

2019



April 1 - 3 • St. Louis, MO

STAKEHOLDER MEETING



2019



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Networked Lighting Control (NLC) Application Process Breakout Session



NLC Technical Requirement

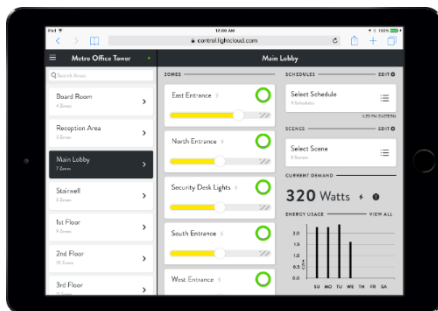


Scope of NLC Technical Requirement

Yes

Networked Lighting Control (NLC)

A combination of sensors, network interfaces, and controllers that affect changes to luminaires



Acuity, Enlighted, Philips, RAB

No

Luminaires

Addressed separately by the DLC's
Solid-State Lighting (SSL)
Qualified Products List (QPL)





Structure of Technical Requirement

“Required”

Capabilities that systems must have, to be listed on the QPL.

QPL describes characteristics.

“Reported”

Capabilities that are not required.

If present, QPL describes characteristics.



'Required' System Capabilities

- *Networking of Luminaires & Devices*
- *Occupancy Sensing*
- *Daylight Harvesting*
- *High-End Trim*
- *Zoning*
- *Luminaire and Device Addressability*
- *Continuous Dimming*
- *Energy Monitoring*

Table 1

**Interior
Lighting
Systems**

'Required' Interior System Capabilities	'Reported' Interior System Capabilities
<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• Energy Monitoring	<ul style="list-style-type: none">• Control Persistence• Scheduling• Device Monitoring / Remote Diagnostics• Type of User Interface• Luminaire Level Lighting Control (LLLC, integrated)• Personal Control• Load Shedding (DR)• Plug Load Control• Emergency Lighting• Cybersecurity• Color Changing / Tuning• Ease of Implementation• Scene Control• Interoperable

Table 2

Exterior Lighting Systems

'Required' Exterior System Capabilities

- Networking of Luminaires and Devices
- Occupancy Sensing AND/OR Traffic Sensing
- Daylight Harvesting / Photocell Control
- High-End Trim
- Zoning
- Luminaire and Device Addressability
- Continuous Dimming
- Scheduling
- Energy Monitoring

'Reported' Exterior System Capabilities

- Control Persistence
- Device Monitoring / Remote Diagnostics
- Type of User Interface
- Load Shedding (DR)
- Emergency Lighting
- Cybersecurity
- Color Changing / Tuning
- Ease of Implementation
- Scene Control
- Interoperable



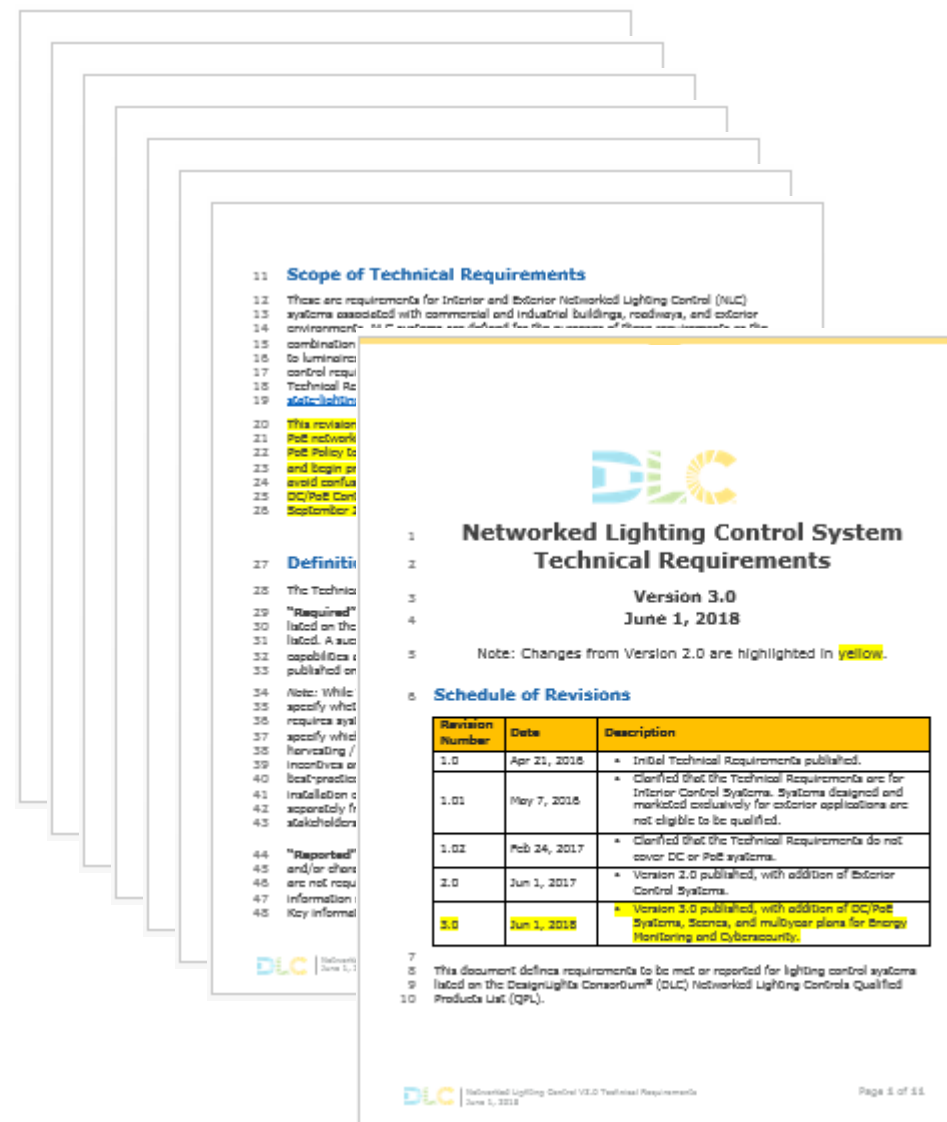
Table 3: Capability & Requirement Definitions

Row	Capability	Definition
1	Networking of Luminaires and Devices	The capability of individual luminaires and control devices to exchange digital data with other luminaires and control devices on the system. This capability is required at the room, space, or area level, but not at the whole building level or beyond (e.g. non-lighting systems, or the internet).
2	Occupancy Sensing	The capability to affect the operation of lighting equipment based upon detecting the presence or absence of people in a space or exterior environment. Exterior systems must include either Occupancy Sensing or Traffic Sensing. They may include both, but that is not required.
...		
23		



Technical Requirement

- Annual revisions
- Version 4 release early June
- 13 pages





Networked Controls Revision Cycle

Technical Requirement
revised annually every June 1

Revision process begins every January to
allow time for stakeholder input

One Year Grace Period:
re-apply under last year's version.





New Application & Annual Renewal in June

If you apply before June (with V3), update with V4 re-application in June

If you draft a partial application before June, switch to V4 in June

One Year Grace Period:
re-apply under last year's version.





Application




← → ↻

Secure | <https://www.designlights.org/lighting-controls/qualify-a-system/>

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Solid State Lighting **Lighting Controls** Current Efforts News and Events Resources

Qualify a System

Search for qualified lighting products by n 🔍 [Advanced Search](#)

Lighting Controls

Download the QPL


» Qualify a System

System Definitions

Technical Requirements

Application Instructions

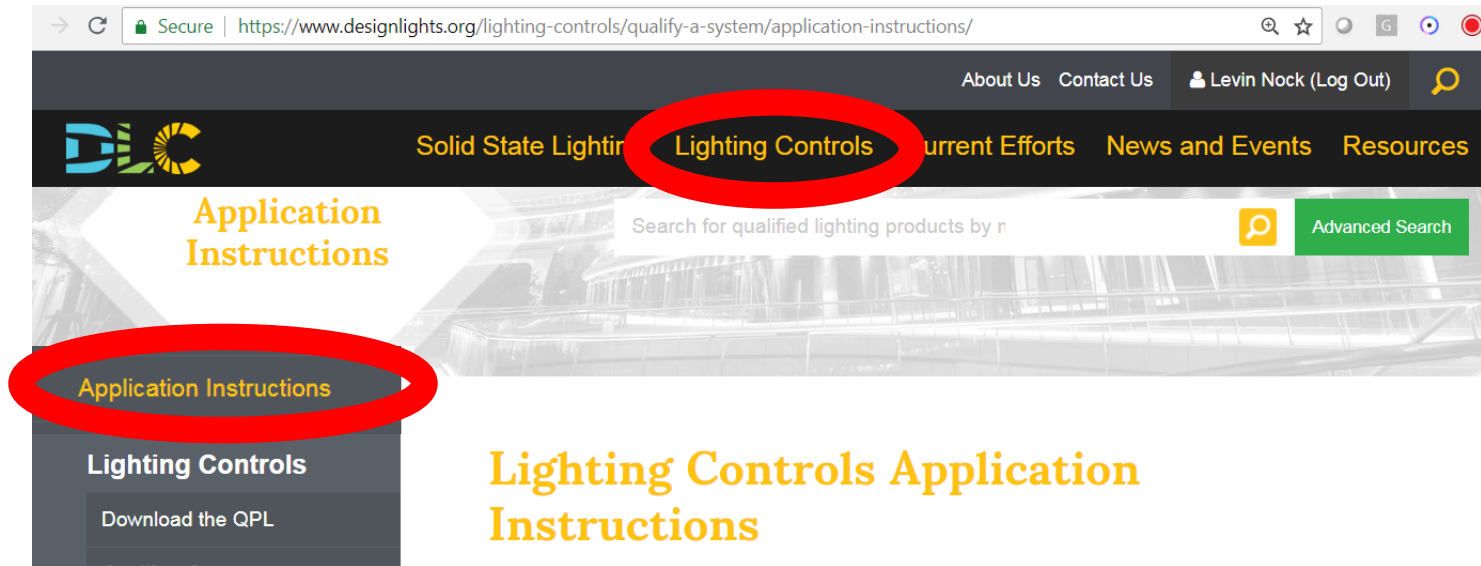
Revision Schedule and Listing Fees

System Definitions

Qualify a System

The Networked Lighting Controls QPL Application Review Process

The Networked Lighting Controls application review process begins with an initial review of the application for system eligibility and completeness, followed by invoicing/payment, and then a detailed review before the system can be listed. See the system requirements and application instructions below for full details.

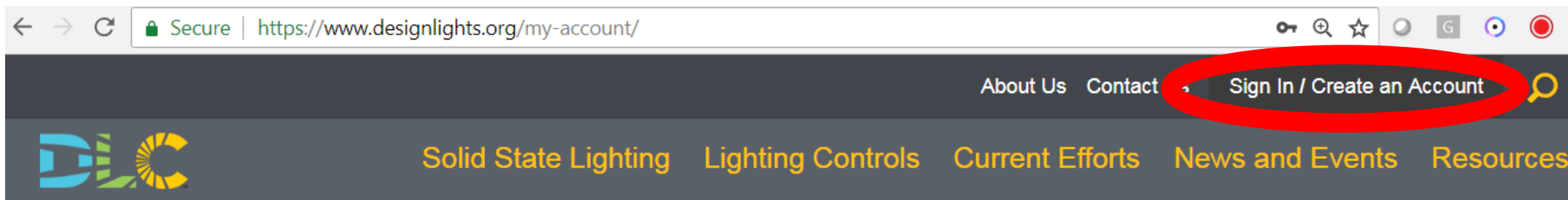


1. If you have not done so already, create your manufacturer log-in.
2. Download and complete the Application Form below
3. Create a new Lighting Controls System Application in your manufacturer account.
4. Go to the Documents tab of your application and upload ALL required documentation



Application Instructions (continued)

5. Submit the application
6. Receive invoice from DLC and make payment
7. The DLC will provide feedback on the status of your application



Log In

Log in here to access your DLC account, manage your saved searches and QPL downloads, and submit QPL applications. **As of December 18, 2017, Lighting Controls applications must be submitted through the new Application Portal, accessible by logging in here. For instructions on setting up your account, [click here](#).**

Sign Up & Request Approval

Please fill out the form below to create a new DLC account. You may use this account to save QPL search criteria, download QPL searches, and submit and manage your QPL applications.



← → ↻ Secure | https://www.designlights.org/Slatwall/?slatAction=ams:main 🔍 ☆ ⌵ G

About Us Contact Us 👤 Levin Nock (Log Out) 🔍

DLC Solid State Lighting Lighting Controls Current Efforts News and Events Resources

My Account Dashboard **Applications** QPL D+R International Account Info

Saved Searches

My Applications

This page lists all QPL applications created by your organization. Search by Application Name or Application Code. Additional options to filter results are available to the right of the search bar.

To create a new application, click the green “Create Application” button.

To view or edit application details, click the “eye” icon to the left of the application. To view all applications in the list, you may download the details into Excel by clicking the “Export” button below the filter option.

You may also revise how application information displays in the table below. Click the “table” icon to the right of the search bar. Click “Add Display Field” for options. Select from the drop-down menu and click “Save & Add Another.” You may also reorder the selected fields by dragging and dropping the row within the “Display Options” list.

Levin Nock Applications

All Applications

+ Create Application



Networked Lighting Control Application v.3.1, Published 06/25/2018
For the most recent version of this application, visit www.designlights.org

Instructions

The "Application" worksheet contains 24 topics. To complete the application, complete each topic that is relevant to your system.

References

Each answer that you provide in the column "Brief Answer for QPL", include a Reference in the adjacent column "Reference File Number(s), Page(s), Section(s)".

- **What to use as a Reference?** A Reference is a document such as a user manual or installation guide; CSI (Construction Specifications Institute) Specification; video clip or other, spec sheet for a product or Integrated Circuit (e.g. radio IC); etc. If a document is more than 2 pages long, include a page number reference.
- **Rename Documents:** As you collect documents into a folder that you will include with the application, rename each one with a number in front, 01-99. For instance, if the first document that you add to the folder is called "UserManual.pdf", rename it as "01-UserManual.pdf". Then, when you provide each Reference in the "Reference File Number(s) and Page(s)" column, refer to the document number. For instance, a reference to p.5 of the UserManual would be "01p5", or if you prefer, "01-UserManual p5".
- **No Nicknames:** Do NOT use 'nicknames' for files. File nicknames may add extra iterations of corrections, and extend the review time. For instance, if the filename is "01-UserManual", please do not call it "Operators guide" or other description that does not match the actual filename.
- **Be specific:** Reviewers will use each Reference to verify that the answer provided for the QPL matches a specific part of a Reference document. For a quick review, use specific References, such as "17p3, third paragraph", or "21 minutes 5-7" for a video clip. If we don't see an answer in your documents, then we can't put the answer in the QPL.
- **Many rows, same reference:** Sometimes a series of rows all share the same reference document and page number. You are welcome to list the document and page number in the first row of a series like this, then use 'see above' or a quotation mark ' "' (which means 'see above') as references on the following rows that share the same reference.

Interior and Exterior: The "I,i,E,e" columns refer to Interior and Exterior. "Required" capabilities are marked with capital letters "I,E". For these rows, a particular answer (usually 'Yes') is required. For questions with lower case letters "i, e", any answer is acceptable, provided that it is supported by a reference document.

Other Columns: Columns S,V and W are used by DLC during the review process. Column X marks a few rows where the answer will not be published on the QPL. These answers are for DLC internal use, to manage applications and to develop future versions of the application.


Expand and Collapse Rows: If you enable Macros, then you can collapse and expand the application rows by topic area. To expand a topic, left-click the "+" plus-sign in the lefthand margin. To collapse an expanded topic, left-click the bracket "[" or the "-" minus-sign in the lefthand margin. To expand all rows, left-click the "2" in the top left corner; and to collapse all rows, left-click the "1" in the top left corner.

On rare occasions, when a section is collapsed and expanded, the check boxes in Col M may disappear. If that occurs, please go back to the last version of the file that you saved, where the check boxes were intact. (So, saving the file frequently is recommended, as you work on it).



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1	2	C	D	E	F	G	H	M	N
		Required Interior reported interior	Required Exterior reported exterior						
	1						Questions	Brief Answer for QPL	Reference File Number(s), Page(s), Section(s)
+	73	I	E				1) Networking of Luminaires and Devices		
+	115	I	E				2) Occupancy Sensing		
+	123		E				3) Traffic Sensing		
+	141	I	E				4) Daylight Harvesting / Photocell Control		
+	149	I	E				5) High End Trim		
+	153	I	E				6) Zoning		
+	157	I	E				7) Luminaire and Device Addressability		
+	184	I	E				8) Continuous Dimming		
+	199	i					9) Control Persistence		
+	213	i	E				10) Scheduling		
+	357	i		e			11) Energy Monitoring		
+	380	i		e			12) Device Monitoring / Remote Diagnostics		
+	405	i		e			13) User Interface		
+	419	i		e			14) Luminaire Level Lighting Control, Integrated		
+	437	i					15) Personal Control		
+	461	i		e			16) Load Shedding (Demand Response)		
+	479	i		e			17) Plug Load Control		
+	570	i		e			18) External Systems Integration (e.g. BMS, EMS, HVAC, Lighting, API)		
+	578	i		e			19) Emergency Lighting		
+	592	i		e			20) Security		
+	602	i		e			21) Color Changing / Tuning		
+	611	i		e			22) Start-up and Configuration Party		
+	625	i		e			23) Scenes		
+	670	I	E				24) Manufacturer and System		
	671								



Instructions.

Application.

Presentation Outline.





	C	D	E	F	G	H	M	N
	Required Interior	reported interior	Required Exterior	reported exterior				Reference
1						Questions	Brief Answer for QPL	File Number(s), Page(s), Section(s)
16	i		e			Wired	<input type="checkbox"/>	
17	i		e			Wireless	<input type="checkbox"/>	
18		i		e		For the networking components, describe briefly how software and firmware is upgraded and under what circumstance and/or frequency. (This question is for DLC internal use only, to guide development of future requirements. Not for publication on QPL).		
19	i		e			Edge devices		
20	i		e			Gateway (if part of the networking components)		
21	i		e			On-premises server/bridge (if part of the networking components)		
22	i		e			Cloud server		
23		i		e		What standards and/or protocols does the communication between the edge devices (luminaires, sensors) and their coordinator (gateway, server, or peer) comply with? (not including required regulatory communication standards such as FCC and IC).	Select all that apply	
24	i		e			3GPP	<input type="checkbox"/>	
25	i		e			3GPP2	<input type="checkbox"/>	
26			e			LTE-M/LTE-MTC/LTE Cat M1/eMTC	<input type="checkbox"/>	
27			e			NB-IoT	<input type="checkbox"/>	
28			e			LoRa	<input type="checkbox"/>	



Case Study or Customer Reference

- DLC will not share this contact with any other parties.
- Beta site with pre-production system is acceptable, provided it is not a manufacturer's or rep's facility.
- Each "Required Capability" demonstrated in the field



5 Year Warranty

- All hardware components of the system (not including software/server).
- A shorter standard warranty is acceptable if an extended warranty can be purchased to achieve 5 years
- The QPL will list the standard warranty length, and stipulate if an additional warranty must be purchased to meet the specification
- Why?
 - Reliable control systems & reliable savings for customers & utilities
 - Align with DLC SSL warranty requirements



System Overview Webinar

- System overview presented via webinar or in-person to DLC reviewers
- Purpose: Help DLC better understand system being qualified
- 1-2 hours
- Scheduled after Application Form received





Qualification and Listing Fee

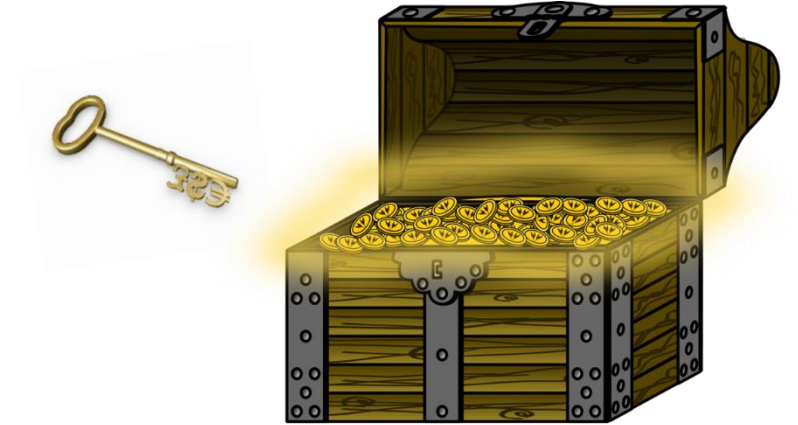
Standard Annual Qualification and Listing Fee: \$15,000

Applications Received	Single Interior or Exterior System	Family Member / Child System	Private Label System
June 1, 2018 – August 31, 2018	\$15,000	\$8,000	\$5,000
September 1, 2018 – November 30, 2018	\$12,000	\$7,000	\$5,000
December 1, 2018 – February 28, 2019	\$9,000	\$6,000	\$5,000
March 1, 2019 – May 31, 2019	\$6,000	\$5,000	\$5,000



Value of the Listing Fee

- Key to unlock incentives and rebates that can return several times the fee, on a few projects or even a single project.
- Broad marketing exposure across North America and beyond
 - The DLC Controls QPL webpage gets **1300+ hits** per month





Jan 2019 Updated Summary of NLC Programs


A screenshot of the DLC website's navigation menu and a list of resources. The navigation bar at the top is dark grey with orange text for the menu items: 'Horticultural Lighting', 'Lighting Controls', 'Current Efforts', 'News and Events', and 'Resources'. The 'Resources' item is circled in red. Below the navigation bar is a large yellow rectangular area containing a list of resource titles. The title 'Efficiency Member Incentive Program Summaries' is circled in red.

Horticultural Lighting Lighting Controls Current Efforts News and Events **Resources**

- The DLC Blog
- Energy Savings Potential of DLC Commercial Lighting and Networked Lighting Controls
- Efficiency Member Incentive Program Summaries**
- Energy Savings from Networked Lighting Control (NLC) Systems
- US DOE 2015 U.S. Lighting Market Characterization



~50 NLC Incentive/Rebate Programs

	A	B	C	D	E	F	G	H
1							NETWORKED LIGHTING CONTROLS	*Custom Rebate: Energy savings may vary by program
2								**Unit: What the rebate is calculated for
3								***Type: Calculation type
4								
5	DLC Member Programs	Region	State or Province	**Unit	***Type	Rate	Networked Lighting Controls Incentives	URL
6	BC Hydro	Canada	British Columbia				N/A	
7	Efficiency Nova Scotia	Canada	Nova Scotia				N/A	
8	Fortis BC	Canada	British Columbia				N/A	
9	Hydro Québec	Canada	Quebec				N/A	
10	Sask Power	Canada	Saskatchewan	Custom	kWh	\$ 0.08	*Custom Rebate	N/A
11	BGE	Mid - Atlantic	Maryland	Fixture	Fixed	\$ 40.00	DLC required. Wall/surface-mounted control cap: \$80.	https://bgesmartenergy.com/sites/default/files/2018-05/IC_Tech_Sheet_Lighting.pdf
12	DC SEU	Mid - Atlantic	Washington DC				N/A	
13	PECO	Mid - Atlantic	Pennsylvania	Sensor	WattsCtrl	N/A	Rate is \$0.0175/sq ft of area controlled. Automated central lighting control systems with override capabilities. Includes centrally-controlled time clocks, wireless on off switches, bi level switches, computer based controls, pre-set scene selection, dimmable ballasts and on-off dimmer switches for non-personal tuning. Floor plan must be submitted verifying square footage.	http://pecoci.programprocessing.com/k/Reference_Sheet
14	PSEG - LI	Mid - Atlantic	Long Island				N/A	
15	SMECO	Mid - Atlantic	Maryland	Fixture	Fixed	\$ 40.00	DLC required. Wall/surface-mounted control cap: \$80.	https://smecoretrofitlighting.programprocessing.com/ad/SMECO_CI_Tech_Sheet_Lighting_5
16	AEP Ohio	Midwest	Ohio	Square Foot	Fixed	\$ 0.75	\$0.75/sqft <12ft fixture height, \$0.3/sqft > 12 ft, outdoor standard controls incentive, 3 control strategies.	https://www.aepohio.com/global/utility/business/programs/AEPOhio/2018/2019/Catalog4-2019



Application Review Timeframes

- Time to review projected at 2-3 weeks from time manufacturer pays qualification/listing fee
- May be longer or shorter depending on:
 - Number of systems already in queue
 - Application Completeness
 - Responsiveness to questions that arise during application review
- DLC will provide an estimated review time once the fee is paid



Who should complete the application

- DLC recommends that the application be completed by a person with deep technical knowledge of the lighting system, such as a product manager or engineer
- This person should be readily available for duration of review process to answer technical questions from DLC



Application Materials

- **Application Instructions** – Step-by-Step instructions for qualifying a system
- **Application Form** – Form that must be completed to submit a system
- **Revision Schedule and Fee Structure:**
 - When and how often DLC will revise specification
 - Fee amounts associated with qualification and listing
 - Policies for when a system will be delisted
 - Policies for multi-vendor and private label solutions
- **Private Label Form**
- **Self-Certification Statement** – Certifies that the information you are providing us is accurate



Steps for a Smooth Process

- Add a number to the beginning of each reference file name
- Provide an appropriate reference for each answer, with document number and page number(s), e.g. R12p23
- Provide clear information in the original application, or soon thereafter, for contacts who can confirm field site operation and commercial availability
- Timely scheduling of webinar(s) with the DLC
- Timely responses to requests from the DLC for more information
- Timely invoice payment



Questions?

Webinar for DLC, Outline Part 1

- Overview of the system you are submitting
- System name, type, architecture, communication platform
- When the system became commercially available
- Information on installations to date
- What markets and customer types are being targeted
- How the system implements the required DLC capabilities
- Overview of key system components
- How the system is installed
- Addressing barriers of complexity, cost, standardization, interoperability
- Ease of installation, wiring, start-up, commissioning
- Emergency Power Options

Webinar for DLC, Outline Part 2

- Overview of system start-up and commissioning:
- Who is responsible for commissioning
- Resources required for commissioning
- Overview of process & timing
- Grouping of luminaires
- Defining control zones
- Any auto-commissioning or learning features
- Default settings, any out-of-the-box features



Private Label Systems

- Private label systems that are identical to system previously qualified by an OEM can be qualified at a reduced fee (\$5,000)
- Private labeled applications can be submitted by the OEM or the new brand/organization
- In all cases, Private Label Agreement Form must be completed and signed by all organizations involved.