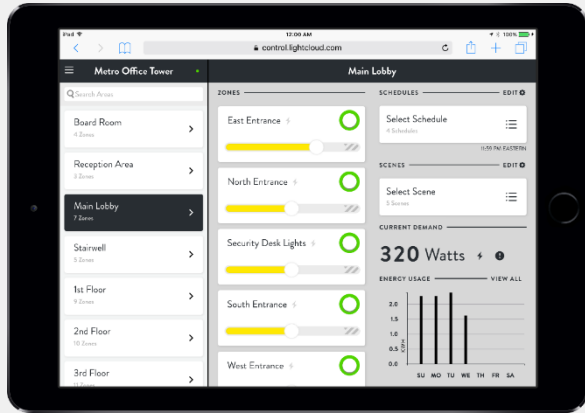




Selecting Appropriate Networked Lighting Controls (NLC)

Levin Nock, PhD

12/11/2019



Agenda



- Introduction to the DLC
- NLC getting easier
- New Online NLC Qualified Products List
- Choose appropriate NLC systems

Roles



**Levin
Nock**
Present



**Gabe
Arnold**
Support

Feedback

- Participants on mute
- Enter questions in the question box
- Gabe may interrupt with timely questions
- Answers will be available afterwards, with the webinar recording

Introduction to the DLC

What is the DesignLights Consortium?

- 76 member efficiency programs across North America
- DLC SSL requirements cover more than 10 million C&I electric accounts (2/3 of total)
- Members spent >\$1.8 billion on C&I efficiency rebates in 2018
 - Historically >50% lighting

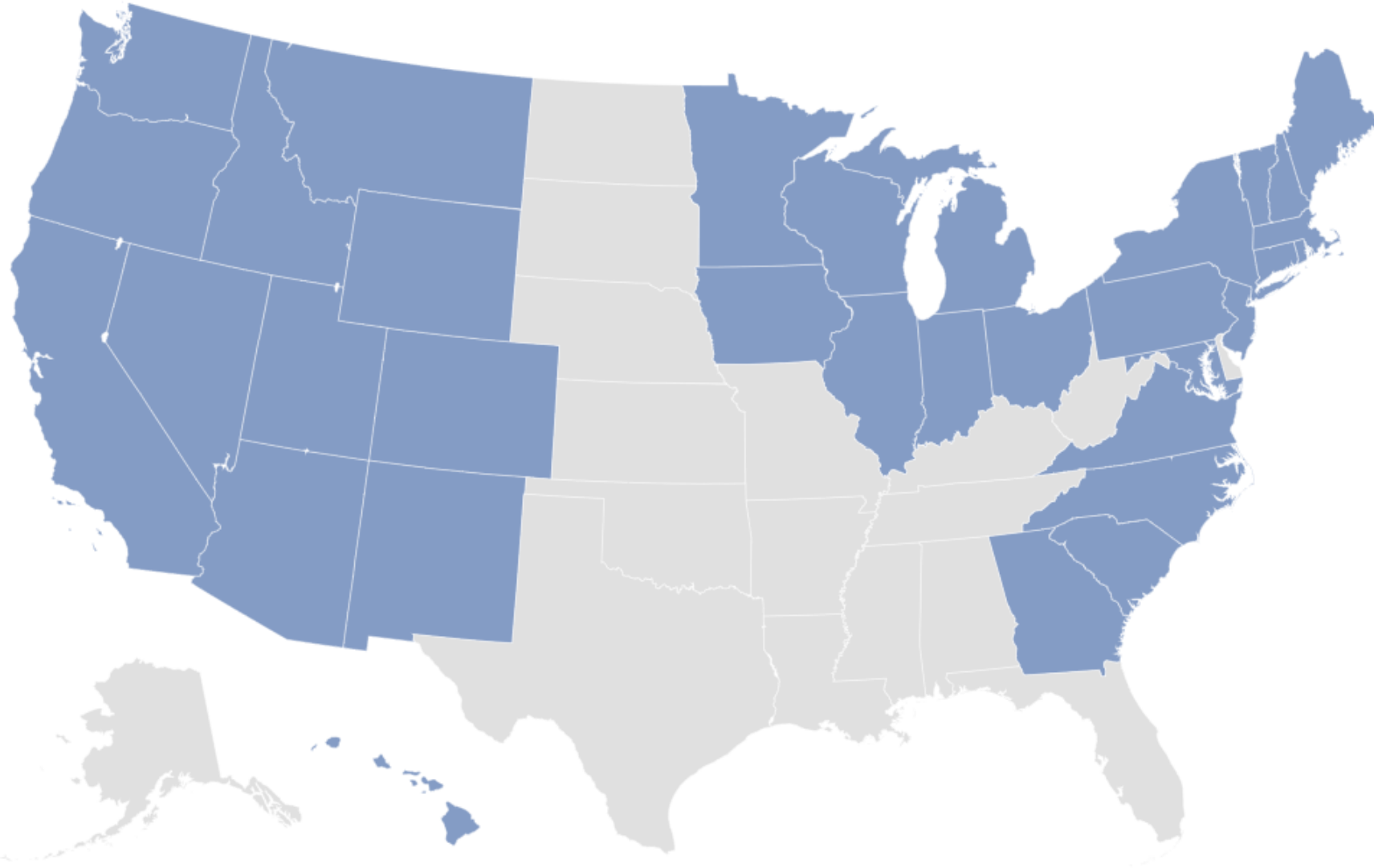


DLC Qualified Product Lists



	SSL Solid State Lighting	NLC Networked Lighting Controls	Horticulture
Launched	2010	2016	2019
Products	C&I LED luminaires, lamps, retrofit kits	Networked Lighting Control systems	Horticultural LED luminaires, lamps, retrofit kits
Products listed	Over 500,000	47	52
QPL visits	1000/day	1,000/month	1,500/month

US states where a majority of C&I electric accounts require DLC listing for SSL rebates



List of NLC Incentive/Rebate Programs

The image shows a screenshot of the designlights.org website. The browser's address bar at the top contains the URL "designlights.org", which is circled in red. The website's navigation bar includes the DLC logo on the left and several menu items: "Solid State Lighting", "Horticultural Lighting", "Lighting Controls", "Current Efforts", "News and Events", and "Resources". The "Resources" menu item is circled in red. Below the navigation bar, a list of resource links is displayed on a yellow background. The link "Networked Lighting Controls Efficiency Member Incentive Program Summaries" is circled in red. At the bottom of the page, there is a footer with the text "US DOE 2015 U.S. Lighting Market Characterization" and the DLC logo on the right.

designlights.org

About Us Contact Us Log In / Sign Up


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

The DLC Blog
Commercial & Industrial Lighting Lifetime and Peak Demand Analysis
Energy Savings Potential of DLC Commercial Lighting and Networked Lighting Controls
Solid-State Lighting Efficiency Member Incentive Program Summaries

Networked Lighting Controls Efficiency Member Incentive Program Summaries

US DOE 2015 U.S. Lighting Market Characterization

DLC

	A	B	C	D	E	F	G	H
1							NETWORKED LIGHTING CONTROLS	*Custom Rebate: Energy savings may vary based on utility's calc
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	Custom	kWh	N/A	In pilot phase. \$/kWh in 3 multiplication levels: Level 1- normal local controls-no multiplier; Level 2-NLC without energy monitoring-multiplier 1; Level 3-NLC including energy monitoring -multiplier 2	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/public/BGE_IC_Tech_Sheet_Lighting.pdf
12	DC SEU	Mid - Atlantic	Washington DC				N/A	
13	PECO	Mid - Atlantic	Pennsylvania	Sensor	WattsCtrl		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	http://pecoci.programprocessing.com/download/PECO_Quick_Reference_Sheet.pdf
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://smecoretrolighting.programprocessing.com/download/SMECO_CL_Tech_Sheet_Lighting_508.pdf
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	https://www.aepohio.com/save/business/programs/AdvancedLightingControls.aspx
17	Alliant Energy [Iowa]	Midwest	Iowa				N/A	
18	Ameren IL	Midwest	Illinois	Custom	kWh	\$ 0.10	*Custom Rebate	N/A

The DLC's Requirements for Networked Lighting Controls



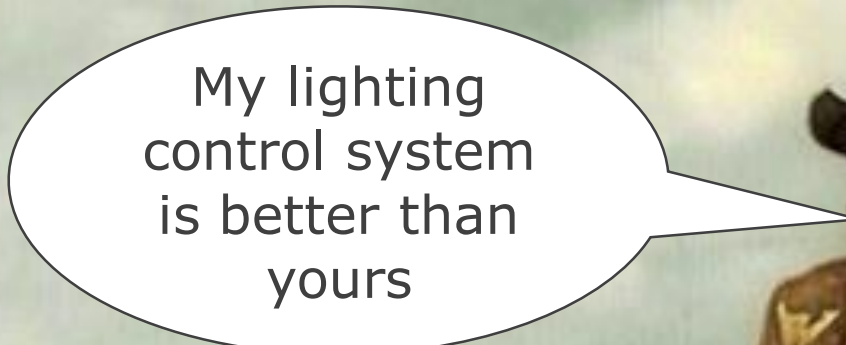
- Networking of Luminaires and Devices
- Occupancy Sensing
- Daylight Harvesting
- High-End Trim
- Zoning
- Luminaire and Device Addressability
- Continuous Dimming
- Energy Reporting (except room-level)





**DLC
Networked Lighting
Control
QPL**

Clarity and transparency for an industry without many formal standards



My lighting control system is better than yours



NLC Getting Easier

Three Technology Innovations that Reduce Cost and Complexity to Install

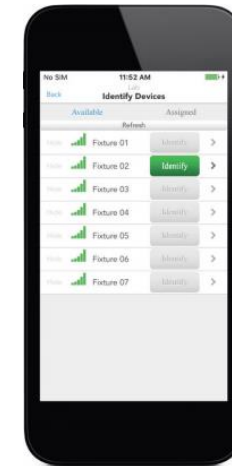
1. Integrated or “Embedded” Sensors and Controls (LLLC)



2. Wireless



3. Apps or Software to Configure & Operate



Limitations of the Past

Sensor Layout

Grouping/Zoning

Driver / Controller /
Sensor Compatibility

Control Strategy Design

Low-Voltage Control
Wiring

Complex Configuration



Available Today

Sensor per Luminaire

Auto-Grouping/Zoning

Pre-Installed, Pre-Wired,
Compatible

Pre-Programmed, Out-of-box

Wireless / Power over Ethernet
(PoE)

Simple Configuration w/
Automated Assistance

Integrated Power Meters in Sensors, Controllers and Drivers

New metering microchips embedded directly into lighting equipment



- Wireless Smart Sensor with built-in meter



- Wireless Fixture Controller with built-in meter



- LED Driver with built-in meter

Enlighted, Lutron, Philips



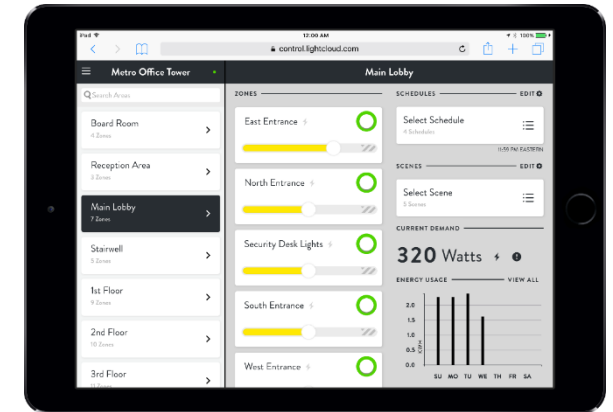
Microchip Technology, Inc.

**New Online
NLC QPL**



Learning Objective

Use the new online NLC QPL to find an appropriate NLC system for each of your projects





Online Search

Lighting Controls

Search for qualified lighting products by model, brand name, manufacturer



Advanced Search

Lighting Controls

Search the QPL

Download the QPL

Qualify a System

System Definitions

Technical Requirements

Application Instructions

Revision Schedule and Listing Fees

Case Studies

Training Programs

Networked Lighting Controls (NLC) Program

The DLC's Networked Lighting Controls (NLC) program is a suite of tools and resources to enable widespread adoption of Networked Lighting Controls in commercial buildings. Working in partnership with utilities, energy efficiency programs, and the lighting industry, the DLC will deploy the tools as lighting controls continue to gain traction in the market.

Networked Lighting Controls Qualified Products List

A Qualified Products List to compare networked lighting control systems and find systems eligible for utility incentives and rebates.



Search the QPL

Download the QPL


Qualify a System

Tile View: Details of Each System


Sort By +

Display As List 


FILTER RESULTS


 Clear All Filters

Manufacturer 


Technical Requirements Version Number 


Ease of Installation 

System Scope and Application 

Advanced Capabilities 

User Interface 

Integral Controls such as LLLC 

Wired or Wireless Communication 

Control System: SiteWorx Tune

Company: Digital Lumens, an
Osram Company

Brand: Digital Lumens

ProductID: N3I06AN7KFU

Technical Requirements Version: 3

Server: Cloud server required

Ease of Implementation: Factory representative
on-site, Factory representative on-site

**Communication with edge
devices:** Wireless

Scope/Scale: Interior

Summary

Network

Connectivity

Saving Energy

Control

Additional Capabilities

- ✓ Network [view details](#)
- ✓ LLLC [view details](#)
- ✓ Control Persistence [view details](#)
- ✗ External Systems Integration
- ✓ Energy Monitor [view details](#)
- ✗ Demand Response
- ✓ Occupancy Sensing [view details](#)
- ✗ Traffic Sensing
- ✓ Daylight Harvesting / Photocell Control [view details](#)
- ✓ High-End Trim [view details](#)
- ✓ Continuous Dimming [view details](#)

- ✗ Plug Load Control
- ✓ Scheduling [view details](#)
- ✗ User Interface
- ✗ Color Changing / Tuning
- ✓ Personal Control [view details](#)
- ✓ Remote Diagnostics [view details](#)
- ✗ Emergency Lighting Documentation
- ✗ Cybersecurity
- ✓ Zoning
- ✓ Individual Luminaire Addressability



Lighting Controls

Search Results:

Customize Columns +

Display As Tiles =

Sort By +

47

Results Per Page: 10 ▼

Download the QPL

FILTER RESULTS

Clear All Filters

Manufacturer +

Technical Requirements Version Number +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +

User Interface +

Integral Controls such as LLLC +

Wired or Wireless Communication +

Company	Brand	System	Product Scope	LLLC (Control + 2 Sensors)	
Acuity Brands	Acuity Controls	Xpoint	Interior	true	Show
Acuity Brands	Acuity Controls	nLight Air	Exterior	true	Show
Acuity Brands	Acuity Controls	nLight Air	Interior	true	Show
Acuity Brands	Acuity Controls	nLight	Interior	true	Show
Amatis Controls	Amatis Controls	Amatis Controls	Interior	false	Show
Autani, LLC	Energy Center	Energy Center	Interior	false	Show
Autani, LLC	Energy Center	Energy Center	Exterior	false	Show
Avi-on Labs, Inc.	Avi-on Lighting Control Platform	Avi-on Lighting Control Platform	Interior	false	Show



Lighting Controls

Search Results:

Customize Columns +

Display As Tiles =

Sort By +

47

Results Per Page:

- 10
- 10
- 20
- 50
- 100

Download the QPL

Clear All Filters

- Manufacturer +
- Technical Requirements Version Number +
- Ease of Installation +
- System Scope and Application +
- Advanced Capabilities +
- User Interface +
- Integral Controls such as LLLC +
- Wired or Wireless Communication +

Company	Brand	System	Product Scope	LLLC (Control + 2 Sensors)	
Acuity Brands	Acuity Controls	Xpoint	Interior	true	Show
Acuity Brands	Acuity Controls	nLight Air	Exterior	true	Show
Acuity Brands	Acuity Controls	nLight Air	Interior	true	Show
Acuity Brands	Acuity Controls	nLight	Interior	true	Show
Amatis Controls	Amatis Controls	Amatis Controls	Interior	false	Show
Autani, LLC	Energy Center	Energy Center	Interior	false	Show
Autani, LLC	Energy Center	Energy Center	Exterior	false	Show
Avi-on Labs, Inc.	Avi-on Lighting Control Platform	Avi-on Lighting Control Platform	Interior	false	Show

Filters

Ease of Installation

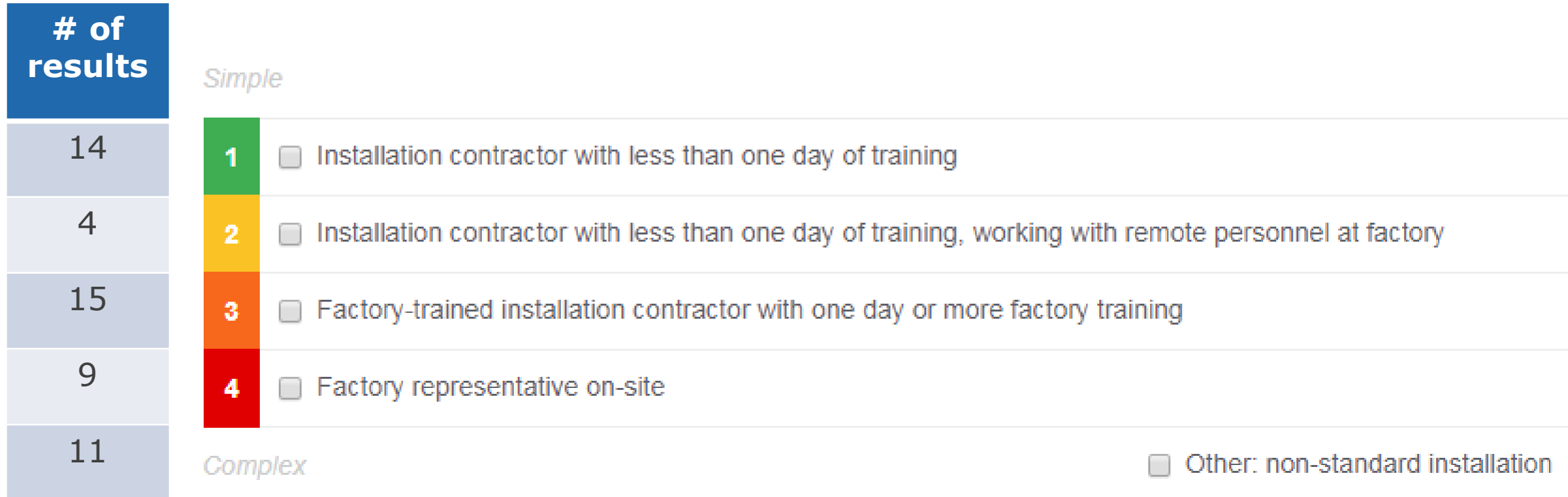
Simple

1	<input type="checkbox"/> Installation contractor with less than one day of training
2	<input type="checkbox"/> Installation contractor with less than one day of training, working with remote personnel at factory
3	<input type="checkbox"/> Factory-trained installation contractor with one day or more factory training
4	<input type="checkbox"/> Factory representative on-site

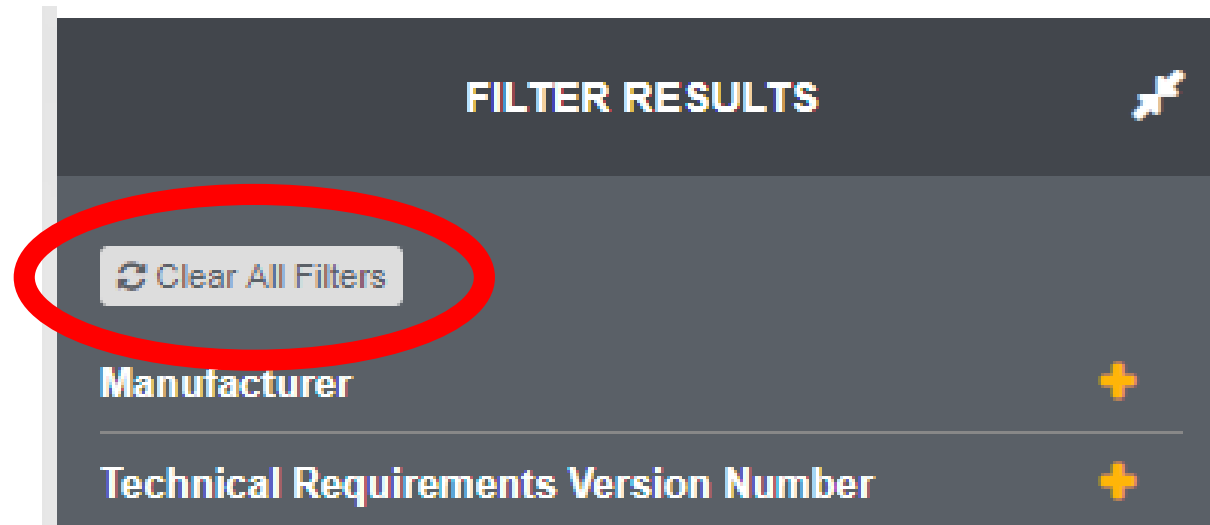
Complex

Other: non-standard installation

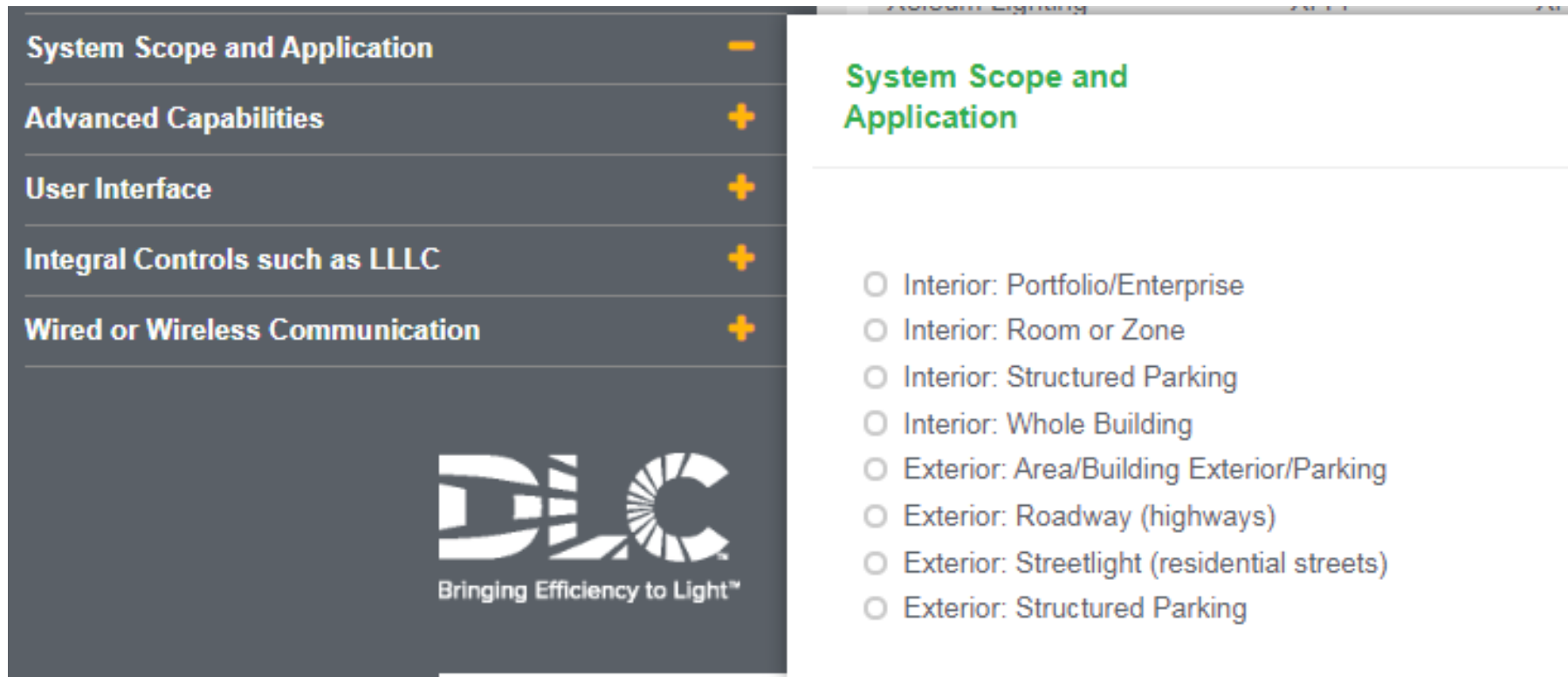
Ease of Installation (Implementation)



Clear All Filters



System Scope and Application



The image shows a screenshot of a software interface. On the left is a dark sidebar menu with the following items: 'System Scope and Application' (with a minus sign), 'Advanced Capabilities' (with a plus sign), 'User Interface' (with a plus sign), 'Integral Controls such as LLLC' (with a plus sign), and 'Wired or Wireless Communication' (with a plus sign). At the bottom of the sidebar is the DLC logo and the tagline 'Bringing Efficiency to Light™'. The main content area on the right has a white background and a green header 'System Scope and Application'. Below the header is a list of application scenarios, each preceded by an empty radio button:

- Interior: Portfolio/Enterprise
- Interior: Room or Zone
- Interior: Structured Parking
- Interior: Whole Building
- Exterior: Area/Building Exterior/Parking
- Exterior: Roadway (highways)
- Exterior: Streetlight (residential streets)
- Exterior: Structured Parking

Advanced Capabilities

- Cybersecurity
- Energy Monitoring
- Integration with API
- Integration with shading systems
- Instructions for wiring emergency power
- Integration with BACNet systems
- Demand Response Method
- Plug Load Control

User Interface

- App for Android
- App for IOS
- Color Changing/Tuning
- Remote Diagnostics
- Display existing system settings
- Does the system have the capability to report photosensor settings (adjustable input parameters) in a user interface?
- Floorplan approximated by graphic grid
- Floorplan upload
- Graphical User Interface (GUI)
- Personal control for each occupant's part of large open area
- Read and adjust settings
- Scenes
- Scheduling
- Wall mounted touch screen
- Web interface
- Web/mobile interface



Lighting Controls

Search Results:

Customize Columns +

Display As Tiles =

Sort By +

47

Results Per Page: 50

FILTER RESULTS

Clear All Filters

- Manufacturer +
- Technical Requirements Version Number +
- Ease of Installation +
- System Scope and Application +
- Advanced Capabilities +
- User Interface +
- Integral Controls such as LLLC +
- Wired or Wireless Communication +

Company	Brand	System	Product Scope
Acuity Brands	Acuity Controls	Xpoint	Interior
Acuity Brands	Acuity Controls	nLight Air	Exterior
Acuity Brands	Acuity Controls	nLight Air	Interior
Acuity Brands	Acuity Controls	nLight	Interior
Amatis Controls	Amatis Controls	Amatis Controls	Interior
Autani, LLC	Energy Center	Energy Center	Interior
Autani, LLC	Energy Center	Energy Center	Exterior
Avi-on Labs, Inc.	Avi-on Lighting Control Platform	Avi-on Lighting Control Platform	Interior

- Company
- Brand
- System
- Product Scope
- LLLC (Control + 2 Sensors)
- LLLC Sensor-driver Protocol
- LC (Control Only)
- API Protocol
- API Luminaire Data
- API Zone-level Data
- API System-level Data
- BMS Protocol
- BMS Luminaire Communication
- BMS Zone-level Data
- BMS System-level Data
- Case studies in North America
- Color Tuning
- Control Persistence
- Cybersecurity
- [Show More...](#)

Color Changing/Tuning Filter + Column sort

Search Results:

18

Results Per Page: 50 ▼

Search by model, brand name, or manufacturer

Customize Columns +

Display As Tiles =

FILTER RESULTS

Clear All Filters

Manufacturer +

Technical Requirements Version Number +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +

User Interface +

Color Changing/Tuning X

Integral Controls such as LLLC +

Wired or Wireless Communication +

System ◆ Company ◆ Product Scope ◆ Color Tuning ◆

CoreSync Molex Interior Color graphic display

Nexos Igor, Inc. Interior Select CCT

Vive Wireless Solutions Lutron Interior Select CCT

DLM Wattstopper / Legrand Interior Select CCT

PowerHUBB Hubbell Lighting Inc. Interior Select CCT

SmartCast Cree Lighting Interior Select CCT

ENCELIUM Extend OSRAM SYLVANIA Inc. Interior Select CCT, CCT graphic display

Avi-on Lighting Control Platform Avi-on Labs, Inc. Interior Select CCT, CCT graphic display

SMART BLU J2 Light Interior Select CCT, CCT graphic display

- Company
 - Brand
 - System
 - Product Scope
 - LLLC (Control + 2 Sensors)
 - LLLC Sensor-driver Protocol
 - LC (Control Only)
 - API Protocol
 - API Luminaire Data
 - API Zone-level Data
 - API System-level Data
 - BMS Protocol
 - BMS Luminaire Communication
 - BMS Zone-level Data
 - BMS System-level Data
 - Control Persistence in North America
 - Color Tuning
 - Control Persistence
 - Cybersecurity
- Show More...

Search Results:

18

Results Per Page: 50 ▼

FILTER RESULTS ✦

🔄 Clear All Filters

- Manufacturer +
- Technical Requirements Version Number +
- Ease of Installation +
- System Scope and Application +
- Advanced Capabilities +
- User Interface** +
 - Color Changing/Tuning x
- Integral Controls such as LLLC +
- Wired or Wireless Communication +

Company	System	Product Scope	Color Tuning
Molex	CoreSync	Interior	Color graphic display
Igor, Inc.	Nexos	Interior	Select CCT
Lutron	Vive Wireless Solutions	Interior	Select CCT
Wattstopper / Legrand	DLM	Interior	Select CCT
Hubbell Lighting Inc.	PowerHUBB	Interior	Select CCT
Cree Lighting	SmartCast	Interior	Select CCT
OSRAM SYLVANIA Inc.	ENCELIUM Extend	Interior	Select CCT, CCT graphic display
Avi-on Labs, Inc.	Avi-on Lighting Control Platform	Interior	Select CCT, CCT graphic display
J2 Light	SMART BLU	Interior	Select CCT, CCT graphic display
Hubbell Lighting Inc.	NX Distributed Intelligence	Interior	Select CCT, Keypad control
Acuity Brands	Xpoint	Interior	Select CCT, Select color
Acuity Brands	nLight	Interior	Select CCT, Select color
Enlighted Inc	IoT System	Interior	Select CCT, Select color, CCT graphic display
Lutron	Quantum	Interior	Select CCT, Select color, CCT graphic display
Enlighted Inc	IoT System	Exterior	Select CCT, Select color, CCT graphic display
Crestron Electronics	Crestron DALI	Interior	Select CCT, Select color, CCT graphic display, Color graphic display
Platformatics, Inc.	Platformatics	Interior	Select CCT, Select color, CCT graphic display, Color graphic display
Hubbell Lighting Inc.	wiSCAPE	Exterior	Select color

Showing 1 to 18 of 18 results

**Color Changing/Tuning
Filter + Column sort**

Integral Controls such as LLLC

Integral Controls such as LLLC -

Wired or Wireless Communication +

Integral Controls such as LLLC

- LLLC (Control + 2 Sensors)
- LC (Control Only)

Showing 1 to 11 of 11 results

Wired or Wireless Communication

Wired or Wireless Communication

- Wired (often used in new construction)
- Wireless (often used in lighting retrofits)
- PoE (Power over Ethernet, a type of Wired communication)

Wired or Wireless Communication

- Wired (often used in new construction)
- Wireless (often used in lighting retrofits)
- PoE (Power over Ethernet, a type of Wired communication)

Manufacturer filter checkbox for each selection

Search Results: Customize Columns + Display As Tiles =

5

Results Per Page: 10 ▼

FILTER RESULTS

Clear All Filters

Manufacturer +

Acuity Brands × Eaton ×

Technical Specification Section +

Number +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +

Company	Brand	System	Product Scope	LLLC (Control + 2 Sensors)
Acuity Brands	Acuity Controls	Xpoint	Interior	true
Acuity Brands	Acuity Controls	nLight Air	Exterior	true
Acuity Brands	Acuity Controls	nLight Air	Interior	true
Acuity Brands	Acuity Controls	nLight	Interior	true
Eaton	WaveLinx	WaveLinx Wireless Connected Lighting	Interior	true

Showing 1 to 5 of 5 results

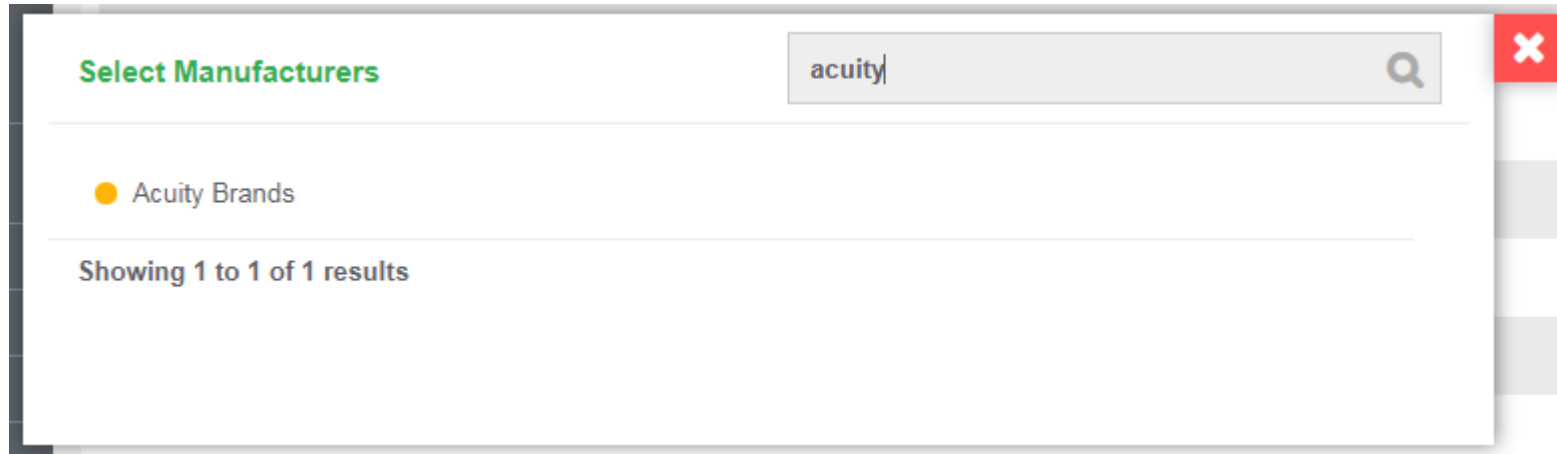
Manufacturer filter checkbox for each selection

Select Manufacturers

acuity

● Acuity Brands

Showing 1 to 1 of 1 results

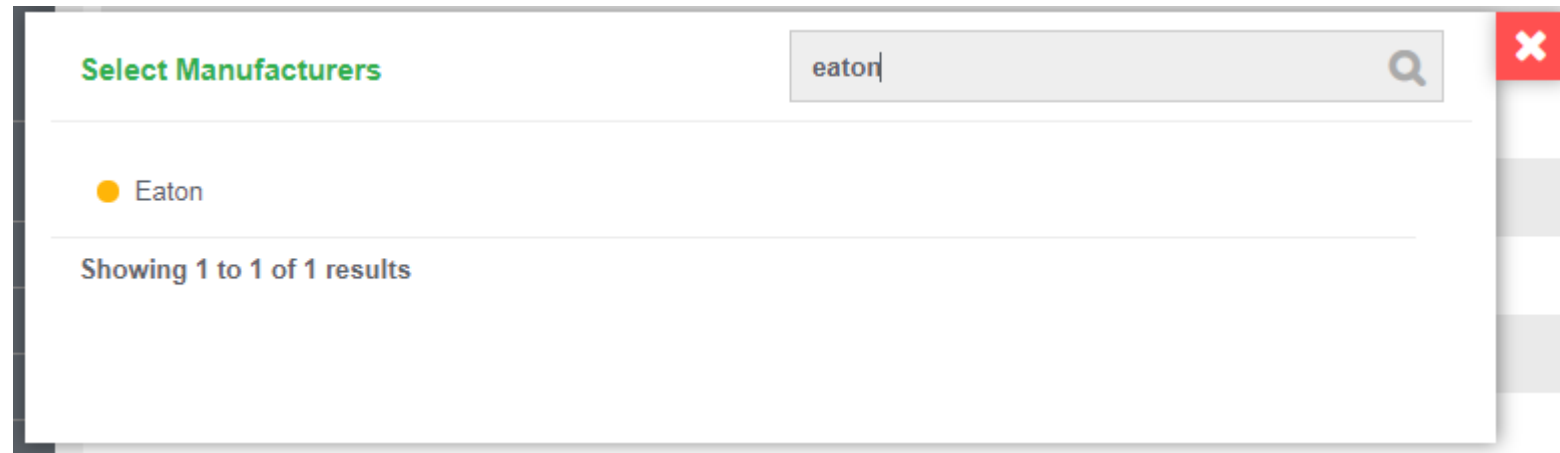
A screenshot of a web application's manufacturer selection dropdown menu. The title is "Select Manufacturers" in green. A search input field contains the text "acuity" and has a magnifying glass icon. A red square with a white 'X' is in the top right corner. Below the search field, there is a single selection: a yellow circle followed by the text "Acuity Brands". At the bottom, it says "Showing 1 to 1 of 1 results".

Select Manufacturers

eaton

● Eaton

Showing 1 to 1 of 1 results

A screenshot of a web application's manufacturer selection dropdown menu. The title is "Select Manufacturers" in green. A search input field contains the text "eaton" and has a magnifying glass icon. A red square with a white 'X' is in the top right corner. Below the search field, there is a single selection: a yellow circle followed by the text "Eaton". At the bottom, it says "Showing 1 to 1 of 1 results".

Manufacturer filter menu auto-populates with each letter typed

The image shows a software interface with a filter menu on the left and a dropdown menu on the right. The filter menu is titled "FILTER RESULTS" and has a "Clear All Filters" button. The "Manufacturer" filter is selected and circled in red. The dropdown menu is titled "Select Manufacturers" and has a search bar containing the letter "a", also circled in red. The dropdown menu lists 15 manufacturers, each with a radio button next to its name. The list includes OSRAM SYLVANIA Inc., Avi-on Labs, Inc., Autani, LLC, Digital Lumens, an Osram Company, Nedap N.V., Amatis Controls, Acuity Brands, GE Current, a Daintree company, EnOcean, Eaton, Wattstopper / Legrand, Platformatics, Inc., RAB Lighting, Synapse Wireless, and IDEAL INDUSTRIES, INC. At the bottom of the dropdown menu, it says "Showing 1 to 15 of 15 results".

FILTER RESULTS

Clear All Filters

Manufacturer -

Technical Requirements Member +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +

User Interface +

Integral Controls such as LLLC +

Wired or Wireless Communication +

Company ▾ Brand ▾ System ▾ Product Scope ▾ LLLC (Control + 2 Se

Acuity Brands Acuity Controls Xpoint Interior true

Select Manufacturers

a

- OSRAM SYLVANIA Inc.
- Avi-on Labs, Inc.
- Autani, LLC
- Digital Lumens, an Osram Company
- Nedap N.V.
- Amatis Controls
- Acuity Brands
- GE Current, a Daintree company
- EnOcean
- Eaton
- Wattstopper / Legrand
- Platformatics, Inc.
- RAB Lighting
- Synapse Wireless
- IDEAL INDUSTRIES, INC.

Showing 1 to 15 of 15 results

DLC

Manufacturer filter menu auto-populates with each letter typed

The screenshot shows a web interface for selecting manufacturers. On the left is a dark sidebar with a filter menu. The 'Manufacturer' filter is currently expanded, indicated by a minus sign. Below it are several other filter categories, each with a plus sign: 'Technical Requirements Version Number', 'Ease of Installation', 'System Scope and Application', 'Advanced Capabilities', 'User Interface', 'Integral Controls such as LLC', and 'Wired or Wireless Communication'. At the bottom of the sidebar is the DLC logo with the tagline 'Bringing Efficiency to Light™' and a link 'About the DLC'. The main content area is titled 'Select Manufacturers' and features a search bar at the top right containing the letter 'L'. Below the search bar is a list of 26 manufacturers, each with a radio button for selection. The list includes: Autani, LLC; ThinkLite LLC; Hubbell Lighting Inc.; Xeleum Lighting; Molex; LG Electronics Inc.; Lutron; J2 Light; Signify (formerly Philips Lighting); Avi-on Labs, Inc.; Lutron Electronics Co Inc; Leviton; OmniSolu Technology Inc.; Digital Lumens, an Osram Company; Signify Holding; Amatis Controls; OSRAM SYLVANIA Inc.; LSI Industries; Cree Lighting; IDEAL INDUSTRIES, INC.; Enlighted Inc; RAB Lighting; Synapse Wireless; Wattstopper / Legrand; Platformatics, Inc.; and Crestron Electronics. At the bottom of the main area, it says 'Showing 1 to 26 of 26 results'. A red circle highlights the 'L' in the search bar, and another red circle highlights the 'Manufacturer' filter header in the sidebar.

Manufacturer -

Technical Requirements Version Number +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +

User Interface +

Integral Controls such as LLC +

Wired or Wireless Communication +

DLC
Bringing Efficiency to Light™

About the DLC

Select Manufacturers

L

- Autani, LLC
- ThinkLite LLC
- Hubbell Lighting Inc.
- Xeleum Lighting
- Molex
- LG Electronics Inc.
- Lutron
- J2 Light
- Signify (formerly Philips Lighting)
- Avi-on Labs, Inc.
- Lutron Electronics Co Inc
- Leviton
- OmniSolu Technology Inc.
- Digital Lumens, an Osram Company
- Signify Holding
- Amatis Controls
- OSRAM SYLVANIA Inc.
- LSI Industries
- Cree Lighting
- IDEAL INDUSTRIES, INC.
- Enlighted Inc
- RAB Lighting
- Synapse Wireless
- Wattstopper / Legrand
- Platformatics, Inc.
- Crestron Electronics

Showing 1 to 26 of 26 results

Customize Columns

Add "Network number of edge devices"

The screenshot displays the DLC website's search results page. At the top, a navigation bar includes the DLC logo and menu items: Solid State Lighting, Horticultural Lighting, Lighting Controls, Current Efforts, News and Events, and Resources. Below this, a banner for "Lighting Controls" is visible. The search results section shows "Search Results: 10" and a "Results Per Page" dropdown set to 10. A search bar contains the text "Search by model, brand name, or manufacturer". To the right of the search bar, two buttons are highlighted with red circles: "Customize Columns +" and "Display As Tiles =". Below the search bar, a "FILTER RESULTS" button is present. A list of filter categories is shown, including "Company", "Brand Name", "System", "LLLC", and "Network number of edge devices", with the latter highlighted by a red circle.

47

Results Per Page: 50

FILTER RESULTS

Clear All Filters

Manufacturer +

Technical Requirements Version Number +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +

User Interface +

Integral Controls such as LLLC +

Wired or Wireless Communication +

System	Company	Product Scope	Network
Xpoint	Acuity Brands	Interior	
nLight Air	Acuity Brands	Exterior	75
nLight Air	Acuity Brands	Interior	75
nLight	Acuity Brands	Interior	20
Amatis Controls	Amatis Controls	Interior	10
Energy Center	Autani, LLC	Interior	
Energy Center	Autani, LLC	Exterior	
Avi-on Lighting Control Platform	Avi-on Labs, Inc.	Interior	24
SmartCast	Cree Lighting	Interior	25
Crestron DALI	Crestron Electronics	Interior	64
Crestron Zum	Crestron Electronics	Interior	
SiteWorx Tune	Digital Lumens, an Osram Company	Interior	5
LightRules 3.3	Digital Lumens, an Osram Company	Interior	50

- Company
- Brand
- System
- Product Scope
- LLLC (Control + 2 Sensors)
- LLLC Sensor-driver Protocol
- LC (Control Only)
- API Protocol
- API Luminaire Data
- API Zone-level Data
- API System-level Data
- BMS Protocol
- BMS Luminaire Communication
- BMS Zone-level Data
- BMS System-level Data
- Case studies in North America
- Color Tuning
- Control Persistence
- Cybersecurity
- Demand Response Method
- Demand Response Open ADR
- Dimming Curve
- Dimming Protocol
- Energy Monitor Method
- Energy Data Export Method
- Network number of edge devices
- Network Interior Wireless Distance (ft)
- Network Protocol

Customize Columns: Case Studies

Search Results:
 47
 Results Per Page: 50

Search by model, brand name, or manufacturer

Customize Columns + Display As Tiles =

FILTER RESULTS

Clear All Filters

- Manufacturer
- Technical Requirements Version Number
- Ease of Installation
- System Scope and Application
- Advanced Capabilities
- User Interface
- Integral Controls such as LLLC
- Wired or Wireless Communication

Company	System	Product Scope	Case studies in North America
Wattstopper / Legrand	DLM	Interior	1) https://www.legrand.us/-/media/brands/wattstopper/resource_study_msk%20hospital.ashx2 https://www.legrand.us/-/media/study/ws_case-study_usgbc.ashx3 https://www.legrand.us/-/media/brands/wattstopper/resources
RAB Lighting	Lightcloud	Interior	Can be downloaded from: lightcloud.com/resources
RAB Lighting	Lightcloud	Exterior	Can be downloaded from: lightcloud.com/resources
Acuity Brands	nLight	Interior	Chicago School District Case Study http://www.acuitybrands.com/studies/district-59
Hubbell Lighting Inc.	NX Distributed Intelligence	Interior	Largo High School Largo, FL
LG Electronics Inc.	LG SENSOR CONNECT	Interior	Not available on the website
GE Current, a Daintree company	ControlScope	Exterior	Whitepapers and case studies available with separate drop d https://products.currentbyge.com/control-systems/daintree-en
GE Current, a Daintree company	ControlScope	Interior	Whitepapers and case studies available with separate drop downs, located at https://products.currentbyge.com/control-systems/daintree-enterprise-wireless-controls
OSRAM SYLVANIA Inc.	ENCELIUM Extend	Interior	http://assets2.osram-americas.com/im/img/us-dam-64501
Synapse Wireless	SimplySNAP Smart Lighting Solution	Interior	http://info.synapse-wireless.com/smart_lighting_case_studies
Synapse Wireless	SimplySNAP Smart Lighting Solution	Exterior	http://info.synapse-wireless.com/smart_lighting_case_studies
ThinkLite LLC	ThinkLite Pro	Interior	http://info.synapse-wireless.com/smart_lighting_case_studies
IDEAL INDUSTRIES,	AUDACY	Interior	http://www.audacywireless.com/content/pdfs/case-studies https://www.youtube.com/watch?v=KX9pzIFJI_E&t=19s ; https://www.youtube.com/watch?

- Company
 - Brand
 - System
 - Product Scope
 - LLLC (Control + 2 Sensors)
 - LLLC Sensor-driver Protocol
 - LC (Control Only)
 - API Protocol
 - API Luminaire Data
 - API Zone-level Data
 - API System-level Data
 - BMS Protocol
 - BMS Luminaire Communication
 - BMS Zone-level Data
 - BMS System-level Data
 - Case studies in North America
 - Color Tuning
 - Control Persistence
 - Cybersecurity
- Show More...

Hide the Filter Box to See More Columns

Search Results:

47

Results Per Page: 50 ▼

 Search by model, brand name, or manufacturer

Customize Columns +

Display As Tiles =


Sort By +



Scroll right to see additional columns → Download the QPL 

FILTER RESULTS



 Clear All Filters

Manufacturer +

Technical Requirements Version Number +

Ease of Installation +

System Scope and Application +

Advanced Capabilities +


User Interface +

System	Company	Product Scope	LLLC (Control + 2 Sensors)	Network Interior Wireless Distance (ft)	Network numb
Xpoint	Acuity Brands	Interior	true		
nLight Air	Acuity Brands	Exterior	true	600	750
nLight Air	Acuity Brands	Interior	true	600	750
nLight	Acuity Brands	Interior	true		20000
Amatis Controls	Amatis Controls	Interior	false	200	100

Filter and Columns for BACNet

Search Results:

 Search by model, brand name, or manufacturer


Customize Columns 

Display As Tiles 


37

Results Per Page: 50 


FILTER RESULTS

 Clear All Filters


Manufacturer 

Technical Requirements Version Number 

Ease of Installation 


System Scope and Application 






Advanced Capabilities 

Integration with BACNet systems 

User Interface 

Integral Controls such as LLLC 

Wired or Wireless Communication 


Company 	System 	Product Scope 	BMS Protocol 	BMS Luminaire Communication 
Wattstopper / Legrand	DLM	Interior	BACNet /IP, Contact closure, RS232	
RAB Lighting	Lightcloud	Interior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status, Luminaire/power pack status
RAB Lighting	Lightcloud	Exterior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status, Luminaire/power pack status
Acuity Brands	nLight	Interior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status, Luminaire/power pack status, Photocell Reading
Hubbell Lighting Inc.	NX Distributed Intelligence	Interior	BACNet /IP, Contact closure	
GE Current, a Daintree company	ControlScope	Exterior	BACNet /IP, MODBUS / RS-232 & RS-486	

- Company
- Brand
- System
- Product Scope
- LLLC (Control + 2 Sensors)
- LLLC Sensor-driver Protocol
- LC (Control Only)
- API Protocol
- API Luminaire Data
- API Zone-level Data
- API System-level Data
- BMS Protocol
- BMS Luminaire Communication
- BMS Zone-level Data
- BMS System-level Data
- Case studies in North America
- Color Tuning
- Control Persistence
- Cybersecurity
- [Show More...](#)


Hide the Filter Box to See More Columns

Search Results:

 Search by model, brand name, or manufacturer

Customize Columns 

Display As Tiles 

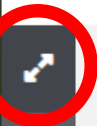
Sort By 










37

Results Per Page: 50 

Scroll right to see additional columns  Download the QPL 



Company 	System 	Product Scope 	BMS Protocol 	BMS Luminaire Communication 	BMS Zone-level Data 	BMS System-level Data 	
Wattstopper / Legrand	DLM	Interior	BACNet /IP, Contact closure, RS232		Light level, Occupancy status		Show
RAB Lighting	Lightcloud	Interior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status, Luminaire/power pack status	Energy usage, Light level, Manual override status, Occupancy status	Energy usage, Occupancy status	Show
RAB Lighting	Lightcloud	Exterior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status, Luminaire/power pack status	Energy usage, Light level, Manual override status, Occupancy status	Energy usage, Occupancy status	Show
Acuity Brands	nLight	Interior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status, Luminaire/power pack status, Photocell Reading		Lighting scene setting, Loadshed status	Show
Hubbell Lighting Inc.	NX Distributed Intelligence	Interior	BACNet /IP, Contact closure		Light level, Manual override status, Occupancy status, Lighting scene setting, Remote sensor data		Show
GE Current, a Daintree company	ControlScope	Exterior	BACNet /IP, MODBUS / RS-232 & RS-486		Control strategy, Light level, Occupancy status	Lighting schedule	Show
GE Current, a Daintree company	ControlScope	Interior	BACNet /IP, MODBUS / RS-232 & RS-486		Light level		Show
OSRAM SYLVANIA Inc.	ENCELIUM Extend	Interior	BACNet /IP, Contact closure, ZigBee		Light level		Show
Synapse Wireless	SimplySNAP Smart Lighting Solution	Interior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status	Control strategy, Energy usage, Light level, Manual override status, Occupancy status, Lighting scene setting, Remote sensor data	Energy usage, Lighting schedule, Lighting scene setting, Loadshed status, Occupancy status	Show
Synapse Wireless	SimplySNAP Smart Lighting Solution	Exterior	BACNet /IP, Contact closure, MODBUS / RS-232 & RS-486	Energy usage, Light level, Occupancy status	Control strategy, Energy usage, Light level, Manual override status, Occupancy status, Lighting scene setting, Remote sensor data	Energy usage, Lighting schedule, Lighting scene setting, Loadshed status, Occupancy status	Show

Scenarios

Room Level



Interior Enterprise/Portfolio



Room level, 1) Easy, LLLC, # of devices



Search Results:

6

Results Per Page: 50

Search by model, brand name, or manufacturer

Customize Columns + Display As Tiles = Sort By +

Download the QPL

FILTER RESULTS

Clear All Filters

Manufacturer +

Technical Requirements Version Number +

Ease of Installation +

System Scope and Application +

Interior: Room or Zone x

Advanced Capabilities +

User Interface +

Integral Controls such as LLLC +

LLLC (Control + 2 Sensors) x

Wired or Wireless Communication +

Company	System	Product Scope	Network number of edge devices	
Signify (formerly Philips Lighting)	EasySense	Interior	45	Show
Signify (formerly Philips Lighting)	SpaceWise	Interior	45	Show
J2 Light	SMART BLU	Interior	100	Show
Eaton	WaveLinx Wireless Connected Lighting	Interior	200	Show
Cree Lighting	SmartCast	Interior	250	Show
Acuity Brands	nLight	Interior	20000	Show

Showing 1 to 6 of 6 results

Room level, 1) Easy, LLLC, # of devices

Search Results:

6

Results Per Page: 50 ▼

FILTER RESULTS ✕

🔄 Clear All Filters

- Manufacturer +
- Technical Requirements Version Number +
- Ease of Installation +
- System Scope and Application +
Interior: Room or Zone ✕
- Advanced Capabilities +
- User Interface +
- Integral Controls such as LLLC +
LLLC (Control + 2 Sensors) ✕
- Wired or Wireless Communication +



Interior Enterprise, API, Color Changing, LLLC, API details



Search Results:

[Customize Columns +](#)
[Display As Tiles =](#)
[Sort By +](#)

5

Results Per Page: 50

Download the QPL

FILTER RESULTS

Clear All Filters

- Manufacturer
- Technical Requirements Version Number
- Ease of Installation
- System Scope and Application
 - Interior: Portfolio/Enterprise
- Advanced Capabilities
 - Integration with API
- User Interface
 - Color Changing/Tuning
- Integral Controls such as LLLC
 - LLLC (Control + 2 Sensors)
- Wired or Wireless Communication

System	Company	Product Scope	API System-level Data	API Zone-level Data	API Luminaire Data	API Protocol	
IoT System	Enlighted Inc	Interior				Java	Show
CoreSync	Molex	Interior	Lighting scene setting, Manual override status	Energy usage, Light level, Occupancy status, Lighting scene setting, Remote sensor data, User inputs	Energy usage, Light level, Occupancy status	JSON, REST	Show
nLight	Acuity Brands	Interior	Lighting scene setting, Loadshed status		Energy usage, Light level, Occupancy status, Photocell Reading	REST	Show
NX Distributed Intelligence	Hubbell Lighting Inc.	Interior		Light level, Lighting scene setting		RS232	Show
Xpoint	Acuity Brands	Interior	Lighting scene setting, Loadshed status		Energy usage, Light level, Occupancy status, Photocell Reading	REST	Show

Showing 1 to 5 of 5 results

Interior Enterprise, API, Color Changing, LLLC, API details

Search Results:

5

Results Per Page: 50 ▼

FILTER RESULTS

Clear All Filters

Manufacturer



Technical Requirements Version Number



Ease of Installation



System Scope and Application



Interior: Portfolio/Enterprise X

Advanced Capabilities



Integration with API X

User Interface



Color Changing/Tuning X

Integral Controls such as LLLC





LLLC (Control + 2 Sensors) X

Wired or Wireless Communication




Tile View

Tile View, Summary

Sort By  **Display As List** 

FILTER RESULTS

 Clear All Filters

Manufacturer

Ease of Installation

System Scope and Application

User Interface

Integral Controls such as LLLC

Wired or Wireless Communication

Advanced Capabilities

Technical Requirements Version Number

Control System: SiteWorx Tune

Company: Digital Lumens, an Osram Company
Brand: Digital Lumens
ProductID: N3I06AN7KFU

Technical Requirements Version: 3
Server: Cloud server required
Ease of Implementation: Factory representative on-site, Factory representative on-site

Communication with edge devices: Wireless
Scope/Scale: Interior

- Summary**
- Network
- Connectivity
- Saving Energy
- Control
- Additional Capabilities

- ✓ **Network** [view details](#)
- ✓ **LLLC** [view details](#)
- ✓ **Control Persistence** [view details](#)
- ✗ **External Systems Integration**
- ✓ **Energy Monitor** [view details](#)
- ✗ **Demand Response**
- ✓ **Occupancy Sensing** [view details](#)
- ✗ **Traffic Sensing**
- ✓ **Daylight Harvesting / Photocell Control** [view details](#)
- ✓ **High-End Trim** [view details](#)
- ✓ **Continuous Dimming** [view details](#)
- ✗ **Plug Load Control**
- ✓ **Scheduling** [view details](#)
- ✗ **User Interface**
- ✗ **Color Changing / Tuning**
- ✓ **Personal Control** [view details](#)
- ✓ **Remote Diagnostics** [view details](#)
- ✗ **Emergency Lighting Documentation**
- ✗ **Cybersecurity**
- ✓ **Zoning**
- ✓ **Individual Luminaire Addressability**

Tile View Network

Control System: IoT System

Company: Enlighted Inc
Brand: Enlighted
ProductID: NR31IRRK7LN

Technical Requirements Version: 2
Server: Either local or cloud server is required
Ease of Implementation: Factory representative on-site, Factory representative on-site

Communication with edge devices: Wired, Wireless
Scope/Scale: Exterior

Summary

Network

Connectivity

Saving Energy

Control

Additional Capabilities

Network

Network Size Limitations: Maximum 125 Sensors per Gateway; Maximum 1,500 Sensors per Energy Manager Server; Up to 18,000 Sensors per Enterprise Energy Manager Server.

Max devices per network: 125

Max devices per onsite system with central UI: 18000

Notes on max devices: Unlimited number of edge devices per cloud system

Max distance between nodes with obstructions (ft): 150

Max distance between nodes (ft): 150

Max distance between wired nodes (ft): 300

Wired and/or wireless communication with edge devices: Wired, Wireless

Local and/or cloud server: Either local or cloud server is required

Uses a gateway or bridge: Either local or cloud server is required

Compliance with Standards: Bluetooth Low Energy BLE, Proprietary IPv4

Control Persistence

Persistent control strategies: Occupancy sensing, Daylight harvesting, High end trim/ task tuning, Personal control, Local Manual Switch

LLLC

Luminaire Level Lighting Control: Yes

Luminaires and/or kits available with LLLC: Eaton/Cooper, Pinnacle Lighting, ILP, Finelite, Focal Point, Amerlux, Axis, Fluxwerx and several others.

Tile View Connectivity

Control System: Vive Wireless Solutions

Company: Lutron
Brand: Vive Wireless Solutions
ProductID: NILZGBGLBJF

Technical Requirements Version: 3
Server: Local server optional
Ease of Implementation: Installation contractor with less than 1 day of training, working with remote personnel at factory, Factory representative remote start-up

Communication with edge devices: Wireless
Scope/Scale: Interior

Summary

Network

Connectivity

Saving Energy

Control

Additional Capabilities

External Systems Integration

Communication protocols supported: BACNet /IP, Contact closure

Components required for integration: Vive Premium Hub

Components certified to industry standards: Vive Premium Hub, BTL Certification

System level data communicated via BMS: Loadshed status, Occupancy status

Zone level data communicated via BMS: Light level, Occupancy status

Luminaire level data communicated via BMS: For a single fixture commissioned as an Area: Power, Maximum Power, Occupancy/Vacancy mode

Operational commands can be input via BMS: Yes

Energy Monitor

Energy monitoring method: True power meter, On/off/dim status with wattage look up table, On/off status with wattage look up table, Calculated power

If metered, meter location: Integral in control module at luminaire

Meter accuracy: Power measurement: Accurate to 2%, or 0.5 W, whichever is higher

Finest resolution, seconds per data point: 900

Duration that fine-resolution raw energy data is available: 2 years

Duration that aggregated energy data is available: 10 years (depends on configuration)

Smallest spatial resolution of the data record: Per luminaire

Loads included in a data point of the reported power/energy consumption: Light engine/lamp, Driver/ballast

Energy data is available at a central onsite location: Yes

Data available for file download: Event-based state-change timestamp, Regularly spaced timestamp, Energy, Luminaire % light output, Occupancy, Power, Energy Savings, Available through 3rd party BACnet integration & Vive Vue also provides Space Utilization Reports for Entire Building or Areas

Data available on GUI (Graphical User Interface): Energy, Power, Energy Savings, Luminaire wattage, Space type

Demand Response

Responds to external signal: Yes

External signal type / method: BACnet, Dry contact

Type of DR (scenes or preset): A dedicated scene

Tile View Saving Energy

Control System: EasySense

Company: Signify (formerly Philips Lighting)
Brand: EasySense
ProductID: N9WB4GNIJMV

Technical Requirements Version: 3
Server:
Ease of Implementation:

Communication with edge devices:
Scope/Scale:

Summary

Network

Connectivity

Saving Energy

Control

Additional Capabilities

Occupancy Sensing

Default Time Delay: 15

Time delay field adjustable: Yes

Damp-condition occupancy sensor(s): IP65 fixture mount (Ceiling)

Unoccupied dim (besides off) level is available: Yes

Unoccupied dim level is adjustable: Yes

Daylight Harvesting / Photocell Control

Sensitivity is adjustable: Yes

Settings are reported in UI: Yes

Damp-condition photosensor(s) description: IP65 fixture mount (Ceiling)

High-end Trim

Minimum Setting: 0.05

Settings reported in UI: Yes

Default Setting: 1

Tile View Control

Control System: ControlScope

Company: Current by GE
Brand: Daintree Enterprise
ProductID: NJRMMBGIUHY

Technical Requirements Version: 3
Server: Either local or cloud server is required
Ease of Implementation: Factory-trained installation contractor with 1 day or more factory training, Factory-trained installation contractor with 1 day or more factory training

Communication with edge devices: Wireless
Scope/Scale: Interior

Summary

Network

Connectivity

Saving Energy

Control

Additional Capabilities

Continuous Dimming

Modes of operation with continuous dimming: Occupancy sensing, Daylight harvesting / photocell control, High-End Trim, Personal Control

Dimming curves offered: Linear

Compliance with dimming standards: IEC60929 Annex E

Plug Load Control

Method (smart outlet or circuit level relay switch): Circuit level relay switch

Control strategies: BACnet signal, Demand response, Manual control, Occupancy, Personal control, Scheduling

Plug load energy data reported: Yes

Scheduling

Astronomical time-clock: Yes

Holiday / Special Events: Yes

Scheduling how far ahead: No Limit

Local Schedule Override Switch: Yes

Personal Control

Method of Control (interface): Local wireless dimmer switch, Web browser

Luminaire groups available for personal control: Yes

Tile View, Additional Capabilities

Control System: LightRules 3.3

Company: Digital Lumens, an
Osram Company

Brand: Digital Lumens

ProductID: NNPIV84GS2C

Technical Requirements Version: 3

Server: Either local or cloud server is required

Ease of Implementation: Factory
representative on-site, Factory representative on-site

Communication with edge

devices: Wireless

Scope/Scale: Interior

Summary

Network

Connectivity

Saving Energy

Control

Additional Capabilities

Remote Diagnostics

Characteristics remotely monitored, diagnosed, and/or reported: Communication Issues, Status: online/offline devices, Device errors, Component failures

Types of alerts: Blinking local LED status lights, GUI alerts, GUI map of offline devices, GUI diagnostic page

Emergency Lighting Documentation

On-luminaire battery backup: <https://www.digitallumens.com/wp-content/uploads/2017/02/Emergency-Management-Overview-North-America.pdf>

Automatic testing and generation of life-safety compliance reports: Yes

Thank You

Levin Nock, PhD

DesignLights Consortium (DLC)

Technical Manager

LNock@designlights.org



Q&A from the webinar

Dec 11, 2019

Q: Can you please explain what LLLC is? I missed that in the beginning.

A: LLLC stands for Luminaire Level Lighting Control. An LLLC system has an occupancy sensor and photosensor in every luminaire. It also has “control persistence” so that each occupancy sensor and photosensor helps save energy, whether or not each luminaire is actively networked.

Some efficiency programs focus either exclusively or preferentially on LLLC systems. The ease of installation, configuration and operation suggests that their energy savings might be larger and persist longer, compared to NLC systems with stand-alone sensors.

Q: How often are the features updated for each NLC product?

A: Some manufacturers update their product information every year. Other manufacturers only update every other year. Most of the information displayed is less than 2 years old.

If you prefer to see recent data, you can use the “Technical Requirements Version Number” filter to select the most recent (highest) version. For instance, in December 2019 the highest version is version 4. If you filter for version 4, then all of the information will be less than 6 months old (as of December), since version 4 was introduced in summer 2019. Versions are updated annually each summer.

Q: How can you select a system based on maximum number of storage days for data?

A: This particular parameter is not included in the Filters or in "Customize Columns". It is visible in Tile View / Connectivity / Energy Monitor / Duration that aggregated energy data is available.

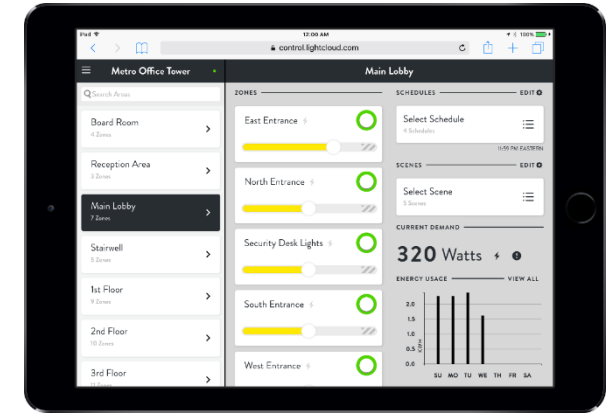
The best way to select a system based on this parameter, or any other parameters that are not included in the Filters or in "Customize Columns", is to download the Excel version of the QPL. Column DO in the Excel QPL shows this parameter.

The following slides give an overview of how to use the Excel QPL.

**Excel based
Networked Lighting Control
Qualified Products List
(NLC QPL)**

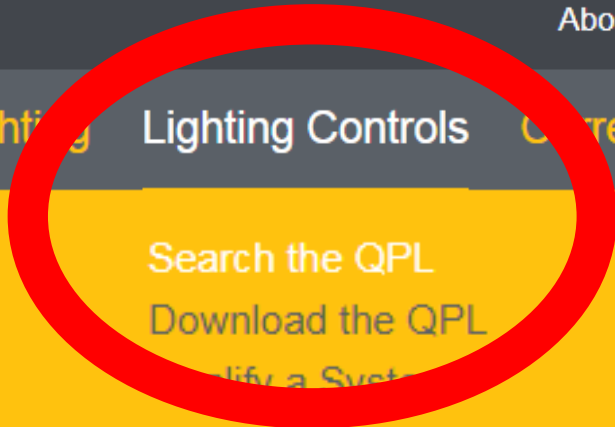
Learning Objective

Use the old Excel Spreadsheet NLC QPL, if you're interested in a particular parameter that's not included in the filters or "Customize Columns" of the online version

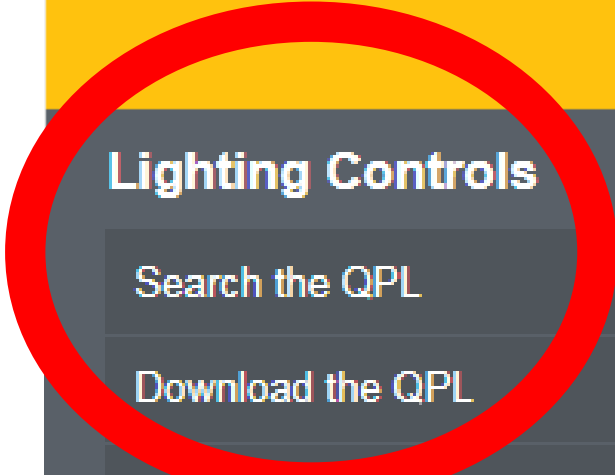


Find the QPL at www.designlights.org

The image shows a screenshot of the DesignLights Consortium website. The browser's address bar displays "Secure | https://www.designlights.org". The navigation menu includes "About Us", "Contact Us", and "Sign In / Create an Account". The main navigation bar features the DLC logo and several menu items: "Solid State Lighting", "Horticultural Lighting", "Lighting Controls", "Current Events", "News and Events", and "Resources". The "Lighting Controls" menu item is highlighted with a red oval. Below the navigation bar, there is a search bar with the placeholder text "Search by brand, model number, manufacturer" and a magnifying glass icon. The text "Advanced Search" is visible below the search bar. On the left side of the page, there is a section titled "Bringing efficiency to light." with a sub-header "The DLC® is a non-profit organization whose mission is to drive efficient lighting by defining quality, facilitating thought leadership, and delivering tools and resources to the lighting market through open dialogue and collaboration." and a "Learn more" link.



- Search the QPL
- Download the QPL
- Qualify a System
- Technical Requirements
- Case Studies
- Training Programs
- Reports, Tools and Resources
- FAQs



Lighting Controls

- Search the QPL
- Download the QPL
- Qualify a System
- System Definitions

Networked Lighting Controls (NLC) Program

The DLC's Networked Lighting Controls (NLC) program is a suite of tools and resources to widespread adoption of Networked Lighting Controls in commercial buildings. Working in partnership with utilities, energy efficiency programs, and the lighting industry, the DLC will the tools over the course of 2016 and 2017.





[Download the QPL](#)

Search for qualified lighting products by n



[Advanced Search](#)

Lighting Controls

[Search the QPL](#)

» [Download the QPL](#)

[Qualify a System](#)

[System Definitions](#)

[Technical Requirements](#)

[Application Instructions](#)

[Revision Schedule and Listing Fees](#)

Networked Lighting Controls QPL

The DLC's Networked Lighting Controls QPL identifies systems that are eligible for utility rebates and incentives by meeting minimum DLC **Technical Requirements**. Containing 22 categories of both required and reported system capabilities, the QPL also serves as a product comparison tool for architects, specifiers, engineers, and contractors.

[Download the QPL](#)

(Updated 11/8/2019)

Excel File

2 Worksheets

- Instructions
- QPL

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER

SECURITY WARNING Macros have been disabled. Enable Content

Q8

A B C D E F G H I J K L M N O

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DLC

**Networked Lighting Control
Qualified Products List V4.0
Published 11/08/2019**

**For the most recent version of this list,
please visit www.designlights.org**


Worksheet (2) of this Excel document provides a list of Networked Lighting Control Systems that have been qualified by DLC to meet DLC's Networked Lighting Control System specifications. These systems may be eligible for utility rebates at DLC Member utilities and energy efficiency programs in the United States and Canada.

How to use Worksheet (2)

To expand columns in order to see details about a capability:

- Enable Macros with the "Enable Content" button. Then select a "Show" button to show details about each capability. When the capability is expanded, the button name will change to "Hide". Select "Hide" to hide the details.
- If you are unable to enable Macros, select two adjacent columns, then right-click "Unhide" in order to see details about the left hand column. To hide any columns, select those columns, then right-click "Hide".

To filter products, based on the answers in one or more columns:

- Left-click on the boxed arrow  in the bottom right corner of each topic heading in row 1. Then, uncheck (left-click) any answers you would like to filter out.

To see a description of each capability:

- Hover the mouse pointer over a column heading

Legend for cell colors:

- In the main capability columns, positive answers are shaded green, and blank or negative answers are shaded red.

1) Title and Instructions | 2) DLC NLC QPL



Enable Macros, to Use "Show/Hide" Buttons

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER

SECURITY WARNING Macros have been disabled. Enable Content

A4 Acuity Brands

	A	B	C	D	E	O	AM	AX	BA	BI	BL	BR	BU	CB
1	Show All Company				Show Summary	Show Network	Show Occupancy Sensing	Show Traffic Sensing	Show Daylight Harvest / Photocell	Show High-End Trim	Show Scheduling	Show Personal Control	Show Demand Response	Show Plug Load Control
4	Acuity Brands	Acuity Controls	nLight	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	Acuity Brands	Acuity Controls	nLight Air	Exterior	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
6	Acuity Brands	Acuity Controls	nLight Air	Interior	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes

Excel-based QPL

	A	B	C	D	E	O	AM	AX	BA	BI	BL	BR	BU	CB	CF	CI	CJ	CR	CV	CY	DH	DK	DW	EN	EQ	EV	
	Show All				Show	Show	Show	Show	Show	Show	Show	Show	Show	Show	Show		Show	Show	Show	Show	Show	Show	Show	Show	Show	Show	
1	Company	Brand	System	Interior / Exterior	Summary	Network	Occupancy Sensing	Traffic Sensing	Daylight Harvest / Photocell	High-End Trim	Scheduling	Personal Control	Demand Response	Plug Load Control	Color Changing / Tuning	Zoning	Individual Luminaire Addressability	Luminaire Level Lighting Control	Continuous Dimming	User Interface	Control Persistence	Energy Monitor	External Systems Integration	Remote Diagnostics	Emergency Lighting Documentation	Cyber-security	
4	Acuity Brands	Acuity Controls	nLight Air	Interior	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
5	Acuity Brands	Acuity Controls	nLight	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
6	Acuity Brands	Acuity Controls	nLight Air	Exterior	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
7	Acuity Brands	Acuity Controls	Xpoint	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
8	Amatis Controls	Amatis Controls	Amatis Controls	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
9	Autani, LLC	Energy Center	Energy Center	Exterior	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
10	Autani, LLC	Energy Center	Energy Center	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
11	Avi-on Labs, Inc.	Avi-on Lighting Control Platform	Avi-on Lighting Control Platform	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
12	Cree Lighting	SmartCast	SmartCast	Interior	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
13	Crestron Electronics	Crestron DALI	Crestron DALI	Interior	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	



Choose "Show" to Expand a Section (macro)

	A	B	C	D	E	F	AM	AX	BA
	Show All				Show	Show	Show	Show	Show
1	Company	Brand	System	Interior / Exterior	Summary	Network	Occupancy Sensing	Traffic Sensing	Daylight Harvest / Photocell
4	Acuity Brands	Acuity Controls	nLight	Interior		Yes	Yes	No	Yes
5	Acuity Brands	Acuity Controls	nLight Air	Exterior		Yes	Yes	Yes	Yes
6	Acuity Brands	Acuity Controls	nLight Air	Interior		Yes	Yes	No	Yes
7	Acuity Brands	Acuity Controls	Xpoint	Interior		Yes	Yes	No	Yes

Choose "Show" to Expand a Section (macro)

Company	Brand	System	Interior / Exterior	Hide Summary	Technical Requirements Version	Ease of Implementation	Technical support phone number	Interior Scope/Scale	Exterior Scope/Scale	Product Website	System/ Hardware Component Standard Warranty
Acuity Brands	Acuity Controls	nLight Air	Interior		V3.0	Installation contractor with less than 1 day of training; Factory representative on-site	800-535-2465	Portfolio/Enterprise, Whole Building, Room or Zone		https://www.acuitybrands.com/products/controlshlight#4ce25366-4aaf-44c0-857d-5131820c5c68	5 years
Acuity Brands	Acuity Controls	nLight	Interior		V3.0	Installation contractor with less than 1 day of training; Factory representative on-site	800-535-2465	Portfolio/Enterprise, Whole Building, Room or Zone		http://www.acuitybrands.com/products/controlshlight	5 years
Acuity Brands	Acuity Controls	nLight Air	Exterior		V3.0	Installation contractor with less than 1 day of training; Factory representative on-site	1-800-535-2465		Structured Parking, Area/Building Exterior/Parking	https://www.acuitybrands.com/products/controlshlight#4ce25366-4aaf-44c0-857d-5131820c5c68	5 years
Acuity Brands	Acuity Controls	Xpoint	Interior		V3.0	Factory representative on-site	1-800-535-2465	Portfolio/Enterprise, Whole Building, Room or Zone, Structured Parking		http://www.acuitybrands.com/products/controlshlight	5 years
Amatis Controls	Amatis Controls	Amatis Controls	Interior		V4.0	Factory-trained installation contractor with 1 day or more factory training; Online training; instructional videos, manuals	248-939-2495	Portfolio/Enterprise, Whole Building, Room or Zone, Structured Parking		https://www.amatiscontrols.com/	5 years
Autani, LLC	Energy Center	Energy Center	Exterior		V2.0	Installation contractor with less than 1 day of training, working with remote personnel at factory	443-320-2233 option 2 855-228-8264 option 2		Area/Building Exterior/Parking, Roadway (highways), Streetlight (residential streets)	www.autani.com	3 Years
Autani, LLC	Energy Center	Energy Center	Interior		V3.0	Installation contractor with less than 1 day of training, working with remote personnel at factory	1-855-228-8264	Whole Building, Room or Zone, Structured Parking		www.autani.com	3 Years
Avi-on Labs, Inc.	Avi-on Lighting Control Platform	Avi-on Lighting Control Platform	Interior		V4.0	installation contractor with less than 1 day of training, sometimes working with remote personnel at factory	1-801-664-7172	Portfolio/Enterprise, Whole Building, Room or Zone, Structured Parking		https://avi-on.com/commercial/	5 Years
Cree Lighting	SmartCast	SmartCast	Interior		V3.0	Installation contractor with less than 1 day of training	1-866-924-3645	Whole Building, Room or Zone		http://www2.cree.com/smartcast-landing-page	10 Years
Crestron Electronics	Crestron DALI	Crestron DALI	Interior		V2.0	(A) Installation contractor w <1 day of training, plus remote personnel at factory, or (B) installation contractor w >1 day factory training, or (C) factory rep. on-site	888-273-7876	Portfolio/Enterprise, Whole Building, Room or Zone		https://www.crestron.com/products/model/DIN-DALI-2	3 yr standard; 5 yr amendment for projects receiving utility rebates



List of all Column Headings

Manufacturer and System	Device Monitoring / Remote Diagnostics
Networking of Luminaires and Devices	User Interface
Occupancy Sensing	Luminaire Level Lighting Control, Integrated
Traffic Sensing	Personal Control
Daylight Harvesting / Photocell Control	Load Shedding (Demand Response)
High End Trim	Plug Load Control
Zoning	External Systems Integration (e.g. BMS, EMS, HVAC, Lighting, API)
Individual Addressability	Emergency Lighting
Continuous Dimming	Cyber Security
Control Persistence	Color Changing / Tuning
Scheduling	Ease of Implementation

Filter one or more columns to narrow the list

To reset all the filters, close the file without saving, then reopen

Y	Z	AA	AB
Wired and/or wireless communication with edge devices	Local and/or cloud server	Uses a gateway or bridge	Gateway/bridge connection to server

Wireless

Wired

Wireless

Wired, Wirele

Wireless

Wireless

Wired, Wirele

Sort A to Z

Sort Z to A

Sort by Color

Clear Filter From "Wired and/or wire..."

Filter by Color

Text Filters

Search

- (Select All)
- netEdgeWired netEdgeWireless
- Wired
- Wired, Wireless
- Wireless

OK Cancel