

# Lighting Technical Sheet

## Energy Solutions for Business

Baltimore Gas and Electric Company (BGE) offers incentives through its Smart Energy Savers Program® to help commercial, industrial, government, institutional and nonprofit electric service customers offset the upfront costs for energy-efficient improvements. The Lighting Technical Sheet offerings cover common energy-efficient lighting and lighting control improvements in projects such as retrofits of existing inefficient lighting systems and the installation of new lighting systems for new construction, major renovation and remodeling projects. Measures can include LED luminaires and retrofit kits, as well as control measures and new construction/major renovation performance lighting designs.

### INSTRUCTIONS

#### Eligible Participants

Incentives are available to non-residential, commercial, industrial, government, institutional and nonprofit electric service customers within the BGE service territory that fall under rate schedules G, GS, GL, P or T.

#### Eligible Equipment

All equipment must be new and meet all designated requirements. Used equipment or equipment not meeting program and/or technical requirements is not eligible for incentives. Existing equipment must be removed and may not be reinstalled within the BGE service territory.

#### Submitting an Application

All lighting applications, regardless of the total requested incentive amount, require a **program pre-approval letter**. No amount of existing equipment being replaced may be removed or altered, and no amount of proposed equipment applied for may be purchased and/or installed prior to the issuance of a program pre-approval letter. To receive a program pre-approval letter, an application must first be submitted for review through **BGE's Application Center** and include the lighting worksheet and (for retrofit projects) as well as the manufacturer data (cut) sheets for all proposed equipment, and customer-signed **Terms and Conditions**.

#### Approval Requirements

Once an application has been submitted, the project will be assigned a project ID. A **program pre-approval letter** will be issued once the application has been pre-approved. Only at this time may any existing equipment being replaced be removed or altered and may the proposed equipment being applied for be purchased and/or installed. Once the installation of all proposed equipment is complete and the BGE customer is satisfied with the equipment and installation, the BGE customer must sign the program pre-approval letter. The BGE customer-signed pre-approval letter must be uploaded to the **BGE Application Center** along with the final detailed invoice(s). Pre-approval commitments are valid for up to six months for prescriptive retrofit projects and up to 12 months for new construction and custom projects from the date of the pre-approval letter that is issued to the customer of record.

#### Program Details

Details of the program, including incentive levels and technical requirements, are subject to change without prior notice. You may go to **BGESmartEnergy.com** to get the most current program information, or you may call 410.290.1202. Total incentives are limited to \$1,000,000 per federal tax ID per calendar year. Incentives above this level may be granted on a case-by-case basis subject to program budget limitations. BGE reserves the right to deny any application that may result in BGE exceeding its program budget.

#### Participation Instructions

**Step 1** – Verify that your project meets the eligibility requirements specified on the Lighting Technical Sheet. Visit the program website at **BGESmartEnergy.com/business/energy-solutions-business** or contact us at 410.290.1202 with any questions about eligibility.

**Step 2** – Whether the application is submitted by the BGE end-use customer or the Service Provider, the Service Provider and/or installation contractor must submit an **Energy Solutions for Business Service Provider application** prior to the submission of incentive applications. The party

listed as completing and submitting the application must be the party who completes and submits the application. Service Providers and installation contractors must be properly licensed and insured and could face participation restrictions based on their cumulative score through the Application Evaluation System. For a list of Service Providers who have participated in the program and currently have no participation restrictions, please visit the Energy Solutions for Business **Service Provider Directory**.

**Step 3** – Visit **the Application Center** to submit an online application. Refer to the Application Checklist to verify that all required information and documentation are included for submission to BGE.

All elements of a completed application must be uploaded to **the Application Center**. All completed applications will be reviewed for eligibility and completeness in the order they were received. Applicants who submit incomplete applications will be notified of deficiencies. BGE may require a pre-installation inspection and will notify customers if an inspection of the facility is necessary.

**Step 4** – The application will be processed, and BGE will notify the applicant in writing when the review is complete and if funds have been reserved. Upon receipt of the program pre-approval letter, participants may begin removing/altering existing equipment and purchase and install the program-approved energy-efficient equipment.

Notify BGE immediately if there are any changes to the scope of work, as this may require additional pre-approval.

**Step 5** – Upon project completion, please review your approved application and note any changes to the project that occurred during installation. The BGE end-use customer must sign and return the **pre-approval letter** and provide invoices for all energy efficiency measures. BGE may require a post-installation inspection to verify compliance with program rules and verify the accuracy of project documentation and equipment operation.

BGE will authorize payment upon the application's review and approval. The incentive check should be received within six to eight weeks after the project's completion and final approval.

#### Questions

If you have questions about the program, call 410.290.1202, email **Business@BGESmartEnergy.com** or visit **BGESmartEnergy.com**.

## I. RETROFIT LIGHTING APPLICATION CHECKLIST

Please include the following items when you apply through [the Application Center](#):

- BGE electric account number
- Supporting documentation to include manufacturer's specification (cut) sheets for all luminaires, retrofit kits, lamps, and controls
- Complete lighting worksheet – for retrofit projects only
  - Complete the room-by-room inventory worksheet using [the Excel-based Lighting Worksheet](#) found on the BGE website
  - Rated wattages for various existing luminaire types are found in BGE's Lighting System Rated Wattage Table (included on [the Excel-based Lighting Worksheet](#))
  - Meet measure code eligibility requirements
  - Upload the completed electronic copy of the worksheet under the files tab of your project in [the Application Center](#)
- Terms and Conditions** signed by the BGE end-use customer

BGE will process applications for payment in the order received and issue incentive payment within six to eight weeks after project completion and approval. Applicants will be notified if post-installation inspections are required prior to final payment. Please note that failure to provide any of the above items may delay the processing of your application and have a negative impact in a Service Provider's Evaluation Score.

## II. RETROFIT LIGHTING TECHNICAL REQUIREMENTS

### General LED Requirements

- ENERGY STAR luminaires must be hard-wired. Screw/plug-in lamps and recessed trim kits that screw in are ineligible for these measure codes. Incentives for lamps and recessed trim kits are available through BGE's Instant Lighting Discounts offering. Visit a participating local distributor or [BGESmartEnergy.com](#) for more information.
- Equipment for each measure code must be selected within the specified "Category," "General Application," and "Primary Use" designations, as classified by the Design Lights Consortium (does not include ENERGY STAR measures).
- Wattage, efficacy and lumens values for the proposed equipment are based on "Reported Data" and must be entered exactly as indicated on the Design Lights Consortium Qualified Products List and ENERGY STAR Qualified Products List.
- If LED linear lamps (TLEDs) are being installed and fewer lamps than what is currently installed are proposed for installation (i.e. installing a single lamp in a two-lamp fixture), the luminaires must be permanently delamped and the TLEDs re-centered in luminaires through the use of UL/CSA-listed retrofit kits specifically made for this purpose.
- Private labeled equipment must be listed on the electronic lighting worksheet in the designated manufacturer and model columns as "Original (as listed on DLC)/Private Labeled" make and model numbers. Spec sheet submissions must include both the spec sheet for the original equipment and the spec sheet for the private labeled equipment with a signed letter attached by the original equipment manufacturer that validates the equipment is the same.
- To qualify for a new fixture incentive, the existing luminaire must be removed and the new luminaire must be independently mounted in a manner that aligns with DLC Primary Use Designation for the luminaire type. Any application that does not align with DLC Primary Use Designation does not qualify for a new fixture incentive.
- A retrofit of existing equipment is any application that makes use of the existing housing luminaire as aligned by DLC Primary Use Designation. Retrofit equipment must be listed under DLC Primary Use Designation to qualify for a corresponding measure code.
- The program is intended for one-for-one replacement. If a lighting project exceeds the one-for-one cap, written authorization by the program is required prior to application submission.

### Specific LED Requirements

- RL 111A and RL 111B and RL 167: Incentive applies to contiguous linear feet of fixture installed, not for nominal linear feet. The measure code should only count the linear feet of a luminaire as measured from end to end, whether as a long contiguous unit or modular units connected to form a chain. Non-contiguous configurations of modular units can claim a per-foot incentive for the length of the assembly at its longest point from end to end of any given module.
- Equipment must be listed on the ENERGY STAR® Qualified Products list to apply for either ENERGY STAR measure code (RL 171-173). All other lighting equipment must be listed on the Design Lights Consortium's (DLC) Qualified Product List.
- Type A and Type B LED linear replacement lamps (TLEDs) and LED mogul screw-based replacement for an HID lamp are not eligible for incentives through the Prescriptive program. Only Type C equipment, as defined by Design Lights Consortium, is eligible for Prescriptive incentives, as outlined in measure codes RL 181 and RL 182. Type A equipment incentives are available only through the Instant Lighting Discounts Program.

## II. RETROFIT LIGHTING TECHNICAL REQUIREMENTS (CONTINUED)

### General Control Requirements

To be eligible for lighting incentives, lighting controls are required to be installed as follows:

- Daylight controls are required to be installed in spaces with a total of more than 150 watts of general lighting within toplight and/or sidelight daylight zones.
- For sidelight daylight zones, fixtures within a distance of 1 x Height of Floor to Top of Window of the window must have daylight controls.
  - For example, if the top of the window is 8 feet from the floor, daylight controls need to be installed for all fixtures within 8 feet of the window.
- For toplight daylight zones, fixtures within a distance of 0.7 x Ceiling Height of the skylight must have daylight controls.
  - For example, if the ceiling height is 9 feet, daylight controls need to be installed for all fixtures within 6.3 feet of the toplight.
- The daylight zone shall extend longitudinally from the edge of the window or other opening up to 2 feet on either side.
  - For example, if a space has windows that are separated by a wall less than 2 feet wide, then all lighting fixtures within that space require daylighting controls.
- Daylight controls are **not required** in:
  1. Spaces in health care facilities where patient care is directly provided
  2. Dwelling units and sleeping units
- **Occupancy/vacancy** controls are required to be installed in the following areas:
  - Classrooms/lecture/training rooms
  - Conference/meeting/multipurpose rooms
  - Copy/print rooms
  - Employee lunch and break rooms
  - Janitorial closets
  - Locker rooms
  - Lounges
  - Private offices
  - Restrooms
  - Storage rooms
  - Warehouses
  - Other spaces 300 sq. ft. or less that are enclosed by floor-to-ceiling height partitions
- Lighting controls are **not required** in the following areas:
  1. Electrical rooms
  2. Areas designated as security or emergency areas that are required to be continuously lit
  3. Interior exit stairways, interior exit ramps, and exit passageways
  4. Emergency egress lighting that is normally off
- Space types which fall under the requirements of needing both a daylight and occupancy/vacancy control (for example, an enclosed office containing windows with luminaires totaling more than 150W within the daylight zone) require a dual daylight and occupancy/vacancy DOS control (LC 101-112) or a combination of separate daylight and occupancy/vacancy controls. For combinations of separate control types, only one control incentive will be paid.
- Spaces with existing control types are not eligible for control incentives. Please indicate when entering your equipment if there are existing controls within a space.
- Exterior luminaires require a functioning time clock or photocell to qualify for lighting incentives, but are not eligible for daylight control incentives. They are eligible for advanced network control and/or occupancy/vacancy control incentives.

## III. NEW CONSTRUCTION PERFORMANCE LIGHTING ELIGIBILITY REQUIREMENTS

NOTE: If the code jurisdiction where the building is being built or renovated requires green certification, apply instead under the **Comprehensive New Construction Incentives Application** (incentives will be determined under the green building track). Contact your jurisdiction for details on specific code requirements.

This offering must be applied for in new construction or major renovation scenarios. Major renovation projects are eligible and classified as:

1. Removal of the entire existing lighting system and wiring,
2. Redesign of the entire existing lighting system, and
3. Significant change to the actual function of the building through significant renovation, e.g., projects where a licensed professional architect or engineer has prepared and certified building plans for the change of use and reconstruction of an existing or vacant building or space.

All projects must meet the following additional requirements to qualify for Performance-Based Lighting incentives.

- Provide maintained lighting levels in accordance with the recommendations of the Illuminating Engineering Society of North America (IESNA).
- Provide high-quality lighting achieving appropriate levels of glare control, color rendering, lighting uniformity and other lighting quality parameters deemed necessary by BGE.

All project submittals must include the following supporting documentation:

- Lighting layout plans.
- Manufacturer's specification sheets for all luminaires and lamps.
- Lighting fixture schedule including manufacturer, model number and rated wattage.
- Completed **New Construction Lighting Workbook**.

Incentives may be provided for reducing the Lighting Power Density (LPD) in watts per square foot from the baseline lighting design that complies with the **Interior Power Lighting Allowance** obtained from ASHRAE/IESNA 90.

1 - 2013. Wattage reduction for either the space-by-space or building-area method must be at least 10% more efficient than code requirements to qualify for incentives. The space-by-space method or building-area method can be applied to an entire building that is new construction or major renovation. The space-by-space method must be applied to a partial building renovation that does not include all the space types usually found within the building type.

### III. NEW CONSTRUCTION PERFORMANCE LIGHTING ELIGIBILITY REQUIREMENTS (CONTINUED)

General Linear Fluorescent Lamp and Ballast Requirements (for new construction only)

- All 4-foot T8 lamps must be listed on the Consortium for Energy Efficiency (CEE) T8 Replacement Lamps qualified product list. Visit [www.CEE1.org](http://www.CEE1.org) for further information.
- 8-foot T8 and 8-foot T5 lamps are not eligible for prescriptive lighting incentives.
- 2-foot and 3-foot T8 lamps must have minimum efficacy of 75 mean lumens/watt.
- 32w U-Bend T8 lamps must have minimum efficacy of 79 mean lumens/watt.
- Installing fewer lamps than what the fixture is designed for (e.g. installing a single lamp in a two-lamp fixture) is not permissible without applying for and meeting permanent delamping technical requirements, even in cases of lamp for lamp retrofits.

### IV. NEW CONSTRUCTION PERFORMANCE LIGHTING EQUIPMENT GUIDE

All Performance Lighting calculations are now captured through the BGE New Construction Lighting Workbook. This interactive Excel workbook is available for download on the [New Construction Performance-Based Lighting application](#) page.

Please note the following:

1. The New Construction Lighting workbook is interactive. You must select your calculation method on the 'Information' tab of the workbook. Depending on your selection, some tabs and fields may be hidden or revealed.
2. The New Construction Lighting workbook contains the program's new incentives for exterior fixtures.
3. The 'Information' tab of the New Construction Lighting workbook should match the lighting fixture schedule. Populate this page with all of the fixture data. Once you do so, this data will populate the drop down menus on the interior and exterior inventory tabs.

Other requirements:

1. All projects require preapproval
2. 50% of the project fixtures are required to be listed on either the Design Lights Consortium or the ENERGY STAR Qualified projects list. Some exceptions may be available for certain specialty fixtures not listed, for example, medical-grade fixtures. Please contact the program office for details.

Measure Code	Minimum Watts Reduced	Incentive/Unit
Tier 1	>10% Below Base LPD	\$0.40 per watt
Tier 2	>20% Below Base LPD	\$0.80 per watt

**V. RETROFIT LIGHTING MEASURES AND INCENTIVES**

	MEASURE CODE	PROPOSED MEASURE	MIN. WATTS REDUCED	REPORTED EFFICACY (LM/W)	INCENTIVE/ UNIT	TECHNICAL REQUIREMENTS IN ADDITION TO GENERAL LED REQUIREMENTS LISTED ON PAGE 2.
LED Troffer Luminaires	RL 101	New LED linear recessed or surface troffer for 2x2 and 1x4 luminaires	15	110	\$50/ Fixture <b>\$40/ Fixture</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces</li> <li>○ 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces</li> </ul> </li> <li>• Fixture housing must be a minimum height of 1.5 inches</li> <li>• Troffers less than 1.5 inches must apply to RL 103</li> <li>• Product spec sheets must show dimensions</li> </ul>
	RL 102	New LED linear recessed or surface troffer for 2x4 luminaires	20	110	\$85/ Fixture <b>\$65/ Fixture</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces</li> </ul> </li> <li>• Fixture housing must be a minimum height of 1.5 inches</li> <li>• Troffers less than 1.5 inches must apply to RL 104</li> <li>• Product spec sheets must show dimensions</li> </ul>
	RL 103	New LED flat panel for 2x2 and 1x4 luminaires	15	110	\$15/ Panel	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces</li> <li>○ 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces</li> </ul> </li> <li>• Product spec sheets must show dimensions</li> </ul>
	RL 104	New LED flat panel for 2x4 luminaires	20	110	\$30/ Panel	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces</li> </ul> </li> <li>• Product spec sheets must show dimensions</li> </ul>
LED Linear Ambient/Stairwell Luminaires	RL 111A	New LED linear ambient luminaire with direct and indirect components or VaporTight, min. IP65	5 (per foot)	110	\$17/ Foot <b>\$15/ Foot</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Linear Ambient</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Direct Linear Ambient Luminaires</li> <li>○ Linear Ambient Luminaires w/ Indirect Component</li> </ul> </li> </ul>
	RL111B	New LED linear ambient luminaire – Strip or Wrap fixtures	5 (per foot)	110	\$12/ Foot <b>\$10/ Foot</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Linear Ambient</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Direct Linear Ambient Luminaires</li> <li>○ Linear Ambient Luminaires w/ Indirect Component</li> </ul> </li> </ul>
	RL 112	New LED stairwell luminaire	10	100	\$400/ Fixture <b>\$85/ Fixture</b>	<ul style="list-style-type: none"> <li>• Fixture must be installed in stairwell.</li> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – Low, Mid, High, or Very High Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Stairwell and Passageway Luminaires</li> </ul> </li> </ul>
LED Interior Directional Luminaires	RL 121	New LED wall wash luminaire	10 (per foot)	75	\$15/ Foot	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Interior Directional</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Wall-Wash Luminaires</li> </ul> </li> </ul>
	RL 122	New LED track/mono-point luminaire	25	75	\$30/ Head	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Interior Directional</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Track or Mono-Point Luminaires</li> </ul> </li> </ul>
LED Display Case Luminaires	RL 131	New LED display case luminaire	20	70	\$25/ Fixture	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Display Case</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Display Case Luminaires</li> </ul> </li> </ul>
	RL 132	New LED display case luminaire installed in reach-in coolers/freezers	15	85	\$30/ Fixture	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor</li> <li>• <b>DLC General Application:</b> Display Case</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Horizontal Refrigeration Case Luminaires</li> <li>○ Vertical Refrigerated Case Luminaires</li> </ul> </li> </ul>

**V. RETROFIT LIGHTING MEASURES AND INCENTIVES (CONTINUED)**

	MEASURE CODE	PROPOSED MEASURE	MIN. WATTS REDUCED	REPORTED EFFICACY (LM/W)	INCENTIVE/ UNIT	TECHNICAL REQUIREMENTS IN ADDITION TO GENERAL LED REQUIREMENTS LISTED ON PAGE 2.
LED High/Low Bay Luminaires	RL 141	New LED high/low bay luminaire – DLC reported lumens between 5,000 lm – 9,999 lm	50	110	\$100/ Fixture <b>\$75/ Fixture</b>	<ul style="list-style-type: none"> <li>Luminaires must be installed greater than or equal to   15 feet above finished floor (AFF).</li> <li><b>DLC Category:</b> Indoor</li> <li><b>DLC General Application:</b> High-Bay</li> <li><b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>High-Bay Luminaires for Commercial and Industrial Buildings</li> <li>Low-Bay Luminaires for Commercial and Industrial Building</li> <li>High-Bay Aisle Luminaires</li> </ul> </li> </ul>
	RL 142	New LED high/low bay luminaire – DLC reported lumens between 10,000 lm – 19,999 lm	75	110	\$150/ Fixture <b>\$100/ Fixture</b>	<ul style="list-style-type: none"> <li>Luminaires must be installed greater than or equal to   15 feet AFF.</li> <li>If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be achieved, please apply for RL 141.</li> <li><b>DLC Category:</b> Indoor</li> <li><b>DLC General Application:</b> High-Bay</li> <li><b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>High-Bay Luminaires for Commercial and Industrial Buildings</li> <li>Low-Bay Luminaires for Commercial and Industrial Buildings</li> <li>High-Bay Aisle Luminaires</li> </ul> </li> </ul>
	RL 143	New LED high/low bay luminaire – DLC reported lumens between 20,000 lm – 29,999 lm	100	110	\$200/ Fixture <b>\$150/ Fixture</b>	<ul style="list-style-type: none"> <li>Luminaires must be installed greater than or equal to 15 feet AFF.</li> <li>If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be achieved, please apply for RL 142.</li> <li><b>DLC Category:</b> Indoor</li> <li><b>DLC General Application:</b> High-Bay</li> <li><b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>High-Bay Luminaires for Commercial and Industrial Buildings</li> <li>Low-Bay Luminaires for Commercial and Industrial Buildings</li> <li>High-Bay Aisle Luminaires</li> </ul> </li> </ul>
	RL 144	New LED high/low bay luminaire – DLC reported lumens between 30,000 lm – 39,999 lm	150	110	\$300/ Fixture <b>\$200/ Fixture</b>	<ul style="list-style-type: none"> <li>Luminaires must be installed greater than or equal to 15 feet AFF.</li> <li>If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be achieved, please apply for RL 143.</li> <li><b>DLC Category:</b> Indoor</li> <li><b>DLC General Application:</b> High-Bay</li> <li><b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>High-Bay Luminaires for Commercial and Industrial Buildings</li> <li>Low-Bay Luminaires for Commercial and Industrial Buildings</li> <li>High-Bay Aisle Luminaires</li> </ul> </li> </ul>
	RL 145	New LED high/low bay luminaire – DLC reported lumens between 40,000 lm or more	400	110	\$400/ Fixture <b>\$300/ Fixture</b>	<ul style="list-style-type: none"> <li>Luminaires must be installed greater than or equal to 15 feet AFF.</li> <li>If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be achieved, please apply for RL 144.</li> <li><b>DLC Category:</b> Indoor</li> <li><b>DLC General Application:</b> High-Bay</li> <li><b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>High-Bay Luminaires for Commercial and Industrial Buildings</li> <li>Low-Bay Luminaires for Commercial and Industrial Buildings</li> <li>High-Bay Aisle Luminaires</li> </ul> </li> </ul>

**V. RETROFIT LIGHTING MEASURES AND INCENTIVES (CONTINUED)**

	MEASURE CODE	PROPOSED MEASURE	MIN. WATTS REDUCED	REPORTED EFFICACY (LM/W)	INCENTIVE/ UNIT	TECHNICAL REQUIREMENTS IN ADDITION TO GENERAL LED REQUIREMENTS LISTED ON PAGE 2.
LED Exterior Luminaires	RL 151	New LED exterior luminaire – DLC reported lumens between 4,999 lm or less	40	90	\$50/ Fixture	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – Low Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Outdoor Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Bollards</li> <li>○ Parking Garage Luminaires</li> <li>○ Fuel Pump Canopy Luminaires</li> <li>○ Architectural Flood and Spot Luminaires</li> <li>○ Landscape/Accent Flood and Spot Luminaires</li> <li>○ Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li> </ul> </li> </ul>
	RL 152	New LED exterior luminaire – DLC reported lumens between 5,000 lm – 9,999 lm	125	95	\$100/ Fixture <b>\$75/ Fixture</b>	<ul style="list-style-type: none"> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 151.</li> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – Mid Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Outdoor Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Bollards</li> <li>○ Parking Garage Luminaires</li> <li>○ Fuel Pump Canopy Luminaires</li> <li>○ Architectural Flood and Spot Luminaires</li> <li>○ Landscape/Accent Flood and Spot Luminaires</li> <li>○ Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li> </ul> </li> </ul>
	RL 153	New LED exterior luminaire – DLC reported lumens between 10,000 lm – 19,999 lm	250	100	\$150/ Fixture <b>\$100/ Fixture</b>	<ul style="list-style-type: none"> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 152.</li> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – High Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Outdoor Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Bollards</li> <li>○ Parking Garage Luminaires</li> <li>○ Fuel Pump Canopy Luminaires</li> <li>○ Architectural Flood and Spot Luminaires</li> <li>○ Landscape/Accent Flood and Spot Luminaires</li> <li>○ Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li> </ul> </li> </ul>
	RL 154	New LED exterior luminaire – DLC reported lumens between 20,000 lm – 29,999 lm	400	100	\$200/ Fixture <b>\$150/ Fixture</b>	<ul style="list-style-type: none"> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 153.</li> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – High Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Outdoor Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Bollards</li> <li>○ Parking Garage Luminaires</li> <li>○ Fuel Pump Canopy Luminaires</li> <li>○ Architectural Flood and Spot Luminaires</li> <li>○ Landscape/Accent Flood and Spot Luminaires</li> <li>○ Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li> </ul> </li> </ul>

**V. RETROFIT LIGHTING MEASURES AND INCENTIVES (CONTINUED)**

MEASURE CODE	PROPOSED MEASURE	MIN. WATTS REDUCED	REPORTED EFFICACY (LM/W)	INCENTIVE/ UNIT	TECHNICAL REQUIREMENTS IN ADDITION TO GENERAL LED REQUIREMENTS LISTED ON PAGE 2.	
RL 155	New LED exterior luminaire – DLC reported lumens between 30,000 lm – 39,999 lm	550	100	<del>\$250/ Fixture</del> <b>\$175/ Fixture</b>	<ul style="list-style-type: none"> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 154.</li> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – Very High Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Outdoor Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Bollards</li> <li>○ Parking Garage Luminaires</li> <li>○ Architectural Flood and Spot Luminaires</li> <li>○ Landscape/Accent Flood and Spot Luminaires</li> <li>○ Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li> </ul> </li> </ul>	
RL 156	New LED exterior luminaire – DLC reported lumens between 40,000 lm or more	700	100	<del>\$300/ Fixture</del> <b>\$225/ Fixture</b>	<ul style="list-style-type: none"> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 155.</li> <li>• <b>DLC Category:</b> Outdoor</li> <li>• <b>DLC General Application:</b> Outdoor – Very High Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Outdoor Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Bollards</li> <li>○ Parking Garage Luminaires</li> <li>○ Architectural Flood and Spot Luminaires</li> <li>○ Landscape/Accent Flood and Spot Luminaires</li> <li>○ Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li> </ul> </li> </ul>	
LED Retrofit Kits	RL 161	LED linear retrofit kit for 2x2 and 1x4 fixtures	15	110	\$5/ Kit	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Linear Retrofit Kits for 2x2 Luminaires</li> <li>○ Linear Retrofit Kits for 1x4 Luminaires</li> </ul> </li> </ul>
	RL 162	LED linear retrofit kit for 2x4 fixtures	20	110	\$10/ Kit	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Linear Retrofit Kits for 2x4 Luminaires</li> </ul> </li> </ul>
	RL 163	LED integrated retrofit kit for 2x2 and 1x4 fixtures	15	110	<del>\$40/ Kit</del> <b>\$35/ Kit</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Integrated Retrofit Kits for 2x2 Luminaires</li> <li>○ Integrated Retrofit Kits for 1x4 Luminaires</li> <li>○ Must be a minimum height of 1.5 inches</li> <li>○ Integrated kits less than 1.5 inches must use RL 165</li> </ul> </li> </ul>
	RL 164	LED integrated retrofit kit for 2x4 fixtures	20	110	<del>\$70/ Kit</del> <b>\$50/ Kit</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Integrated Retrofit Kits for 2x4 Luminaires</li> <li>○ Must be a minimum height of 1.5 inches</li> <li>○ Integrated kits less than 1.5 inches must use RL 166</li> </ul> </li> </ul>
	RL 165	LED integrated flat panel retrofit kit for 2x2 and 1x4 fixtures	15	110	\$10/ Panel Kit	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Integrated Retrofit Kits for 2x2 Luminaires</li> <li>○ Integrated Retrofit Kits for 1x4 Luminaires</li> </ul> </li> </ul>
	RL 166	LED integrated flat panel retrofit kit for 2x4 fixtures	20	110	\$20/ Panel Kit	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Troffer</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Integrated Retrofit Kits for 2x4 Luminaires</li> </ul> </li> </ul>
	RL 167	LED retrofit kit for ambient luminaire	5 (per foot)	110	<del>\$5/ Foot</del> <b>\$4/ Foot</b>	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Linear Ambient</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Retrofit Kits for Direct Linear Ambient Luminaires</li> </ul> </li> </ul>



**V. RETROFIT LIGHTING MEASURES AND INCENTIVES (CONTINUED)**

	MEASURE CODE	PROPOSED MEASURE	MIN. WATTS REDUCED	REPORTED EFFICACY (LM/W)	INCENTIVE/ UNIT	TECHNICAL REQUIREMENTS IN ADDITION TO GENERAL LED REQUIREMENTS LISTED ON PAGE 2.
LED Retrofit Kits (continued)	RL 168	LED retrofit kit for high/low bay luminaire	40	110	\$30/ Kit	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Indoor Retrofit kit</li> <li>• <b>DLC General Application:</b> Linear Ambient</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Retrofit Kits for High-Bay Luminaires for Commercial and Industrial Buildings</li> <li>○ Retrofit Kits for Low-bay Luminaires for Commercial and Industrial Buildings</li> </ul> </li> </ul>
	RL 169	LED retrofit kit for exterior luminaire	40	110	\$30/ Kit	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Outdoor Retrofit Kit</li> <li>• <b>DLC General Application:</b> Outdoor – Low, Mid, High or Very High Output</li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Retrofit Kits for Outdoor Pole/Arm-Mounted Areas and Roadway Luminaires</li> <li>○ Retrofit Kits for Pole/Arm-Mounted Decorative Luminaires</li> <li>○ Retrofit Kits for Large Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li> <li>○ Retrofit Kits for Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li> <li>○ Retrofit Kits for Parking Garage Luminaires</li> <li>○ Retrofit Kits for Fuel Pump Canopy Luminaires</li> </ul> </li> </ul>
LED ENERGY STAR Fixtures	RL 171	New LED ENERGY STAR fixture – 1,499 lm or less	10	70	\$15/ Fixture	<ul style="list-style-type: none"> <li>• ENERGY STAR fixtures must either be inseparable or be packaged with an ENERGY STAR qualifying lamp from the manufacturer.</li> <li>• Screw or plug-in based recessed trim kits are not eligible for this measure.</li> </ul>
	RL 172	New LED ENERGY STAR fixture – 1,500 lm – 2,999 lm	25	70	<del>\$40/ Fixture</del> \$30/ Fixture	<ul style="list-style-type: none"> <li>• ENERGY STAR fixtures must either be inseparable or be packaged with an ENERGY STAR qualifying lamp from the manufacturer.</li> <li>• Screw or plug-in based recessed trim kits are not eligible for this measure.</li> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 171.</li> </ul>
	RL 173	New LED ENERGY STAR fixture – 3,000 lm or greater	50	70	<del>\$80/ Fixture</del> \$50/ Fixture	<ul style="list-style-type: none"> <li>• ENERGY STAR fixtures must either be inseparable or be packaged with an ENERGY STAR qualifying lamp from the manufacturer.</li> <li>• Screw or plug-in based recessed trim kits are not eligible for this measure.</li> <li>• If the indicated lumen output is needed and the min. watts reduced and/or efficacy cannot be obtained, please apply for RL 172.</li> </ul>
LED Replacement Lamps	RL 181	Type C LED linear lamp and new LED driver	10 (per lamp)	110	\$4/ Lamp	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Linear Replacement Lamps</li> <li>• <b>DLC General Application:</b> <ul style="list-style-type: none"> <li>○ Four-Foot Linear Replacement Lamps</li> <li>○ Two-Foot Linear Replacement Lamps</li> <li>○ U-Bend Replacement Lamps</li> </ul> </li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ 2-lamp External Driver Lamp-Style Retrofit Kits (UL Type C)</li> <li>○ 3-lamp External Driver Lamp-Style Retrofit Kits (UL Type C)</li> <li>○ 4-lamp External Driver Lamp-Style Retrofit Kits (UL Type C)</li> </ul> </li> </ul>
	RL 182	Type C LED mogul screw-base replacement for an HID lamp and new external driver	60	110	\$30/ Lamp	<ul style="list-style-type: none"> <li>• <b>DLC Category:</b> Mogul Screw-Base Replacements for HID Lamps</li> <li>• <b>DLC General Application:</b> <ul style="list-style-type: none"> <li>○ Outdoor – Low, Mid, or High Output</li> <li>○ High-Bay</li> </ul> </li> <li>• <b>DLC Primary Use:</b> <ul style="list-style-type: none"> <li>○ Replacement Lamps for Outdoor Pole/Arm-Mounted Area and Roadway Luminaires (Type C)</li> <li>○ Replacement Lamps for Outdoor Pole/Arm-Mounted Decorative Luminaires (Type C)</li> <li>○ Replacement Lamps for Outdoor Full-Cutoff Wall-Mounted Area Luminaires (Type C)</li> <li>○ Replacement Lamps for Parking Garage Luminaires (Type C)</li> <li>○ Replacement Lamps for Fuel Pump Canopy Luminaires (Type C)</li> <li>○ Replacement Lamps for High-Bay Luminaires (Type C)</li> <li>○ Replacement Lamps for Low-Bay Luminaires (Type C)</li> </ul> </li> </ul>

## VI. LIGHTING CONTROLS MEASURES AND INCENTIVES

	MEASURE CODE	MEASURE DESCRIPTION	MIN. WATTS CONTROLLED	INCENTIVE/ UNIT	INCENTIVE CAPS		TECHNICAL REQUIREMENTS IN ADDITION TO GENERAL CONTROL REQUIREMENTS ON PAGE 3.
					Ceiling or Corner Mounted Control	Wall Switch Control	
Networked Lighting Controls	LC 101	Networked lighting control w/ local or cloud server required	20	\$50/ Fixture	\$100/ Control	\$100/ Control	<ul style="list-style-type: none"> <li>Equipment must be listed on DLC NLC Qualified Products List.</li> <li>The system requires a Local or Cloud Server to operate.</li> </ul>
	LC 102	Networked lighting control w/ local or cloud server required – lower wattage fixtures/downlights	N/A	\$10/ Fixture	\$100/ Control	\$100/ Control	<ul style="list-style-type: none"> <li>Equipment must be listed on DLC NLC Qualified Products List.</li> <li>The system requires a Local or Cloud Server to operate.</li> </ul>
	LC 103	Networked lighting control (no server required)	20	<del>\$40/ Fixture</del> <b>\$45/ Fixture</b>	<del>\$80/ Control</del> <b>\$90/ Control</b>	<del>\$80/ Control</del> <b>\$90/ Control</b>	<ul style="list-style-type: none"> <li>Equipment must be listed on DLC NLC Qualified Products List.</li> </ul>
	LC 104	Networked lighting control (no server required) – lower wattage fixtures/downlights	N/A	\$8/ Fixture			
Dual Daylight/ Occupancy Controls	LC 111	Dual daylight & occupancy sensor (DOS)	20	<del>\$30/ Fixture</del> <b>\$25/ Fixture</b>	<del>\$60/ Control</del> <b>\$50/ Control</b>	<del>\$60/ Control</del> <b>\$50/ Control</b>	<ul style="list-style-type: none"> <li>Control must have the capability to control fixtures based on both occupancy and daylight.</li> <li>Customers must identify the quantity of fixtures located in a Daylight Zone on the Lighting Fixtures and Controls Worksheet (the same incentive will be paid for fixtures if they are not located in a Daylight Zone).</li> <li>Control must automatically turn fixtures on and off based on occupancy.</li> <li>Control must continuously dim fixtures located in a Daylight Zone (see General Control Requirements).</li> </ul>
	LC 112	Dual daylight & occupancy sensor (DOS) – lower wattage fixtures/downlights	N/A	\$6/ Fixture			
Daylight Controls	LC 121	Daylight continuous dimming control	20	\$20/ Fixture	\$40/ Control	\$40/ Control	<ul style="list-style-type: none"> <li>Control must continuously dim fixtures located in a Daylight Zone (see General Control Requirements) in response to ambient daylight.</li> </ul>
	LC 122	Daylight continuous dimming control – lower wattage fixtures/ downlights	N/A	\$4/ Fixture	\$40/ Control	\$40/ Control	
Occupancy/Vacancy Controls	LC 131	Vacancy control	20	<del>\$20/ Fixture</del> <b>\$15/ Fixture</b>	<del>\$60/ Control</del> <b>\$45/ Control</b>	<del>\$40/ Control</del> <b>\$30/ Control</b>	<ul style="list-style-type: none"> <li>Control must be set to "Manual ON" so fixtures controlled require a person to manually turn them ON.</li> <li>The control must automatically turn off light fixtures after preset time has elapsed where no occupancy is detected.</li> </ul>
	LC 132	Vacancy control – lower wattage fixtures/downlights	N/A	\$4/ Fixture			
	LC 133	Occupancy control	20	<del>\$45/ Fixture</del> <b>\$10/ Fixture</b>	<del>\$45/ Control</del> <b>\$30/ Control</b>	<del>\$30/ Control</del> <b>\$20/ Control</b>	<ul style="list-style-type: none"> <li>Control must automatically turn fixtures on and off based on occupancy.</li> </ul>
	LC 134	Occupancy control – lower wattage fixtures/downlights	N/A	\$3/ Fixture			

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