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BOUNDLESS ENERGY™

PSO Business Rebates Retrofit Lighting Technical Requirements

General LED Requirements

- LED replacement lamps and LED luminaires must be listed on the [DesignLights Consortium \(DLC\)](#) or [ENERGY STAR® Qualified Products List \(QPL\)](#).
- DLC or ENERGY STAR qualified retrofit kits are acceptable as substitutions for fixture replacements.
- LED upgrades not listed on this document may be considered under the custom application, provided the upgrades are DLC or ENERGY STAR qualified products.
- LED lamps purchased through retail channels where PSO ENERGY STAR residential lighting discounts are applied at the point-of-sale are not eligible for rebates.
- LED wattage inputs and requirements are based on total system/fixture wattage (including ballast factor, if applicable), except where noted.

TLED Requirements

- All TLEDs, regardless of type or application, must be listed on the [DLC QPL](#).
- If proposing to install TLEDs in existing fixtures using a de-lamping approach (e.g., installing 2 TLEDs in place of 4 fluorescent lamps), then standard fluorescent de-lamping technical requirements apply, such as requiring lamp centering and the use of listed retrofit kits.
- LED wattage inputs and requirements are based on total system/fixture wattage (including ballast factor, if applicable), except where noted.
- Currently, three types of TLED products are recognized. Specific technical requirements for each TLED variant are listed below.

Type A – TLED using instant or rapid start fluorescent ballast as power supply

- New compatible instant or rapid start fluorescent ballast must be installed.
- The existing ballast must be removed and legally disposed of. All rebates shall be denied on Type “A” lamp replacements that do not meet these application requirements.
- Label must be installed in fixture indicating that fixture has been retrofitted with TLEDs and that fluorescent lamps should not be installed as replacements.

Type B – TLED with no external driver; line voltage (120 / 277v) applied to TLED via lamp-holder

- Existing fluorescent ballast must be removed.
- Condition of existing lamp-holders must be verified; replace damaged, corroded, cracked lamp-holders as necessary.
- Label must be installed in fixture indicating that fixture has been retrofitted with TLEDs and that fluorescent lamps should not be installed as replacements.

Type C – TLED using dedicated external driver

- Existing fluorescent ballast must be removed.
- Technical specifications for the power supply/driver supplied with the TLEDs must be submitted.



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General Linear Fluorescent Lamp and Ballast Requirements

- 32w 4-ft HPT8 lamps and high-efficiency T8 ballasts must be listed on the **Consortium for Energy Efficiency (CEE)** product list or meet CEE standards.
- 28w and 25w 4-ft RWT8 lamps and high-efficiency T8 ballasts must be listed on the **CEE** product list or meet CEE standards.
- 8-ft T8 lamps are not eligible for prescriptive lighting rebates.
- 17w 2-ft T8 or 25w 3-ft T8 lamps must have minimum efficacy of 75 mean lumens/watt.

Sign Lighting

- See the LED Sign Lighting Upgrades and Rebates section.

Agricultural and Specialized LED Lighting

- Specialized LED lighting, such as for agricultural facilities, paint houses, etc., that is not covered by categories on the **DLC** or **ENERGY STAR QPL** may be considered on a case by case basis.
- Manufacturer's specification sheets demonstrating product testing in compliance with standards such as IES LM79/80/TM21 must be submitted with application.
- Applicant must provide narrative, under separate cover, describing the proposed project.



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Retrofit Lighting Measures and Rebates

Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements
LED Integral Replacement Lamps	LED screw-in lamps, MR11/ MR16 lamps, & recessed can/downlight retrofit trim kits.	25 Watts/ Lamp	\$3/ Lamp	<ul style="list-style-type: none"> Installation of type A, PAR, MR, BR, R, G or B integral screw-in lamps to replace medium or candelabra-based incandescent or halogen lamps of similar nominal size Applicant must verify compatibility with existing controls Self-contained recessed can/downlight trim kits are acceptable Lamps must be installed in hard-wired, wall- or ceiling-mounted fixtures. Lamps installed in portable fixtures are not eligible for rebates.
	LED replacement lamps for HID fixtures, replacing 250w and lower	80 Watts/ Lamp	\$25/ Lamp	<ul style="list-style-type: none"> Installation of mogul (E39) screw-base LED replacement lamps in HID fixtures Equipment not listed on the ENERGY STAR or DLC qualified product lists will be reviewed for eligibility on a case-by-case basis
	LED replacement lamps for HID fixtures, replacing 251w and higher	180 Watts/ Lamp	\$60/ Lamp	
LED Interior Fixtures	Interior LED Recessed, Surface, Track, Pendant downlight fixtures.	35 Watts/ Fixture	\$15/ Fixture	<ul style="list-style-type: none"> Installation of new recessed, surface, pendant or track luminaires to replace incandescent, halogen, linear fluorescent or CFL luminaires Applicant must verify compatibility with existing controls Recessed can/downlight trim kits qualify under Measure Code 100a
	Replacement/Retrofit of linear fluorescent T12/T8 (existing 1-2 lamps) fixtures with new LED fixtures, or self-contained LED retrofit kits.	20 Watts/ Fixture	\$12/ Fixture	<ul style="list-style-type: none"> Installation of new LED troffers, panels or similar linear luminaires. Self-contained LED retrofit kits (2x4 LED troffer kits, "array" kits, etc.) are also permitted Applicant must verify compatibility with existing controls Installation of TLEDs qualifies under measure codes 111, 115a, or 115b
	Replacement/Retrofit of linear fluorescent T12/T8 (existing 3-4 lamps) fixtures with new LED fixtures, or self-contained LED retrofit kits.	35 Watts/ Fixture	\$20/ Fixture	



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Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements
LED Interior Fixtures	LED stairwell fixture containing integrated occupancy control furnished by manufacturer.	N/A	\$20/ Fixture	<ul style="list-style-type: none"> • Installation of self-contained occupancy-based luminaires in stairwell retrofit projects • Eligible fixtures contain onboard, factory-furnished occupancy controls and are designed for stairwells and other seldom-occupied spaces • Not eligible for additional lighting control rebates on page 9
LED Linear Lamp Retrofit (TLEDs)	LED Linear Tube Replacement/ Retrofit	10 Watts/ Lamp	\$3/ Lamp	<ul style="list-style-type: none"> • One-for-one replacement of T12, T8 or T5 fluorescent lamps with TLED lamps • If installing Type A TLED lamps, new qualifying CEE-listed electronic ballasts must be installed • Refer to TLED requirements on page 1 • Installation of TLEDs in new fixtures does not qualify for rebates; TLED rebates are for the retrofit of existing fixtures only • A “lamp” is defined as a 4-ft lamp equivalent (e.g., an 8-ft T12 lamp counts as (2) 4-ft lamp equivalents) • LED wattage inputs and requirements are based on total system/fixture wattage (including ballast factor, if applicable)
Permanent De-lamping LED Linear Lamps	Permanent De-lamping with Retrofit Kit - LED Linear Tubes (2-3 lamps existing, removing 1)	18 Watts/ Fixture	\$9/ Fixture	<ul style="list-style-type: none"> • De-lamping and retrofit of existing linear T12, T8 or T5 fluorescent systems with TLED lamps • If installing Type A TLED lamps, new qualifying CEE-listed electronic ballasts must be installed • Refer to TLED requirements on page 1 • Installation of TLEDs in new fixtures does not qualify for rebates; TLED rebates are for the retrofit of existing fixtures only • Luminaires must be permanently de-lamped through the use of UL / CSA-listed retrofit kits specifically for this purpose; lamps must be re-centered in luminaires • Light levels may be affected; therefore, de-lamping may not be appropriate for all applications • When de-lamping 8ft fixtures using 4ft nominal lamps in tandem, total existing and proposed lamp footage will be used as basis for determining appropriate measure code • A “lamp” is defined as a 4-ft lamp equivalent (e.g., an 8-ft T12 lamp counts as (2) 4-ft lamp equivalents) • LED wattage inputs and requirements are based on total system/fixture wattage (including ballast factor, if applicable)
	Permanent De-lamping with Retrofit Kit - LED Linear Tubes (4+ lamps existing, removing 2+)	40 Watts/ Fixture	\$14/ Fixture	



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Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements
LED High Bay/Low Bay Fixtures	New LED High/Low Bay Fixture; Replacing existing \leq 250w HID or \leq 220w fluorescent.	80 Watts/ Fixture	\$40/ Fixture	<ul style="list-style-type: none"> • Installation of LED high/low bay luminaires in place of HID sources or existing linear fluorescent high/low bay luminaires • Luminaires must be on DLC QPL as one of the following categories: High Bay Luminaires for Commercial and Industrial Buildings; Low Bay Luminaires for Commercial and Industrial Buildings or High Bay Aisle Luminaires • Fluorescent high/low bay luminaires lamped with TLEDs will not qualify for rebates • Luminaires must be installed \geq 15-ft AFF • Wattage ranges referenced in the measure descriptions apply to nominal lamp wattage, not system wattage • Replacement of existing linear fluorescent fixtures is permitted, provided that minimum wattage reduction requirements are met. The sum of the existing lamp wattage will determine which measure code is applicable. • Installation of on-board occupancy sensors qualifies for additional rebate under Measure Code 83.
	New LED High/Low Bay Fixture; Replacing existing 251w–400w HID or 221-325w fluorescent.	120 Watts/ Fixture	\$70/ Fixture	
	New LED High/Low Bay Fixture; Replacing existing \geq 401w HID or \geq 326w fluorescent.	180 Watts / Fixture	\$140/ Fixture	
LED Exit Signs	LED exit signs.	10 Watts/ Fixture	\$6/ Sign	<ul style="list-style-type: none"> • Installation of LED exit signs to replace incandescent or fluorescent sources • LED retrofit kits are not eligible
LED Refrigeration Lighting	LED reach-in freezer or cooler lighting.	N/A	\$15/ Fixture	<ul style="list-style-type: none"> • Installation of LED strips to replace T12 and T8 sources in refrigerated display case • LED strips must completely replace existing gear • Existing channel wiring may be reused, if necessary



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Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements
LED Parking Garage Fixtures	Exterior LED Parking Garage Fixture or retrofit kit; replacing 150w and lower.	50 Watts/ Fixture	\$40/ Fixture	<ul style="list-style-type: none"> • Installation of recessed or surface luminaires in parking garages to replace HID or linear fluorescent luminaires • DLC-listed retrofit kits are acceptable • Installation of on-board occupancy sensors qualifies for additional rebate under Measure Code 83.
	Exterior LED Parking Garage Fixture or retrofit kit; replacing 151w and higher.	80 Watts/ Fixture	\$60/ Fixture	
LED Exterior Fixtures	Exterior LED Parking Lot, Gas Canopy, Area, Flood, Wallpack or retrofit kit; replacing 150w and lower.	35 Watts/ Fixture	\$25/Fixture	<ul style="list-style-type: none"> • Installation of parking lot, gasoline canopy, area, flood or wallpack luminaires to replace HID or incandescent luminaires • DLC-listed retrofit kits are acceptable • Wattage ranges referenced in the measure descriptions apply to nominal lamp wattage, not system wattage
	Exterior LED Parking Lot, Gas Canopy, Area, Flood, Wallpack or retrofit kit; replacing 151-250w.	50 Watts/ Fixture	\$40/ Fixture	
	Exterior LED Parking Lot, Gas Canopy, Area, Flood, Wallpack or retrofit kit; replacing 251-400w.	80 Watts/ Fixture	\$80/ Fixture	
	Exterior LED Parking Lot, Gas Canopy, Area, Flood, Wallpack or retrofit kit; replacing 401w or higher.	350 Watts/ Fixture	\$150/ Fixture	
	Exterior LED Parking Lot, Gas Canopy, Area, Flood, Wallpack or retrofit kit; replacing 1001w or higher.	550 Watts / Fixture	\$200/ Fixture	

Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements	
LED Exterior Fixtures	Exterior LED Parking Lot, Roadway, Area, or Flood pole mounted fixtures where replacing multiple 1000w or higher wattage fixtures mounted on the same pole with 50% or fewer new fixtures on that pole.	850 Watts / New Fixture	\$225/ Fixture	<ul style="list-style-type: none"> • Installation of Parking Lot, Roadway, Area, or Flood pole mounted luminaires to replace HID or incandescent luminaires • DLC-listed retrofit kits are acceptable • Wattage ranges referenced in the measure descriptions apply to nominal lamp wattage, not system wattage • Refers to pole mounted luminaires only on poles where the number of fixtures per pole will be reduced • The number of new fixtures must be half or less than the number of existing fixtures 	
Fluorescent Lamp & Ballast Retrofits	Re-lamp/re-ballast: Retrofit existing linear fluorescent fixtures with RWT8 lamps and qualifying electronic ballast	1-2 lamps	10 Watts/ Fixture	\$3/ Fixture	<ul style="list-style-type: none"> • Lamp-for-lamp retrofits of existing linear fluorescent systems • Reduced wattage (RW) T8 lamps (25- or 28-watt) must be installed in conjunction with qualifying CEE-listed electronic ballasts • New high performance T8 32-watts lamps are not permitted with this measure code
		3-4 lamps	15 Watts/ Fixture	\$5/ Fixture	
Fluorescent Permanent De-lamping	Permanent de-lamping with retrofit kit: replace or retrofit existing fluorescent systems with RWT8, T5 or T5HO lamp(s) and qualifying electronic ballast	2-3 lamps existing; removing 1 lamp	28 Watts/ Fixture	\$5/ Fixture	<ul style="list-style-type: none"> • De-lamping and retrofit of existing linear fluorescent systems • New fixtures may be used to de-lamp, provided that lamp reduction requirements are met • Luminaires must be permanently de-lamped through the use of UL / CSA-listed retrofit kits specifically for this purpose; lamps must be re-centered in luminaires • Light levels may be affected; therefore, de-lamping may not be appropriate for all applications • Reflectors, if specified, shall have a minimum reflectivity of 90% and should be used if necessary to provide proper lighting levels or quality • When de-lamping 8ft fixtures using 4ft nominal lamps in tandem, total existing and proposed lamp footage will be used as basis for determining appropriate measure code
		4 or more lamps existing; removing 2 or more lamps	45 Watts/ Fixture	\$8/ Fixture	

Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements
New Fluorescent Fixtures	New fixture containing RWT8, T5 or T5HO lamps and qualifying electronic ballast	15 Watts/ Fixture	\$8/ Fixture	<ul style="list-style-type: none"> • Installation of fluorescent luminaires in retrofit projects • Eligible new fixtures may be surface, recessed, suspended or self-contained retrofit kits • Fixtures include standard troffers, strips, wraps, industrial and vapor tight, and advanced fixtures • New high performance T8 32-watts lamps are not permitted with this measure code
Fluorescent High Bay Fixtures	New Fluorescent T5HO/HPT8 High/Low Bay Fixture; Replacing ≤250w HID	70 Watts/ Fixture	\$20/ Fixture	<ul style="list-style-type: none"> • Installation of fluorescent high/low bay luminaires in place of HID sources or linear fluorescent fixtures • Reduced-wattage T8 and standard T5 lamps are not permitted with this measure code • Overall fixture efficiency must be ≥ 80% • Luminaires must contain 3–12 lamps and be installed ≥ 15-ft AFF • Wattage ranges referenced in the measure descriptions apply to nominal lamp wattage, not system wattage. • For existing fluorescent fixtures, the sum of the existing lamp wattage determines which measure code is applicable. • Installation of on-board occupancy sensors qualifies for additional rebate under Measure Code 83.
	New Fluorescent T5HO/HPT8 High/Low Bay Fixture; Replacing 251w–400w HID	80 Watts/ Fixture	\$30/ Fixture	
	New Fluorescent T5HO/HPT8 High Bay Fixture; Replacing 401w–1,000w HID	200 Watts/ Fixture	\$60/ Fixture	

LED Sign Lighting Measures and Rebates

- These requirements are for retrofitting existing neon, cold cathode, linear fluorescent or HID signs using LED technology; LED signs installed in new construction or those installed as part of a complete sign replacement are not eligible.
- Photos of existing system and internal sign components (ballast, lamps, transformers, etc.) and proposed system, including new LED components (LED modules, drivers, etc.) must be submitted with ALL sign lighting applications.
- Manufacturer’s specification sheets for all proposed components must be submitted with application.
- Equipment must be UL Listed.



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Upgrade Description		Min. Watts Reduced	Rebate/ Unit	Technical Requirements
LED Sign Lighting	24/7 Sign Lighting	NA	\$1.00/ watt reduced	<ul style="list-style-type: none"> • Retrofitting existing neon, cold cathode, linear fluorescent or HID signs using LED technology. • Complete sign replacements are not eligible. • Equipment must be UL listed.
	Dusk to Dawn Sign Lighting	NA	\$0.50/ watt reduced	
	Interior Retail Sign Lighting	NA	\$0.50/ watt reduced	

Retrofit Lighting Control Measures and Rebates

Upgrade Description		Min. Watts Controlled	Rebate/ Unit	Technical Requirements
Lighting Controls	Occupancy Control – Wall Switch Replacement.	40 Watts/ Fixture	\$9/ Control	<ul style="list-style-type: none"> • Hardwired wall switch occupancy control; passive infrared, ultrasonic or dual technology • Residential grade controls or those with manual on override capability are not eligible
	Occupancy Control – Ceiling/Wall Mounted.	119 Watts/ Fixture	\$15/ Control	<ul style="list-style-type: none"> • Hardwired or wireless ceiling- or wall-mounted remote occupancy control; passive infrared, ultrasonic or dual technology
	Occupancy Control – Fixture Mounted.	40 Watts/ Fixture	\$15/ Control	<ul style="list-style-type: none"> • Hardwired fixture-mounted occupancy controls; passive infrared, ultrasonic or dual technology • Controls may be furnished as new equipment by fixture manufacturer or installed on existing fixture(s) as a retrofit measure

Ready to submit an application? Click [here](#) to begin.