



Technology Requirements

All High Efficiency Lighting Program projects shall comply with the following requirements in order to qualify for a rebate.

Part I: Acceptable Products

Fluorescent Lamps, Ballasts and Luminaires

1. 4ft straight tube and U-bent T-8 lamps and ballasts must meet the Consortium for Energy Efficiency's High Performance / Reduced Wattage (HP/RW) T-8 specifications. For eligibility requirements and a list of eligible lamps and ballasts, log onto CEE's web site at www.cee1.org.
2. 2ft and 3ft T-8 lamps
 - a. Minimum efficacy of 75 mean lumens per watt
 - b. Minimum color rendering index of 80
 - c. Average rated life of 24,000 hours at 3 hours per start
3. 2ft, 3ft and 4ft 30 watt U-bent T-8 ballasts must meet the CEE's High Performance T-8 Ballast Specifications.
4. 2ft – reduced wattage biax lamps
 - a. Minimum efficacy of 94 mean lumens per watt
 - b. Minimum color rendering index of 80
 - c. Average rated life of 20,000 hours at 3 operating hours per start
 - d. Ballasts must meet the CEE's High Performance T-8 Ballast Specifications.
5. 8ft T-8 lamps
 - a. Minimum color rendering index of 80
 - b. Minimum of 24,000-hour rated average life at 3 operating hours per start
6. 4 ft - T5HO Lamps
 - a. Minimum color rendering index of 80
 - b. Minimum of 20,000-hour rated average life at 3 operating hours per start
 - c. Minimum of 4,450 initial lumens, 4,140 design (mean) lumens
7. Fluorescent Ballasts
 - a. Ballast shall be a high frequency electronic type and operate lamps at a frequency of ≥ 20 kHz.
 - b. Ballast shall be Underwriters Laboratory (UL 9325) listed, Class P.
 - c. Ballast shall have a power factor $\geq 95\%$.
 - d. Input current Total Harmonic Distortion (THD) shall not exceed 20% for 4-ft and 8-ft lamps; and shall not exceed 32% for 2-ft and 3-ft lamps.
 - e. Ballast shall be provided with a 5-year manufacturer's replacement warranty against defects in materials and workmanship from the date of manufacture.

8. Fluorescent Luminaires
 - a. Luminaires and components must be Underwriters Laboratory (UL) or Canadian Standards Association (CSA) listed or classified.

Screw-In/CFL Lamps

1. Screw-in and pin-based CFLs must be Energy Star-rated.
2. Screw-in cold cathode lamps must have a minimum 3 year manufacturer's replacement warranty from date of installation.

Solid State (includes LED) Lighting

Solid state lighting must be on the Design Lights Consortium (DLC) products list or the Energy Star-qualified commercial products list.

Exit Lighting

Exit signs must be Light Emitting Diode (LED), Electroluminescent or Cold Cathode type. Must use 5 Watts or less.

Occupancy Sensors and Electronic Timers:

1. Occupancy sensors shall be U.L. listed or CSA classified.
2. Occupancy sensors with manual "ON" overrides are not permitted.
3. Occupancy sensors shall be provided with manual sensitivity adjustment and an adjustable or fixed-time delay during which controlled luminaires remain on after the space is vacated. Fixed-time delays shall be at least 30 seconds and no more than 30 minutes.
4. Wall mounted occupancy sensors must operate as Automatic ON and OFF.
5. Wall mounted vacancy sensors must operate as Manual ON, Automatic OFF.
6. Ballasts for high bay fluorescent (HIF) occupancy control systems must be automatically controlled based on occupancy. Systems with manual "ON" or override switches are not eligible.
7. Occupancy sensors shall be provided with a minimum 3-year manufacturer's warranty.
8. Electronic timers shall be capable of automatic shut-off of lights in unoccupied space. Time range shall be adjustable for 5 minutes to 12 hours.
9. Electronic timers shall have a visual warning when automatic shut-off is imminent when controlling interior lighting.

Daylighting Controls:

1. Electronic dimming ballast shall control the light output of the lamps continuously within the range of 10% to 100% light output.
2. Daylighting sensors shall be adjusted and commissioned, with maximum trim adjusted for no more than 120% of target light level.

Part II: Installation

1. Delamped fixtures shall have the ballast and lamp holder wire leads cut. Ballast and unused sockets must be removed from the fixture and the ballast cover labeled "delamped."
2. Ballasts removed from a fixture must have the power leads cut at the ballast so that they are permanently disabled.
3. CMLP reserves the right to inspect installations for program compliance before, during, at and after the time of substantial completion.
4. Contractor shall provide materials and labor warranty for one year from date of installation.

Part III: Disposal – Lamps and Ballasts

1. All lamps and ballasts must be disposed of in accordance with applicable federal, state and local waste disposal regulations.
2. Submit Lighting Waste Disposal Form at end of project for all projects in which existing lamps and/or ballasts are removed.

Part IV: Rebate Eligibility

Lamps not funded under our program:

1. T12 VHO, T12 HO, T10 VHO and T10 HO fluorescent lamps
2. Incandescent lamps
3. Low voltage incandescent lamps
4. Halogen lamps
5. High Intensity Discharge (HID) lamps
6. Exit signs with fluorescent lamps

Other conditions where funding is not allowed:

1. Extra bulbs/ballasts are not eligible. Rebates are for installed equipment only.
2. Lighting that is not on during some or all of the 1pm to 7pm time period on week days is not eligible for a rebate.
3. Lighting controls that do not reduce demand during some or all of the 1pm to 7pm time period on weekdays are not eligible for a rebate.
4. Outdoor lighting and outdoor lighting controls are not eligible for a rebate.
5. Delamping as a sole method of achieving energy efficiency will not be funded. If delamping constitutes a significant portion of the project cost, CMLP reserves the right to revise the rebate accordingly.

**CMLP reserves the right to make changes to the
High Efficiency Lighting Program Technology Requirements at its discretion.**