

Lighting

Retrofit Lighting
Overview

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We look forward to hearing from you

Please put all your questions into the questions section with this icon.



Q&A



Agenda

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Retrofit Lighting Tiers Overview

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Lighting Designer Incentive

3

Pre-Qualification Tool

4

New Controls Savings

5

In-depth on Three Lighting Tiers

Retrofit Lighting Tiers

	Tier	Requirements (see Incentive Cap Sheet full details)	Incentive Greater of	Incentive Not to Exceed
Best	High Performance (Tier 3)	Networked Lighting Controls *	\$0.65 / kWh/year OR \$1,000/ summer kW	65% of Installed Cost
Better	Enhanced (Tier 2)	LED** with Wirelessly Accessible Digital Controls	\$0.45 / kWh/year OR \$1,000/ summer kW	45% of Installed Cost
Good	Standard (Tier 1)	LED**	\$0.25 / kWh/year OR \$1,000/ summer kW	25% of Installed Cost

* System must be on DesignLights Consortium Networked Lighting Controls qualified products list (QPL)

** Product must be on DesignLights Consortium Solid State Lighting qualified products list (QPL) if covered

Lighting Designer Incentive (LDI) Energy Opportunities (Retrofit)

Lighting Retrofit Tier	LDI Incentive	Maximum Project LDI Total \$ Cap*
Tier 3 (High Performance)	\$0.06 / lighting kWh saved/year	\$5,000
Tier 2 (Enhanced)	\$0.04 / lighting kWh saved/year	\$5,000
Tier 1 (Standard)	\$0.02 / lighting kWh saved/year	\$5,000

* LDI is calculated and capped separately from the core lighting scope of work that uses lesser of \$/kWh OR % of cost

LDI Requirements

- Use LED products rated/listed by DesignLights Consortium and/or EnergyStar
- Use lighting designer with valid LC, CLEP, CLD, or IALD Professional credentials; who must design, engineer, or install lighting (not just sell the LEDs)
- Maintain recommended light levels per IESNA 10th Edition Handbook or Design Guides
- Generate and deliver lighting layout diagram and foot-candle distribution information for design (max:min illuminance, uniformity)



Pre-Qualification Tool for Lighting Projects



Eversource Only

Traditional Approach

- Use Data Collection spreadsheet
- Attach DLC screen shots
- Attach product spec sheets

Database Approach (online portal)

- Use pre-qualification tool (currently Amplify) is highly recommended
- Benefits:
- Pull from database of DLC/Energy Star listed products
 - No DLC screen shots or specs needed
 - Reduces error
 - Faster turnaround

Pre-Qualification Tool for Lighting Projects

Measures

Estimate: Berlin Office

Space Name: Oscars Office

Configured Spaces [Add](#)

[Copy](#) Sort: A-Z or As Entered

- Office 1
- Office 2
- Allens Office
- Lobby
- Shipping
- Oscars Office**

- Office 1
- Office 2
- Allens Office
- Lobby
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- Oscars Office

[Add New]

Existing	Qty	Q	i	
Proposed	Qty	Trim Pct	Q	i

[Save](#) [Cancel](#)

Occupancy Sensor

Quantity

Vacancy Sensor

Dimming Level (%)

Revised Lighting Instructions

"Description Before"	<i>For existing LEDs being replaced: List the LED manufacturer and model number.</i>	
	Examples:	<i>Acme LED Co. - 24ABC Troffer</i>
"Annual Hours Before"	<i>If the area has existing occupancy sensors, reduce hours to reflect the current "on" time.</i>	
"Item Type"	New Fixtures w/ LLLC or NLC – New unit which includes Luminaire-Level Lighting Control (LLLC) capability or is controlled by Network Lighting Controls (NLC) system.	
	TLED Type C – Linear Replacement Lamp which requires rewiring of the existing fixture to replace the ballast with a new external driver.	

- New directions for LED to LED retrofit and projects with existing occupancy sensors
- New Item Types

Revised Lighting Controls Factors



Controls Technology	Savings Factor
Networked Lighting Controls (NLC)	49%
Luminaire-Level Lighting Controls (LLLC)	49%
Combination of Occupancy and Daylight Sensors	38%
Combination of High-End Trim and Daylight Dimming	35%
Combination of High-End Trim and Occupancy Sensors	33%
High-End Trim	27%
Daylight Dimming	28%
Occupancy Sensors	24%

Changes –

New lighting controls savings factors

Note –

Savings Factor is taken from proposed LED wattage after retrofit

High Performance Lighting



Network Lighting Controls

DLC NLC Requirements	Additional Utility Program Requirements
<ul style="list-style-type: none">• Networking of Luminaires and Devices• Occupancy Sensing• Daylight Harvesting/Photocell Control• High-End Trim• Zoning• Luminaire and Device Addressability• Continuous Dimming• Cybersecurity	<ul style="list-style-type: none">• Energy Monitoring – 6 months data• Load Shedding (Demand Response)

High Performance Energy Monitoring Report

Energy Report Format

Building Summary

Site Name	Business Hours	Gross Floor Area	System kW
<i>Example Site</i>	<i>8am-6pm</i>	<i>25,000</i>	<i>17.5 kW</i>

Energy Data Table

Time Period	Area Name	Zone Name	Quantity of Luminaires in Zone	Max Power Without Controls	Hours On	kWh in Time period	High End Trim	Occupancy Sensor	Daylight Harvesting
			#	Watts	Hours	kWh	%	Y/N	Y/N

Enhanced Performance Lighting

Minimum of:

One Control Strategy per Fixture

Two Control Strategies across the Whole Project

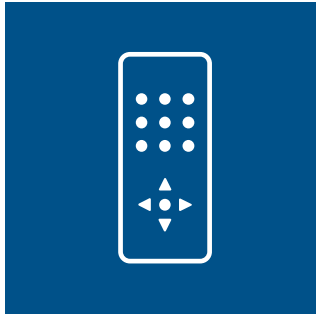
Possible Control Strategies:

Occupancy Sensors

Daylight Harvesting

High End Trim

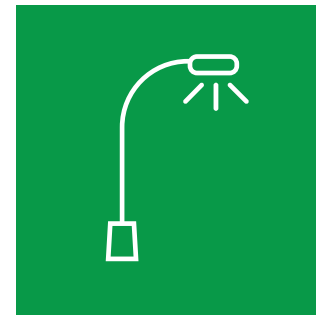
Tier 2 – Enhanced Performance Lighting



Controlled LEDs need digital control & wireless accessibility to initialize, configure, & commission



All LED products used must be on DesignLights Consortium (DLC) Qualified Products List (QPL)



80% of project load must be controlled LED fixtures



Group LED fixture control acceptable; individual fixture control optional

Group maximum size guidance of 300W connected LED luminaire load within the same physical space and/or control zone $\leq 1,000$ sq. ft. controlled as a group

Digital Control & Wireless Accessibility to Initialize, Configure, Commission

1

Variety of digital & wireless control systems/layouts can qualify; use “remotes” or “apps” etc.

2

Access to: set daylight threshold/sensitivity; standby dim level; hold/delay time; etc.

3

Can be “individual fixture level” access; using LEDs with LLLC or other means

4

Can be “room/group level” access; e.g. use some form of “room controller” for wireless

5

May have option now/later to scale to multi-room network with router/gateway/bridge

Standard Lighting



No Controls Requirement



Use Midstream or Express Rebate Form Where Applicable

Eversource CT

- TLED Type A & B:
 - Not allowed in large C&I
 - Allowed in Midstream or Express Rebate

UI

- TLED Type A,B, & C - OK



Questions

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Thank you

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