

Multifamily Performance Program  
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# New Construction Component **Estimated Incremental Cost Guidelines**

Version 6

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## 1. Scope

This document contains the methodology for calculating the Estimated Incremental Hard Costs associated with the energy reduction measures (ERMs), which are developed by the Partner for the NYSEDA Multifamily Performance Program – New Construction component. The difference in material and labor costs between the baseline equipment or system and the proposed improvement is the Estimated Incremental Hard cost for that ERM. The Simulation Guidelines, provided separately, are to be followed to determine the requirements for the baseline and proposed designs. This document, the Estimated Incremental Hard Cost Guidelines, is to be used by the Partners to provide the cost of installing each ERM, which is presented to the Developer as part of the ERM report. This Incremental Hard Cost Guidelines document may be shared with the Developers, if requested.

## 2. Objectives

1. Develop a comprehensive methodology to determine the incremental costs of the proposed design compared to the baseline using generally accepted costing approaches (e.g. cost-estimating manuals such as RS Means).
2. Provide a procedure to reconcile costs that are prepared by the Design Team, if these differ from the Partner's cost estimate.
3. Ensure that the process developed is fair and equitable with all types of ERMs, and replicable between projects.
4. Ensure that the procedure can be considered objective to all parties.

## 3. Overview

Any proposed design component with an energy consumption impact that differs from the baseline component is considered to be an ERM, and shall be provided with an Estimated Incremental Hard Cost. If an ERM cost is determined to be less than its respective baseline component's cost, then the Estimated Incremental Hard Cost will be a negative value, representing the cost decrease. This negative cost should be included in the summation of the project's Estimated Incremental Hard Costs.

Many of these ERMs will arise out of consultation between the developer/design team and the Partner, with this group finding ways to improve the energy efficiency of the proposed design. Some proposed design building components that result in reduced energy usage when compared to the baseline may have been included in the initial set of plans. All such building components are included as ERMs, even though they were part of the original designs. These ERM distinctions are pointed out to ensure that all components that are an improvement over the baseline are recognized, in order to provide a fair and equal evaluation of all projects in the Program.

To determine the cost of a baseline component, Partners should obtain the cost of an alternate but comparable option. The baseline component should have performance characteristics that closely match those determined by ASHRAE Appendix G and the Simulation Guidelines, but should have the other characteristics, such as brand, quality and appearance, that match the proposed component. For example, when calculating the incremental cost of a window, the partner will find a comparable product (frame type, dimensions, brand, etc.) that show the performance characteristics of the baseline design (U-Value, SHGC, etc.).

The Baseline Cost Estimator spreadsheet should be used to estimate baseline component costs, where applicable.

If the Developer is a not-for-profit company, no sales tax should be included for materials; otherwise the sales tax should be included.

Partners should be aware that even if the project delivery method for a project is a guaranteed maximum price bid, all incremental costs shall be determined for each ERM in the project.

## 4. Cost Estimating Procedures

### 4.1 Introduction

Once the ERMs have been determined for the project, the price of both the baseline and proposed measures must be calculated to determine the Incremental Cost and Total Resource Cost (TRC) of each measure and the comprehensive package of measures.

To do so, the Partner shall first determine all building components associated with a specific ERM that would differ from the baseline. For example, if an ERM specifies that R-20 continuous exterior wall insulation be installed in the proposed design, the only difference between the proposed and baseline would be the insulation itself. The baseline cost would include the cost of the insulation that was determined to be the appropriate baseline wall insulation, and the proposed cost would include the cost of the actual specified insulation. However, determining what components should be included in the incremental cost calculation is not always so straight forward. For example, in cases where the wall in the proposed design is a different construction type than is specified in the baseline, the total price of the wall construction including the insulation should be accounted for in the cost analysis. Therefore, Partners shall include in their Energy Reduction Plan, a description of the items that were included in the hard costs for both the baseline and proposed.

Once the components of the measure that need to be included in the cost analysis are identified, the Partner shall determine the method in which to calculate their prices. The Partner may estimate costs through the use of cost estimation manuals, the Baseline Cost Estimator spreadsheet, vendor quotes, design team calculations, or other reasonable methods – including online pricing. For each calculated hard cost, the method chosen to estimate this value shall be documented in the report.

#### **4.2 Estimating by Cost Estimation Manuals and the Baseline Cost Estimator**

One method for estimating measure costs is to use cost estimation manuals, such as RS Means. The Baseline Cost Estimator spreadsheet is another acceptable method for estimating baseline costs, and was designed to assist Partners in calculating the hard costs of baseline components. The Baseline Cost Estimator was created using prices and guidelines from RS Means, and therefore Partners are encouraged to use this document as an example of how to appropriately use a cost estimation manual.

In the Baseline Cost Estimator, the costs for materials and labor are assessed using the initial “Bare Costs” or “Raw” value derived from RS Means. These raw costs are then multiplied by correction factors to accurately estimate the total material and labor costs, which include taxes, overhead, profit, and regional fluctuations in prices. The correction factors can be found on the “Constants” tab of the Baseline Cost Estimator, and should be applied to any construction costs assessed using a cost estimation manual such as RS Means. The markup labor and markup material values are percentages that represent the national average for overhead and profit charged for the material and labor associated with construction. Whereas, the constant associated with the zip code of the project is a regional correction factor that takes into account the local area cost variations in labor and materials within New York State.

#### **4.3 Estimating by Vendor Quotes**

When using vendor supplied quotes, it is necessary that the Partner document in the report what material and labor costs are taken into account in the quote. For example, if the building was designed to be heated by a high-efficiency non-condensing boiler, and the vendor’s quote did not include the material and labor cost associated with the hot water loop piping, it would be incorrect to compare that quote to the baseline cost assessment using the Baseline Cost Estimator that did include pricing for the hot water loop piping. In this case it would be appropriate to leave out the pricing for the piping system assuming a similar system type for both baseline and proposed. However, if the building was designed to be heated by individual furnaces, then it would be appropriate to compare a vendor’s quote for the furnaces (that would obviously not include hot water loop piping) to the baseline cost calculated in the Baseline Cost Estimator including the piping, as this is an actual difference in the cost of the systems. Additionally, it is important to verify which type of price a vendor is providing, since this can be a source of confusion and have a large impact on the price. Vendor prices can be given as a contractor’s (or trade) cost or a retail (or budget) cost. The Partner should apply an appropriate contingency/markup for these prices accordingly.

#### **4.4 Estimating by Design Team Calculations**

Similar to vendor quotes, the design team calculations should be clear on what items they are pricing for each energy reduction measure to ensure an accurate comparison between the baseline and proposed measures.

#### **4.5 Estimating by Online Pricing**

Online pricing is permitted, but the source of the quote must be justified and included in the report.

## 5. Guidance on Assessing Costs for Specific Building Components

### 5.1 Building Envelope: Opaque assemblies

#### Baseline design components

Calculate the costs of the ASHRAE 90.1 (mid- or high-rise projects) or IECC (low-rise projects) requirements for opaque assemblies, as summarized in the Program Requirements section of the Simulation Guidelines, using one of the estimating methods listed above. The Baseline Cost Estimator spreadsheet should be used to estimate the baseline component costs when applicable.

#### Proposed design components

Costs of components in the proposed design shall be estimated in accordance with their actual properties, using one of the estimating methods listed above.

Permanent shading devices (side fins, overhangs, balconies) shall not be included in the incremental cost of the proposed design.

### 5.2 Building Envelope: Vertical Fenestration

#### Baseline design components

The window area used to calculate the baseline cost shall be equal to the amount in the proposed design or 40% of the total gross above grade wall area, whichever is smaller.

Prepare cost estimates for windows that comply with ASHRAE 90.1 requirements, using one of the estimating methods listed above. If applicable, the Baseline Cost Estimator spreadsheet should be used to estimate the baseline component costs.

#### Proposed design components

The actual properties of fenestration planned in the proposed design shall be used for cost estimating. The proposed cost should be based on the actual amount of fenestration in the proposed design, even when there is fenestration area that is greater than 40% of the total gross above grade wall area, using one of the estimating methods listed above. For projects with excessive windows, this will likely result in a significant increase in incremental cost for the project.

### 5.3 Interior and Exterior Lighting: Power Density Reductions and Bi-level Fixtures

This section applies to interior lighting ERMs related to reductions in lighting power density (W/SF), exterior lighting ERMs related to reductions in lighting power density (W/SF) and installation of bi-level lighting fixtures (fixtures with manufacturer integrated occupancy controls for high-low switching). Note that, as described further in the Simulation Guidelines, "Exterior lighting performance credit can be claimed only for the areas for which lighting is specified on the drawings."

The Estimated Incremental Hard Cost for this ERM is the sum of the results for all the following steps:

1. Determine the *labor cost* portion of the Estimated Incremental Hard Cost by one of the estimating methods listed above. In most cases the incremental labor costs will be \$0.
2. Determine the *material cost* portion of the Estimated Incremental Hard Cost as follows:
  - a. The proposed design fixture cost shall be estimated in accordance with their actual properties.
  - b. For proposed design fixtures that match the descriptions listed in the New Construction Program Pre-Qualified Incentives Worksheet (shown in Appendix A of these Guidelines):
    - i. Follow the instructions on the Worksheet;
    - ii. Multiply the sum of all "total incentive" values from this Worksheet by 2.5. This is the materials portion of the Estimated Incremental Hard Cost for these fixtures.
  - c. For proposed design fixtures related to the ERM that do not match any description listed in the attached New Construction Program worksheet, or if preferred: Estimate the material cost using one of the methods listed in Section 4.
3. Add the material cost and labor cost to get the total incremental hard cost for this measure

The estimated costs shall assume the same quantity of fixtures in the baseline and proposed design.

#### 5.4 Lighting: Automatic Control Devices

This section applies to lighting ERMs related to the installation of non-required automatic control devices. Note that, as described further in the Simulation Guidelines, “Credit for automatic controls can only be taken for spaces where such control is not required by ASHRAE 90.1.”

The Estimated Incremental Hard Cost for this ERM is the sum product of all the following steps:

1. Determine the total estimated *labor cost* associated with the additional control devices. The baseline labor cost is \$0, so the labor cost portion of the Estimated Incremental Hard Cost is equal to this estimated labor cost.
2. Determine the *material cost* portion of the Estimated Incremental Hard Cost as follows:
  - a. For proposed design devices that match the descriptions listed in the New Construction Program Pre-Qualified Incentives Worksheet (shown in Appendix A of these Guidelines):
    - i. Follow the instructions on the Worksheet;
    - ii. Multiply the sum of all “total incentive” values from this Worksheet by 2.5. This is the materials portion of the Estimated Incremental Hard Cost for these devices.
  - b. For proposed design devices that do not match any descriptions listed in the attached New Construction Program worksheet, or if preferred: Determine the total estimated *material cost* associated with the ERM using one of the estimating methods listed above. The baseline material cost for these devices is \$0, so the total estimated material cost for these devices should be added to the *material cost* portion of the Estimated Incremental Hard Cost.

#### 5.5 HVAC

##### Baseline design components

For nearly all projects in this Program, the baseline HVAC system type is a packaged terminal air conditioner (PTAC) with a constant volume fan control and either one or two hot water natural draft fossil fuel boiler(s). If fossil fuel is not available, a packaged terminal heat pump (PTHP) is to be used instead of a boiler.

When applicable, the Baseline Cost Estimator spreadsheet should be used to estimate the baseline component costs.

##### Proposed design components

Costs of components in the proposed design shall be estimated in accordance with their actual properties using one of the estimating methods listed above.

#### 5.6 Service Hot Water Systems

##### Baseline design components

Prepare cost estimates for baseline service hot water systems that comply with ASHRAE 90.1 requirements using one of the estimating methods listed above. If applicable, the Baseline Cost Estimator spreadsheet should be used to estimate the baseline component costs.

##### Proposed design components

Costs of components in the proposed design shall be estimated in accordance with their actual properties using one of the estimating methods listed above.

#### 5.7 Receptacles and Other Loads

##### Baseline design components

Provide estimated installed costs for the appliance or other load with the minimum efficiency required as detailed in the Simulation Guidelines. When applicable, the Baseline Cost Estimator spreadsheet should be used to estimate the baseline component costs.

##### Proposed design components

Provide installed costs for appliances or other loads that have the efficiency in accordance with their actual properties using one of the estimating methods listed above. For appliances, the most accurate method to obtain these prices is typically by contacting a vendor of the applicable equipment.

## **6. Guidance on Assessing Costs for Gut Rehab Projects**

For gut rehabilitation projects, the Baseline design of the envelope shall reflect existing conditions prior to any revisions that are part of the scope of work being evaluated, as described in building envelope section of Table G3.1 of Appendix G. However, all other components of the building (HVAC, DHW, lighting, appliances, etc.) shall follow the same design guidelines of non-gut rehab projects

As such, the baseline cost for all gut rehab envelope components shall be \$0. Costs of envelope components in the proposed design shall be estimated in accordance with their actual properties, using one of the estimating methods listed above.

The baseline and proposed design costs of all other components of the building shall be calculated using the guidance listed in Section 4 and 5 of this document.

**APPENDIX A**

The following pages from the New Construction Program Pre-Qualified Incentives Worksheet shall be used as instructed in the lighting and lighting controls sections of these Guidelines.



# Existing Facilities Program Pre-Qualified Lighting for New Construction



CFA # \_\_\_\_\_

Applicant \_\_\_\_\_

Facility \_\_\_\_\_

## Completing and Submitting the Lighting Measure Worksheet

- Fill in the appropriate fields on pages 2 through 5 following the instructions associated with the application section in question.
- To calculate the **Total Incentive** for each measure, multiply the **Count** (quantity of installed equipment) by the **Unit Incentive** and enter this amount in the **Total Incentive** column.
- Enter the sum of the **Total Incentive** for each lighting measure type on the summary worksheet below.
- Add these **Total** amounts together for the **Grand Total** amount on the last line.
- Complete a Consolidated Funding Application: [www.nyserda.ny.gov/Funding-Opportunities/Consolidated-Funding-Application](http://www.nyserda.ny.gov/Funding-Opportunities/Consolidated-Funding-Application)
- Submit your CFA online along with copies of the following. Be sure to reference your CFA number on all submitted materials:
  - 1) This completed worksheet and any other measure worksheets associated with your project.
  - 2) Electric utility bill from the last 90 days, with SBC notation.
  - 3) Invoices, including purchase and installation price.
  - 4) Equipment specification sheets showing manufacturer(s) and model number(s) for all fixtures, lamps, ballasts and/or lighting controls included on the worksheet.

## General Eligibility Requirements for Lighting Systems and Controls

- Pre-Qualified projects must submit an application for incentives within 90 days of invoice for the purchase and installation of Pre-Qualified measures.
- All lamps, ballasts, fixtures and controls installed must be new. Used or rebuilt equipment is not eligible except for qualifying retrofit kits.
- For energy saving lighting measures not covered by the Pre-Qualified application, please contact NYSERDA regarding Performance-Based programs.
- Lighting controls required by code do not qualify for incentives.
- LED tubes and LED panels designed to replace linear fluorescent technology are ineligible.
- ENERGY STAR®-qualified products list: [http://www.energystar.gov/certified-products/detail/commercial\\_light\\_fixtures?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=LTG](http://www.energystar.gov/certified-products/detail/commercial_light_fixtures?fuseaction=find_a_product.showProductGroup&pgw_code=LTG)
- DesignLights Consortium qualified products list: <http://www.designlights.org/QPL>
- Questions regarding the process, incentives, or requirements? Contact a NYSERDA representative at: 1-866-NYSERDA x3480 or [EFPPQADMIN@NYSERDA.ny.gov](mailto:EFPPQADMIN@NYSERDA.ny.gov)

## Individual Measure Incentive Totals

Lighting Systems (page 4) . . . . . Total \$ \_\_\_\_\_

Lighting Controls (page 5) . . . . . Total \$ \_\_\_\_\_

**Grand Total Lighting Systems and Controls Incentive Requested \$ \_\_\_\_\_**

## Project Cost Information (Required)

Total cost of materials and labor for installed lighting equipment. . . . . Total \$ \_\_\_\_\_

## HVAC System Type Selection Table

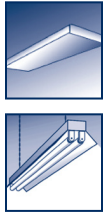

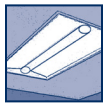
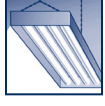
From the list to the right, please select the type of HVAC system that serves the space in which the lighting measures will be installed. If none apply, select "Other" and briefly describe the system used.

- |   |  |
|---|--|
| <input type="checkbox"/> No heating or cooling                      | <input type="checkbox"/> Steam heat only                             |
| <input type="checkbox"/> AC with gas heat                           | <input type="checkbox"/> Constant volume system with no economizers  |
| <input type="checkbox"/> Heat pump                                  | <input type="checkbox"/> Constant volume system with economizers     |
| <input type="checkbox"/> AC with electric heat                      | <input type="checkbox"/> Variable air volume system with economizers |
| <input type="checkbox"/> Electric heat only                         | <input type="checkbox"/> Water cooled ammonia screw compressors      |
| <input type="checkbox"/> Gas heat only                              | <input type="checkbox"/> Other: _____                                |
| <input type="checkbox"/> Fan coil with chiller and hot water boiler | _____  |

## Lighting System Incentive Table

General Eligibility Requirements:

- Four-foot U-shaped T8 lamps must have minimum efficacy of 79 mean lumens/watt and must be driven by high performance T8 ballasts.
- Two-foot linear T8 lamps must have minimum efficacy of 75 mean lumens/watt and must be driven by high performance T8 ballasts.
- The Consortium for Energy Efficiency maintains specifications and a list for high performance and reduced wattage T8 lamps and ballasts. The list is updated frequently and is available at <http://library.cee1.org/content/commercial-lighting-qualifying-products-lists>.
- Four-foot T8 lamps and associated ballasts must be listed on a CEE-qualified list (see previous bullet) or meet the appropriate CEE specifications.
- Installed LPD (Lighting Power Density) must be 3% less than code (building area or space-by-space) in the spaces containing fixtures for which incentives are being requested. LPD includes all fixtures in the applicable area, including those that do not qualify for an incentive.

Measure Code	Measure Description	Incentive/Fixture	Eligibility Criteria
HPT8-NF	New fluorescent fixtures 	\$10	<ul style="list-style-type: none"> <li>• T5, T5HO, and high performance and reduced wattage T8 systems are eligible</li> <li>• 1 unit = 1 new fixture with 1 to 4 lamps and 1 ballast</li> <li>• 3 and 4 lamp fixtures with 2 ballasts and dual switching are eligible under this measure code</li> <li>• Only 1 or 2 lamp T5HO fixtures are eligible under this measure code</li> <li>• Pendant-, surface-, and recessed-mounted direct/indirect fixtures are eligible under this code</li> <li>• Linear fluorescent fixtures that do not meet the other codes – HP-HEF, HEF-LG and HIF – may be eligible under this measure code</li> </ul>
HP-HEF	High efficiency troffer fixture 	\$15	<ul style="list-style-type: none"> <li>• T5 and high performance T8 systems are eligible</li> <li>• 1 unit = 1 fixture with 2 lamps and 1 ballast</li> <li>• Overall fixture efficiency must exceed 80%</li> <li>• 2x4 and 2x2 fixtures and retrofit kits are eligible</li> </ul>
HEF-LG	High efficiency low glare fixture 	\$25	<ul style="list-style-type: none"> <li>• T5, T5HO, and high performance T8 systems are eligible</li> <li>• 1 unit = 1 fixture with 1 or 2 lamps and 1 ballast</li> <li>• Overall fixture efficiency must exceed 80% and a minimum of 15% of the zonal lumens between 60 and 90 degrees</li> <li>• 2x4, 2x2 and 1x4 fixtures are eligible</li> <li>• Must be a new fixture incorporating advanced lighting distribution and glare control features</li> </ul>
HIF	High intensity fluorescent 	\$15	<ul style="list-style-type: none"> <li>• T5, T5HO, and high performance T8 systems are eligible</li> <li>• Each unit must have a wattage greater than 125 W</li> <li>• Must be installed in areas with ceiling heights of 15 feet or greater</li> <li>• 1 unit = 1 fixture with 3-12 lamps</li> <li>• Overall fixture efficiency must exceed 80%</li> </ul>

(continued on page 3)

**Lighting System Incentive Table** *(continued from page 2)*

Measure Code	Measure Description	Incentive/ Fixture	Eligibility Criteria
DLED	LED downlights	\$20	<ul style="list-style-type: none"> <li>Product must be on the ENERGY STAR® or DesignLights Consortium qualified products list</li> <li>Recessed-, surface- and pendant-mounted LED downlights are eligible for incentives</li> <li>Linear (1x4, 2x4, 2x2) fixtures are not eligible under this measure</li> </ul>
LMPLED	LED screw-in and pin-based lamps	\$10	<ul style="list-style-type: none"> <li>Product must be on the ENERGY STAR® or DesignLights Consortium qualified products list</li> <li>Screw- or pin-based LED lamps are eligible</li> </ul>
LBLED	LED low-bay fixtures (garage & canopy)	\$100	<ul style="list-style-type: none"> <li>Product must be on the ENERGY STAR® or DesignLights Consortium qualified products list</li> <li>Fixtures are required to be installed in 4,380 hours applications</li> </ul>
WLED	LED wallpacks	\$75	<ul style="list-style-type: none"> <li>Product must be on the ENERGY STAR® or DesignLights Consortium qualified products list</li> <li>Fixtures are required to be installed in 4,380 hours applications</li> </ul>
STAIR	Bi-level Stairwell Lighting	\$50	<ul style="list-style-type: none"> <li>T5, T5HO, and high performance and reduced wattage T8 systems are eligible</li> <li>The ratio of full wattage to low-level (standby) wattage must exceed 3:1</li> <li>The fixtures must have a fail-safe feature to switch to 100% light level if sensor is damaged</li> <li>Installation must comply with all national and local safety codes for stairwell illumination</li> <li>This measure is eligible in: hospitals, hotels, any building with at least 5 floors and elevators</li> </ul>

## Lighting System Data Collection Table

### Guidance for Space Type and Space Area columns:


- **Space Type** describes the use of the space where the fixtures are being installed. Examples include office, retail, warehouse, hospital, gymnasium, hotel, library, parking garage, religious, school, and so on. Please select the best example descriptor available or provide an alternative that better describes the use of the space. Specific identifying information (e.g., "4th Floor Office") is also encouraged as available to keep the application orderly for reference purposes.
- **Space Area** is the square footage attributable to the space type selected. This value will be different than whole building square footage if your building has multiple space types or if you are applying for only a portion of a total building area.
- **Building-Area Method:** If the project encompasses an entire building OR one or more distinct spaces that can be described using building-area descriptors (e.g., warehouse and office), please indicate the space type or types at left and enter the relevant lighting information at right on as many lines as necessary, attributing lighting to a space type using arrows as in the example below.
- **Space-by-Space Method:** If the project area encompasses one or more spaces that do not constitute the entirety of a typical building or space, please indicate space type or types at left and enter the relevant lighting information at right on as many lines as necessary, attributing lighting to a space type using arrows as in the example below. Space by space typically applies to multi-use or unique buildings.

### Guidance for Device Description:

- **Please list all fixtures** that contribute to lighting in each space identified in the Space Types and Space Areas columns. This includes fixtures that do not qualify for incentives. This information is required to calculate internal metrics and will not affect your incentive. When entering information related to non-qualifying fixtures, enter "Non-qualified" in the Measure Code field and leave the Incentive fields blank.
- **Device Description** should include fixture type (fluorescent, CFL, LED, etc.), lamps/fixture, and other relevant information related to size, wattage, and ballasts.

Line Item	Space Type	Space Area (square feet)	Measure Code (qualifying fixtures only)	Proposed System		Annual Hours of Operation	B Incentive/ Fixture (from Incentive Table)	Total Incentive (A x B)	
				Device Description	A Qty				
1	Warehouse	50,000	HIF	Fluorescent, 6-lamp, 4-foot, high-output T5 fixtures	80	2,600	\$15	\$1,200	
2	Office (Room 124)	2,000	HPT8-NF	Fluorescent, 2-lamp, 4-foot, 28W Super T8s, tandem 4-lamp instant start ballasts NLO	8	2,340	\$10	\$80	
3	↳	↳	HPT8-NF	Fluorescent, 3-lamp, 4-foot, 30W Super T8s, instant start ballasts NLO	10	2,340	\$10	\$100	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
(enter on page 1)								<b>Total Lighting System Incentive Requested</b>	<b>\$</b>

## Lighting Controls Incentive Table

Measure Code	Measure Description	Incentive/Control	Eligibility Criteria
OC-HIF	Fixture-mounted occupancy sensor	\$20	<ul style="list-style-type: none"> <li>Sensors must utilize passive infrared and/or ultrasonic technologies</li> <li>Must be installed on high-intensity fluorescents rated 125 W or greater</li> </ul>
OC-2	Remote-mounted occupancy sensor 	\$50	<ul style="list-style-type: none"> <li>Sensors must utilize passive infrared and/or ultrasonic technologies</li> <li>Wall switch-plate-mounted sensors are not eligible</li> <li>Installations must comply with manufacturer's guidelines on coverage and maximum controlled watts</li> <li>Remote mounted sensors configured as vacancy sensors are eligible</li> </ul>

## Lighting Controls Data Collection Table

• Annual Hours can be estimates based on expected occupancy of each space to be controlled by the sensor during typical daily or weekly operating patterns

Line Item	Location/Designation	Lighting Fixtures Controlled By Sensors			Measure Code	A Qty	Annual Hours of Operation (With Controls)	B Incentive/Control (from Controls Table)	Total Incentive (A x B)
		Device Description	Qty	Annual Hours of Operation (Without Controls)					
1	Paul's Office (Room 124)	Fluorescent, (2) 48" STD T5 lamp	3	2,340	OC-2	1	1,640	\$50	\$50
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
(enter on page 1)								<b>Total Lighting Controls Incentive Requested</b>	<b>\$</b>

EES-CI-efp-lightingncmr-form-1-v4  
6/14

