusions:

- Replacement lamps rebated in this category are not eligible for additional rebates through the "Interior Linear Fluorescent Fixtures" category.

### Additional Details:

- Low wattage T8 lamps are best used to replace First Generation 700 series 32 watt T8 lamps in existing lighting systems. Care should be taken to read manufacturer recommendations for ballast requirement and use in low temperature.

## 2. Interior Linear Fluorescent Fixtures: High Bay

| Measure Code | Measure Name                              | Existing Fixture Wattage | Rebate/Unit   |
|--------------|---|--------------------------|---------------|
| LT001        | > 351-585 Watt Linear Fluorescent Fixture | >585 Watts               | \$125/fixture |
| LT002        | > 234-351 Watt Linear Fluorescent Fixture | >351 Watts               | \$100/fixture |
| LT003        | > 144-234 Watt Linear Fluorescent Fixture | >234 Watts               | \$75/fixture  |
| LT004        | > 118-144 Watt Linear Fluorescent Fixture | >144 Watts               | \$50/fixture  |
| LT005        | > 64-118 Watt Linear Fluorescent Fixture  | >118 Watts               | \$30/fixture  |
| LT006        | ≤ 64 Watt Linear Fluorescent Fixture      | >64 Watts                | \$20/fixture  |

### Requirements:

- Only complete, new High Performance (HP) T8/T5, Super T8, T8 VHO, or T5 HO interior linear fluorescent fixtures qualify.
- New fixtures must not exceed the maximum wattage listed in the table above for each range of lamp wattage being replaced. New fixture wattage is considered to be total lamp wattage only.).
- Rebates are based on a one-for-one replacement of incandescent or high intensity discharge (HID) fixtures including, mercury vapor, high pressure sodium, and standard metal halide or pulse start metal halide. Existing lamp wattage is used rather than total fixture wattage.
- Any wattage incandescent lamp may be replaced by complete new linear fluorescent fixtures.
- In all cases, the wattage of the replacement fixture must be less than the wattage of the existing lamp.
- All 32 Watt T8 lamps must be HP T8 or Super T8 lamps and listed on the qualified HP T8 lamp list at [www.cee1.org](http://www.cee1.org).
- All lamps must be rated ≥ 20,000 hours average rated lamp life based on 3 hours per start when operated on Program Rapid-Start Ballasts.
- All lamps must have a Color Rendering Index (CRI) that is equal to or greater than 82.
- All T8 ballasts must be NEMA premium or designated HP electronic ballast listed on [www.cee1.org](http://www.cee1.org), T5 HO and T8 VHO must be Program Rapid Start ballasts.

### Exclusions:

- Exterior installations do not qualify.
- Not eligible for additional rebates under the "Compact Fluorescent Fixtures" category.
- Replacement fixtures for T12 Linear Fixtures are not eligible for this rebate.

### 3. Interior Induction Fixtures: High Bay

| Measure Code | Measure Name   | Rebate/Unit    |
|--------------|--|----------------|
| L0270        | Interior Induction Lamps and Fixtures – 400 watt to $\leq$ 250 watt (Tier 1) | \$45/fixture   |
| L1025        | Interior Induction Lamps and Fixtures – 176-399 watt to $\leq$ 180 watt      | \$30/fixture   |
| L1024        | Interior Induction Lamps and Fixtures – 101-175 watt to $\leq$ 120 watt      | \$25/fixture   |
| L1023        | Interior Induction Lamps and Fixtures – $\leq$ 100 watt to $\leq$ 70 watt    | \$12.5/fixture |

**Requirements:**

- Only complete, new induction fixtures or retrofit kits.
- New fixtures must not exceed the maximum wattage listed in the table above for each lamp being replaced. New lamp wattage is the total lamp only wattage.
- Any wattage incandescent lamp  $\geq$  60 Watts may be replaced by complete new interior induction fixtures.
- In all cases, the wattage of the replacement fixture must be less than the wattage of the existing lamp.

**Exclusions:**

- Exterior installations and applications are typically operating during non-peak hours and therefore do not qualify under this interior fixture category.

**Additional Details:**

- To calculate the base case wattage for incandescent fixtures with more than one lamp, multiply number of lamps by nominal lamp wattage as listed on lamp label.

#### 4. LED High Bay and Low Bay Fixtures

| Measure Code | Measure Description                 | Base Case Fixture              | Minimum LED Fixture Lumens | Rebate/Unit   |
|--------------|-------------------------------------|--------------------------------|----------------------------|---------------|
| LD101        | LED High/Low Bay: 40 to 131 Watts   | 175 Watt PS-MH                 | 6,200                      | \$25/fixture  |
| LD102        | LED High/Low Bay: >131 to 160 Watts | 200 Watt PS-MH                 | 9,600                      | \$30/fixture  |
| LD103        | LED High/Low Bay: >160 to 187 Watts | 250 Watt PS-MH                 | 11,200                     | \$55/fixture  |
| LD104        | LED High/Low Bay: >187 to 220 Watts | 320 Watt PS-MH                 | 12,900                     | \$75/fixture  |
| LD105        | LED High/Low Bay: >220 to 262 Watts | 350 Watt PS-MH                 | 15,800                     | \$90/fixture  |
| LD106        | LED High/Low Bay: >262 to 280 Watts | 400 Watt PS-MH                 | 21,600                     | \$115/fixture |
| LD107        | LED High/Low Bay: >280 to 320 Watts | 450 Watt PS-MH                 | 23,900                     | \$140/fixture |
| LD108        | LED High/Low Bay: >320 to 500 Watts | 750 Watt PS-MH                 | 32,300                     | \$170/fixture |
| LD109        | LED High/Low Bay: >500 to 750 Watts | 1000 Watt PS-MH                | 43,400                     | \$250/fixture |
| LD111        | LED High/Low Bay: 40 to 131 Watts   | T8 Fluorescent 2nd Gen 4L VHLO | 6,200                      | \$25/fixture  |
| LD112        | LED High/Low Bay: >131 to 160 Watts | T8 Fluorescent 2nd Gen 6L VHLO | 9,600                      | \$30/fixture  |
| LD113        | LED High/Low Bay: >160 to 220 Watts | T8 Fluorescent 2nd Gen 8L VHLO | 11,200                     | \$55/fixture  |

#### Requirements:

- Must be a one for one replacement of linear fluorescent or high-intensity discharge fixtures.
- All LED fixtures or retrofit kits must be on the California Statewide Qualified LED Product List. For the most up to date list, visit <http://caioulightingqpl.com/>. The fixture or retrofit kit must be in the following categories:
- For measure codes LD101–LD109:
  - High-Bay Luminaires (fixtures and retrofit kits)
  - Low-Bay Luminaires (fixtures and retrofit kits)
  - High-Bay Aisle Luminaires (fixtures)
- For measure codes LD111–LD113, retrofit kits not eligible:
  - High-Bay Luminaires (new fixtures only)
  - Low-Bay Luminaires (new fixtures only)
  - High-Bay Aisle Luminaires (new fixtures only)
- The input wattage of the LED fixture must be lower than the input wattage of the original equipment.
- The measure code is selected based on the wattage of the LED fixture.
- Must meet the Minimum LED Fixture Lumens listed for the appropriate fixture in the table above.

#### Exclusions:

- Self-ballasted, screw-based lamps and LED tube-style lamps do not qualify.

#### 5. LED Surface, Pendant, Accent, Track and Recessed Downlight

| Measure Code | Measure Name   | Rebate/Unit    |
|--------------|--|----------------|
| LD127-129    | LED Surface, Pendant, Track, Accent and Recessed Downlight Fixture: <9W  | \$8/fixture    |
| LD130-132    | LED Surface, Pendant, Track, Accent and Recessed Downlight Fixture: <12W | \$11/fixture   |
| LD133-138    | LED Surface, Pendant, Track, Accent and Recessed Downlight Fixture: <18W | \$13/fixture   |
| LD139-146    | LED Surface, Pendant, Track, Accent and Recessed Downlight Fixture: ≥18W | \$15.5/fixture |

#### Requirements:

- All LED fixtures must be on the California Statewide Qualified LED Product List. For the most up to date list, visit <http://caioulightingqpl.com/>
- The LEDs must replace reflector-type incandescent, PAR halogen, or PAR halogen IR fixtures as a fully integrated LED luminaire (complete retrofit kit).
- Rebates are based on a one-for-one replacement of fixtures up to 100 watts.
- LED screw-in lamps are not eligible under these measures.

## 6. LED Outdoor Area Lighting

| Measure Code | Measure Name   | Rebate/Unit |
|--------------|--|-------------|
| LT015        | LED Outdoor Area Lighting - Install $\leq$ 50 W Fixture  | \$40/lamp   |
| LT014        | LED Outdoor Area Lighting - Install 51 to 70 W Fixture   | \$50/lamp   |
| LT013        | LED Outdoor Area Lighting - Install 71 to 110 W Fixture  | \$60/lamp   |
| LT012        | LED Outdoor Area Lighting - Install 111 to 150 W Fixture | \$70/lamp   |
| LT011        | LED Outdoor Area Lighting - Install 151 to 192 W Fixture | \$80/lamp   |
| LT010        | LED Outdoor Area Lighting - Install 193 to 225 W Fixture | \$100/lamp  |
| LT009        | LED Outdoor Area Lighting - Install 226 to 265 W Fixture | \$125/lamp  |
| LT008        | LED Outdoor Area Lighting - Install 266 to 500 W Fixture | \$150/lamp  |
| LT007        | LED Outdoor Area Lighting - Install 501 to 750 W Fixture | \$200/lamp  |

### Requirements:

- Only LED fixtures or retrofit kits on the list of prequalified LED fixtures available at <http://caioulightingqpl.com/> in the following categories qualify for this rebate:
  - Architectural Flood and Spot Luminaires
  - Landscape/Accent Flood and Spot Luminaires
  - Outdoor Pole/Arm-mounted Area and Roadway Luminaires (fixtures and retrofit kits)
  - Large Outdoor Pole/Arm-mounted Area and Roadway Luminaires (retrofit kits)
  - Outdoor Pole/Arm-mounted Decorative Luminaires (fixtures and retrofit kits)
  - Outdoor Wall-mounted Area Luminaires (fixtures and retrofit kits)
  - Bollards
  - Fuel Pump Canopy Luminaires (fixtures and retrofit kits)
  - Parking Garage Luminaires (fixtures and retrofit kits)
- Total installed wattage within each fixture category must be less than the original equipment.

### Exclusions:

- Self-ballasted, screw-based lamps do not qualify.

## 7. LED MR-16 Lamps

| Measure Code | Measure Name              | Rebate/Unit |
|--------------|---------------------------|-------------|
| LD196        | LED MR-16: $<$ 6 Watts    | \$10/lamp   |
| LD197-208    | LED MR-16: $\geq$ 6 Watts | \$10/lamp   |

### Requirements:

- Must replace a halogen MR16 lamp
- All LED fixtures or retrofit kits must be on the California Statewide Qualified LED Product List. For the most up to date list, visit <http://caioulightingqpl.com/>.
- A product cut sheet must be provided to the program.

## 8. LED PAR Lamps

| Measure Code | Measure Name               | Rebate/Unit |
|--------------|----------------------------|-------------|
| LD03         | LED PAR20: $\leq$ 11 Watts | \$8/lamp    |
| LD167-172    | LED PAR30: $<$ 15 Watts    | \$14/lamp   |
| LD173-178    | LED PAR30: $\geq$ 15 Watts | \$14/lamp   |
| LD179-189    | LED PAR38: $<$ 22 Watts    | \$18/lamp   |
| LD190-195    | LED PAR38: $\geq$ 22 Watts | \$18/lamp   |

### Requirements:

- Must replace a halogen PAR lamp
- All LED fixtures or retrofit kits must be on the California Statewide Qualified LED Product List. For the most up to date list, visit <http://caioulightingqpl.com/>.
- A product cut sheet must be provided to the program.

## 9. LED Troffers

| Measure Code                                   | Measure Name  | Rebate/Unit   |
|--|---|---------------|
| LT042, LT046,<br>LT050, LT054,<br>LT058, LT062 | LED Luminaires/Retrofit Kits rated $\geq 110$ and $< 125$ LPW, Ambient Interior Commercial Spaces | \$6/kilolumen |
| LT043, LT047,<br>LT051, LT055,<br>LT059, LT063 | LED Luminaires/Retrofit Kits rated $\geq 125$ LPW, Ambient Interior Commercial Spaces             | \$8/kilolumen |

### Requirements:

- Must be a one for one replacement for a Linear Fluorescent Fixture with T8 or T5 lamps.
- All LED troffers or retrofit kits must be a Design Lights Consortium (DLC) approved New Luminaire or an Integrated Retrofit Kit and is listed on the PG&E qualified product list. For the most up to date list, visit <http://caioulightingqpl.com>. The LED troffer must be listed as one of the following categories:
  - 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
  - 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
  - 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
  - Integrated Retrofit Kits for 1x4 Luminaires
  - Integrated Retrofit Kits for 2x2 Luminaires
  - Integrated Retrofit Kits for 2x4 Luminaires
- The input wattage of the LED fixture must be lower than the input wattage of the original equipment.
- The measure code is selected based on the lumens per watt (LPW) rating of the LED fixture.
- Products must be listed in the DLC Premium Classification for the above product categories starting July 15, 2016.

### Exclusions:

- LED Linear Retrofit Kits, LED tube-style lamps, self-ballasted and, screw based lamps do not qualify.

## HVAC

### 1. VFDs for HVAC Fans

| Measure Code | Measure Name       | Rebate/Unit |
|--------------|--------------------|-------------|
| H148         | VFDs for HVAC Fans | \$80/hp     |

**Requirements:**

- Drives must be applied to existing HVAC supply or return air fans only.
- Eligible for a rebate only if throttling devices, such as inlet vanes or bypass dampers and throttling valves, are removed or permanently disabled.

**Exclusions:**

- Fans of size greater than 100 horsepower (hp) are not eligible for this rebate.
- Replacement Multiple-Speed or Variable Speed Motors (VSM) are not eligible for a rebate.
- VFDs on cooling towers fans are not eligible for this rebate.



## Food Service

### 1. Commercial Convection Oven (Electric)

| Measure Code | Measure Name               | Rebate/Unit |
|--------------|----------------------------|-------------|
| F187         | Commercial Convection Oven | \$350/oven  |

#### Requirements:

This measure includes new commercial electric or gas convection ovens that are ENERGY STAR® qualified or meet the qualifications listed in Table 1. ENERGY STAR® maintains an updated list of qualifying products and specifications at [www.energystar.gov](http://www.energystar.gov). Consult with the manufacturer or manufacturer's representative to determine if a non-ENERGY STAR® qualified model meets the efficiency requirements in Table 1. Used or rebuilt equipment is not eligible. Customers must provide proof that the appliance has a cooking-energy efficiency that meets the requirements in Table 1.

**Table 1 Energy Efficiency Requirements for Commercial Convection Ovens.**

| Convection oven Type                           | Cooking-Energy Efficiency* | Idle Energy Rate |
|--|----------------------------|------------------|
| Electric Half-Size Convection Ovens            | ≥ 70%                      | ≤ 1.0 kW         |
| Electric Full-Size (≤ 5 pans) Convection Ovens | ≥ 70%                      | ≤ 1.6 kW         |
| Electric Full-Size (> 5 pans) Convection Ovens | ≥ 73%                      | ≤ 1.9 kW         |

\*Based on the heavy-load potato test in ASTM F1496.

### 2. Commercial Ice Machine

| Measure Code | Measure Name  | Rebate/Unit |
|--------------|---|-------------|
| F200         | Commercial Ice Machine – CEE Tier III Ice Machine (101-300 lbs/day)   | \$100/unit  |
| F201         | Commercial Ice Machine – CEE Tier III Ice Machine (301-500 lbs/day)   | \$150/unit  |
| F202         | Commercial Ice Machine – CEE Tier III Ice Machine (501-1000 lbs/day)  | \$250/unit  |
| F203         | Commercial Ice Machine – CEE Tier III Ice Machine (1001-1500 lbs/day) | \$400/unit  |
| F204         | Commercial Ice Machine – CEE Tier III Ice Machine (>1500 lbs/day)     | \$500/unit  |

#### Requirements:

This incentive applies towards the purchase of new or replacement energy efficient Air-cooled ice machines. Used or rebuilt equipment is not eligible. Customers must provide proof that the appliance meets the energy efficiency specifications listed in Table 1.

This specification covers machines generating 60 grams (2 oz.) or lighter ice cubes, as well as flaked, crushed, or fragmented ice machines that meet the Super Energy Efficiency thresholds by Ice harvest (IHR) rate listed in Table 1. Only air cooled machines (icemaker heads, self-contained unites, and remote condensing units) are eligible for incentives. Performance data is based on ARI Standard 810.

**Table 1. Super Energy Efficiency Requirements for Commercial Ice Machines.**

| Equipment Type               | Ice Harvest Rate (lbs ice/day) | Energy Use Limit (kWh/100 lbs ice) | Potable Water Use Limit (gal/100 lbs ice) |
|------------------------------|--------------------------------|------------------------------------|---|
| Ice Maker Head (IMH)         | < 450                          | $8.72 - 0.0073 \times H^a$         | ≤ 20                                      |
|                              | ≥ 450                          | $5.86 - 0.0009 \times H^a$         | ≤ 20                                      |
| Remote Condensing Unit (RCU) | < 1,000                        | $7.52 - 0.0032 \times H^a$         | ≤ 20                                      |
|                              | ≥ 1,000                        | 4.34                               | ≤ 20                                      |
| Self-Contained Unit (SCU)    | < 175                          | $15.3 - 0.0399 \times H^a$         | ≤ 30                                      |
|                              | ≥ 175                          | 8.33                               | ≤ 30                                      |

<sup>a</sup> H = Ice Harvest Rate (IHR) for the commercial ice machine as determined by applying ARI Standard 810.

### 3. Insulated Holding Cabinet

| Measure Code | Measure Name              | Rebate/Unit |
|--------------|---------------------------|-------------|
| F110         | Full Size holding cabinet | \$750/unit  |
| F111         | Half Size holding cabinet | \$200/unit  |

**Requirements:**

This measure includes new insulated holding cabinets that have a demonstrated idle energy rate of less than or equal to 20 Watts per cubic foot of internal volume, as determined by applying The ASTM Standard Test Method for the Performance of Hot Food Holding Cabinets (F2140).

**F110:** Full-size holding cabinets are defined as any holding cabinet with an internal measured volume of greater than or equal to 15 cubic feet ( $\geq 15 \text{ ft.}^3$ ). This measure does not include cook-and-hold or retherm equipment. All measures must be electric hot food holding cabinets that are fully insulated and have doors. Qualifying cabinets must not exceed the maximum idle energy rate of 20 Watts per cubic foot in accordance with the ASTM Standard F2140 test method.

**F111:** Half-size holding cabinets are defined as any holding cabinet with an internal measured volume of less than 15 cubic feet ( $< 15 \text{ ft.}^3$ ). This measure does not include cook-and-hold or retherm equipment. All measures must be electric hot food holding cabinets that are fully insulated and have doors. Qualifying cabinets must not exceed the maximum idle energy rate of 20 Watts per cubic foot in accordance with the ASTM Standard F2140 test method.

### 4. On-Demand Hand Wrap Machine

| Measure Code | Measure Name                | Rebate/Unit |
|--------------|-----------------------------|-------------|
| FS009        | On-demand Hand Wrap Machine | \$125/unit  |

**Requirements:**

- On-demand hand wrap machine's heating platform must by default be off
- On-demand hand wrap machine must use either a mechanical or optical control system to switch heating platform on until the item is removed, or for a maximum of 3 seconds

**Additional Details:**

- Spec sheet for hand wrap machine must be submitted to the Program for review to confirm eligibility
- The hand wrap machine should be installed by a manufacturer-recommended service technician
- Rebate is based on a per unit (i.e. hand wrapper) basis.

## Custom

### 1. Customized Incentives (Non-Lighting)

| Measure Code | Measure Description   | Rebate/kWh | Rebate/kW | Rebate/therm |
|--------------|-----------------------|------------|-----------|--------------|
| RFXXX        | Basic Non-Lighting    | \$0.08     | \$150     | \$1.00       |
| RFXXX        | Targeted Non-Lighting | \$0.15     |           |              |

**NOTE: Rebate subject to an engineering review to verify conformity with terms and conditions.**

**Requirements:**

- Eligibility and energy savings for Customized Non-Lighting projects are evaluated on an individual basis
- The project must demonstrate energy savings that earn an incentive of at least \$2,000 to be considered for program eligibility
- The project must be inspected and approved by PG&E prior to the removal of the existing equipment/systems and prior to the ordering or the installation of new equipment/systems
- All project documentation, including product cut sheets, refrigeration schedules, mechanical drawings, etc. must be provided to the program

**Exclusions:**

- Customized incentives are not available for measures that would qualify for an incentive through a deemed measure offering

### 2. Customized Incentives (Lighting)

| Measure Code | Measure Description      | Rebate/kWh | Rebate/kW | Rebate/therm |
|--------------|--------------------------|------------|-----------|--------------|
| CLXXX        | Basic Lighting (non-LED) | \$0.03     | \$150     | \$1.00       |
| CLXXX        | Targeted Lighting        | \$0.08     |           |              |

**NOTE: Rebate subject to an engineering review to verify conformity with terms and conditions.**

**Requirements:**

- All LED fixtures or retrofit kits must be listed on PG&E's qualified products list. For the most up to date list, visit <http://caioulightingqpl.com>
- For retrofit kits, the existing ballast must be removed and external drivers must be installed
- The project must demonstrate energy savings that earn an incentive of at least \$2,000 to be considered for program eligibility
- The project must be inspected and approved by PG&E prior to the removal of the existing equipment/systems and prior to the ordering or the installation of new equipment/systems
- All project documentation, including product cut sheets, to-scale floor plans, etc. must be provided to the program

**Exclusions:**

- Customized incentives are not available for measures that would qualify for an incentive through a deemed measure offering, including the Distributor LED Replacement Lamps Program
- Plug-n-Play LED "T8 style" replacement lamps do not qualify
- LED retrofit tubes with an internal driver that removes the ballast and connects line voltage directly to the tombstones do not qualify
- Lighting control measures are ineligible for incentives when installed as part of a project that triggers the Title 24 requirements for lighting controls