

# 2019 Commercial & Industrial Retrofit Lighting Worksheet



RETROFIT LIGHTING INCENTIVE WORKSHEET												
EXISTING LIGHTING						NEW LIGHTING						
Location / Room / Area	Lighting Type (from Table 1)	Lamps per Fixture	Lamp Wattage	Number of Fixtures	Annual Hours	Product Code (Table A)	Lighting Type (from Table 1)	Lamps per Fixture	Lamp Wattage	Number of Fixtures	Incentive per Fixture (\$)	Total Incentive (\$)
<i>Example: Parking Lot</i>	<i>High Pressure Sodium</i>	<i>1</i>	<i>90</i>	<i>8</i>	<i>4,345</i>	<i>90L</i>	<i>LED Lamps and Fixtures-LED</i>	<i>1</i>	<i>90</i>	<i>8</i>	<i>\$150</i>	<i>\$1,200</i>
<b>LIGHTING TOTAL</b>												

LIGHTING CONTROLS INCENTIVE WORKSHEET											
Location / Room / Area	Lighting Control Product Code (Table A-1)	Number of Controls	Lighting Type (from Table 1)	Lamps per Fixture	Lamp Wattage	Number of Fixtures Controlled	Annual Hours without Controls	Annual Hours Reduced with Controls	% Power Reduction for Daylight Dimming	Incentive per Unit (Table A1) (\$)	Total Incentive (\$)
<i>Example: Conference Room</i>	<i>1</i>	<i>6</i>	<i>T8 HP - 4 Foot</i>	<i>2</i>	<i>32</i>	<i>12</i>	<i>3,200</i>	<i>800</i>	<i>N/A</i>	<i>\$50</i>	<i>\$300</i>
<i>Example: Reception</i>	<i>3</i>	<i>8</i>	<i>LED Lamps &amp; Fixtures – LED</i>		<i>35</i>	<i>10</i>	<i>3,200</i>	<i>N/A</i>	<i>50%</i>	<i>\$20</i>	<i>\$200</i>
<b>CONTROL TOTAL</b>											
<b>LIGHTING AND CONTROL TOTAL</b>											

TABLE 1: LIGHTING TYPES					
Biaxial - 2 Foot	Low Voltage Halogen – LVH	T12 - 4 Foot	T12VHO - 4 Foot	T8 - 3 Foot	T8 HP - 4 Foot – Low Power Ballast
Compact Fluorescent – CF	Mercury Vapor – MV	T12 - 5 Foot	T12VHO - 8 Foot	T8 - 4 Foot	T8 HP - 4 Foot – High Power Ballast
High Pressure Sodium – HPS	Metal Halide – MH	T12 - 6 Foot	T5 - 2 Foot	T8 - 5 Foot	T8 Tandem Wired - 4 Foot
Incandescent – I	Metal Halide Track Lighting – MHT	T12 - 8 Foot	T5 - 3 Foot	T8 - 8 Foot	T8 Tandem Wired - 8 Foot
LED Exit Signs – LEDX	Quartz/Halogen - Q	T12HO - 4 Foot	T5 - 4 Foot	T8 HP - 2 Foot	T8 HP Tandem Wired - 4 Foot
LED Lamps & Fixtures – LED	T12 - 2 Foot	T12HO - 6 Foot	T5 HO - 4 Foot	T8 HP - 3 Foot	Other--Describe
Low Pressure Sodium – LPS	T12 - 3 Foot	T12HO - 8 Foot	T8 - 2 Foot	T8 HP - 4 Foot	

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## Instructions for completing the Retrofit LIGHTING Incentive Worksheet



### **General Note**

1. This application is for replacing existing lighting fixtures or systems with new higher efficiency lamps, ballast and lighting fixtures, systems and controls.
2. Cutsheets/specifications including photometric tables must be submitted and reviewed by the utility to verify compliance with technical requirements.
3. Proof of Purchase includes invoice(s) indicating the cost, type, manufacturer, model or part number, purchase date, and vendor of the efficient equipment are required for payment of incentives.
4. The incentive, in conjunction with all other sources of funding, cannot exceed the total project cost.
5. Project must be completed by the "Offer Valid Through" date on the front of the application to be eligible for incentive. After that date the preapproval is void and the business will need to contact their Utility to reapply for incentive pending funding availability.

### **Eligibility Requirements:**

1. The existing lighting should be in-place and operational at the time of pre-inspection.
2. Use Code 99L for LED fixtures not covered by another product code
3. Systems must operate on average 2,000 hours annually unless otherwise specified by the product code. Lighting project average must be at least 2,000 hours (total kWh/total kW).
4. Minimum watts for prescriptive control products is the average total watts controlled per controller.
5. The incentive offer is not valid unless signed and dated by the Utility Representative. The Customer accepts the Utilities incentive offer and agrees to the Terms and Conditions of the Utility by signing in the pre-approval offer block.
6. Projects need to be pre-approved prior to installation to be eligible for incentives.
7. Each fixture type must meet the Minimum Watts Reduction listed in Table A. The Minimum Watts Reduction is the average savings per new fixture. This is the difference between the total existing fixture system watts and the total new replacement system fixture watts / quantity of new fixtures. Quantity of fixtures installed may be different than the quantity of fixtures removed as long as the average minimum watts reduction is met. For Product Code 10L, Linear LED Tube wattage must include the ballast power when a ballast is used to operate the LED tubes. When entering the new lamp wattage on the incentive worksheet, use the total fixture wattage, including ballast power, divided by the total number of LED tubes in the fixture.
8. DLC qualification requires documentation of safety certification. Installation instructions must be followed with care.
9. Some linear LED tubes may utilize either the existing or a new fluorescent ballast. It is essential to select a compatible LED tube and ballast combination. Failure to do so may damage system components, shorten product life or result in a hazardous condition. The age and condition of the existing ballast may also shorten system life.

### **LED Specific Documentation Requirements**

LED fixtures and lamps must be listed on ENERGY STARS's (ES), Designlights Consortium (DLC) or the utilities' websites. For more information see the DLC's listing <http://www.designlights.org/> or ENERGY STAR's website: Bulbs: <http://www.energystar.gov/productfinder/product/certified-light-bulbs/results>, Fixtures: <http://www.energystar.gov/productfinder/product/certified-light-fixtures/results>

**\*\*Note:** NHSaves and its sponsor utilities do not warrant or accept any liability whatsoever in respect of any LED 4ft or 2ft Linear Replacement Lamps that receive incentives through our energy efficiency programs. Customers are responsible for the proper modification and installation of LED 4ft and 2ft Linear Replacement Lamps in existing fixtures in accordance with manufacturer's instructions. Customers should be aware that this may void fixture warranty. Customers are responsible for proper

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labeling of all modified existing fixtures. It is the responsibility of the lighting installers to meet current Illuminating Engineering Society standards for light levels, light distribution, uniformity and lighting quality for all installations that use these prescriptive technologies.

## Existing Lighting Systems Inventory

1. An inventory should be submitted documenting all existing fixtures to be replaced and the proposed fixtures that will be installed. For each fixture, note the lamp size, type, quantity, ballast type and hours of operation. Electronic spreadsheet copies of the Lighting System Inventory similar to the Lighting Worksheets are encouraged to facilitate the incentive application review. Existing and Proposed lighting types can be found in Table 1.
2. Complete the lighting and/or lighting controls incentive info found in Table A and A-1. Check to ensure all proposed products meet the criteria and minimum watts saved for products noted in Table A and A-1.
3. Fill out a separate line on the Retrofit Lighting Incentive Worksheet for each unique combination of Existing lighting type, Annual Hours of Operation, Product Code and lighting type. Both existing and high efficiency lighting types can be found in Table 1.
4. Fill out a separate line on the Lighting Controls Incentive Worksheet for each lighting control product including control description, quantity of fixtures controlled, number of watts controlled and hours of reduction for each device proposed, Refer to Table A-1.
5. Hours of operation are the estimated annual hours that the particular fixture(s) actually operates. Try to be as specific and accurate as possible. NOTE: Fixture operating hours are not necessarily the same as the facility operating hours.
6. Add the Lighting Total and the Control Total in the Grand Total box. The Incentive Total boxes cannot exceed the total equipment costs.

## Pre-Installation

1. A site inspection may be performed by a utility representative confirming the existing fixture information and quantities. Make sure to call your utility before starting the lighting project to determine if a site inspection is required.
2. The existing fixtures should be verified by lighting type and room/area, reference Lighting Worksheet and Table 1.

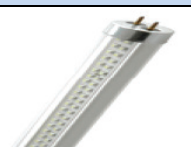
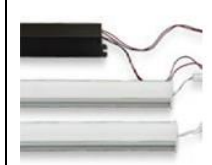
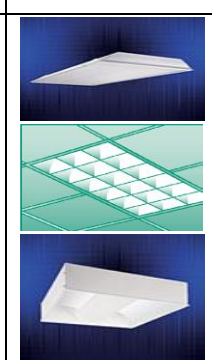

## Post-Installation

### ***Utility Representative must verify that:***

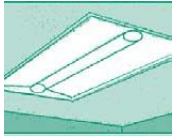
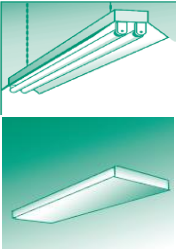

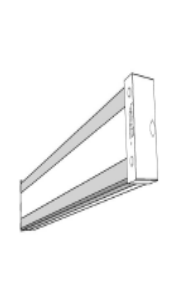
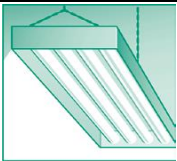
1. The new energy efficient lighting fixtures, systems and controls types have been installed and are energized.
2. The lighting fixtures, systems and controls match the manufacturer's information represented on the incentive application. If any of the lighting fixtures, systems and controls have changed from what was approved for the initial incentive offer, the substituted lighting fixtures, systems and controls specifications must be re-submitted, reviewed to verify compliance with technical requirements and approved before an incentive is considered.
3. Proof of Purchase has been submitted. This includes invoice(s) indicating the fixture manufacturer, model, and number of lamps, ballast specifications (if applicable), fixture quantities, costs, purchase date, and vendor of the efficient equipment. Other forms of payment such as AIA Certificates of Payment may also be acceptable.
4. The Utility Representative & Customer have signed & dated the post installation inspection block on the incentive form.

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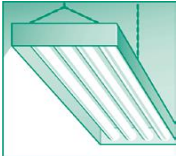


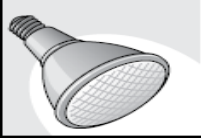

**Table A: Lighting Systems Incentives**

Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
10L	<u>TLED Tubes</u> Linear LED Tubes using existing bi-pin fluorescent sockets	<b>\$5 Per Tube</b>	Installations must not allow line voltage to be present at socket. Your utility may require replacement of existing ballast. LED lamps are required to be listed by Design Lights Consortium. (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	<b>10 Per Tube</b>	
12L	<u>Direct Wired LED Strip Kits</u> Must not use existing bi-pin fluorescent sockets.	<b>\$20 Per Strip</b>	For direct wired LED strips that do not use existing bi-pin fluorescent sockets or ballast. LED lamps are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	<b>15 Per Strip</b>	
20L	<u>LED</u> High Efficiency Interior Fixtures & Retrofit Kits	<b>\$60</b>	1x4, 2x2 and 2x4  Prismatic, Parabolic, Recessed Direct and Recessed Indirect fixtures  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	<b>32</b>	
21L	<u>LED</u> Linear Indirect or Indirect Pendant Fixtures	<b>\$75</b>	Fixtures may have a down-light component of no greater than 45%. Fixtures with a down-light component must incorporate glare limiting louvers or a perforated cover shielding the lamps. Ceiling finish must be white and unobstructed  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	<b>32</b>	







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Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
22L	<u>LED</u> Advanced Recessed Fixtures	\$60	Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	32	
30L	<u>LED</u> Industrial/Commercial Fixtures 4ft & 8ft Fixtures	\$60	LED industrial/commercial strip or wrap fixtures. Applies to fixtures installed 16 feet or less above the floor. Only one incentive may be counted per fixture.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	32	
31L	<u>LED</u> Clean Room Rated or Vapor Tight Fixtures 1x4 or 2x4	\$75	Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	32	
32L	<u>LED</u> Stairwell Fixture with integral Occupancy sensor controls	\$75	To be eligible for incentives, fixtures must be installed in an 8,760 hour stairwell application with integral occupancy sensor control, setting lights to 50% output or less in control mode (not occupied). Not eligible for additional control incentive  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	27	
40L	<u>LED</u> High and Low Bay High Intensity Fixtures & Retrofit Kits	\$125	Minimum wattage is 35 watts to 149 watts. Recommended mounting height is > 16 feet above the floor.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	95	



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Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
41L	<u>LED</u> High and Low Bay High Intensity Fixtures & Retrofit Kits	\$175	Minimum wattage is $\geq$ 150 watts. Recommended mounting height is > 16 feet above the floor. Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	150	
50L	<u>LED</u> Down Light Fixtures & Retrofit Kits	\$25	Eligible LED Down Lights are required to be less than 25 watts and hardwired or GU-24 (pin) base. Screw Base LED Down Light <u>Retrofit Kits</u> are also eligible. <u>Replacement lamps not eligible.</u> Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	14	
51L	<u>LED</u> Hardwired Track Heads or Mono-Point Directional Fixtures	\$25	LED track heads hardwired installations only, <u>replacement lamps not eligible.</u> Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	30	
52L	<u>LED</u> Directional and Omni-directional Replacement Lamps	\$5	Eligible LED Integral replacement lamps with screw or pin base Lamps must operate a minimum of 2,000 hours annually. Eligible lamps are required to be listed by Energy Star Pre-Qualified list (For more information see <a href="http://www.energystar.gov">www.energystar.gov</a> )	10	
53L	<u>LED</u> Exit Fixtures	\$5	All materials and assembled units shall comply with all applicable codes and standards including (but not limited to) Federal/State/Local building, fire, and electrical codes, and may require designated egress lighting to comply with such codes. Exit sign retrofit kits are not eligible.	15	

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Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
60L	<u>LED</u> Cooler , Freezer, or Refrigerated 3' & 4' Fixture	\$40	Fixtures are required to be required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	14	
61L	<u>LED</u> Cooler , Freezer, or Refrigerated 5' & 6' Fixture	\$55	Fixtures are required to be required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> )	23	
70L	<u>LED</u> Garage & Canopy Fixtures & Retrofit Kits	\$75	LED Low Bay for Garages and Canopies 25-99 watts.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	60	
71L	<u>LED</u> Garage & Canopy Fixtures & Retrofit Kits	\$100	LED Low Bay for Garages and Canopies greater than 99 watts.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	100	
80L	<u>LED</u> Exterior Wall, Post, Ground, and Arm Mount Floods and Fixtures & Retrofit Kits	\$75	Wattage range is 25 watts to 99 watts Must be automatically controlled to avoid daylight operation. Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	60	
81L	<u>LED</u> Exterior Wall, Post, Ground, and Arm Mount Floods and Fixtures & Retrofit Kits	\$100	Minimum wattage is 100 watts Must be automatically controlled to avoid daylight operation.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	100	

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Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
90L	<u>LED</u> Pole Mounted Parking, or Roadway Fixtures & Retrofit Kits	\$150	Wattage range is 45 watts to 149 watts Must be automatically controlled to avoid daylight operation.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	100	
91L	<u>LED</u> Pole Mounted Parking, or Roadway Fixtures & Retrofit Kits	\$200	Minimum wattage is 150 watts Must be automatically controlled to avoid daylight operation.  Fixtures are required to be listed by Design Lights Consortium (for more information see <a href="http://www.designlights.org">www.designlights.org</a> ).	150	
99L	<u>LED</u> New Fixtures & Retrofit Kits	\$20	LED fixture categories not covered under other codes, or fixtures that do not meet minimum watt reduction in other codes. Fixtures are required to be listed by Design Lights Consortium or ENERGY STAR.  Linear TLED Tubes are not eligible as code 99L	20	



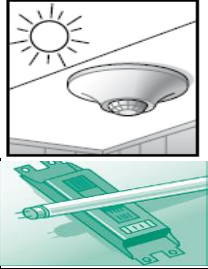
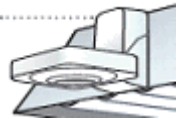
**Note:** It is the responsibility of the lighting installers to meet current Illuminating Engineering Society standards for light levels, light distribution, uniformity and lighting quality for all installations that use these prescriptive technologies.



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Please note that only one incentive control strategy will be approved per fixture/area

**Table A-1: Lighting Control Incentives**

Product Code	Product Description	Incentive	Eligibility Criteria	Min Controlled Wattage	
1	Remote Mounted Occupancy Sensor	\$50 per control	Comply with manufacturer's coverage recommendations. No manual "ON" overrides.	90 (total)	
2	Wall mounted Occupancy/Vacancy Sensors	\$20 per control	Occupancy Sensors must operate as Automatic On, and Automatic Off or Manual On and Off. Sensors are wall mounted devices only. Not recommended in multi stall restrooms, locker rooms, stairwells or rooms of greater than 250 square feet.	45 (total)	
3	Daylight Dimming System and/or Occupancy Controlled Step-Dimming System	\$20 per fixture	Daylight: Must have continuous dimming or adjust to a minimum of 4 levels. Typical lamping is either a 28 or 32 watt T8 lamps. Step-Dimming: Ballast must be automatically controlled based on occupancy. Power consumption in low mode must not exceed 60%.	45 (per fixture)-	
4	Integral High Bay Fixture Occupancy Control Systems	\$20 per fixture	Fluorescent Ballast or LED Drivers must be automatically controlled based on occupancy. Systems with manual "ON" or override switches are not eligible. Occupancy sensors are integral (built into) or permanently attached to each fixture.	45 (per fixture)	
5	Photocell Sensors	\$20 per control	Photocell sensor for exterior lighting systems, or lighting circuit, that would otherwise operate on 24 hours a day, 7 days a week (8,760 hours annually)	30 (total)	