



WSEC 2015

nLight® Applications Guide





/ nLight Lighting Controls Platform

It's not just smarter. It's easier.

nLight is a sensor-based digital lighting controls solution that offers wired and wireless lighting controls that easily connect luminaires, sensors, and other control devices to create a digital network. The nLight platform of products enables ease in specification, installation, and ownership, making it the go-to digital lighting controls platform for specifiers, contractors, and building owners.

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About WSEC

The Washington State Energy Code (WSEC) 2015 is a residential and commercial building energy code based on the International Energy Conservation Code (IECC) which has been adopted by many states and municipalities. The intention of this code is to reduce energy consumption by outlining design and construction requirements which include specific constraints for lighting controls. The use of lighting controls to synchronize light levels with daylight, occupancy, and multi-level control demand response capability are required in order to be compliant.

About This Guide

Acuity Brands® offers the nLight® WSEC Applications Guide as a reference of typical nLight layouts that help make code compliance quicker and easier.

The Acuity Brands Design Services Team is also available to support engineers and contractors with detailed design, submittal, and installation. For additional information, please contact your Acuity Brands Sales Representative.

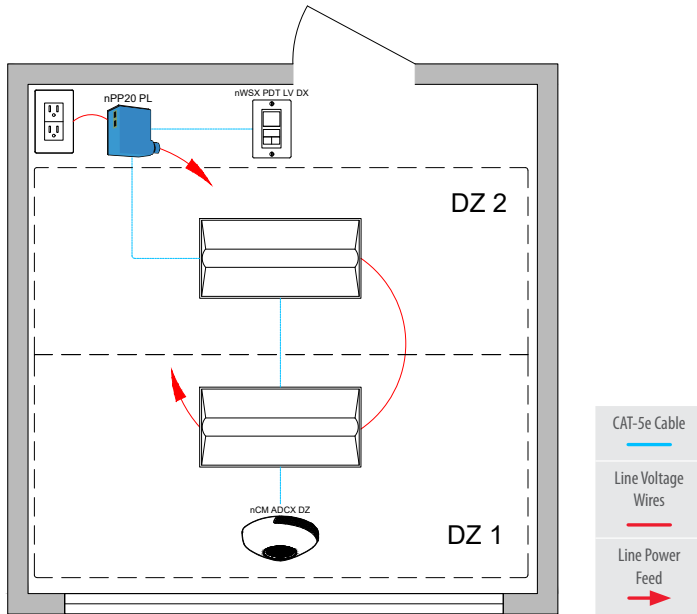
About nLight

nLight® is a sensor-based digital lighting controls solution that offers wired and wireless lighting controls that easily connect luminaires, sensors, and other control devices to create one digital lighting controls platform to aid in code compliance, reduce energy, and enable advanced networked capabilities. Ideal for practically any application, small to large, indoor to outdoor, nLight offers lighting controls that scale from one room to an entire floor, from one floor to an entire building, from one building to an entire campus.

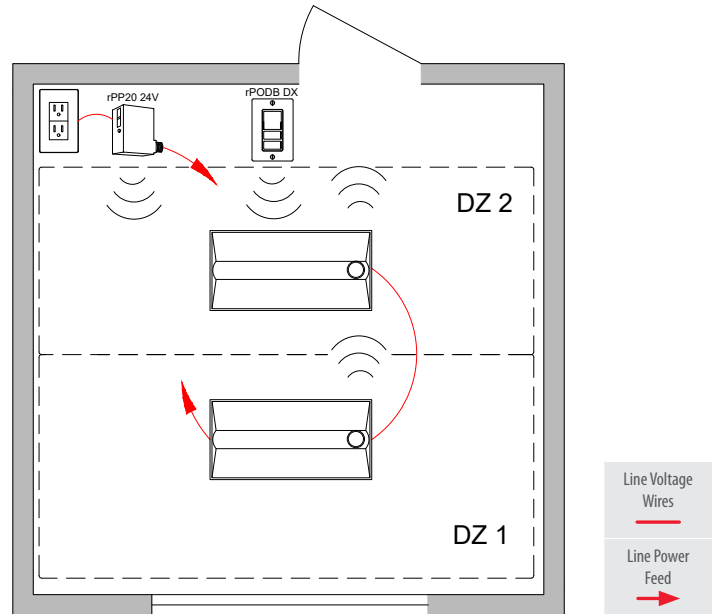
The chart below is an overview of the Code Requirements for Common Building Spaces. Please use this information as a guide. For specific code requirements please refer to the WSEC code.

Control Requirement*	Code Provision	Code Summary*	Space Type										
			Private Office	Open Office	Conference, Meeting, Multipurpose Room	Classroom, Lecture Hall, Training Room	Lobby	Corridor	Restroom	Non-Exit Stairwell	Gymnasium	Warehouse	
Manual-On or Auto-On ≤ 50%	C405.2.1.1.2	Occupancy sensor controlled spaces must be manual on, or be controlled to automatically turn the lighting on to not more than 50% power.	✓	✓	✓	✓						✓	
Full Auto-On	C405.2.1.1.2	Occupancy sensor controlled spaces are allowed to turn on to full.					✓	✓	✓	✓			✓
Auto-Off ≤ 50%	C405.2.1.2	Occupancy sensors shall automatically reduce lighting in warehouse storage aisle-ways and open areas to ≤ 50%.											✓
Full Auto-Off via Occupancy Sensor	C405.2.1.1.1	Fixtures must automatically turn off within 30 minutes of all occupants leaving the space.	✓	✓	✓	✓	✓	✓	✓			✓	✓
Time Switch Controls (with backbone networked installed)	C405.2.2.1	Each area of the building not provided with occupant sensor controls shall be provided with time switch controls. These areas must also be provided with a manual override switch.		(or) ✓			(or) ✓	(or) ✓					(or)
Light Reduction Control	C405.2.2.2	Time Switch controlled spaces shall have a manual control that allows the occupant to reduce the connected lighting load uniformly by at least 50%.		✓									
Manual Control (Local Switch)	C405.2.3	Areas shall incorporate readily accessible manual controls.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Daylight-Responsive Controls	C405.2.4	Daylight-responsive controls shall be provided within each space with more than two general lighting fixtures within sidelight and toplight daylight zones.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plug Load/ Controlled Receptacles	C405.10	50% of all receptacles shall be controlled by the occ sensor or time switch.	✓	✓	✓	✓							
Exterior Lighting Controls	C405.2.7	C405.2.7.1 Daylight shutoff C405.2.7.2 Decorative lighting shutoff C405.2.7.3 Lighting setback											

Wired



Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	1	nWSX PDT LV DX	Wall Switch Occupancy Sensor with On/Off, Raise/Lower
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	Luminaire with Wireless Networked Embedded Controls from nLight
	1	rPODB DX G2	On/Off, Raise/Lower WallPod®
	1	rPP20 24V EFP G2	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures can be controlled together or independently
- Adjustable high/low trim. Max/min levels can be task tuned to any percentage via programming

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures turn off automatically when room becomes vacant

Daylight Control:

- Not required for offices without windows or that have loads <150W in sidelit zones

Manual Control:

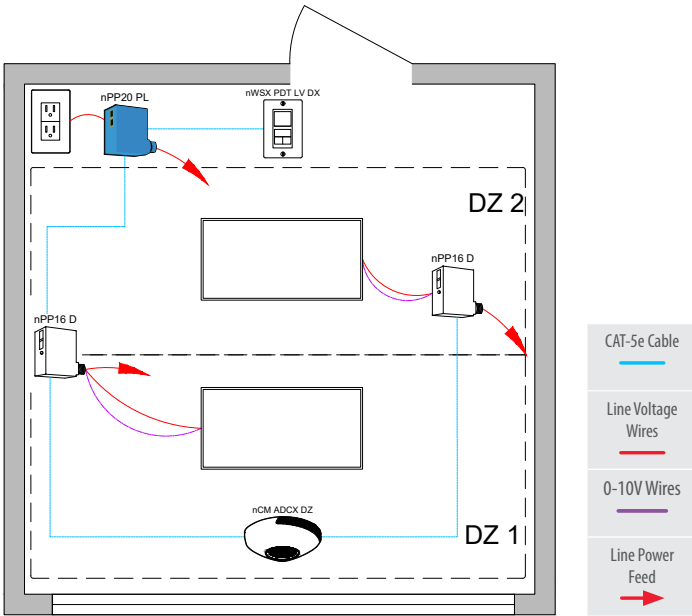
- On/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:

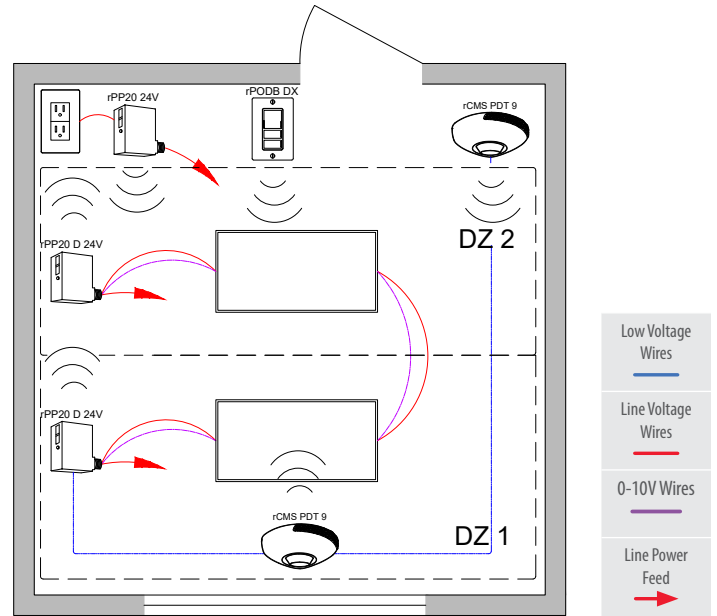
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital Lighting Controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).

Wired



Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	2	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	1	nWSX PDT LV DX	Wall Switch Occupancy Sensor with On/Off, Raise/Lower
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	2	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	1	rPODB DX G2	On/Off, Raise/Lower WallPod
	2	rCMS PDT 9 G2	Occupancy and Daylight Sensor
	1	rPP20 24V EFP G2	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures and receptacles automatically turn off when room becomes vacant

Daylight Control:

- Not required for offices without windows or that have loads <150W in sidelit zone

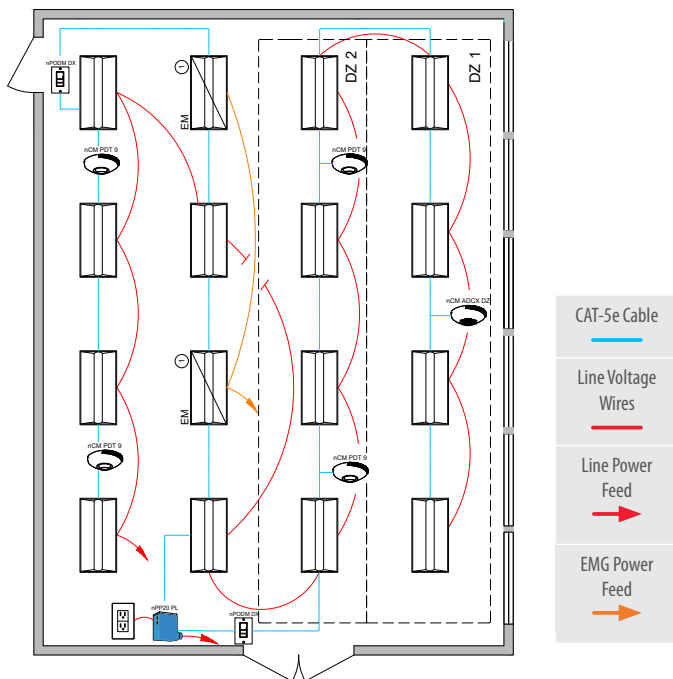
Manual Control:

- On/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

Wired



① Some emergency luminaire with networked embedded controls from nLight require a normal sense line connection. See fixture spec sheet for details.

Bill of Materials

Symbol	Qty	Product #	Description
	14	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	2	See Note	Luminaire with Wired Networked Embedded Controls from nLight with Emergency Option
	2	nPODM DX	On/Off, Raise/Lower WallPod
	4	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Optional automatic lumen compensation
- Adjustable High/Low Trim

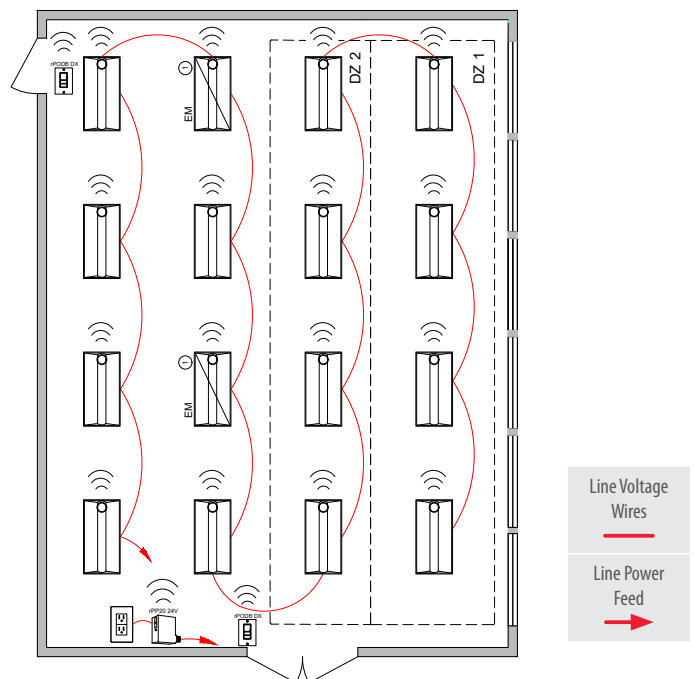
Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures and Receptacles automatically turn off when room becomes vacant

Daylight Control:

- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number zones = number of fixtures)
- Not required for offices without windows or with two or less luminaires

Wireless



① Fixtures assumed to be battery backup

Bill of Materials

Symbol	Qty	Product #	Description
	14	See Note	Luminaire with Wireless Networked Embedded Controls from nLight
	2	See Note	Luminaire with Wireless Networked Embedded Controls from nLight with Battery Option
	2	rPODB DX G2	On/Off, Raise/Lower WallPod
	1	rPP20 24V EFP G2	Plug Load Relay Pack

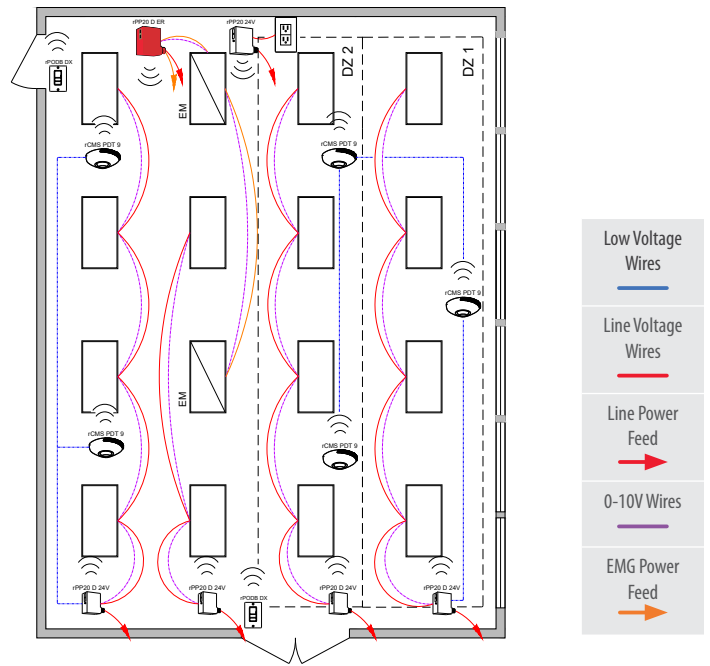
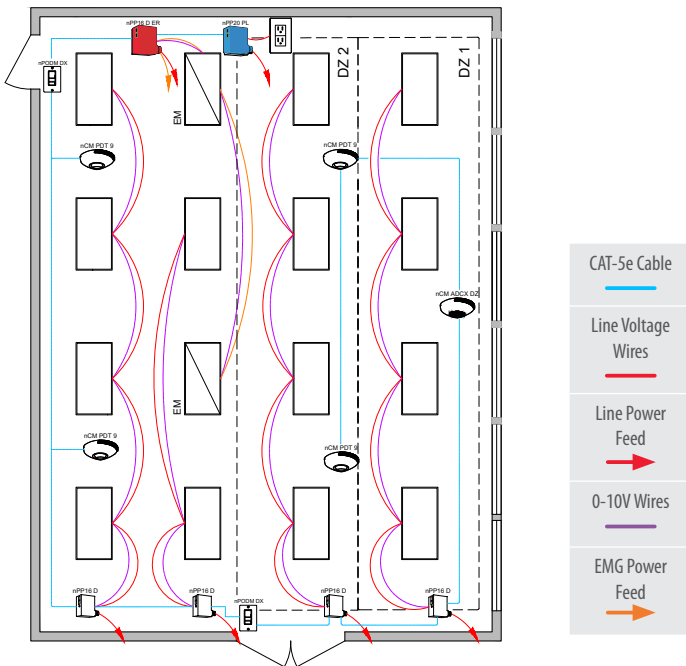
ADDITIONAL OPTIONS:

- Add Graphic WallPod (model nPOD TOUCH) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital Lighting Controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLC) (WESC CODE).

Wired

Wireless



Bill of Materials

Bill of Materials

Symbol	Qty	Product #	Description
	4	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	1	nPP16 D ER EFP	Emergency Relay Pack with 0-10V Dimming Output
	2	nPODM DX	On/Off, Raise/Lower WallPod
	4	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Symbol	Qty	Product #	Description
	4	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	1	rPP20 D ER EFP G2	Emergency Relay Pack with 0-10V Dimming Output
	2	rPODB DX G2	On/Off, Raise/Lower WallPod
	5	rCMS PDT 9 G2	Occupancy and Daylight Sensor
	1	rPP20 24V EFP G2	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Each row controlled independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures and Receptacles automatically turn off when room becomes vacant

Daylight Control:

- Smooth continuous dimming
- Daylight zones defined by rows
- Not required for offices without windows or with two or less luminaires

Manual Control:

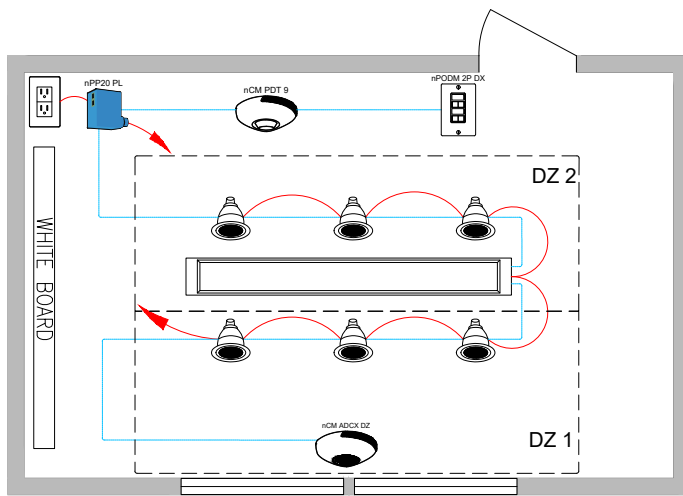
- Master on/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:

- Add Graphic WallPod (model nPOD TOUCH) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

CONFERENCE ROOM with Luminaires with Networked Embedded Controls from nLight

Wired

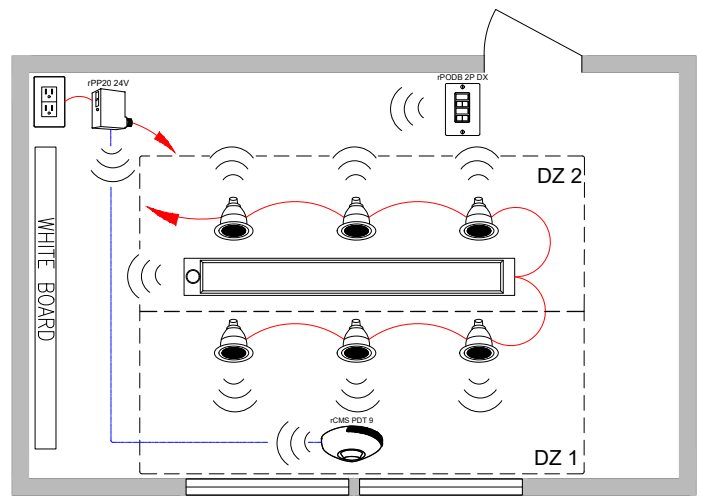


CAT-5e Cable

Line Voltage Wires

Line Power Feed

Wireless



Line Voltage Wires

Line Power Feed

Bill of Materials

Symbol	Qty	Product #	Description
	1	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	6	See Note	Downlight with Wired Networked Embedded Controls from nLight
	1	nPODM 2P DX	2-Pole On/Off, Raise/Lower WallPod
	1	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	1	See Note	Luminaire with Wireless Networked Embedded Controls from nLight
	6	See Note	Downlight with Wireless Networked Embedded Controls from nLight
	1	rPODB 2P DX G2	2-Pole On/Off, Raise/Lower WallPod
	1	rPP20 24V EFP G2	Plug Load Relay Pack
	1	rCMS PDT 9 G2	Occupancy and Daylight Sensor

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Each row/fixture controlled independently
- Optional automatic lumen compensation
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to some on automatically to 50%)
- Fixtures and Receptacles automatically turn off when room becomes vacant

Daylight Control:

- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max number zones = number of fixtures)
- Not required for areas without windows or with two or less luminaires

Manual Control:

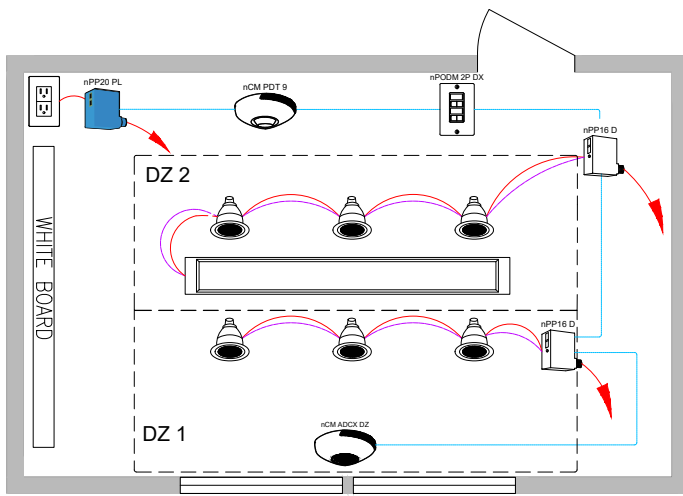
- On/off & raise/lower control of two groups of fixtures

ADDITIONAL OPTIONS:

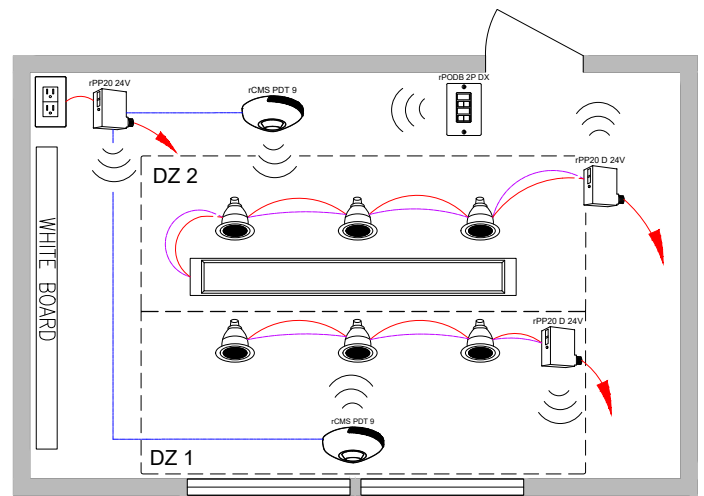
- Add Graphic WallPod (model nPOD TOUCH) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).

Wired



Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	2	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	1	nPODM 2P DX	2-Pole On/Off, Raise/Lower WallPod
	1	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	2	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	1	rPODB 2P DX G2	2-Pole On/Off, Raise/Lower WallPod
	2	rCMS PDT 9 G2	Occupancy and Daylight Sensor
	1	rPP20 24V EFP G2	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Each row controlled independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to some on automatically to 50%)
- Fixtures and Receptacles automatically turn off when room becomes vacant

Daylight Control:

- Smooth continuous dimming
- Daylight zones defined by rows
- Not required for areas without windows or with two or less luminaires

Manual Control:

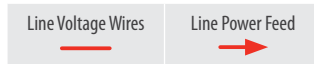
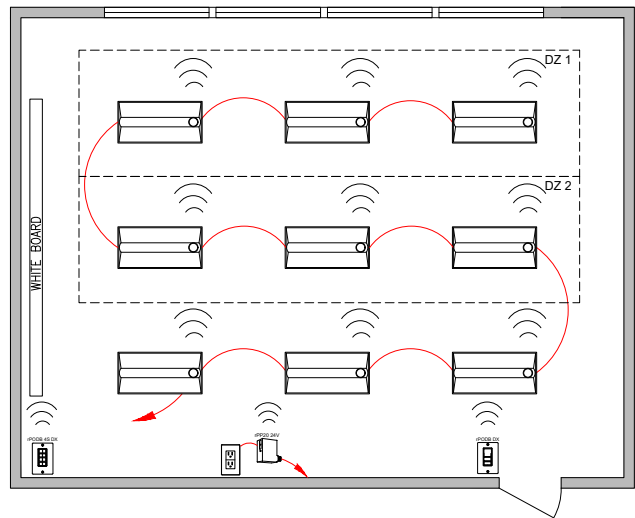
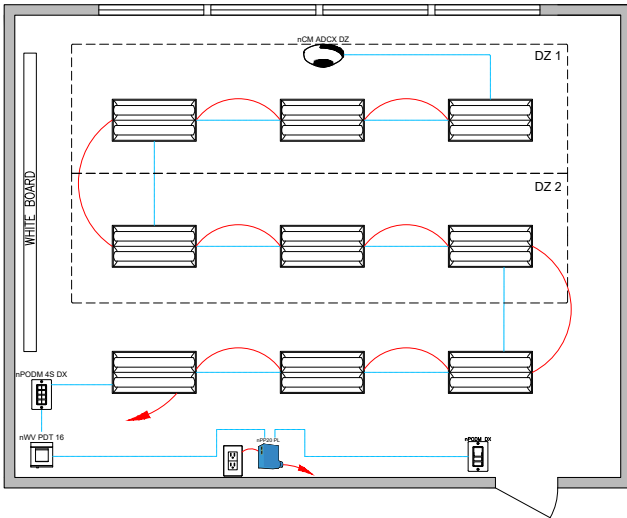
- On/off & raise/lower control of each row

ADDITIONAL OPTIONS:

- Add Graphic WallPod (model **nPOD TOUCH**) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

Wired

Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	9	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	1	nPODM DX	On/Off, Raise/Lower WallPod
	1	nWV PDT 16	Dual Technology Wide View Occupancy Sensor
	1	nPODM 4S DX	Teacher Station — 4 Scene Control with Master On/Off & Raise/Lower
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	9	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	1	rPODB DX G2	On/Off, Raise/Lower WallPod
	1	rPODB 4S DX G2	Teacher Station — 4 Scene Control with Master On/Off & Raise/Lower
	1	rPP20 24V EFP G2	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Each row/fixture controlled independently
- Optional automatic lumen compensation
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to some on automatically to 50%)
- Fixtures and Receptacles automatically turn off when room becomes vacant

Daylight Control:

- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max number zones = number of fixtures)
- Not required for areas without windows or with two or less luminaires

Manual Control:

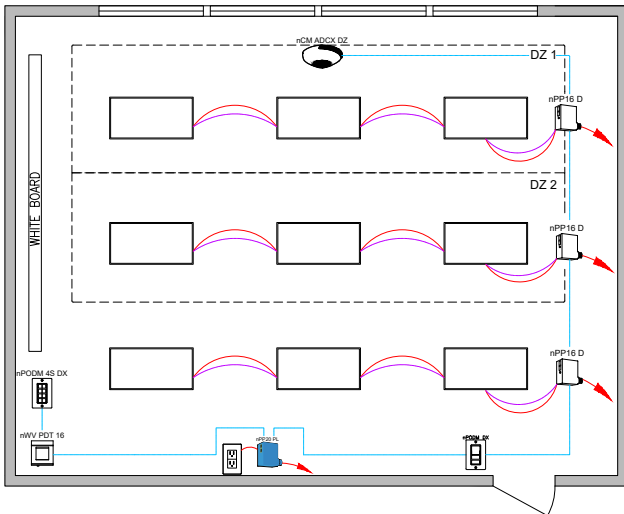
- Master on/off & raise/lower control of entire room
- Master 4 scene control

ADDITIONAL OPTIONS:

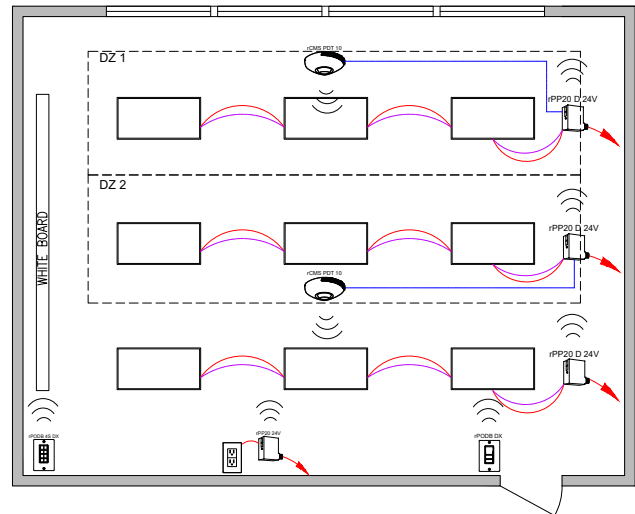
- Add graphic wallpod (model nPOD TOUCH) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLC) (WESC CODE).

Wired



Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	3	nPP16 D EFP	Relay Module with 0-10V Dimming Output
	1	nPODM DX	On/Off, Raise/Lower WallPod
	1	nWV PDT 16	Dual Technology Wide View Occupancy Sensor
	1	nPODM 4S DX	Teacher Station — 4 Scene Control with Master On/Off & Raise/Lower
	1	nCM ADCX DZ RJB	Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	3	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	1	rPODB DX G2	On/Off, Raise/Lower WallPod
	2	rCMS PDT 10 G2	Occupancy and Daylight Sensor
	1	rPODB 4S DX G2	Teacher Station — 4 Scene Control with Master On/Off & Raise/Lower
	1	rPP20 24V EFP G2	Plug Load Relay Pack

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Each row controlled independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to some on automatically to 50%)
- Fixtures and Receptacles automatically turn off when room becomes vacant

Daylight Control:

- Smooth continuous dimming
- Not required for areas without windows or with two or less luminaires

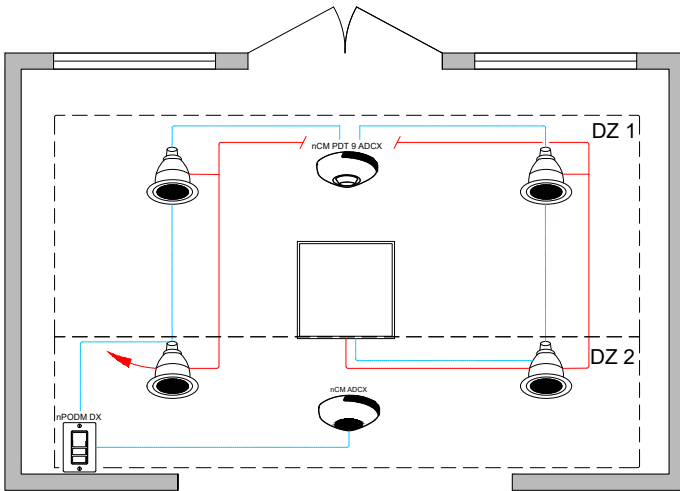
Manual Control:

- Master on/off & raise/lower control of entire room
- Master 4 scene control

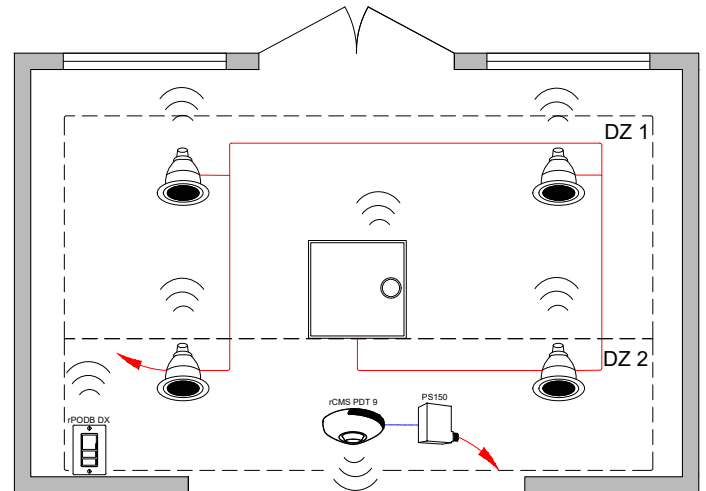
ADDITIONAL OPTIONS:

- Add graphic wallpod (model nPOD TOUCH) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Wired



Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	4	See Notes	Downlight with Wired Networked Embedded Controls from nLight
	1	See Notes	Troffer (recessed) with Wired Networked Embedded Controls from nLight
	1	nPODM DX	On/Off, Raise/Lower WallPod
	1	nCM PDT 9 ADCX	Occupancy and Daylight Sensor
	1	nCM ADCX RJB	Daylight Sensor

Bill of Materials

Symbol	Qty	Product #	Description
	4	See Notes	Downlight with Wireless Networked Embedded Controls from nLight
	1	See Notes	Troffer (recessed) with Wireless Networked Embedded Controls from nLight
	1	rPODB DX G2	On/Off, Raise/Lower WallPod
	1	PS150	Standard Range Power Supply
	1	rCMS PDT 9 G2	Occupancy and Daylight Sensor

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

Daylight Control:

- Smooth continuous dimming
- Not required for areas without windows or that have loads <150W in sidelit zones

Manual Control:

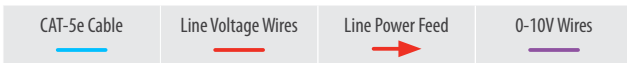
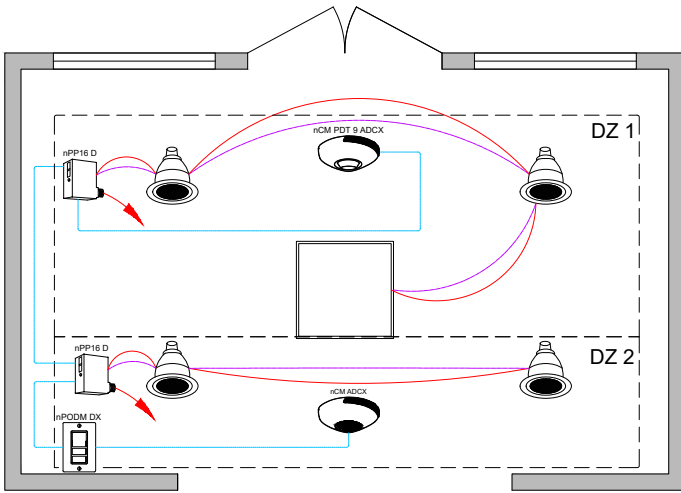
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

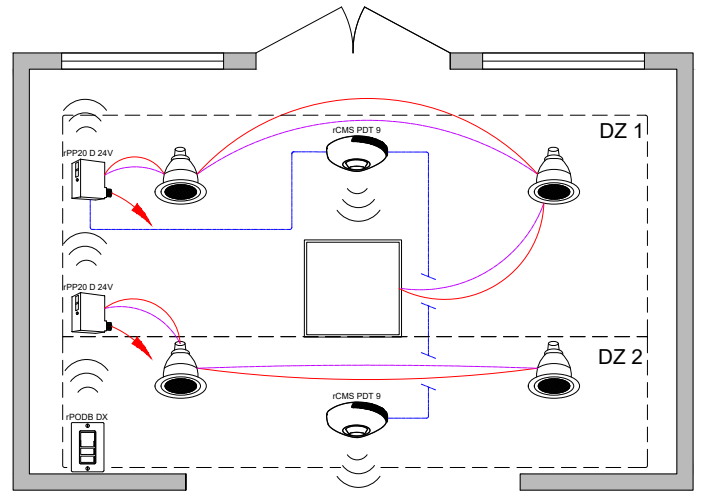
- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).

Wired



Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	2	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	1	nPODM DX	On/Off, Raise/Lower WallPod
	1	nCM PDT 9 ADCX	Occupancy and Daylight Sensor
	1	nCM ADCX RJB	Daylight Sensor

Bill of Materials

Symbol	Qty	Product #	Description
	2	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	1	rPODB DX G2	On/Off, Raise/Lower WallPod
	2	rCMS PDT 9 G2	Occupancy and Daylight Sensor

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

Daylight Control:

- Smooth continuous dimming
- Daylight zones defined by relay module wiring
- Not required for areas without windows or that have loads <150W in sidelit zones

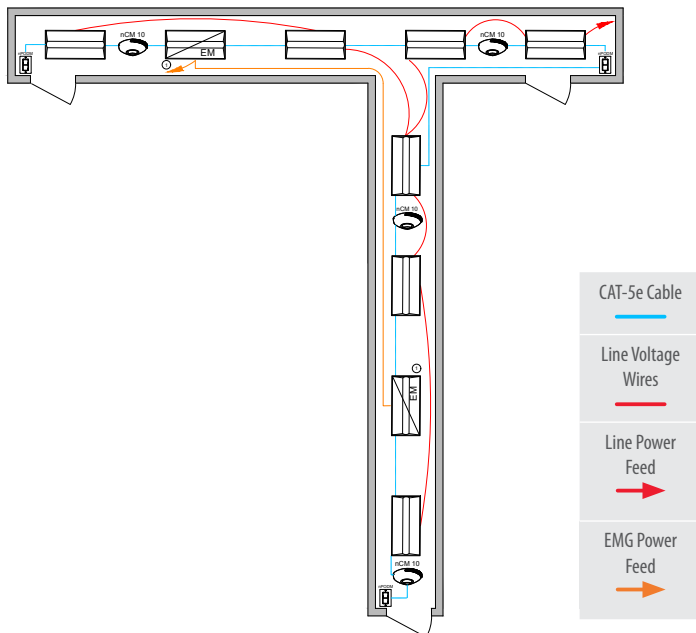
Manual Control:

- On/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:

- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

Wired

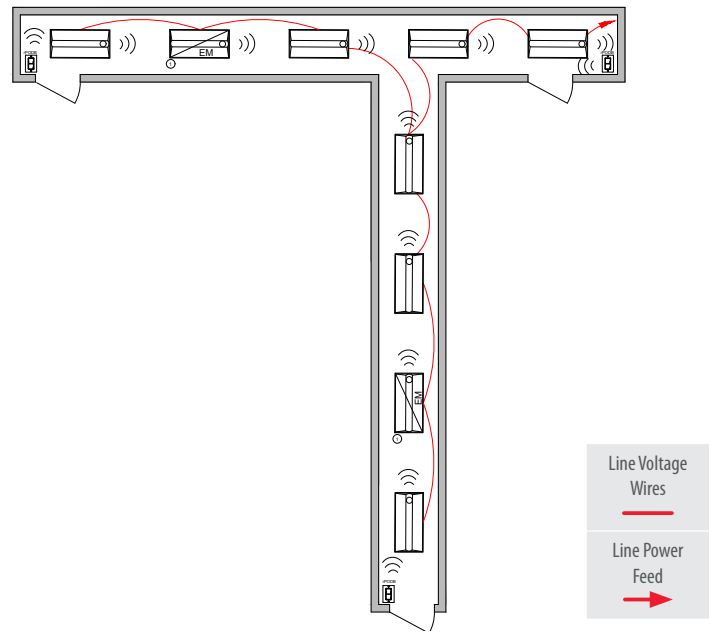


- ① Some luminaires with networked embedded controls from nLight require a normal sense line connection. See fixture spec sheet for details.

Bill of Materials

Symbol	Qty	Product #	Description
	7	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	2	See Note	Luminaire with Wired Networked Embedded Controls from nLight with Emergency Option
	3	nPODM	On/Off WallPod
	4	nCM 10 RJB	Occupancy Sensor

Wireless



- ① Fixtures assumed to be battery backup

Bill of Materials

Symbol	Qty	Product #	Description
	7	See Note	Luminaire with Wireless Networked Embedded Controls from nLight
	2	See Note	Luminaire with Wireless Networked Embedded Controls from nLight with Battery Option
	3	rPODB G2	On/Off WallPod

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Optional automatic lumen compensation
- Adjustable High/Low Trim

Occupancy Control:

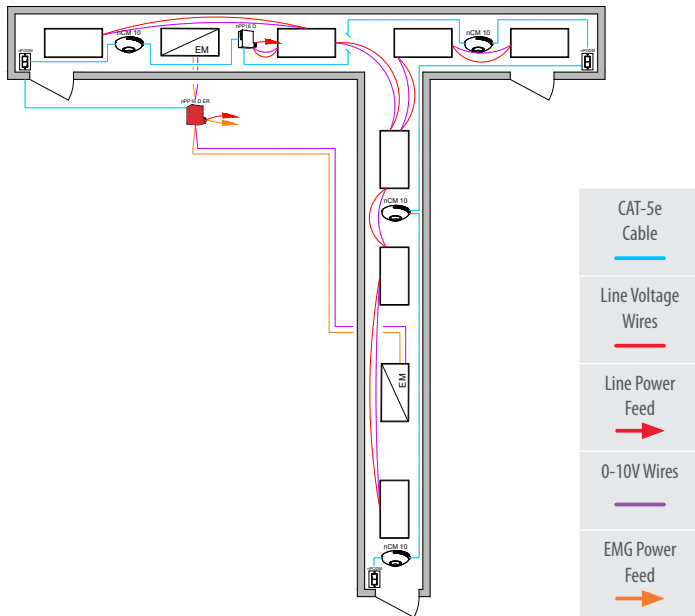
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

ADDITIONAL OPTIONS:

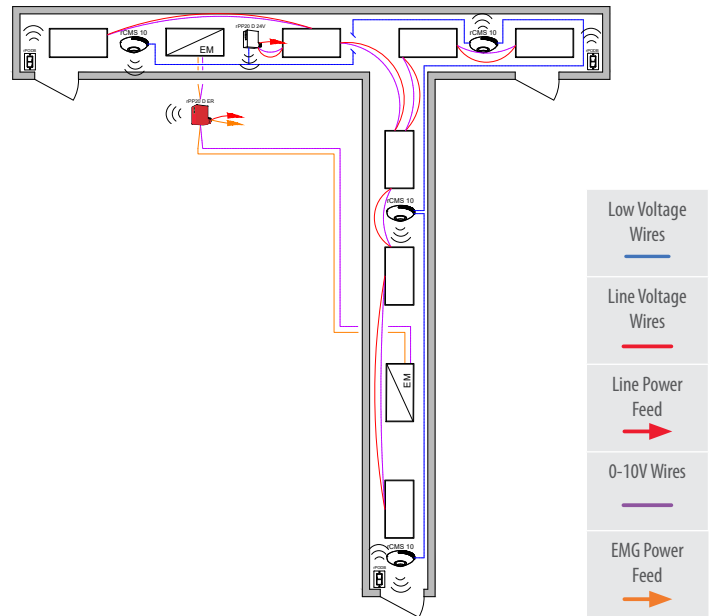
- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).





Wired







Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	1	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	1	nPP16 D ER EFP	Emergency Relay Pack with 0-10V Dimming Output
	4	nCM 10 RJB	Occupancy Sensor
	3	nPODM	On/Off WallPod

Bill of Materials

Symbol	Qty	Product #	Description
	1	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	1	rPP20 D ER EFP G2	Emergency Relay Pack with 0-10V Dimming Output
	4	rCMS 10 G2	Occupancy Sensor
	3	rPODB G2	On/Off WallPod

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together
- Adjustable High/Low Trim

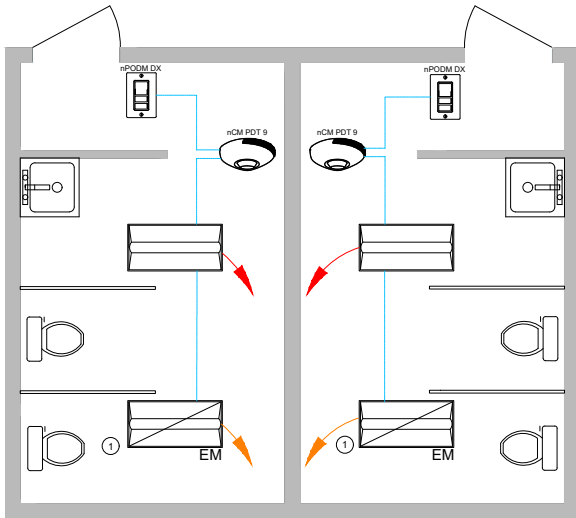
Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

/ ADDITIONAL OPTIONS:

- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

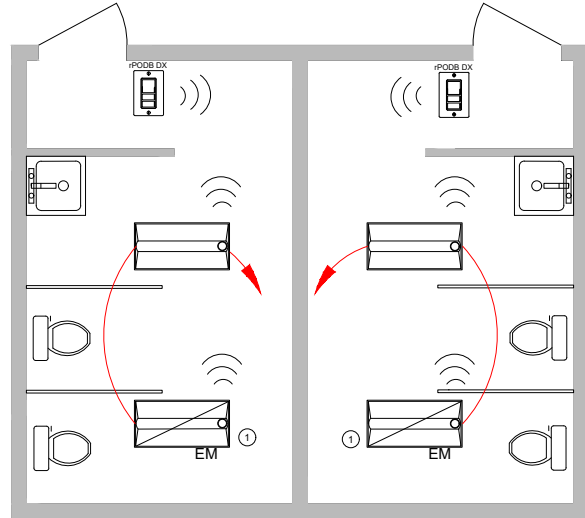
Wired



① Some luminaires with networked embedded controls from nLight require a normal sense line connection. See fixture spec sheet for details.



Wireless



① Fixtures assumed to be battery backup



Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	Luminaire with Wired Networked Embedded Controls from nLight
	2	See Note	Luminaire with Wired Networked Embedded Controls from nLight with Emergency Option
	2	nPODM DX	On/Off, Raise/Lower WallPod
	2	nCM PDT 9 RJB	Occupancy Sensor

Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	Luminaire with Wireless Networked Embedded Controls from nLight
	2	See Note	Luminaire with Wireless Networked Embedded Controls from nLight with the Battery Option
	2	rPODB DX G2	On/Off, Raise/Lower WallPod

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently (per room)
- Optional automatic lumen compensation
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off when room becomes vacant

Manual Control:

- On/off control of fixtures (per room)

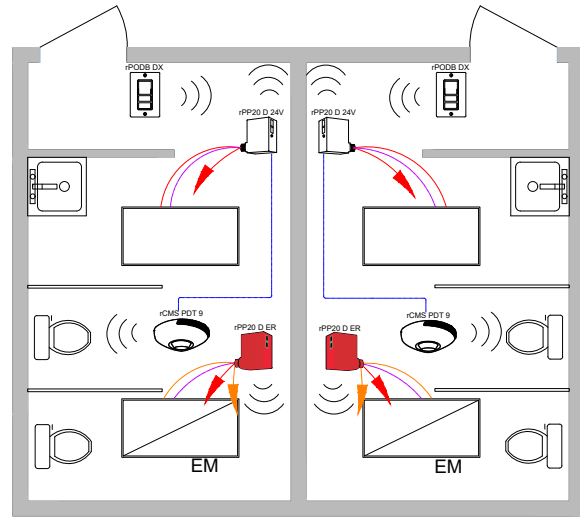
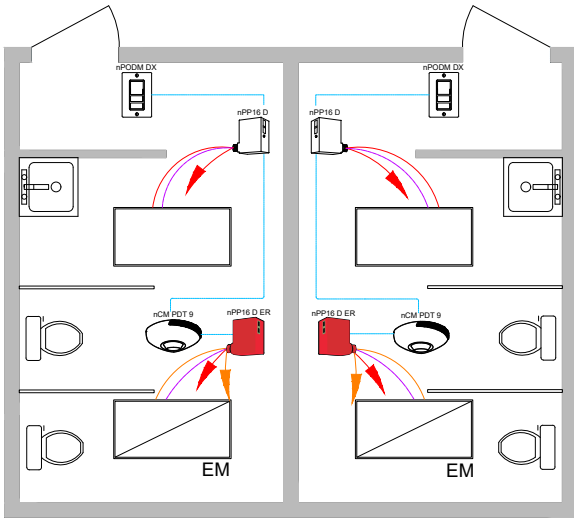
ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4).
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).

Wired

Wireless



Bill of Materials

Symbol	Qty	Product #	Description
	2	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	2	nPP16 D ER EFP	Emergency Module with 0-10V Dimming Output
	2	nPODM DX	On/Off & Raise/Lower WallPod
	2	nCM PDT 9 RJB	Occupancy Sensor

Bill of Materials

Symbol	Qty	Product #	Description
	2	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	2	rPP20 D ER EFP G2	Emergency Relay Pack with 0-10V Dimming Output
	2	rPODB DX G2	On/Off & Raise/Lower WallPod
	2	rCMS PDT 9 G2	Occupancy Sensor

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together (per room)
- Adjustable High/Low Trim

Occupancy Control:

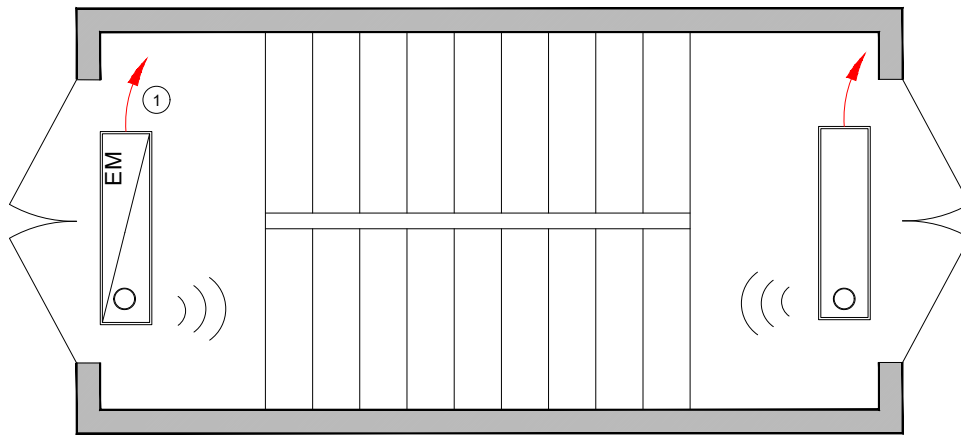
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off when room becomes vacant

Manual Control:

- On/off control of fixtures (per room)

ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option


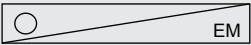


① Fixtures assumed to be battery backup

Line Voltage Wires

Line Power Feed

Bill of Materials

Symbol	Qty	Product #	Description
	1	Various; see appendix A	Luminaire with Networked Embedded Controls from nLight with Occupancy Sensor
	1	Various; see Appendix A	Emergency Luminaire with Networked Embedded Controls from nLight with Occupancy Sensor

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Adjustable High/Low Trim

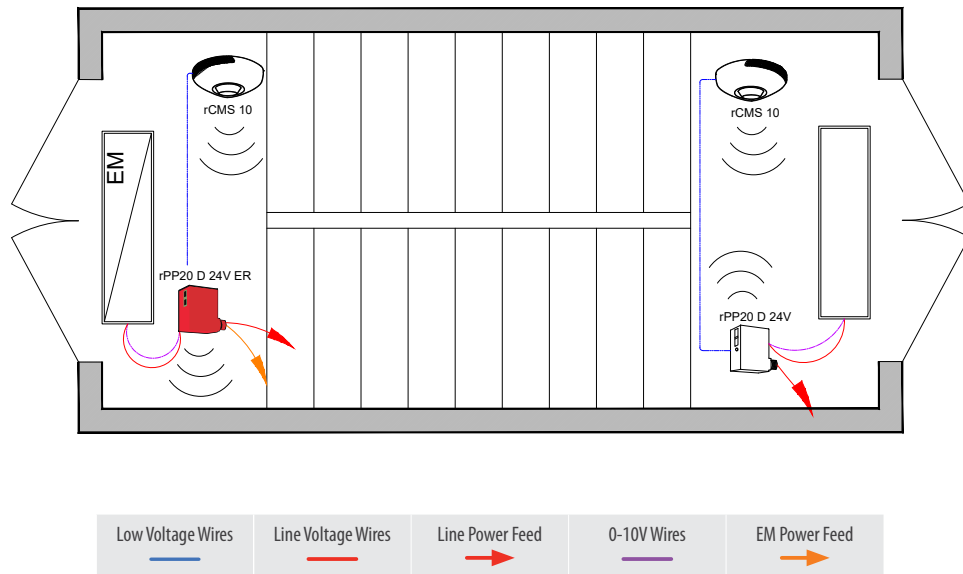
Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

/ ADDITIONAL OPTIONS:

- Stairwell can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).



Bill of Materials

Symbol	Qty	Product #	Description
	1	rPP20 D 24V EFP G2	Relay Module with 0-10V Dimming Output
	1	rPP20 D 24V ER EFP G2	Emergency Relay Module (UL924) with 0-10VDC Dimming
	2	rCMS PDT 10 G2	PIR Extended Range Occupancy Sensor

OPERATIONAL DETAILS:

Light Fixtures:

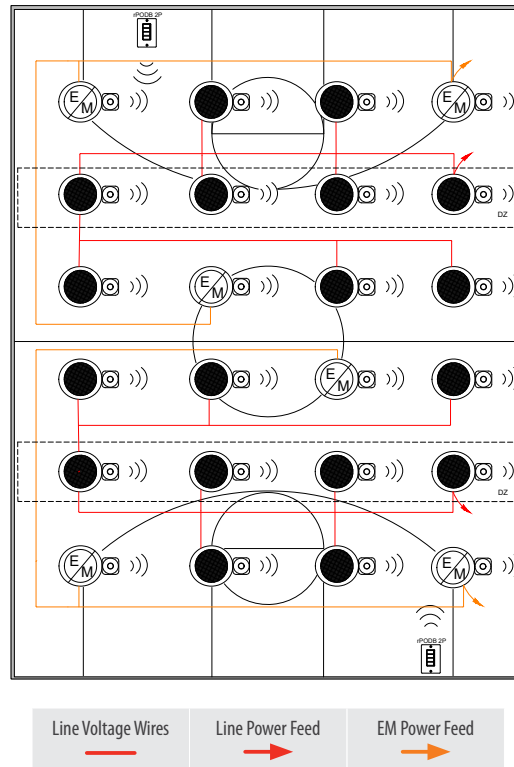
- All fixtures are dimmable
- Adjustable High/Low Trim

Occupancy Control:




- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

ADDITIONAL OPTIONS:

- Stairwell can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option



Bill of Materials

Symbol	Qty	Product #	Description
	18	See Notes	Luminaire with Wireless Networked Embedded Controls from nLight
	6	See Notes	Luminaire with Networked Embedded Controls from nLight with Emergency Option
	2	rPODB 2P G2	2-Pole On/Off WallPod

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off when the space becomes vacant or optionally can be configured to a low dim setting

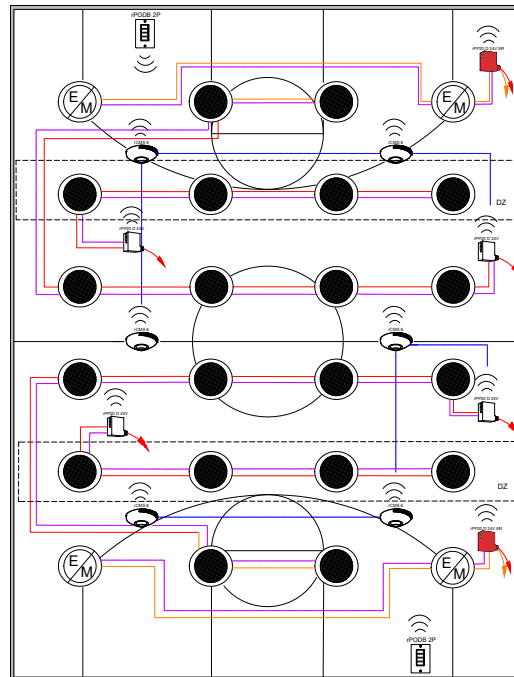
Manual Control:

- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Space can be connected to the nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).



Bill of Materials

Symbol	Qty	Product #	Description
	4	rPP20 D EFP 24V G2	Relay Pack with 0-10V Dimming Output
	2	rPP20 D 24V ER EFP G2	Emergency Relay Pack with 0-10V Dimming Output
	2	rPODB 2P G2	2-Pole On/Off WallPod
	6	rCMS 6 G2	High Bay Occupancy Sensor

SEQUENCE OF OPERATIONS:

Fixtures:

- All fixtures are dimmable
- Each row controlled independently
- Adjustable High/Low Trim

Occupancy Control:

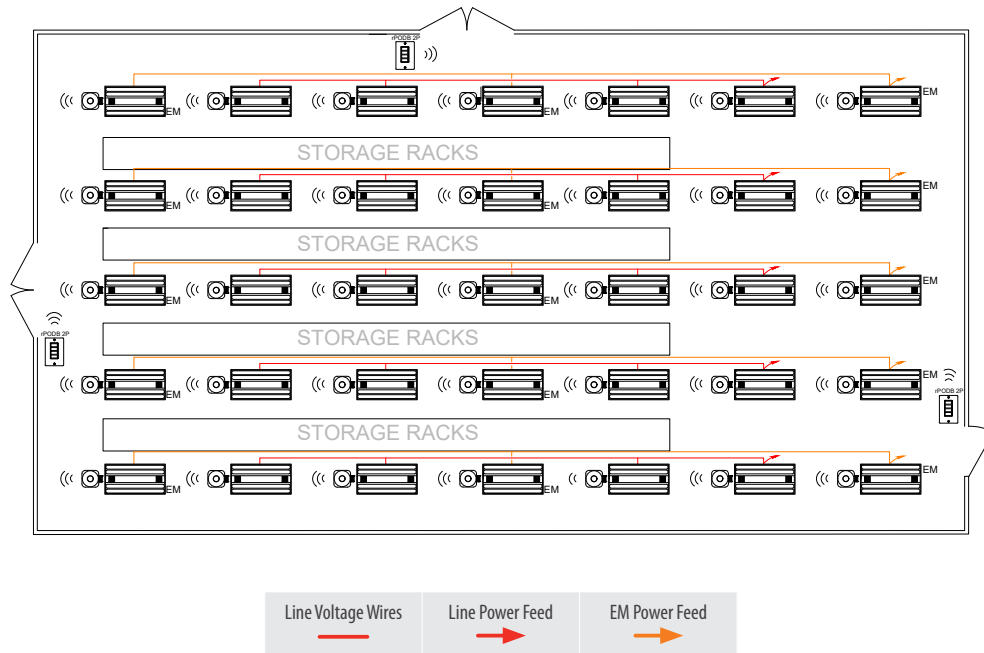
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off when the space becomes vacant or optionally can be configured to a low dim setting

Manual Control:




- On/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:

- Space can be connected to the nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option



Bill of Materials

Symbol	Qty	Product #	Description
	20	IBG Series	Luminaires with Wireless Networked Embedded Controls from nLight
	15	IBG Series	Luminaires with Wireless Networked Embedded Controls from nLight with Emergency Option
	3	rPODB 2P G2	2-Pole On/Off WallPod

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Optional automatic lumen compensation
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied or optionally can be configured to a low dim setting
- Fixtures automatically turn off when space becomes vacant

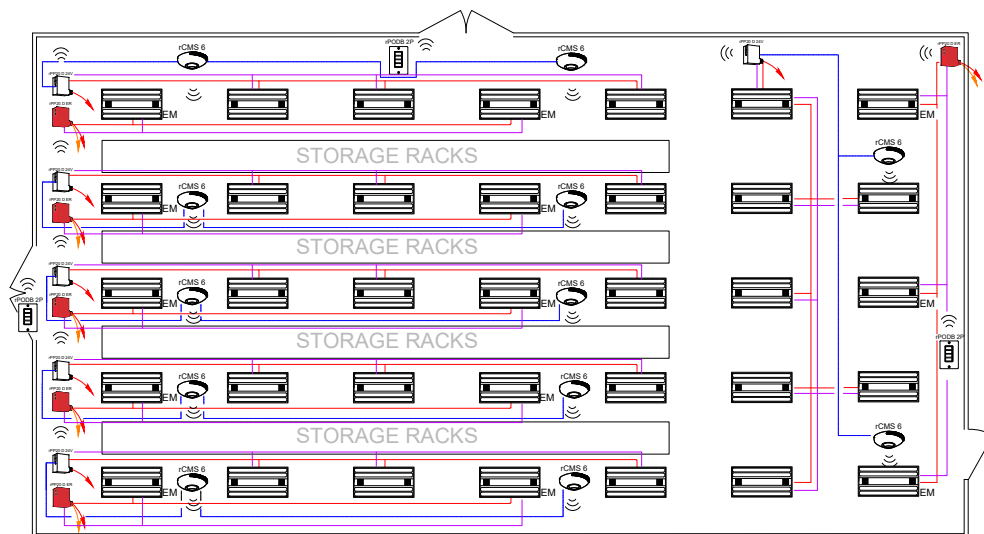
Manual Control:

- On/off & raise/lower control of fixtures





/ ADDITIONAL OPTIONS:

- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1) and qualify for enhanced digital lighting controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).



Bill of Materials

Symbol	Qty	Product #	Description
	6	rPP20 D 24V EFP G2	Relay Pack with 0-10V Dimming Output
	6	rPP20 D ER EFP G2	Emergency Relay Pack with 0-10V Dimming Output
	3	rPODB 2P G2	2-Pole On/Off WallPod
	12	rCMS 6 G2	Occupancy Sensor

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Optional automatic lumen compensation
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied or optionally can be configured to a low dim setting
- Fixtures automatically turn off when space becomes vacant

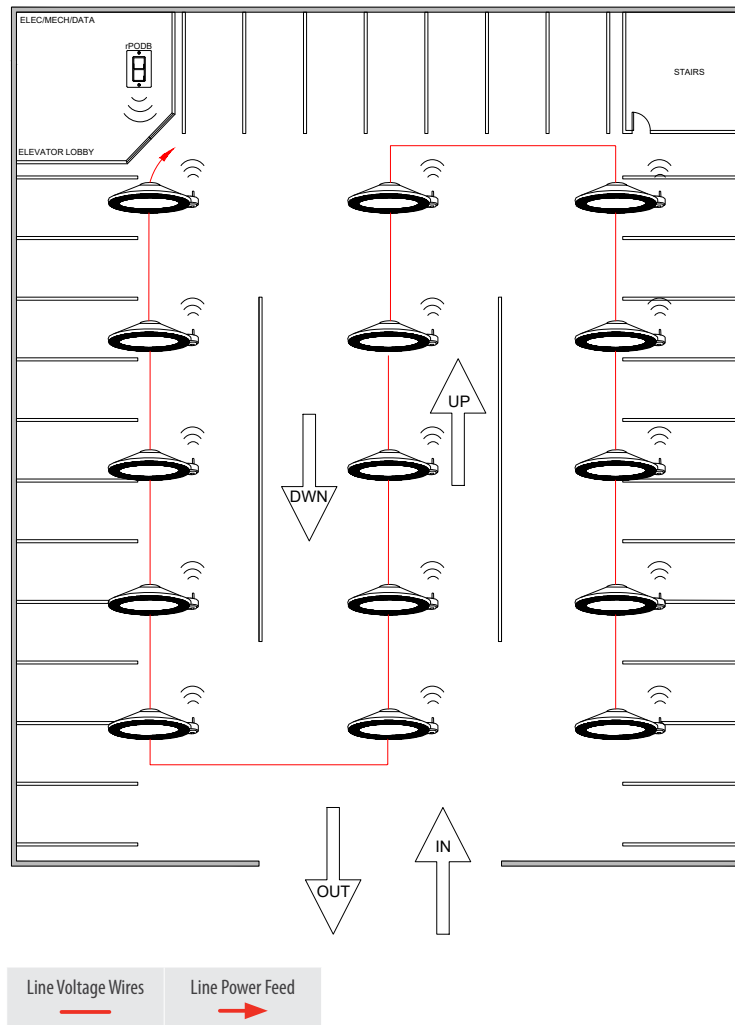
Manual Control:

- On/off & raise/lower control of fixtures



ADDITIONAL OPTIONS:

- Space can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR)

Wireless Parking Garage



Bill of Materials

Symbol	Qty	Product #	Description
	15	See Notes	Luminaires with Wireless Networked Embedded Controls from nLight
	1	rPODB G2	On/Off WallPod

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

Daylight Control:

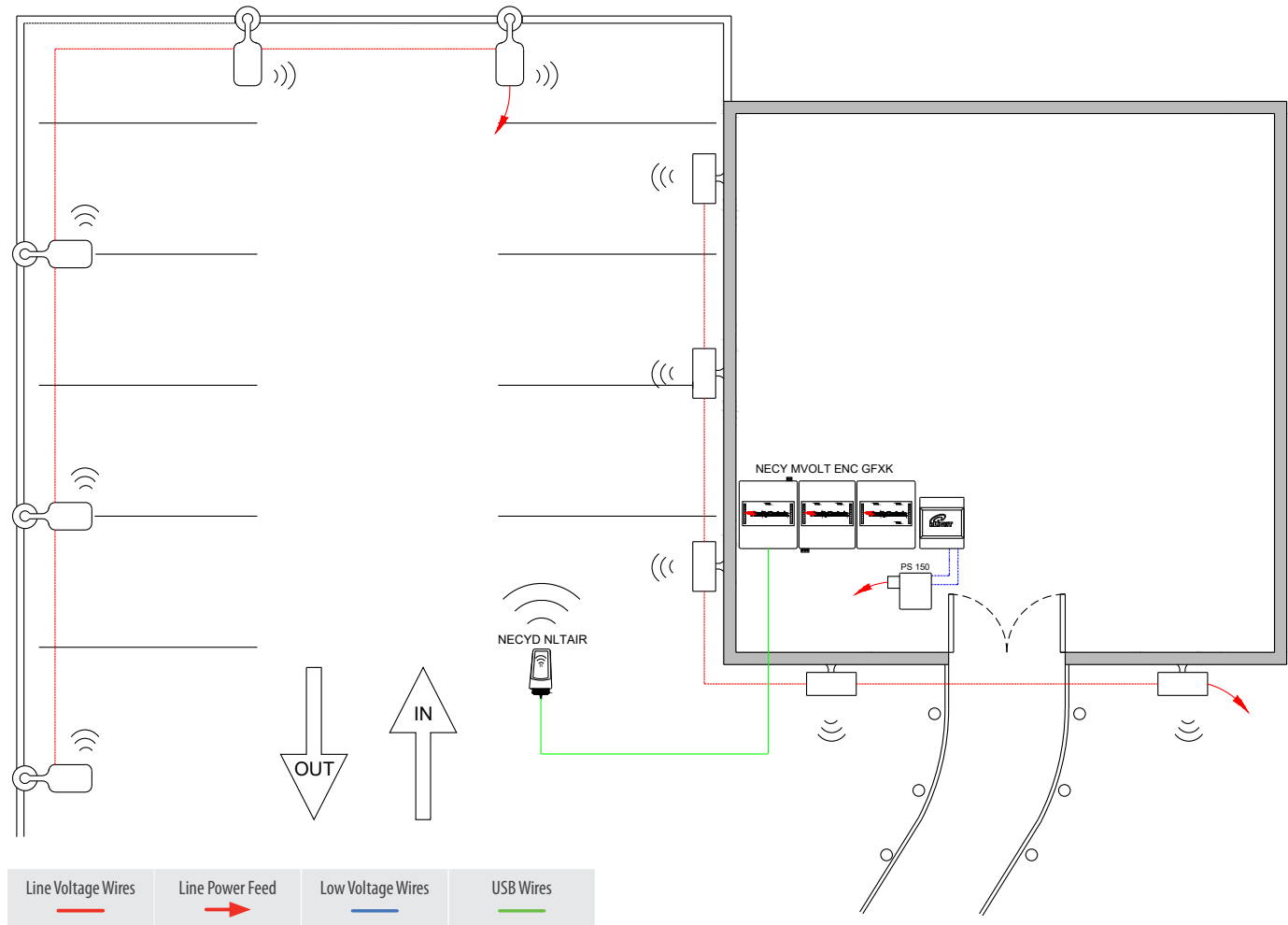
- Daylight responsive controls lights to full off when adequate daylight present

/ ADDITIONAL OPTIONS:

- Space can be connected to the nLight backbone to enable network control or time schedules (C405.2.2.1)

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).

Wireless Site Lighting



Bill of Materials

Symbol	Qty	Product #	Description
	5	See Notes	Area Luminaire with Wireless Networked Embedded Controls from nLight
	5	See Notes	Wall Mount with Wireless Networked Embedded Controls from nLight
	1	nECY MVOLT ENC GFXK	Lighting and BMS Controller with Graphic WallPod
	1	nECYD NLTAIR G2	nLight AIR Adapter

OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Adjustable High/Low Trim

Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

Daylight Control:

- Daylight responsive controls lights to full off when adequate daylight present

Time Switch:

- Time switch controls are required for building facade and landscape. All other exterior areas require either occupancy sensor control or time switch controls

Note: Contact your local lighting agent for more information on luminaires with networked embedded controls from nLight. nLight wired or wireless networked control devices address the requirements of Luminaire Level Lighting Controls (LLLC) (WESC CODE).

nLight Backbone Network:

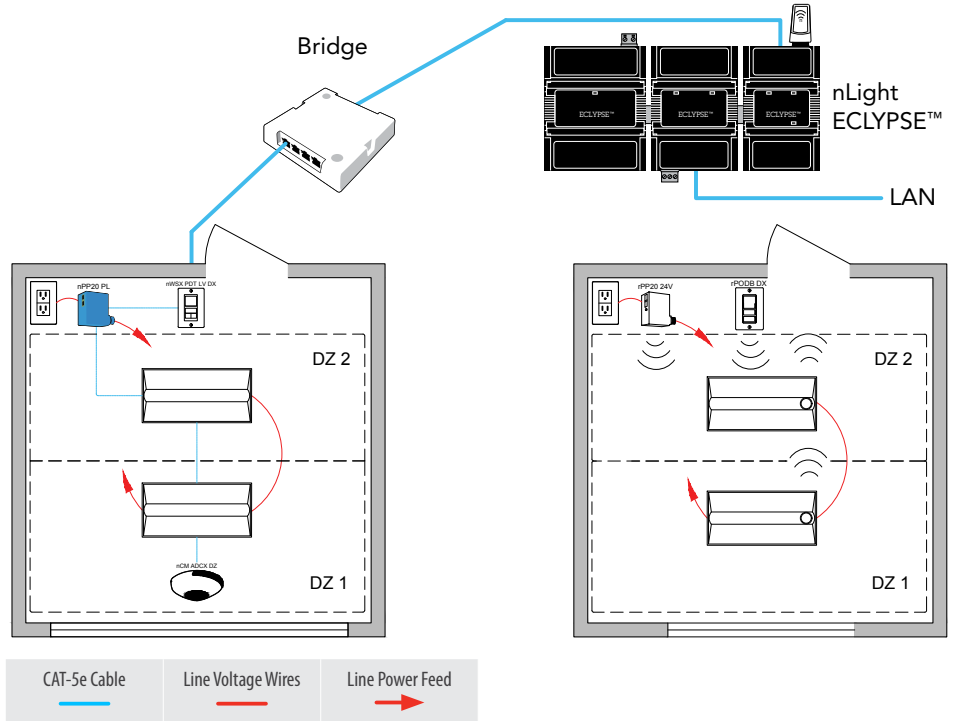
Although not pictured within each of the individual room design guides, each nLight Control Zone can be connected via an nLight backbone to create a networked nLight lighting control system capable of meeting the requirements of the WSEC programmable timeclock provision (Section C405.2.2.1). A networked system also enables astronomical time clock control.

Additionally, the nLight network backbone is required to meet the Enhanced Digital Lighting Controls additional efficiency package option (C406.4).




For additional information regarding building management integration (including BACnet) or demand response features, please contact your Acuity Brands Sales Representative.

System Functionality:

- Remote configuration and custom commissioning
- Run time-based and on demand control profiles (such as load shedding)
- Real-time lighting, photocell, and occupancy status collection and analysis
- Provides required connectivity for third party Building Management Systems
- Remote upgrading of all system devices
- Global Groups



Bill of Materials

Symbol	Qty	Product #	Description
	1	nBRG 8 KIT	8-Port Backbone Bridge
	1	nECY MVOLT ENC	Lighting and BMS Controller
	1	nECYD NLTAIR G2	nLight AIR Adapter

Luminaires with Networked Embedded Controls from nLight

Acuity Brands offers the industry's broadest portfolio of luminaires with networked embedded controls from nLight. Please scan the QR code to see the current luminaires with networked embedded controls from nLight.



Mobile Apps

Quick and Easy Lighting Configuration and Control In the Palm of Your Hand

nLight Wired



nLight BLE Radio Module

nLight wired uses the nIO BT (Bluetooth® Low Energy radio module) to communicate with the nConfig app to modify the settings and operation of the devices in an nLight zone.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Acuity Brands Lighting is under license.

nConfig™

The nConfig mobile app is for nLight wired controls startups. It's a quick and easy alternative to SensorView software for smaller projects and simple programming.

nLight AIR



CLAIRITY™ Pro

The CLAIRITY Pro mobile app allows you to start up, configure and troubleshoot nLight AIR wireless controls from a compatible smartphone or tablet.

C405.2 Lighting controls (Mandatory) added...

Exception: Stairwells and parking garages are not permitted to use wall-mounted manual switches.

C405.2.1.1 Occupancy sensor control function added...

Exception : Full automatic-on controls shall be permitted to control lighting in...“parking garages”...

C405.2.2.1 Time Switch control function revised...

Individual override switch control shall control lighting for an area not larger than (5000) “2500” square feet

C405.2.3 Manual controls added...

“Where manual controls are required, at least one separate manual control shall be provided for each area enclosed by walls or floor-to-ceiling partitions.”

C405.2.4 Daylight responsive controls revised...

Exception: Sidelight daylight zones on the first floor above grade in Group A2 and Group M occupancies “where the fenestration adjoins a sidewalk or other outdoor pedestrian area provided that the light fixtures are controlled separately from the general area lighting.”

C405.2.4.1 Daylight responsive controls function revised/added...

8) “The maximum area a single daylight responsive control device serves shall not exceed 2500 square feet “and no more than 60 lineal feet of façade.”

10) “Be set initially at 30 footcandles or not more than 110% of the illuminance level specified on the construction documents.”

C405.2.4.2 Sidelight daylight zone

“Where the fenestration is located in a wall, the sidelight daylight zone includes the primary and secondary daylight zones. The primary daylight zone shall extend laterally to the nearest full height wall, or up to 1.0 times the height from the floor to the top of the fenestration, and longitudinally from the edge of the fenestration to the nearest full height wall, or up to 2 feet (610 mm), whichever is less, as indicated in Figure C405.2.4.2(1). The secondary daylight zone begins at the edge of the primary daylight zone and extends laterally to the nearest full height wall, or up to 2.0 times the height from the floor to the top of the fenestration, whichever is less, as indicated in Figure C405.2.4.2(1).”










C405.2.5 Additional lighting controls added...

8) Each stairway shall have one or more control devices to automatically reduce lighting power by not less than 50 percent when no occupants have been detected in the stairway for a period not exceeding (30) “15” minutes, and restore lighting to full power when occupants enter the stairway. All portions of stairways shall remain illuminated to meet the requirements of Seattle Building Code Section 1009 or Code Alternate CA1009.2 when the lighting power is reduced.

9) Lighting in parking garages shall have one or more control devices to automatically reduce lighting power in any one controlled zone by not less than 50 percent when no occupants have been detected in that zone for a period not exceeding 30 minutes, and restore lighting to full power when occupants enter or approach the zone. Each lighting zone controlled by occupancy sensors shall be no larger than 7,200 square feet. Pedestrian occupancy sensors controlling any lighting zone are permitted to be configured to detect pedestrians no more than 30 feet outside of that zone. Vehicle occupancy sensors controlling any lighting zone are permitted to be configured to detect vehicles no more than 60 feet outside of that zone.

C405.2.7 Exterior lighting controls revised...

2. Where lighting the building façade or landscape, the lighting shall have controls that automatically shut off the lighting “as a function of dawn/dusk and a set opening and closing time.” between midnight or business/facility closing, whichever is later, and 6 a.m. or business/facility opening, whichever is earlier.

Control Requirement	Code Provision	nLight Solution Details	
Manual Control (Local Switch)	C405.2.3	nLight WallPod devices provide a user with local control of lighting within an nLight controlled space. WallPods are available in multiple styles – each with varying features and user experiences.	
		<p align="center">Push-Button WallPod</p>	<p align="center">Graphic WallPod*</p>
		<p>nPODM Series rPODB Series</p>  <p align="center">Traditional tactile buttons and LED user feedback.</p>	<p>nLight UNITOUCH</p>  <p align="center">Full-color touch screen provides a sophisticated look and feel.</p>
Shut-Off Control Time-Switch Controls and Exterior Lighting Control (via System Controller)	C405.2.2.1 C405.2.7	Individual nLight control groups (i.e.: rooms) can be easily networked together across an entire building simply by connecting them into a “backbone” made up of one or more nLight bridge devices and/or nLight AIR adapters and an nLight ECLYPSE system controller. The system controller provides programmable time clock functionality for an nLight network as well as interfaces to the SensorView suite of web-based software applications (via an Ethernet LAN / WAN connection).	
		<p align="center">Network System Controller</p>	
		<p align="center">Network System Controller</p>  <p>Additional benefits of installing an nLight backbone include remote status monitoring, system-wide configuration changes, and BMS interface capability.</p>	
Full Auto-Off via Occupancy Sensor	C405.2.1.1.1	nLight occupancy sensors utilize 100% digital passive infrared (PIR) detection, come in several mounting styles, and offer multiple coverage pattern options. Additionally, nLight sensors are available with patented Microphonics™ dual technology detection for rooms with obstructions. Configuring for full off vs. partial off control is done with system programming.	
Manual On, Auto-On <=50%, Full Automatic On	C405.2.1.1.2	<p align="center">360° Occupancy Sensor</p>	<p align="center">120° WideView Corner Sensor*</p>
		<p>nCM Series rCMS Series</p> 	<p>nWV Series</p> 
		<p align="center">Surface mounts to ceiling tiles or sheetrock/plaster.</p>	<p align="center">Directly mounts in corner or to ceiling via repositionable ceiling bracket.</p>
Light Level Control Light-Reduction Controls	C405.2.2.2	nLight provides multiple options for controlling continuous dimming luminaires. This allows spaces with several lighting types and technologies to be controlled together and with a common user experience.	
		<p align="center">Acuity Brands Luminaires with Networked Embedded Controls from nLight</p> 	<p align="center">Dimming Relay Packs</p> <p>nPP16 Series rPP20 Series</p> 
		<p>Acuity Brands offers a wide variety of LED fixtures with factory installed integrated nLight controls that provide smooth continuous dimming.</p>	<p>nLight dimming relay enable control of any 0-10VDC dimmable LED luminaire.</p>
Daylight-Responsive Controls	C405.2.4	nLight offers standalone daylight harvesting sensors as well as occupancy sensors with integrated daylight harvesting. Sensors are available in various housings and provide continuous dimming control of any/all luminaires with networked embedded controls from nLight or dimming relay packs, each capable of being its own daylight zone.	
		<p align="center">Ceiling Mount Dimming Photocell</p>	<p align="center">Recessed Mount Dimming Photocell*</p>
		<p>nCM Series rCMS Series</p> 	<p>nRM Series</p> 

*Available with nLight Wired products only.

Note: This summary is for general information purposes only and is provided without any warranty as to accuracy, completeness, or otherwise. The user should read the applicable code sections for more complete and detailed descriptions of code requirements and exceptions and should consult with a professional engineering or other competent advisor before making any decision or taking any action based on this summary.



Additional Resources:

Acuity Controls Typical Layout Drawings

www.acuitybrands.com/typicals

Use the Following Sections of the WSEC 2015 Code as Reference:

- Section C405.2.1.1.1 – Full Auto-Off via Occupancy Sensor
- Section C405.2.1.1.2 – Manual-On or Auto-On ≤ 50%
- Section C405.2.1.1.2 – Full Auto-On
- Section C405.2.2.1 – Time Switch Controls
- Section C405.2.2.2 – Manual Lighting Reduction
- Section C405.2.4 – Daylight-Responsive Controls
- Section C406.4 – Enhanced Digital Lighting Controls
- Section C405.2.1 – Occupancy Sensor Controls
- Section C405.10 – Controlled Receptacles

