



# IECC 2015

nLight® Applications Guide





## / nLight Lighting Controls Platform

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**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.



## / TABLE OF CONTENTS

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04	Code Requirements for Common Building Spaces
05	How to Use This Guide
06	Private Office Solutions
08	Open Office Solutions
10	Conference Room Solutions
12	Classroom Solutions
14	Lobby Solutions
16	Corridor Solutions
18	Restroom Solutions
21	Stairwell Solutions
22	Warehouse Solutions
23	Gymnasium Solutions
24	Parking Garage / Site Lighting
25	nLight Enabled Luminaires
26	Requirements Overview
27	Emergency Lighting







## / ABOUT

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### About IECC 2015

The International Energy Conservation Code (IECC) 2015 is a residential and commercial building energy code. The IECC 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 scheduled/manual inputs are required in order to be compliant.

### About This Guide

Acuity Brands® offers the nLight® IECC 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 IECC code.

	Control Requirement*	Code Provision	Code Summary*	Space Type									
				Private Office	Open Office	Conference, Meeting, Multipurpose Room	Classroom, Lecture Hall, Training Room	Lobby	Corridor	Public Restroom	Private Restroom	Non-Exit Stairwell	Gymnasium
On-Off Control	Manual-On or AutoOn ≤ 50%	C405.2.1.1.2	Automatically controlled spaces must be controlled to automatically turn the lighting on to not more than 50% power.	✓	✓	✓	✓						
	Full Automatic-On	C405.2.1.1.2	Automatically controlled spaces are allowed to turn on to full.					✓	✓	✓	✓	✓	
	Auto-Off ≤ 50%	C405.2.1.2	Occupancy sensors shall automatically reduce lighting in warehouse aisle-ways and open areas by ≤ 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 (via System Controller)	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)	(or)
					✓			✓	✓			✓	✓
	Light Reduction Controls	C405.2.2.2	Spaces shall have a manual control that allows the occupant to reduce the connected lighting load uniformly by at least 50%.		✓							✓	✓
Daylight Control	Manual Control (Local Switch)	C405.2.2.3	Areas shall incorporate a manual control to allow occupants to turn fixtures off.	✓	✓	✓	✓	✓	✓	✓**	✓**	✓**	✓**
	Daylight-Responsive Controls	C405.2.3.1/2	Daylight-responsive controls shall be provided within each space with sidelight and toplight daylight zones totaling > 150W.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Exterior Lighting Controls	C405.2.5	Lighting for exterior applications other than emergency lighting that is intended to be automatically off during building operation.										
Exterior Control	Exterior Lighting Controls	C405.2.5.3	Lighting shall automatically reduce connected lighting power by not less than 30% from no later than midnight to 6 am for one hour after business closing when occupancy has not been detected for longer than 15 minutes										



Warehouse	Parking Garage	Site Lighting
✓		
✓		
(or)		
✓		
✓		
	✓	✓
	✓	✓

For each space type there will be a wired solution on the left and wireless solution on the right.

Room description

Room layout with devices & locations

Room layout diagram with control, fixture, and wiring type detail

Required list of devices in order to implement room layout design above

6 PRIVATE OFFICE: < 250 sq. ft., Windows, nLight Enabled Fixtures

**Wired**

**Wireless**

Symbol	Qty	Product #	Description
	2	See Note	nLight Wired Enabled Fixture
	1	nWSX POT LV DX	Wall Switch Occupancy Sensor with On/Off, Raise/Lower

Symbol	Qty	Product #	Description
	2	See Note	nLight AIR Enabled Fixture
	1	rPCOB DX G2	On/Off, Raise/Lower WallPod®

**OPERATIONAL DETAILS:**

**Light Fixtures:**

- All fixtures are dimmable
- All fixtures can be controlled together or independently
- Maximum level 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 sidelight 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 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- HVAC control available through system-wide BACnet® interface option on the ECOPSE® controller
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

Note: Contact your local lighting agent for more information on nLight enabled fixtures.

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Operational details describe the functionality provided by the equipment specified in the solution

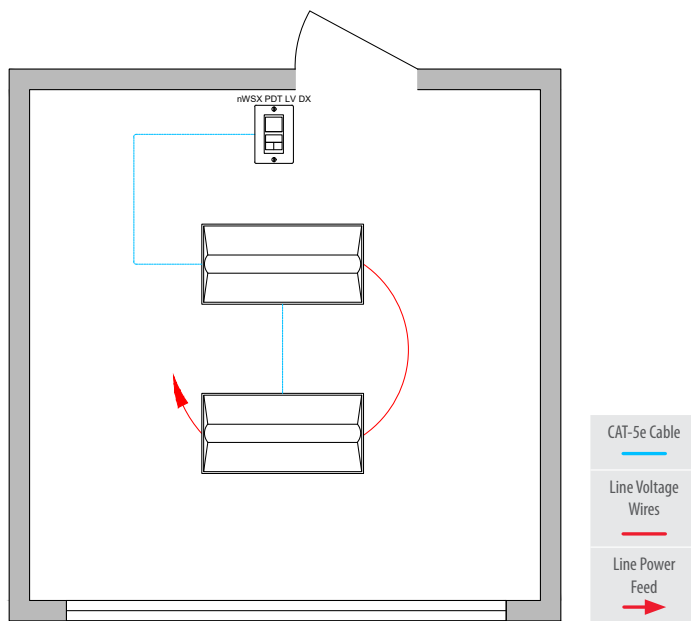
Additional options that add control capacity beyond code requirements

#### Notes:

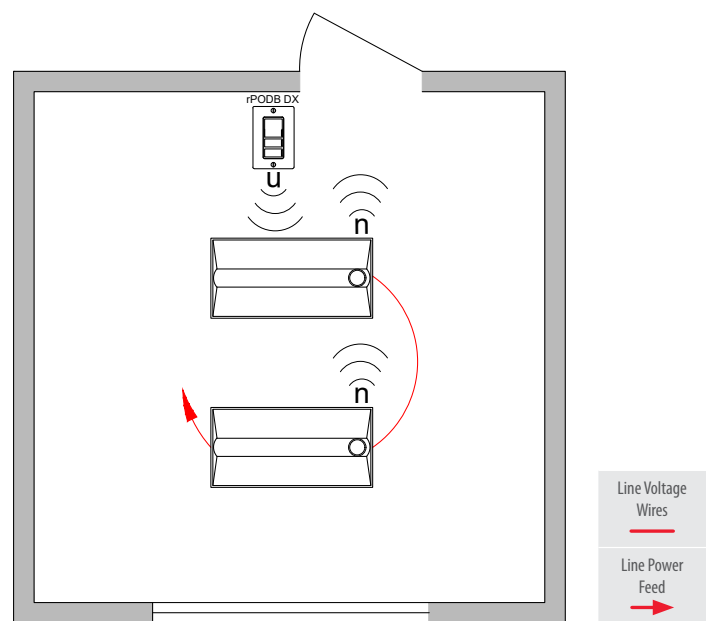
\*This summary is for general information purposes only and is provided without any warranty as to accuracy, completeness, or otherwise. The user should read the applicable code sections for more complete and detailed descriptions of code requirements and exceptions and should consult with a professional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

\*\* While energy code is required, safety may preclude the use of a manual controls in these spaces.

## Wired



## Wireless



### Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	nLight Wired Enabled Fixture
	1	nWSX PDT LV DX	Wall Switch Occupancy Sensor with On/Off, Raise/Lower

### Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	nLight AIR Enabled Fixture
	1	rPODB DX G2	On/Off, Raise/Lower WallPod®

### OPERATIONAL DETAILS:

#### Light Fixtures:

- All fixtures are dimmable
- All fixtures can be controlled together or independently
- Maximum level 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 sidelight zones

#### Manual Control:

- On/off & raise/lower control of fixtures

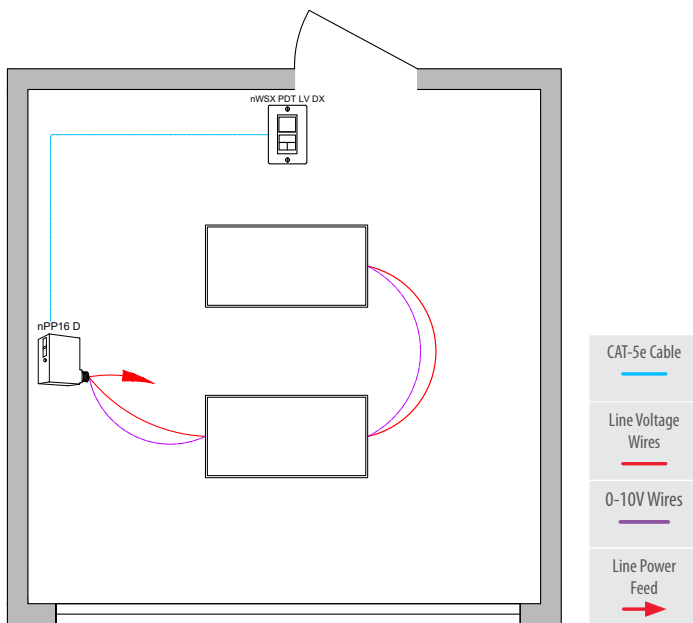
### ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE® controller
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

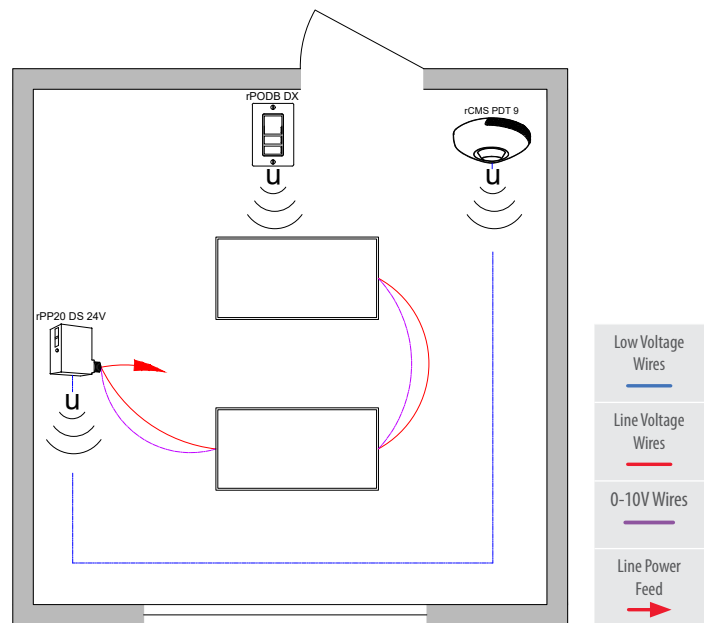
**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.



## Wired



## Wireless



### Bill of Materials

Symbol	Qty	Product #	Description
	1	nPP16 D EFP	Relay Pack with 0-10V Dimming Output
	1	nWSX PDT LV DX	Wall Switch Occupancy Sensor with On/Off, Raise/Lower

### Bill of Materials

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

#### / OPERATIONAL DETAILS:

##### Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together
- Maximum level 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 sidelight zone

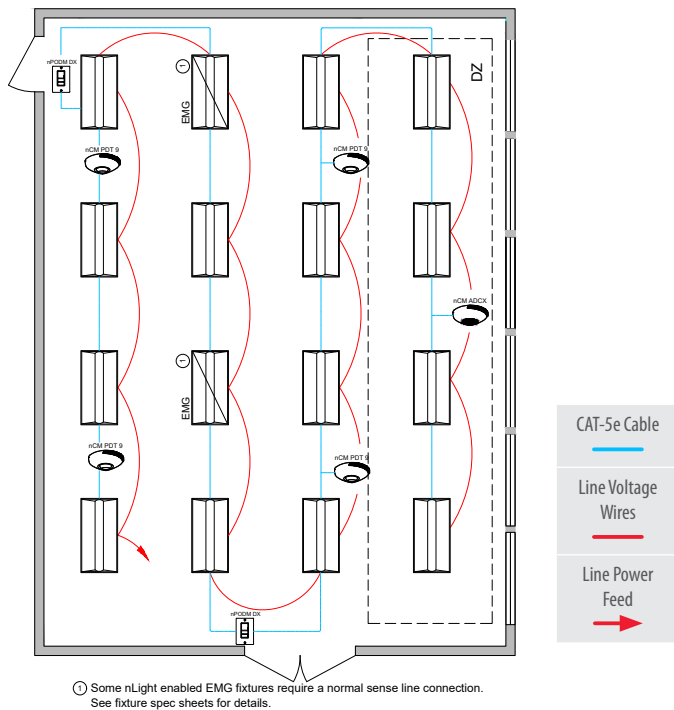
##### Manual Control:

- On/off & raise/lower control of fixtures

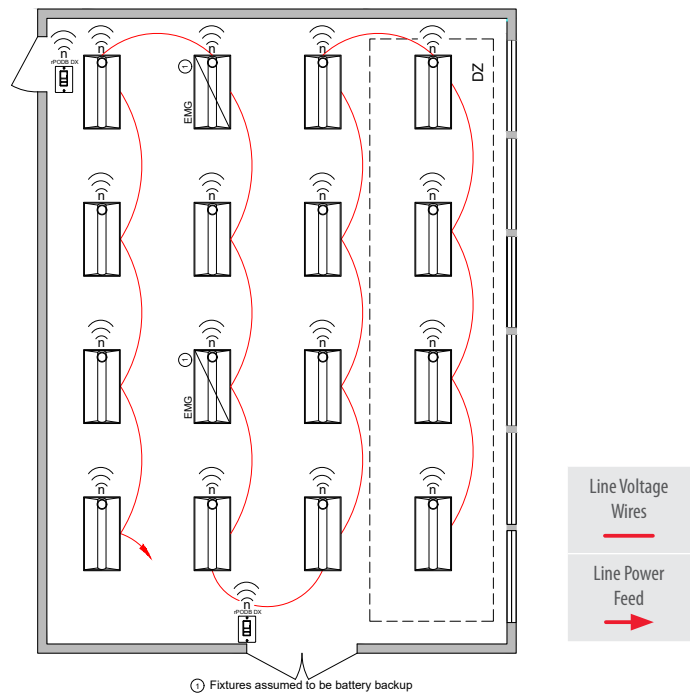
#### / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- For emergency lighting control use a power pack with ER option

## Wired



## Wireless



### Bill of Materials

Symbol	Qty	Product #	Description
	14	See Note	nLight Wired Enabled Fixture
	2	See Note	nLight Wired Enabled Fixture with EMG option
	2	nPODM DX	On/Off, Raise/Lower WallPod
	4	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX RJB	Daylight Sensor

### Bill of Materials

Symbol	Qty	Product #	Description
	14	See Note	nLight AIR Enabled Fixture
	2	See Note	nLight AIR Enabled Fixture with 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
- Maximum level 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:

- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number zones = number of fixtures)
- Not required for offices without windows or that have loads <150W in sidelight zones

#### Manual Control:

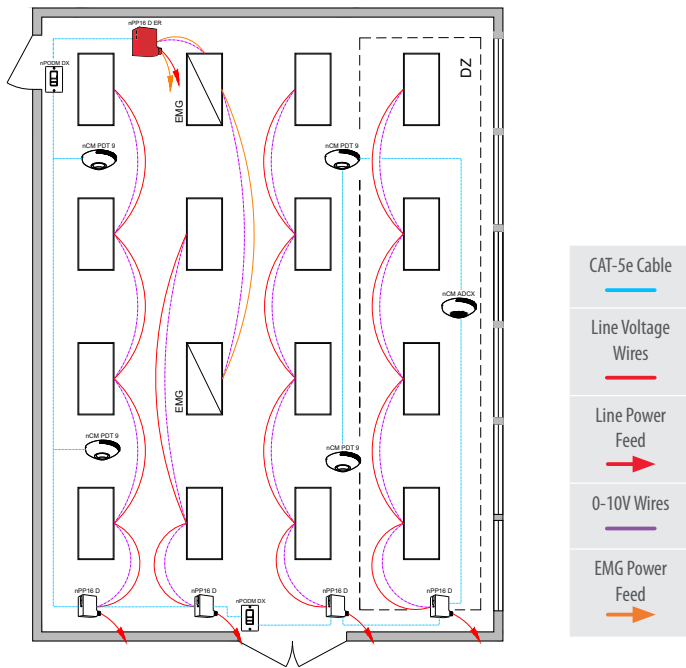
- On/off & raise/lower control of fixtures

### ADDITIONAL OPTIONS:

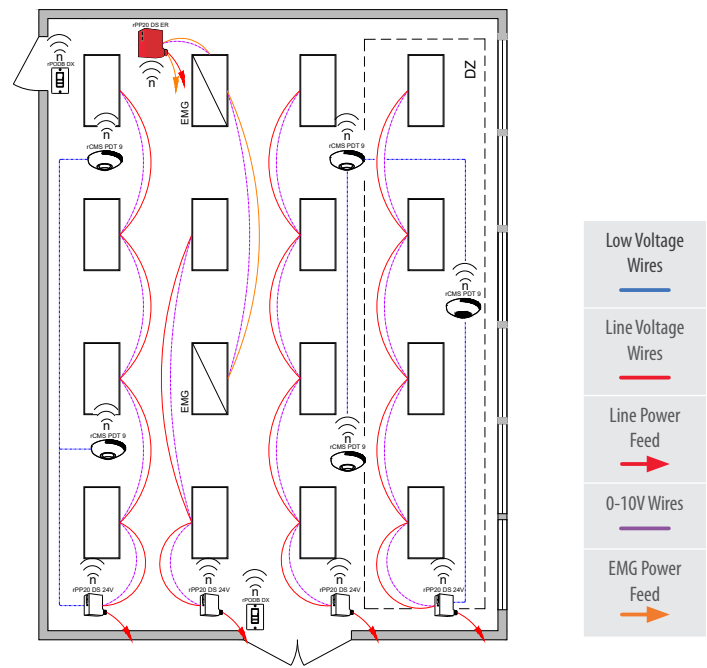
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

**Note: Contact your local lighting agent for more information on nLight enabled fixtures.**

## Wired



## Wireless



## 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 RJB	Daylight Sensor

## Bill of Materials

Symbol	Qty	Product #	Description
	4	rPP20 DS 24V G2	Relay Pack with 0-10V Dimming Output
	1	rPP20 DS ER 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

### OPERATIONAL DETAILS:

#### Light Fixtures:

- All fixtures are dimmable
- Each row controlled independently
- Maximum level 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:

- Smooth continuous dimming
- Daylight zones defined by rows
- Not required for offices without windows or that have loads <150W in sidelight zones

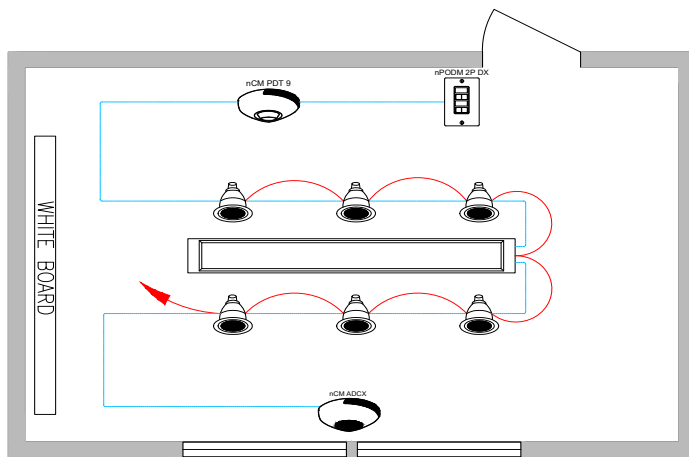
#### Manual Control:

- On/off & raise/lower control of fixtures

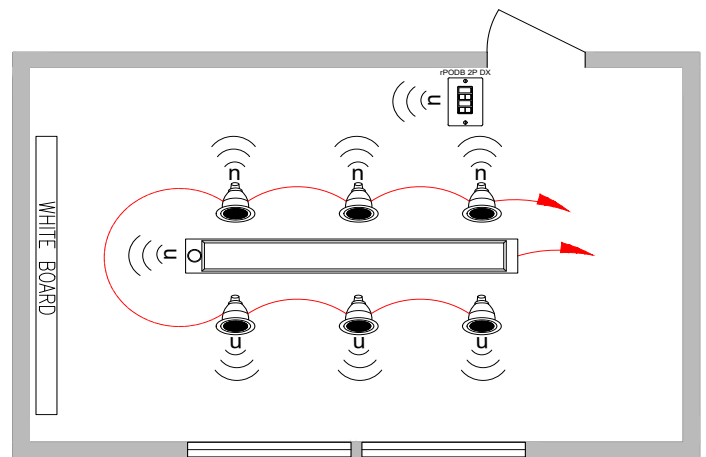
### ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- 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
	1	See Note	nLight Wired Enabled Linear Fixture
	6	See Note	nLight Wired Enabled Downlight Fixture
	1	nPODM 2P DX	2-Pole On/Off, Raise/Lower WallPod
	1	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX RJB	Daylight Sensor

## Bill of Materials

Symbol	Qty	Product #	Description
	1	See Note	nLight AIR Enabled Linear Fixture
	6	See Note	nLight AIR Enabled Downlight Fixture
	1	rPODB 2P DX G2	2-Pole On/Off, Raise/Lower WallPod

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming
- A/V zone can be programmed to control two fixtures in front of the whiteboard

## 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:

- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max number zones = number of fixtures)
- Not required for areas without windows or that have loads <150w in sidelight zones

## Manual Control:

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

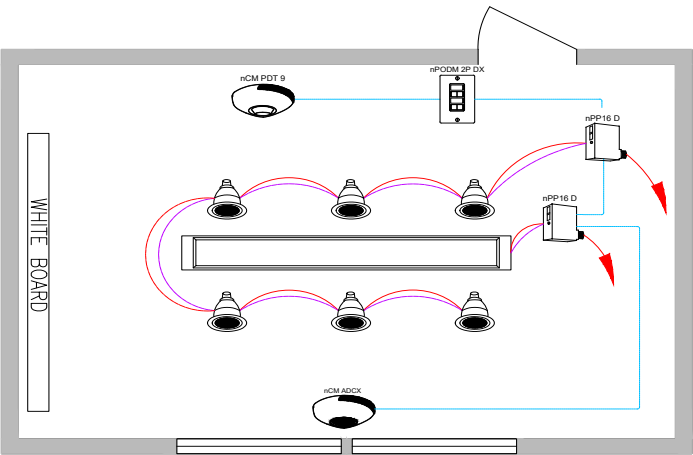
## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

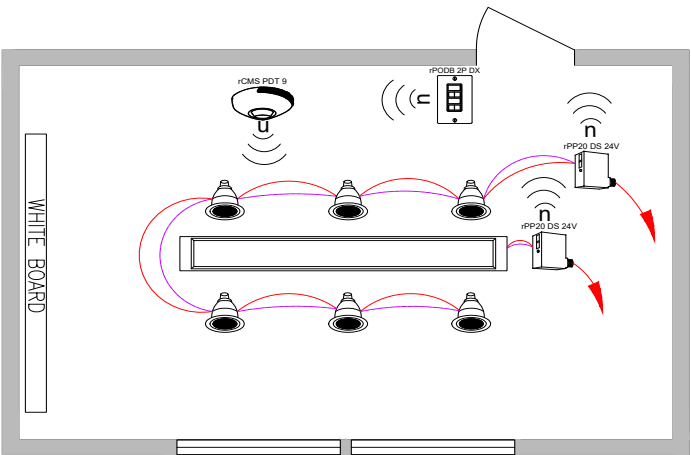
**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.



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 RJB	Daylight Sensor

Bill of Materials

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

/ OPERATIONAL DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Maximum level 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:

- Smooth continuous dimming
- Daylight zones defined by rows
- Not required for areas without windows or that have loads <150W in sidelight zones

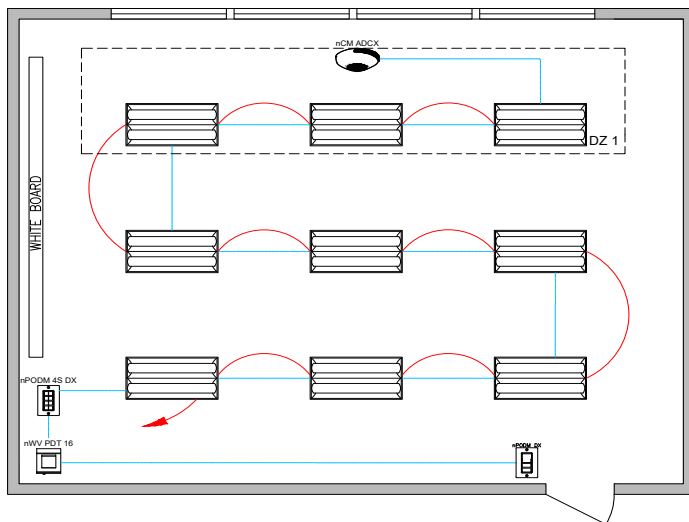
Manual Control:

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

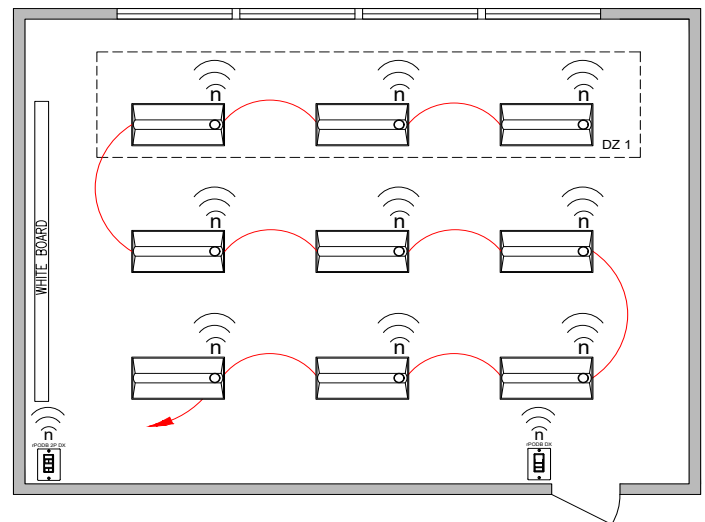
/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- 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	nLight Wired Enabled Fixture
	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 Master On/Off & Raise/Lower
	1	nCM ADCX RJB	Daylight Sensor

## Bill of Materials

Symbol	Qty	Product #	Description
	9	See Note	nLight AIR Enabled Fixture
	1	rPODB DX G2	On/Off, Raise/Lower WallPod
	1	rPODB 2P DX G2	2-Pole On/Off, Raise/Lower WallPod

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Maximum level can be task tuned to any percentage via programming

## Occupancy Control:

- Fixtures must be turned on manually (or optionally can be configured to some on automatically to 50%)
- Fixtures 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 that have loads <150W in sidelight zones

## Manual Control:

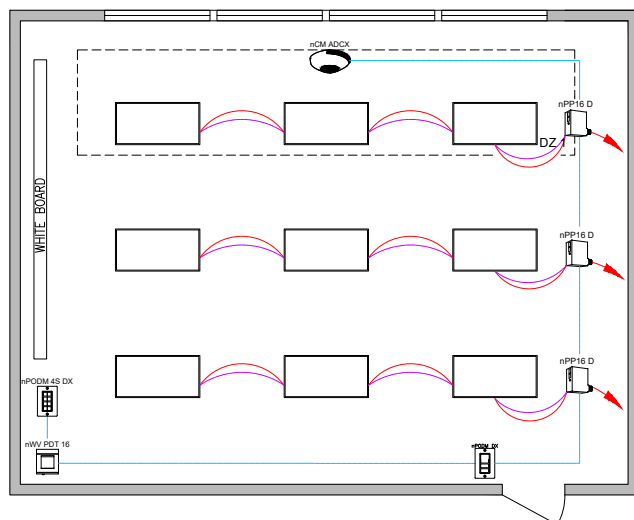
- On/off & raise/lower control of entire room
- Teacher station with control of two zones

## / ADDITIONAL OPTIONS:

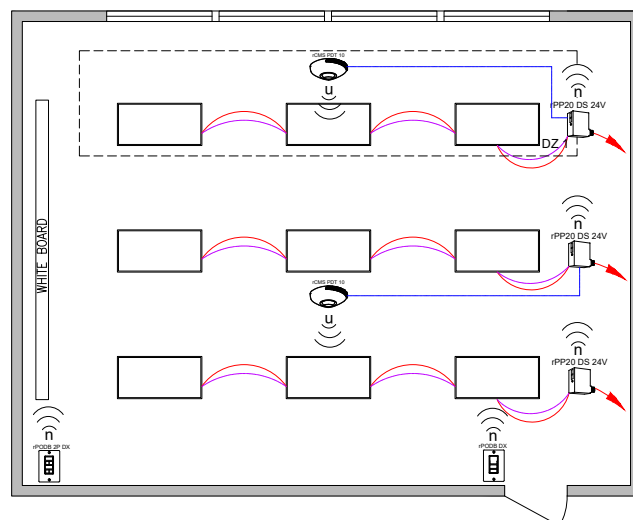
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.

## 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 RJB	Daylight Sensor

## Bill of Materials

Symbol	Qty	Product #	Description
	3	rPP20 DS 24V 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 2P DX G2	2-Pole On/Off, Raise/Lower WallPod

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- Each row can be controlled independently
- Maximum level 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 automatically turn off when room becomes vacant

## Daylight Control:

- Smooth continuous dimming
- Daylight zones defined by rows
- Not required for areas without windows or that have loads <150W in sidelight zones

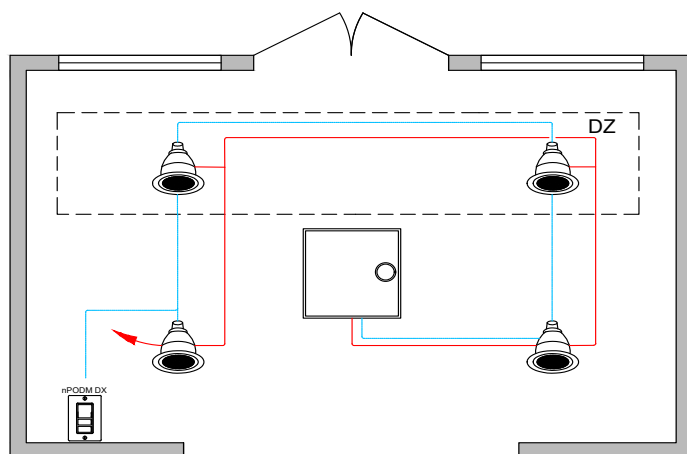
## Manual Control:

- Master on/off & raise/lower control of entire room
- Teacher station with control of two zones

## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

## Wired

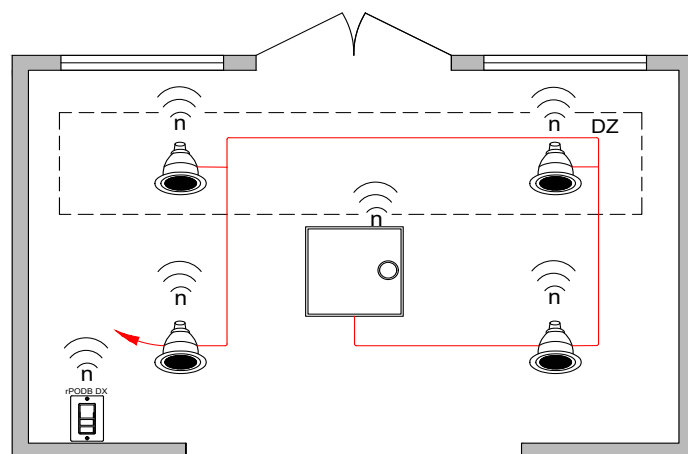


CAT-5e Cable

Line Voltage Wires

Line Power Feed

## Wireless



Line Voltage Wires

Line Power Feed

## Bill of Materials

Symbol	Qty	Product #	Description
	4	See Notes	nLight Wired Enabled Downlight
	1	See Notes	nLight Wired Enabled troffer (recessed)
	1	nPODM DX	On/Off, Raise/Lower WallPod

## Bill of Materials

Symbol	Qty	Product #	Description
	4	See Notes	nLight AIR Enabled Downlight
	1	See Notes	nLight AIR Enabled troffer (recessed)
	1	rPODB DX G2	On/Off, Raise/Lower WallPod

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming

## Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures 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 that have loads <150W in sidelight zones

## Manual Control:

- On/off & raise/lower control of fixtures

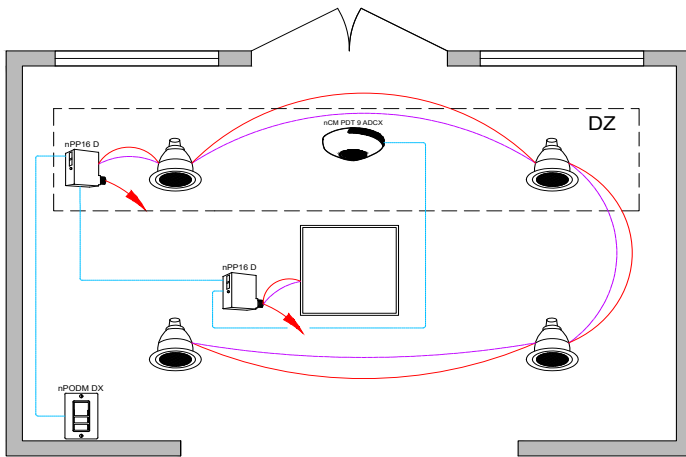
## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.



## Wired



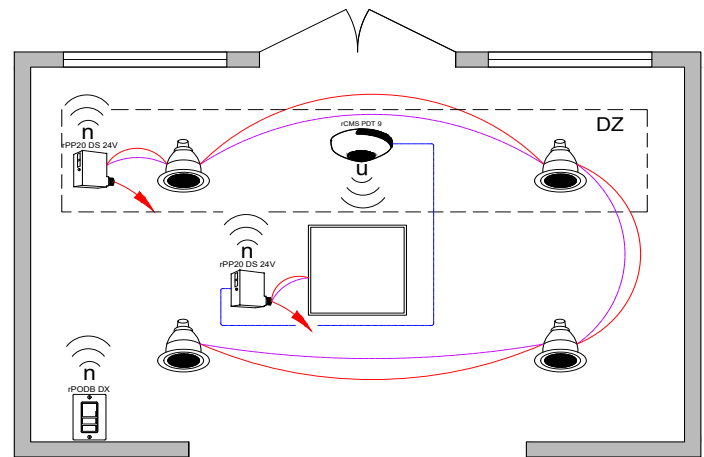
CAT-5e Cable

Line Voltage Wires

Line Power Feed

0-10V Wires

## Wireless



Low Voltage Wires

Line Voltage Wires

Line Power Feed

0-10V Wires

## 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

## Bill of Materials

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

### / OPERATIONAL DETAILS:

#### Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming

#### Occupancy Control:

- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off when room 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 sidelight zones

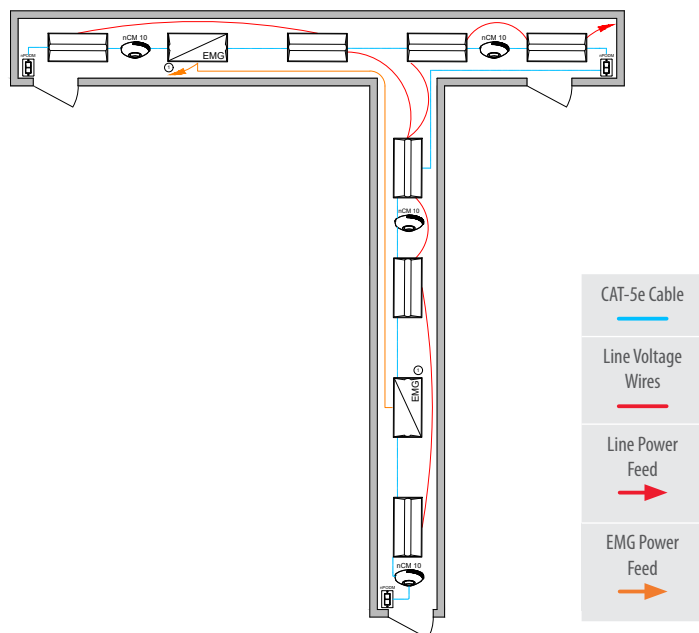
#### Manual Control:

- 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 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option

## Wired

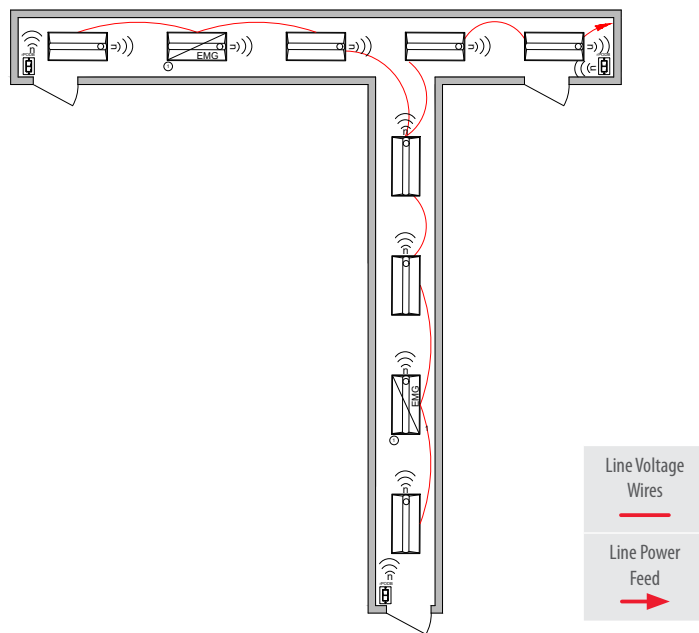


① Some nLight enabled EMG fixtures require a normal sense line connection. See fixture spec sheet for details.

## Bill of Materials

Symbol	Qty	Product #	Description
	7	See Note	nLight Wired Enabled Fixture
	2	See Note	nLight Wired Enabled Fixture with EMG 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	nLight AIR Enabled Fixture
	2	See Note	nLight AIR Enabled Fixture with Battery Option
	3	rPODB G2	On/Off WallPod

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Maximum level can be task tuned to any percentage via programming

## 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

## Manual Control:

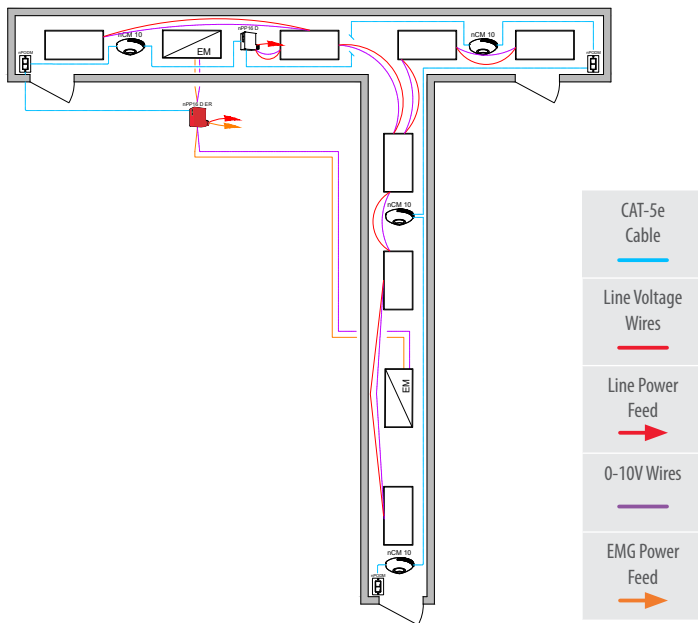
- On/off control of fixtures

## / ADDITIONAL OPTIONS:

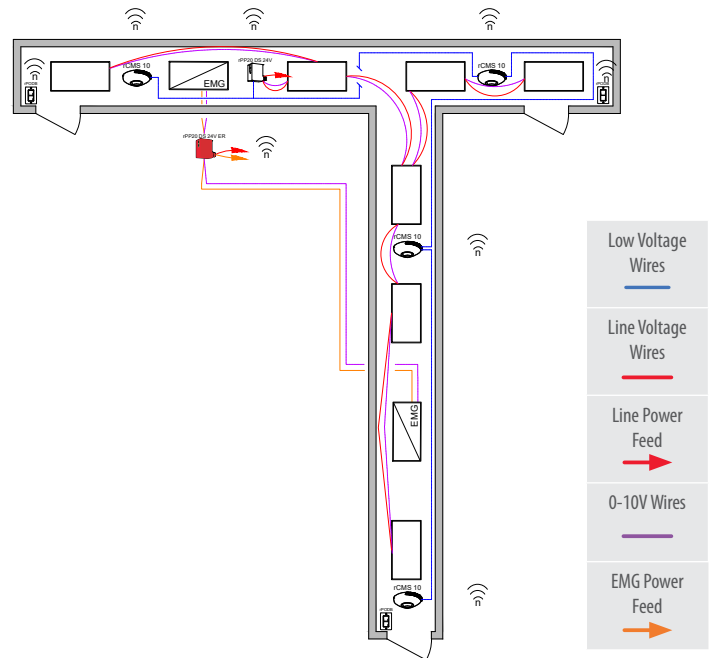
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.





## 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 DS 24V G2	Relay Pack with 0-10V Dimming Output
	1	rPP20 DS 24V ER 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
- Maximum level can be task tuned to any percentage via programming

## 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

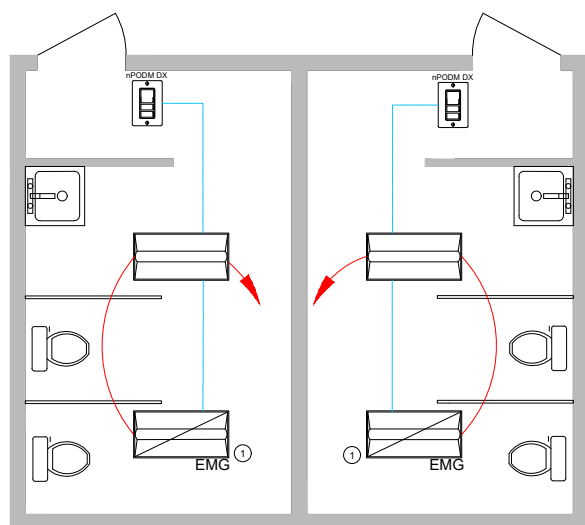
## Manual Control:

- On/off control of fixtures

## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller

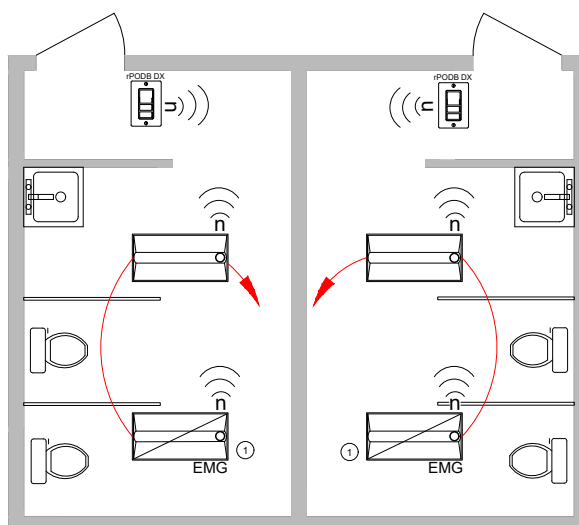
## Wired



① Some nLight enabled EMG fixtures require a normal sense line connection. See fixture spec sheets for details.



## Wireless



① Fixtures assumed to be battery backup



## Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	nLight Wired Enabled Fixture
	2	See Note	nLight Wired Enabled Fixture with the EMG Option
	2	nPODM DX	On/Off, Raise/Lower WallPod

## Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	nLight AIR Enabled Fixture
	2	See Note	nLight AIR Enabled Fixture 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)
- Maximum level can be task tuned to any percentage via programming

## Occupancy Control:

- Fixtures automatically go to full bright when occupied (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

## Manual Control:

- On/off & raise/lower control of fixtures
- If switch poses safety concerns, optionally can be programmed for "on only"

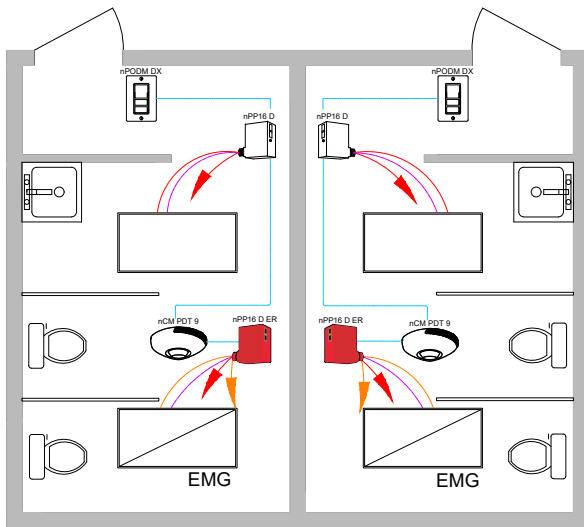
## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

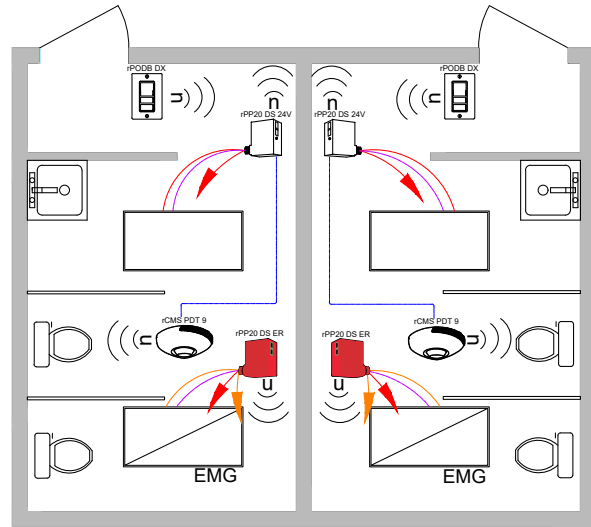
**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.



## Wired



## Wireless



CAT-5e Cable    0-10V Wires    Line Voltage Wires    Line Power Feed    EM Power Feed

Low Voltage Wires    0-10V Wires    Line Voltage Wires    Line Power Feed    EM Power Feed

## 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 DS 24V G2	Relay Pack with 0-10V Dimming Output
	2	rPP20 DS ER 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 or independently (per room)
- Maximum level can be task tuned to any percentage via programming

## Occupancy Control:

- Fixtures automatically go to full bright when occupied (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

## Manual Control:

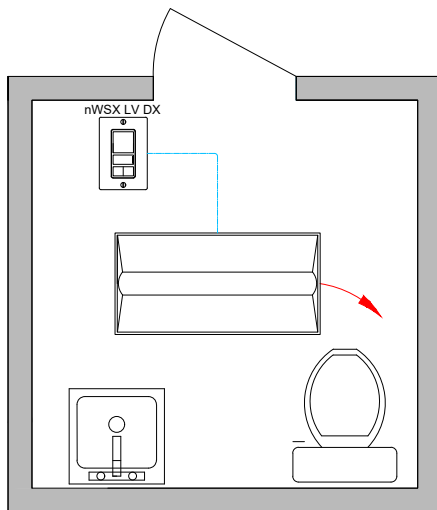
- On/off & raise/lower control of fixtures
- If switch poses safety concerns, optionally can be programmed for "on only"

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.

## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

## Wired

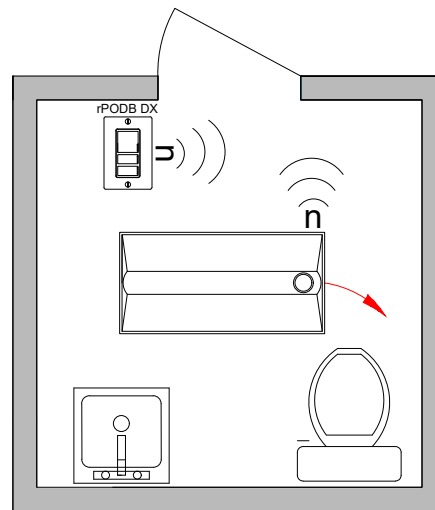


CAT-5e Cable

Line Voltage Wires

Line Power Feed

## Wireless



Line Voltage Wires

Line Power Feed

## Bill of Materials

Symbol	Qty	Product #	Description
	1	See Notes	nLight Wired Enabled Fixture
	1	nWSX LV DX	Occupancy Wall Switch, On/Off, Raise/Lower

## Bill of Materials

Symbol	Qty	Product #	Description
	1	See Notes	nLight AIR Enabled Fixture
	1	rPODB DX G2	On/Off, Raise/Lower WallPod

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming

## Occupancy Control:

- Fixtures automatically go to full bright when occupied (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

## Manual Control:

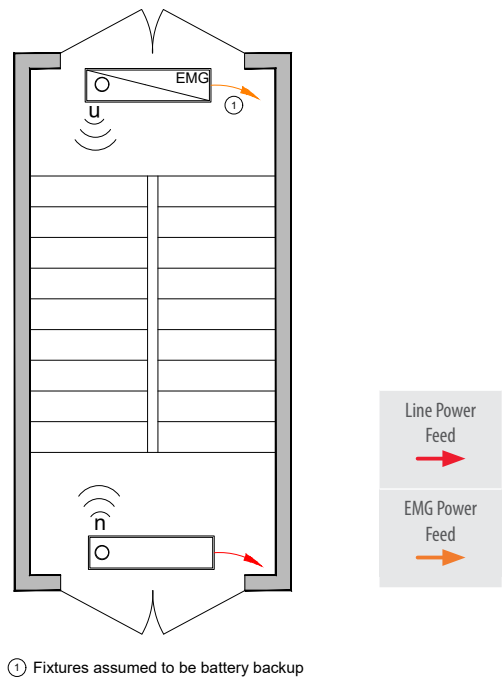
- On/off & raise/lower control of fixtures
- If switch poses safety concerns, optionally can be programmed for "on only"

## / ADDITIONAL OPTIONS:

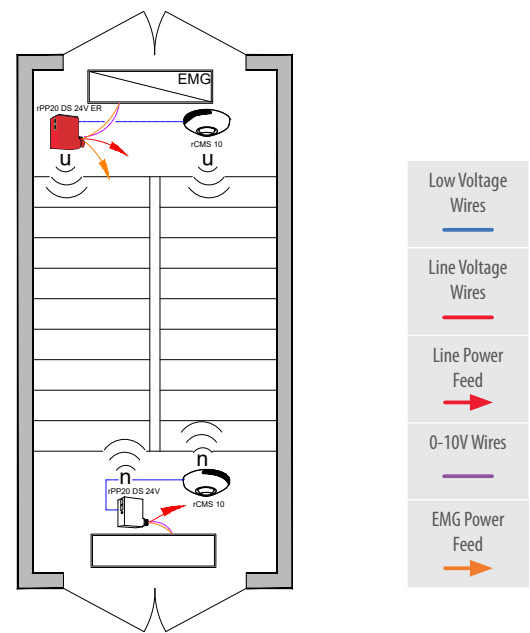
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.

## Wireless with nLight Enabled Fixtures



## Wireless with 0-10V Dimming Fixtures



### Bill of Materials

Symbol	Qty	Product #	Description
	1	See Note	nLight AIR Enabled Fixture
	1	See Note	nLight AIR Enabled Fixture with Battery Option

### Bill of Materials

Symbol	Qty	Product #	Description
	1	rPP20 DS 24V G2	Relay Pack with 0-10V Dimming Output
	1	rPP20 DS 24V ER G2	Emergency Relay Pack with 0-10V Dimming Output
	2	rCMS 10 G2	Occupancy and Daylight Sensor

### / OPERATIONAL DETAILS:

#### Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming

#### 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

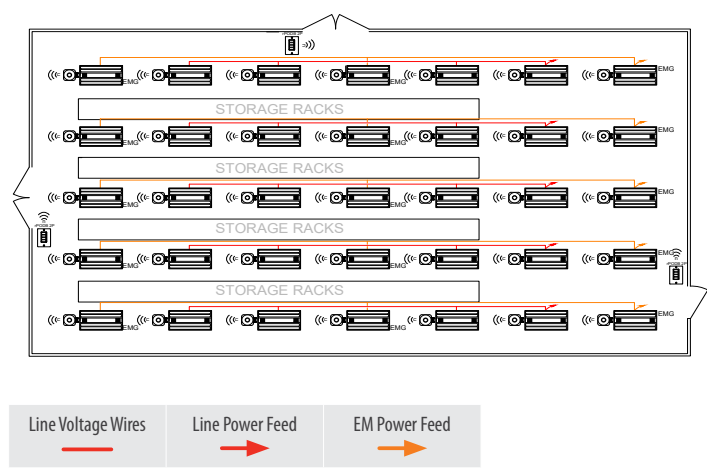
#### Manual Control:

- Safety may preclude the use of a manual control in these areas

### / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

### Wireless with nLight Enabled Fixtures



#### Bill of Materials

Symbol	Qty	Product #	Description
	20	IBG Series	nLight AIR Wireless Enabled Fixture
	15	IBG Series	nLight AIR Wireless Enabled Fixture with EM Option
	3	rPODB 2P G2	2-Pole On/Off WallPod

#### / OPERATIONAL DETAILS:

##### Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming

##### Occupancy Control:

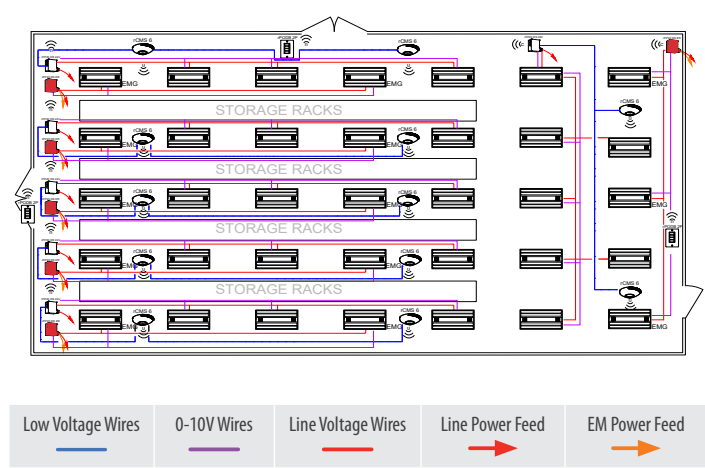
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

##### Daylight Control:

- Daylight responsive controls lights to full off when adequate daylight present
- Not required for spaces without skylights or that have loads <150W in toplight zones

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.

### Wireless with 0-10V Dimming Fixtures



#### Bill of Materials

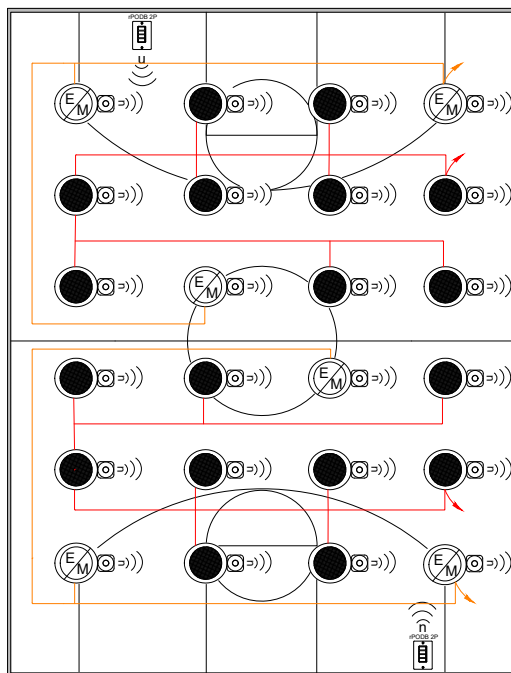
Symbol	Qty	Product #	Description
	6	rPP20 DS 24V G2	Relay Pack with 0-10V Dimming Output
	6	rPP20 DS ER G2	Emergency Relay Pack with 0-10V Dimming Output
	3	rPODB 2P G2	2-Pole On/Off WallPod
	12	rCMS 6 G2	Occupancy Sensor

#### / ADDITIONAL OPTIONS:

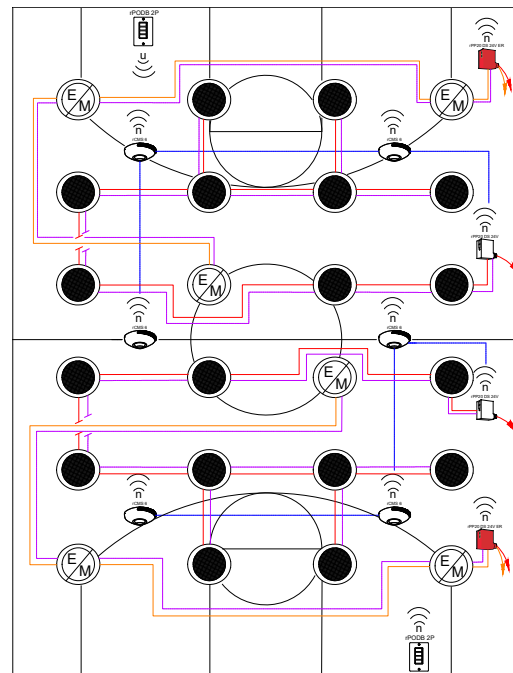
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4) Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet



## Wireless with nLight Enabled Fixtures



## Wireless with 0-10V Dimming Fixtures



## Bill of Materials

Symbol	Qty	Product #	Description
	18	See Notes	nLight AIR Wireless Enabled Fixture
	6	See Notes	nLight AIR Wireless Enabled Fixture with EM Option
	2	rPODB 2P G2	2-Pole On/Off WallPod

## Bill of Materials

Symbol	Qty	Product #	Description
	2	rPP20 DS 24V G2	Relay Pack with 0-10V Dimming Output
	2	rPP20 DS 24V ER 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

## / OPERATIONAL DETAILS:

## Light Fixtures:

- All fixtures are dimmable
- Maximum level can be task tuned to any percentage via programming

## 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:

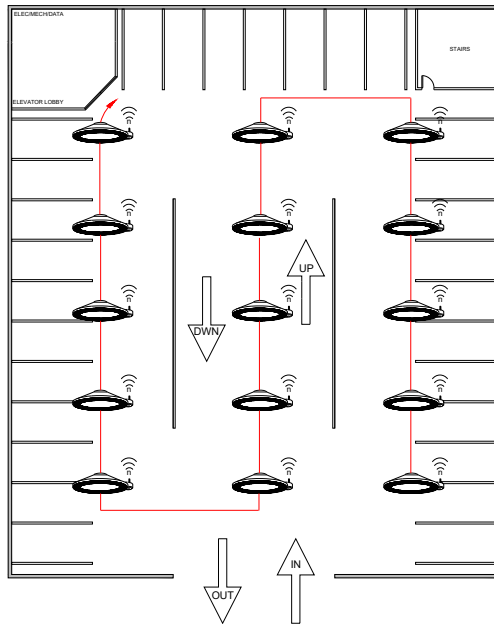
- Daylight responsive controls lights to full off when adequate daylight present
- Not required for spaces without skylights or that have loads <150W in toplight zones

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.

## / ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)  
Note: Max of 4 fixtures per controlled group
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

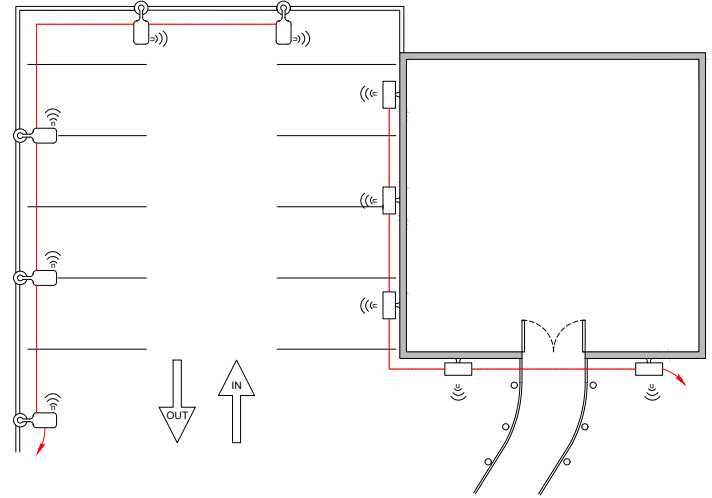
## Wireless Parking Garage



Line Voltage Wires

Line Power Feed


## Wireless Site Lighting





Line Voltage Wires

Line Power Feed

### Bill of Materials

Symbol	Qty	Product #	Description
	15	See Notes	nLight AIR Enabled Fixture

### Bill of Materials

Symbol	Qty	Product #	Description
	5	See Notes	nLight AIR Enabled Area Fixture
	5	See Notes	nLight AIR Enabled Wall Mount

#### / OPERATIONAL DETAILS:

##### Light Fixtures:

- All fixtures are dimmable
- All fixtures can be controlled together or independently
- Maximum level can be task tuned to any percentage via programming

##### 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

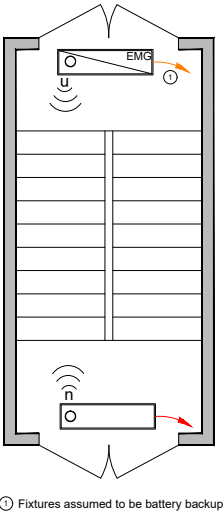
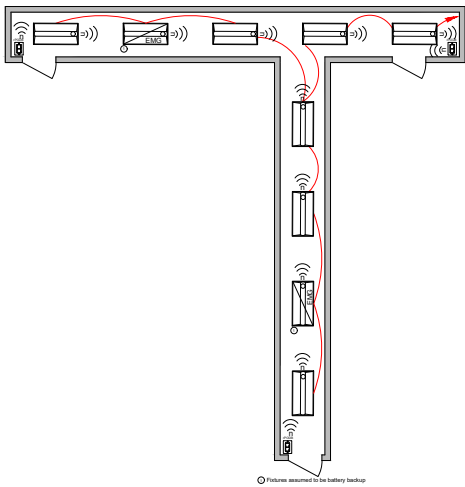
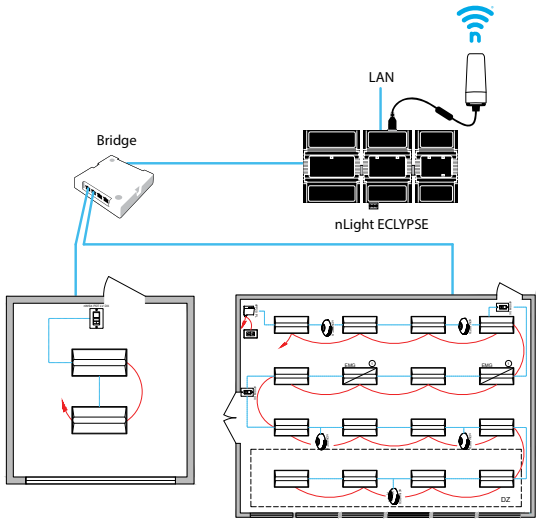
##### Daylight Control:

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

#### / ADDITIONAL OPTIONS:




- Devices can be connected to nLight backbone to enabled network control or time schedules, including astronomical time schedules
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

**Note:** Contact your local lighting agent for more information on nLight enabled fixtures.



Some nLight enabled EMG fixtures require a normal sense line connection. See fixture spec sheet for details.

Bill of Materials

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










Programmable Time Clock Control:

Although not pictured within each of the individual room design guides, each nLight controlled space can be connected via an nLight backbone to create a networked nLight lighting control system capable of meeting the requirements of IECC 2015 Provision C405.2.2.1, Time-Switch Controls. A networked system also enables astronomical time clock control.

nLight Enabled Fixtures

Acuity Brands offers the industry’s broadest portfolio of controls enabled fixtures. Please scan the QR code to see the current nLight enabled fixtures.



Control Requirement	Code Provision	nLight Solution Details	
Shut-Off Control	Manual Control (Local Switch)	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.	
		<b>Push-Button WallPod</b>	<b>Graphic WallPod*</b>
			
		Traditional tactile buttons and LED user feedback.	Full-color touch screen provides a sophisticated look and feel.
	Time-Switch Controls (via System Controller)	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).	
	Full Auto-Off via Occupancy Sensor	<b>Network System Controller</b>	
			
		Additional benefits of installing an nLight backbone include remote status monitoring, system-wide configuration changes, and BMS interface capability.	
	Manual On, Auto-On <=50%, Full Automatic On	<b>360° Occupancy Sensor</b>	<b>120° WideView Corner Sensor*</b>
			
		Surface mounts to ceiling tiles or sheetrock/plaster.	Directly mounts in corner or to ceiling via repositionable ceiling bracket.
Light Level Control	Light-Reduction Controls	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.	
		<b>nLight Enabled Acuity Brands Fixtures</b>	<b>Dimming Relay Packs</b>
			
		Acuity Brands offers a wide variety of LED fixtures with factory installed integrated nLight controls that provide smooth continuous dimming.	nLight dimming relay enable control of any 0-10VDC dimmable LED luminaire.
	Daylight-Responsive Controls	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 networked nLight enabled fixtures or dimming relay packs, each capable of being its own daylight zone.	
		<b>Ceiling Mount Dimming Photocell</b>	<b>Recessed Mount Dimming Photocell*</b>
			

\*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.

## 2015 IECC and Emergency Lighting

IECC lighting controls requirement C405.2 (and subsection 405.2.5 for exterior lighting controls) provides exceptions for emergency and egress lighting, indicating that lighting controls are not required for the following types of lighting:

- Areas designated as security or emergency areas that are required to be continuously lighted.
- Interior exit stairways, interior exit ramps and exit passageways.
- Emergency egress lighting that is normally off.
- Lighting for covered vehicle entrances or exits from buildings or parking structures where required for safety, security or eye adaptation.

Generally speaking, lighting that is normally on during occupied periods, normally dimmed or off during unoccupied periods, and also used to provide for egress during emergency power conditions should be controlled in compliance with C405.2. nLight features various UL924 listed options that can be specified to provide both lighting control in compliance with IECC and emergency operation in compliance with locally enforced fire codes.

Additional specification details and information can be found on the nLight platform webpage at [www.acuitybrands.com/nLight](http://www.acuitybrands.com/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.



# Additional Resources

## Acuity Controls Typical Layout Drawings

<https://www.acuitybrands.com/resources/tools-and-documents/typicals>

## IECC

<http://www.iccsafe.org/>

## Use the Following Sections of the IECC 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 Partial-On
- Section C405.2.1.1.2 – Full Automatic On
- Section C405.2.1.3 – Local Switch
- Section C405.2.2.1 – Programmable Timeclock
- Section C405.2.2.2 – Manual Lighting Reduction
- Section C405.2.3.1/2 – Daylight-Responsive Controls
- Section C405.2.5 – Exterior Lighting Controls
- Section C406.4 – Enhanced Digital Lighting Controls

## Explore Acuity Academy

Acuity Academy provides educational resources for individuals wanting to expand their lighting, controls and building management technical knowledge. On Acuity Academy, you can register for instructor-led classes, take e-learning courses or watch videos and recorded content.

<https://www.acuitybrands.com/resources/training-and-education>

## nLight Lighting Controls Platform Page

[www.acuitybrands.com/nlight](http://www.acuitybrands.com/nlight)



**A+ Certified** solutions from Acuity Brands help you quickly and confidently select and implement lighting systems that are both compatible and consistent.

For lighting applications, A+ means verified consistent performance, visual appearance and system interoperability of all luminaires and controls within the certified solutions. For lighting professionals it means confidence that all parts of the lighting system will work together and meet common Acuity Brands specifications.

Go to [www.acuitybrands.com/solutions/a-certified](http://www.acuitybrands.com/solutions/a-certified) or contact your local Acuity Brands representative for more information.

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