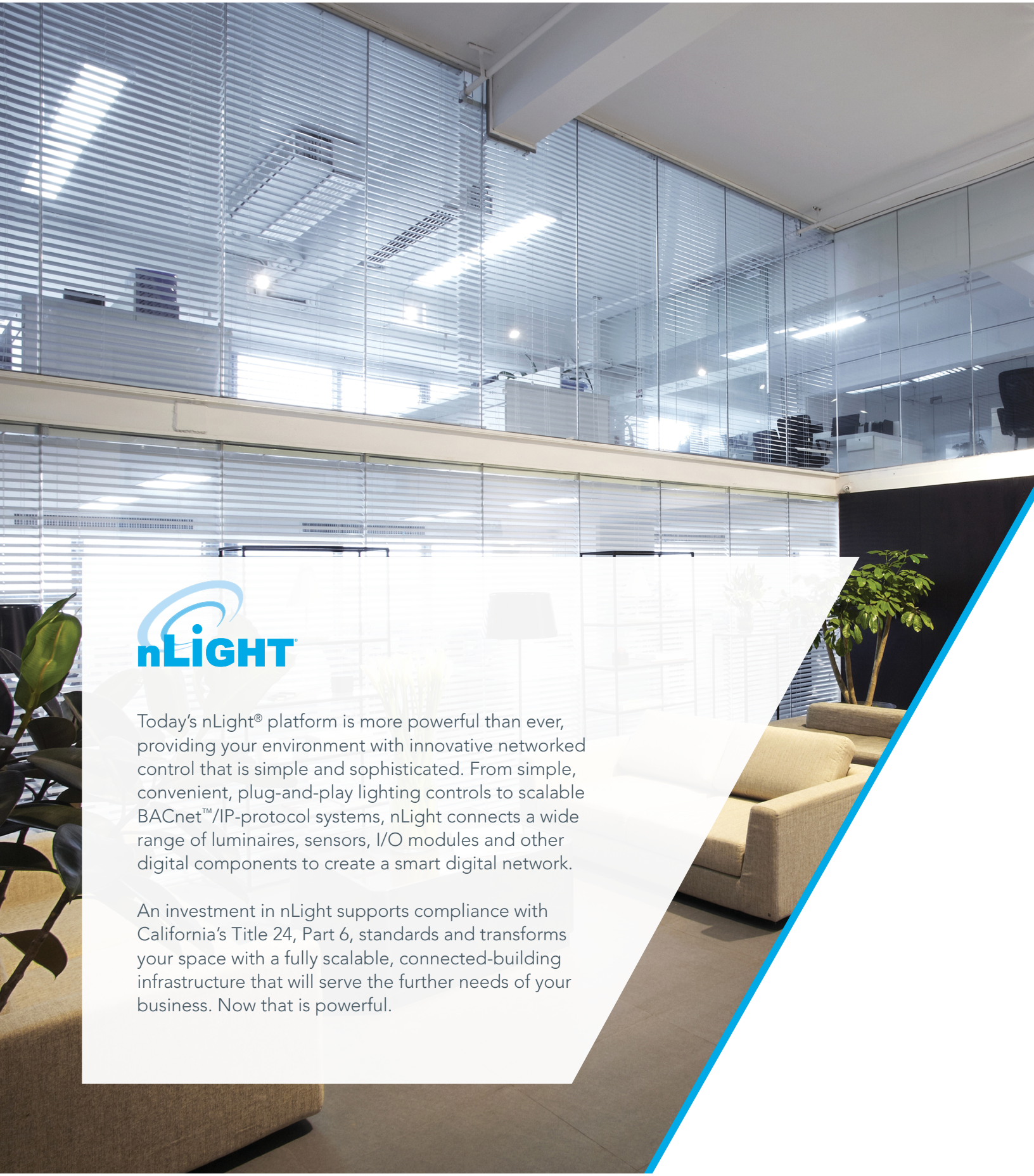


nLight®

Title 24 2019

Applications Guide

www.acuitybrands.com/nLight



nLIGHT

Today's nLight® platform is more powerful than ever, providing your environment with innovative networked control that is simple and sophisticated. From simple, convenient, plug-and-play lighting controls to scalable BACnet™/IP-protocol systems, nLight connects a wide range of luminaires, sensors, I/O modules and other digital components to create a smart digital network.

An investment in nLight supports compliance with California's Title 24, Part 6, standards and transforms your space with a fully scalable, connected-building infrastructure that will serve the further needs of your business. Now that is powerful.



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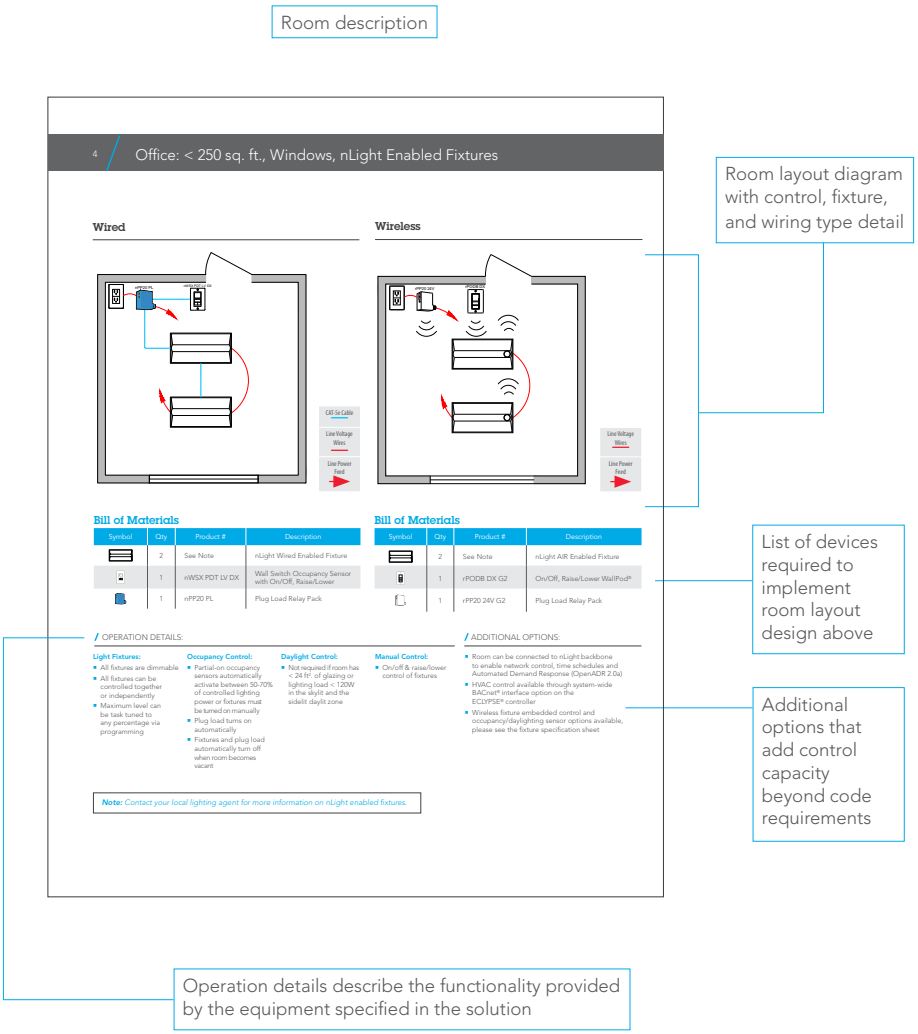
Title 24 Code Requirements for Typical Building Spaces

The chart below is an overview of the code requirements for typical building spaces. Please use this information as a guide. For specific code requirements, please refer to the California Code of Regulations, Title 24, Part 6.

	Control Requirement[1]	Code Provision	Code Summary[1]	Space Type							
				Office < 250 sq. ft.	Open Office > 250 sq. ft.	Conference, Meeting Room	Classroom, Lecture Hall, Training Room	Lobby	Corridor	Restroom	Stairwell
Shut-Off Control	Area Control[2]	130.1(a)	All luminaires shall be functionally controlled with manual on and off lighting controls.	✓	✓	✓	✓	✓	✓	✓	✓
	Timeclock	130.1(c) 1	All areas not shut off by occupancy sensing must be shut off by a time switch control when the space is typically unoccupied.		✓ (or)			✓ (or)	✓ (or)	✓ (or)	✓ (or)
	Automatic Full-Off via Occupancy Sensor[3]	130.1(c) 5	Occupant-sensing controls must be used in specific areas to shut off lighting.	✓	✓	✓	✓	✓	✓	✓	✓
	Automatic Partial-Off via Occupancy Sensor[3]	130.1(c) 6 & 7	Partial-off occupancy sensing may be used in combination with another form of full automatic shutoff (exception: parking garage areas may use just partial-off sensing).						✓		✓
Light Level Control	Multi-Level Lighting Controls	130.1(b)	Any enclosed area ≥ 100 ft² with a lighting power density > 0.5 W/ft², shall provide multi-level lighting control.	✓	✓	✓	✓	✓		✓	
	Automatic Multi-Level Daylight Controls	130.1(d)	Areas in designated daylight zones with total power ≥ 120 watts and with a lighting power density > 0.3 W/ft² shall use automatic multi-level daylight controls.	✓	✓	✓	✓	✓	✓	✓	✓
Additional Controls	Demand Response	110.12(c) 130.1(e)	In buildings >10,000 ft², excluding areas <0.5 W/ft², lights shall be capable of automatically reducing power in response to a Demand Response Signal.	✓	✓	✓	✓	✓	✓	✓	✓
	Receptacle (i.e., Plug Load) Control[4]	130.5(d)	Both controlled and uncontrolled 120-volt receptacles shall be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, and copy rooms.	✓	✓	✓		✓			
Outdoor Lighting Controls	Daylight Availability	130.2(c) 1	Lighting shall be controlled by a photo control, astronomical time-switch control or other control to automatically shut off when daylight is available.								
	Automatic Scheduling Controls	130.2(c) 2	Controls shall be capable of reducing the lighting power by 50-90%, and capable of turning the lighting off, during scheduled unoccupied periods. Scheduling a minimum of two nighttime periods with independent lighting levels is required.								
	Motion Sensing Controls	130.2(c) 3	Controls shall be capable of reducing the lighting power by 50-90%, and capable of turning the lighting off, during unoccupied periods. Motion sensing controls shall be capable of reducing the lighting to its dim or off state no longer than 15 minutes after the area has been vacated.								

Gymasium	Warehouse	Parking Garage	Site Lighting/Facade/ Parking Garage Roof
✓	✓	✓	
✓			
	✓	✓	
✓	✓	✓	
✓	✓	✓	
✓	✓	✓	
			✓
			✓
			✓

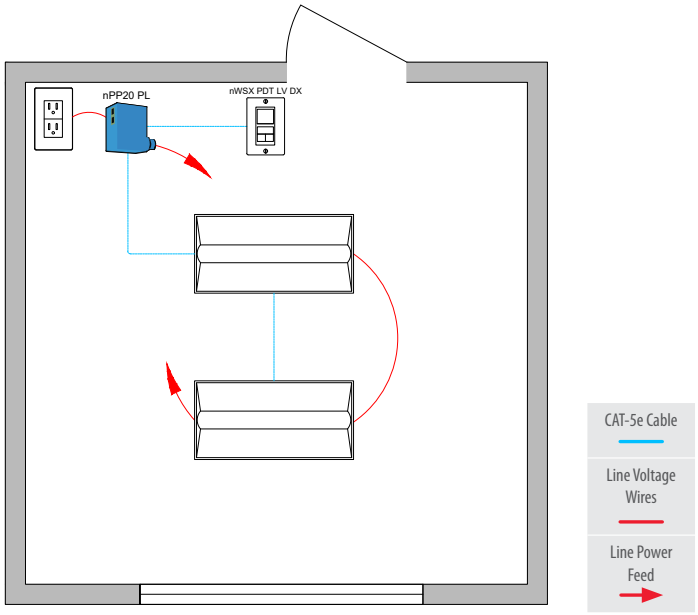
This Title 24, Part 6, Applications Guide is designed to facilitate quicker and easier lighting controls solutions to help you comply with the requirements of the standards using nLight lighting controls. While there are many ways to design a space to support building energy codes, use this guide as a quick reference to get your project on the path toward compliance. Our Design Services Team is also available to support engineers and contractors with detailed design, submittal, and installation assistance. For additional information, please contact your Acuity Brands sales representative.



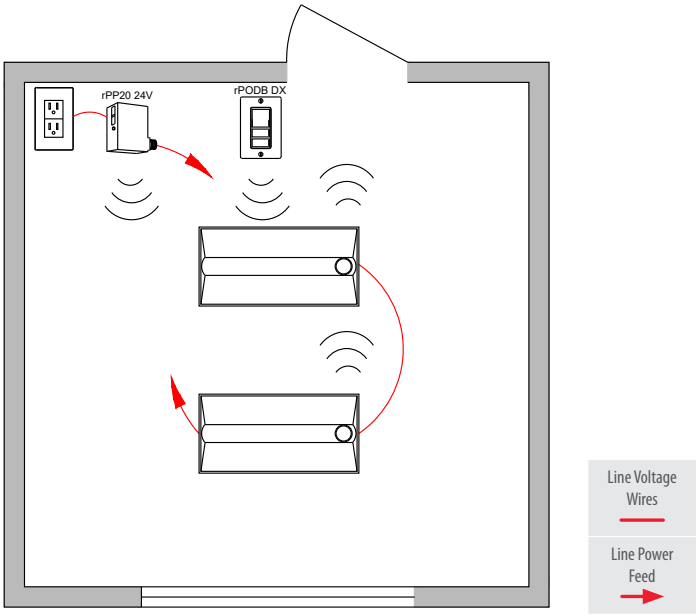
1. Note: This summary is for general information purposes only and is provided without any warranty as to accuracy, completeness, or otherwise. The user should read the applicable code sections for more complete and detailed descriptions of code requirements and exceptions and should consult with a professional engineer or other competent advisor before making any decision or taking any action based on this summary.
2. Can be inaccessible to unauthorized personnel
3. Not required in residential areas such as hotels, condos or dormitories
4. Does not apply to Classrooms and Lecture Halls

Office: < 250 sq. ft., Windows, nLight Enabled Fixtures

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
	1	nPP20 PL	Plug Load Relay Pack

Bill of Materials

Symbol	Qty	Product #	Description
	2	See Note	nLight AIR Enabled Fixture
	1	rPODB DX G2	On/Off, Raise/Lower WallPod®
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION 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:

- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:

- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone

Manual Control:

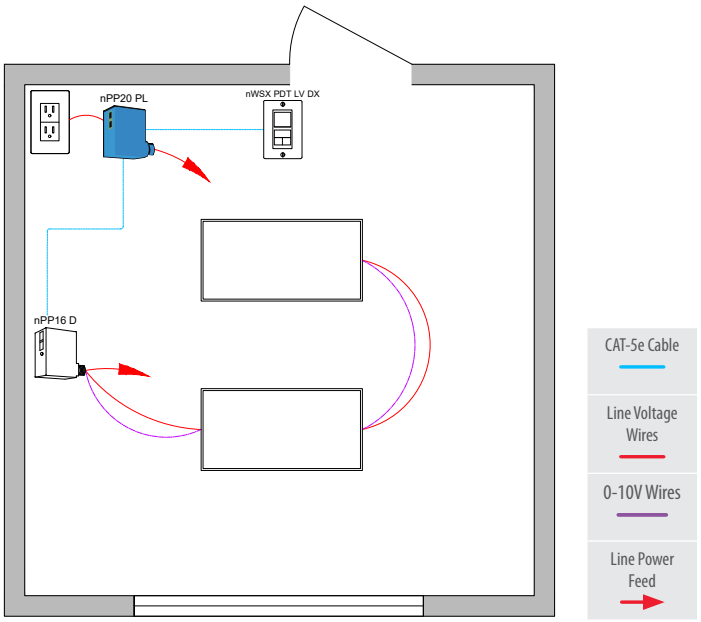
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

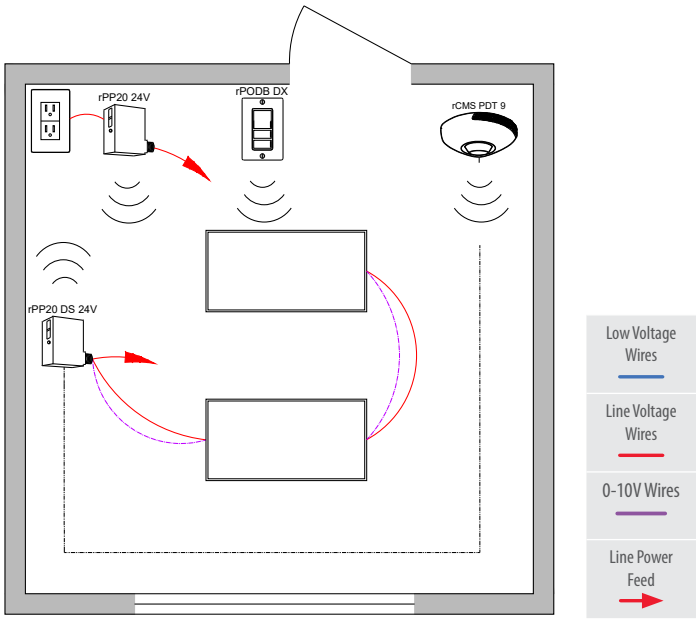
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE® controller
- Wireless fixture embedded control and occupancy/daylighting sensor options 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
	1	nPP20 PL	Plug Load Relay Pack

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
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:

- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:

- Not required if room has < 24 ft^2. of glazing or lighting load < 120W in the skylit and the sidelit daylit zone

Manual Control:

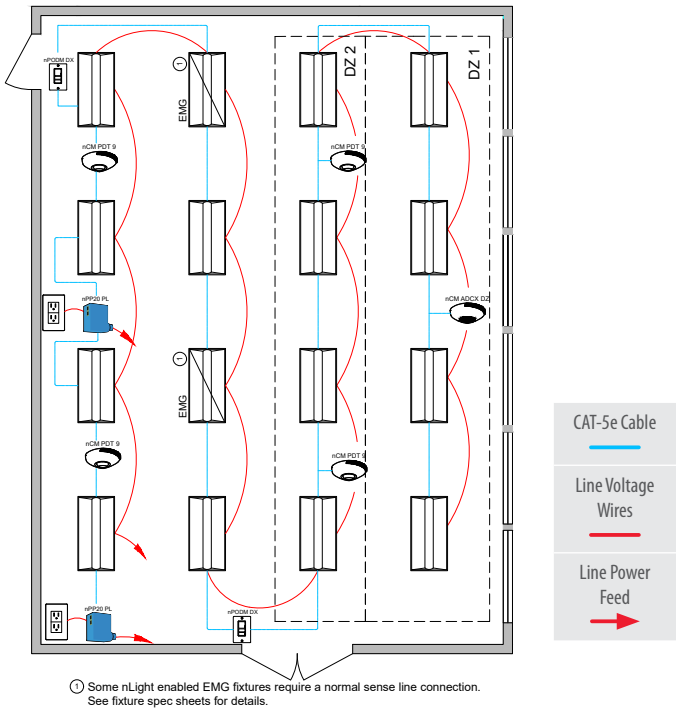
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

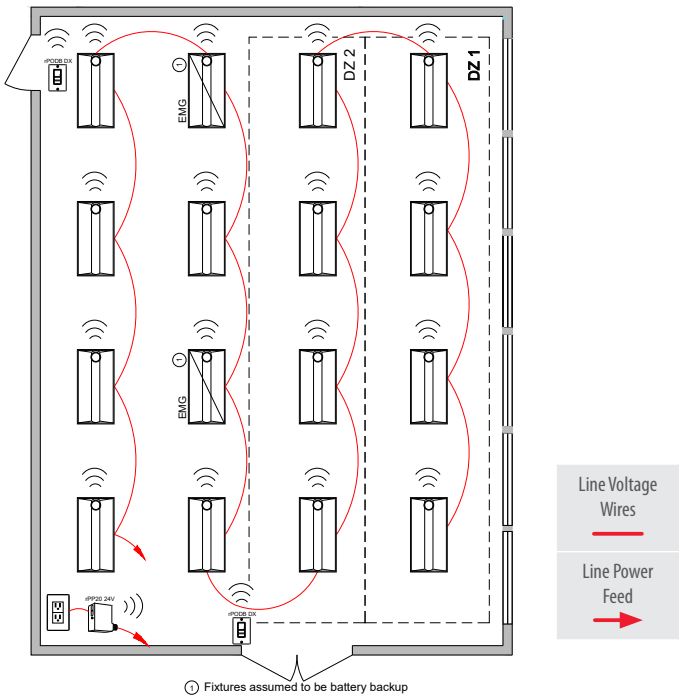
Open Office with nLight Enabled Fixtures

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
	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 DZ RJB	Dual Zone Daylight Sensor
	2	nPP20 PL	Plug Load Relay Pack

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
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION 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:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

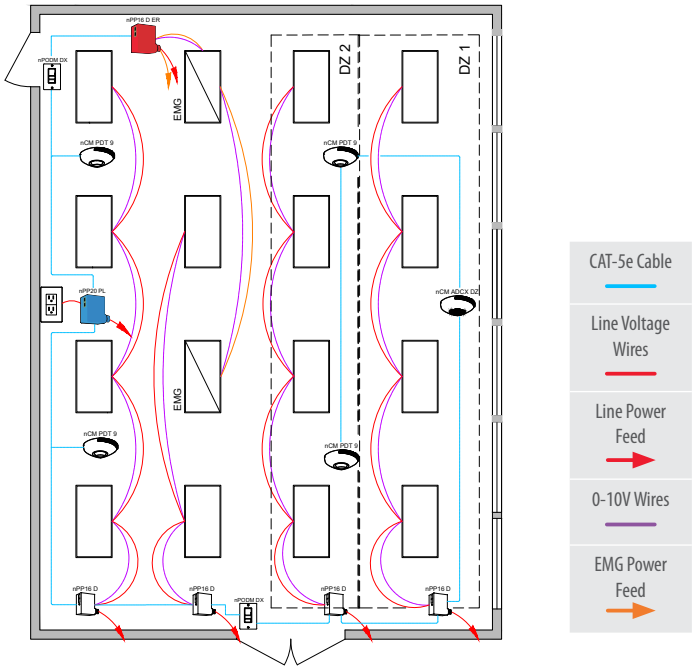
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

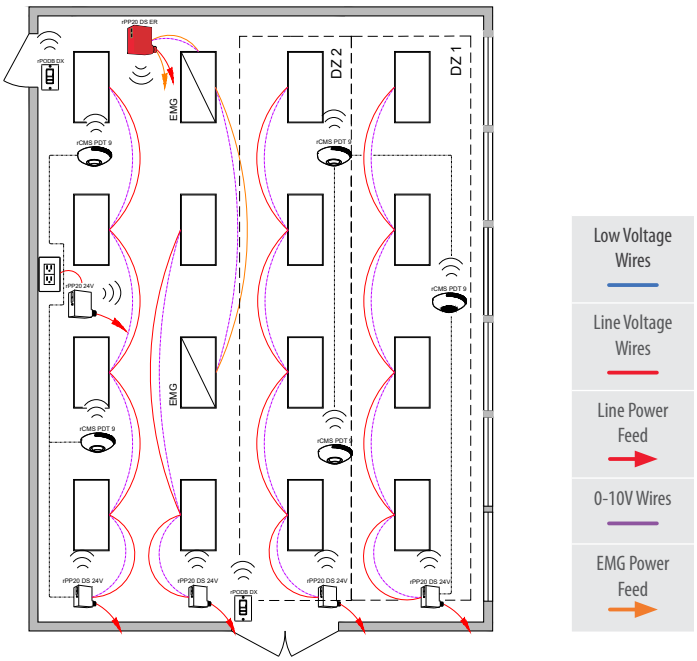
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE® controller
- Wireless fixture embedded control and occupancy/daylighting sensor options 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
	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	Dual Zone Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

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
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION DETAILS:

Light Fixtures:

- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:

- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:

- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Daylight zones defined by relay packs

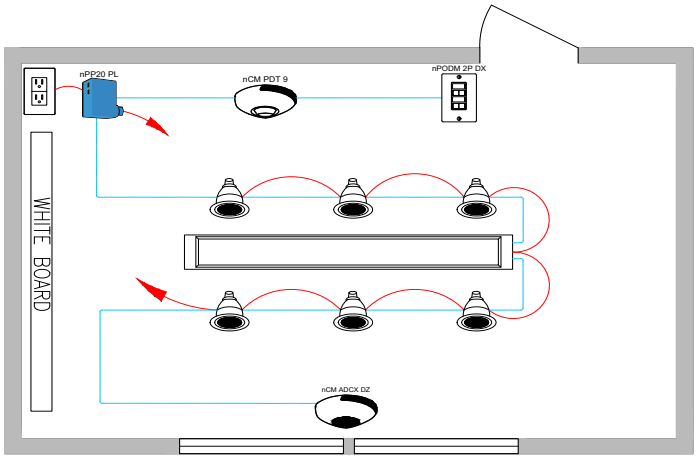
Manual Control:

- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

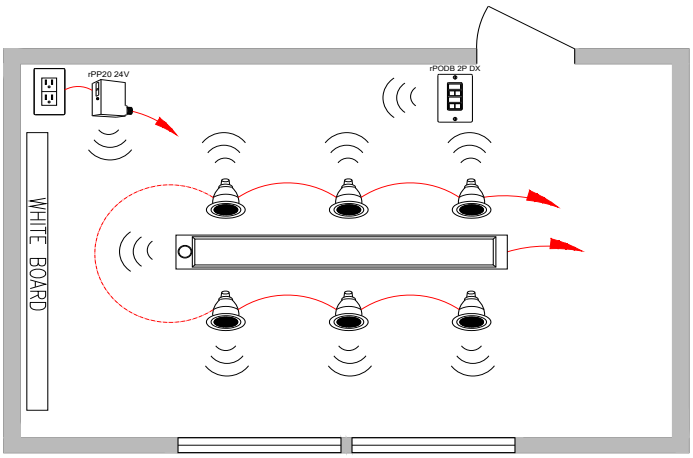
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless 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 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 DZ RJB	Dual Zone Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

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
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION 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:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

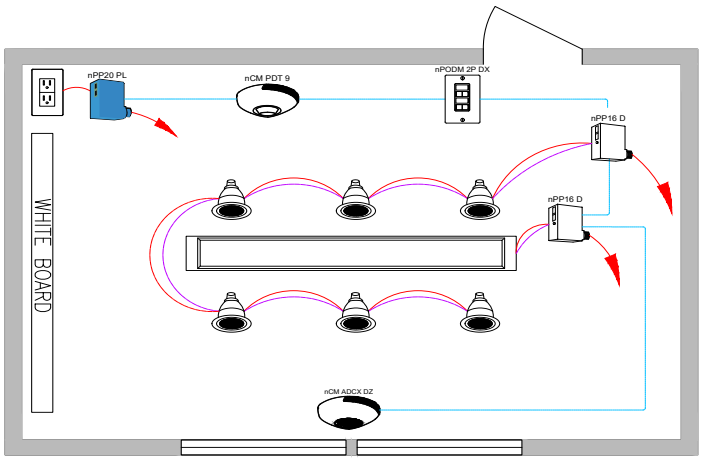
Manual Control:
- On/off & raise lower control of two zones of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

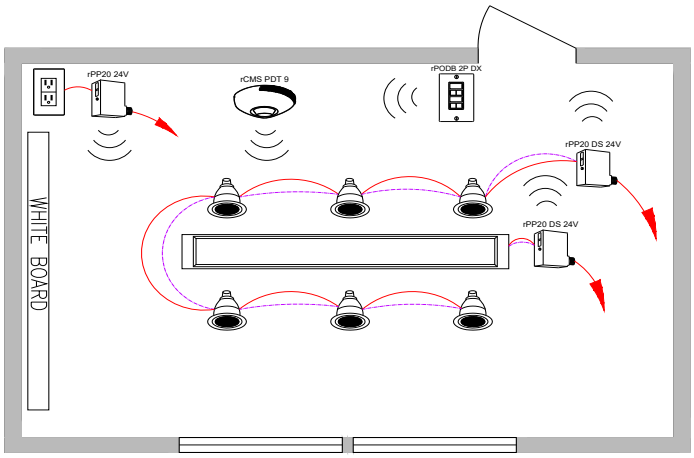
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

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 2P DX	2-Pole On/Off, Raise/ Lower WallPod
	1	nCM PDT 9 RJB	Occupancy Sensor
	1	nCM ADCX DZ RJB	Dual Zone Daylight Sensor
	1	nPP20 PL	Plug Load Relay Pack

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
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION DETAILS:

Light Fixtures:
- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

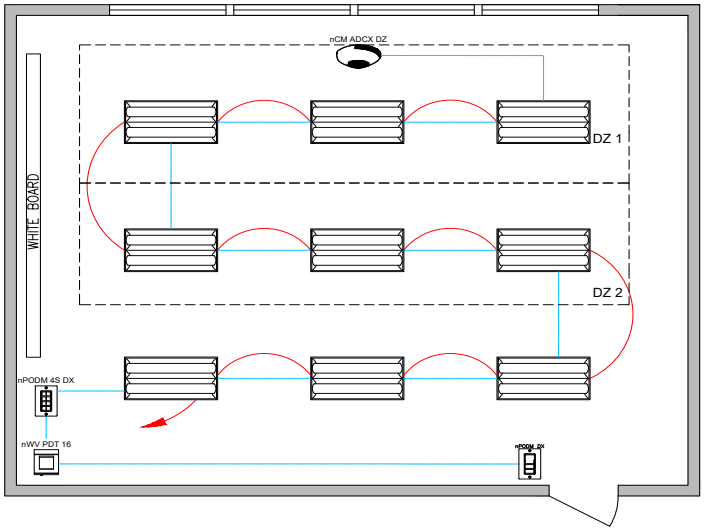
Daylight Control:
- Not required if room has < 24 ft^2. of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Daylight zones defined by relay packs

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

/ ADDITIONAL OPTIONS:

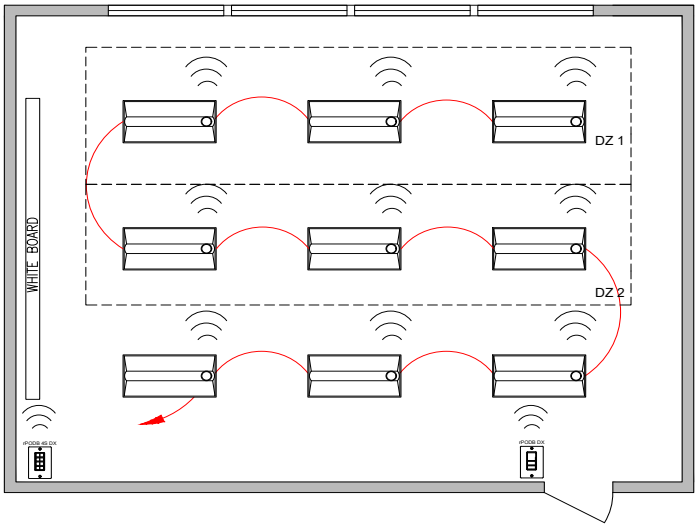
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless 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
	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 with Master On/Off & Raise/Lower
	1	nCM ADCX DZ RJB	Dual Zone 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 4S DX G2	Teacher Station — 4 Scene Control with Master On/Off & Raise/Lower

/ OPERATION 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:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Fixture automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft^2. of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

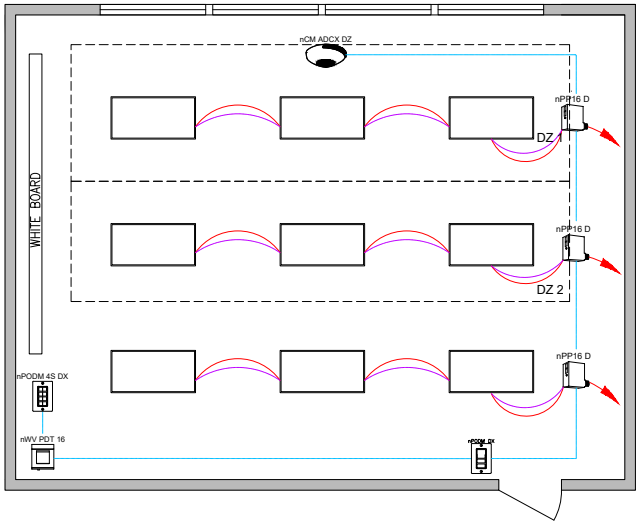
Manual Control:
- On/off & raise/lower control of fixtures
- Teacher station with 4 preset scenes

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

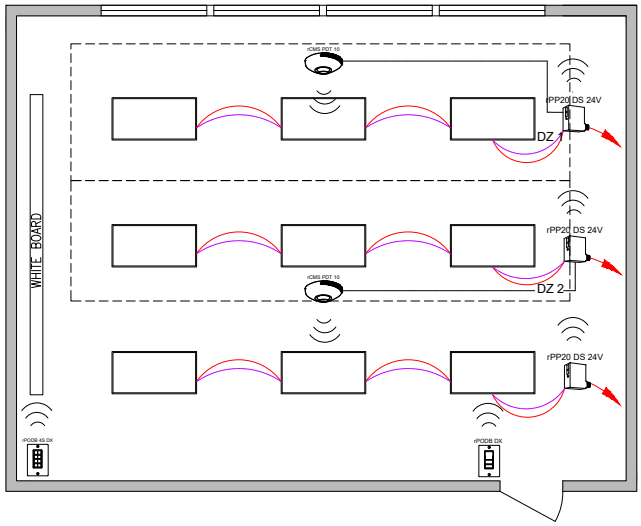
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

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
	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	Dual Zone 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 4S DX G2	Teacher Station — 4 Scene Control with Master On/Off & Raise/Lower

/ OPERATION DETAILS:

Light Fixtures:
- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Fixture automatically turn off when room becomes vacant

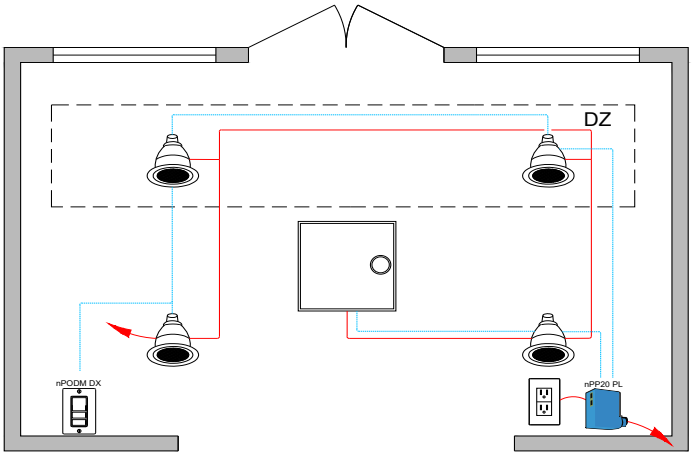
Daylight Control:
- Not required if room has < 24 ft^2. of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Daylight zones defined by relay packs

Manual Control:
- On/off & raise/lower control of fixtures
- Teacher station with 4 preset scenes

/ ADDITIONAL OPTIONS:

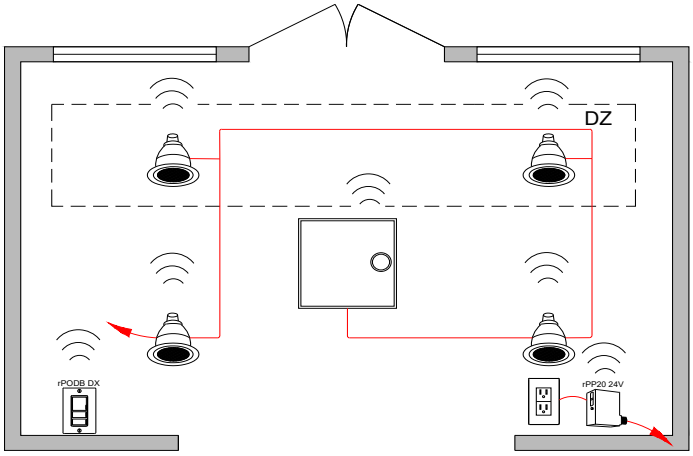
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless 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
	4	See Notes	nLight Wired Enabled Downlight
	1	See Notes	nLight Wired Enabled troffer (recessed)
	1	nPODM DX	On/Off, Raise/Lower WallPod
	1	nPP20 PL	Plug Load Relay Pack

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
	1	rPP20 24V G2	Plug Load Relay Pack

/ OPERATION 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:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

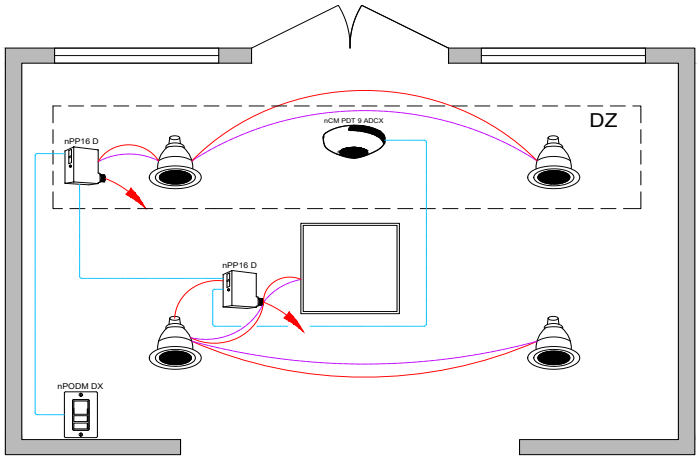
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

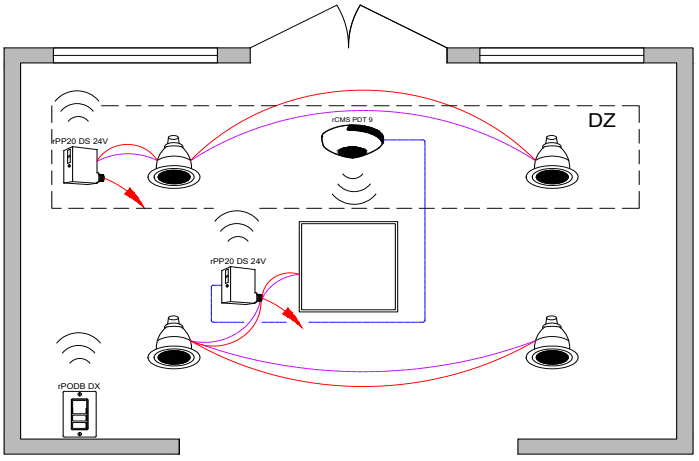
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

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

/ OPERATION DETAILS:

Light Fixtures:
- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Plug load turns on automatically
- Fixtures and plug load automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Daylight zones defined by relay packs

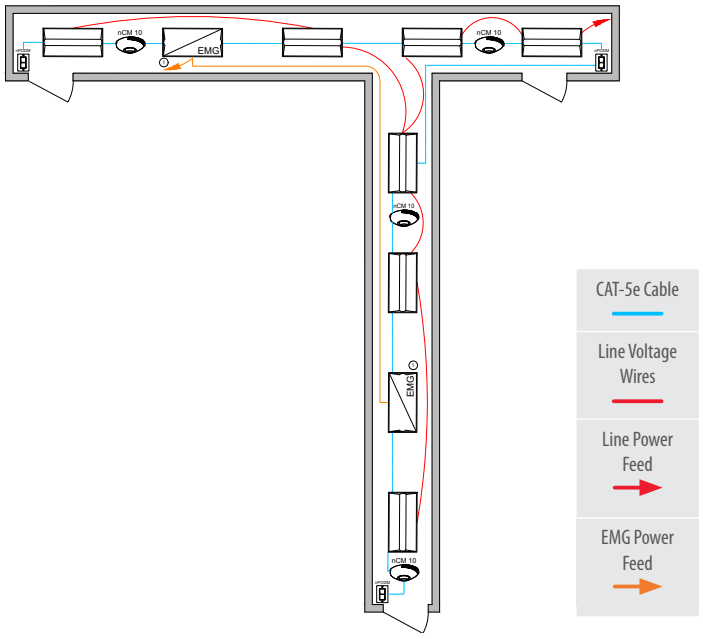
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

Corridor with nLight Enabled Fixtures

Wired

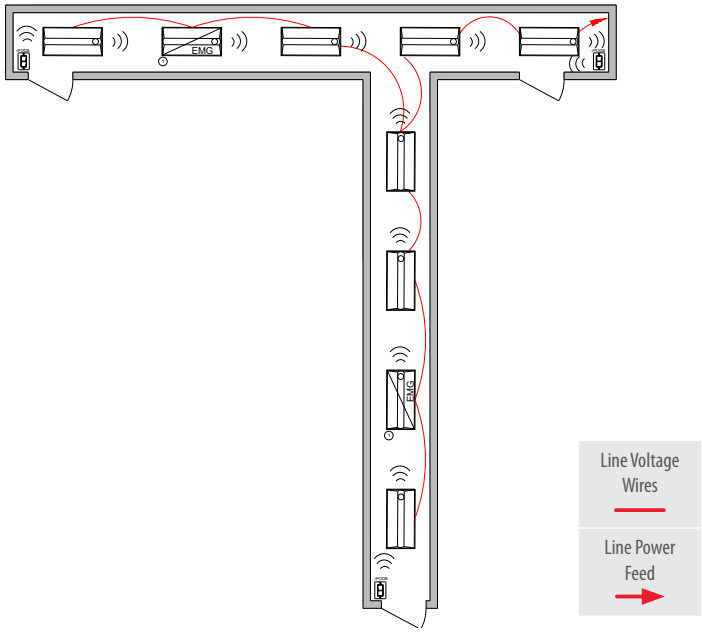


(1) Some nLight enabled EMG fixtures require a normal sense line connection. See fixture spec sheet for details.

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

/ OPERATION 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 turn off or optionally can be configured to drop to low dim setting of at least 50% when space becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

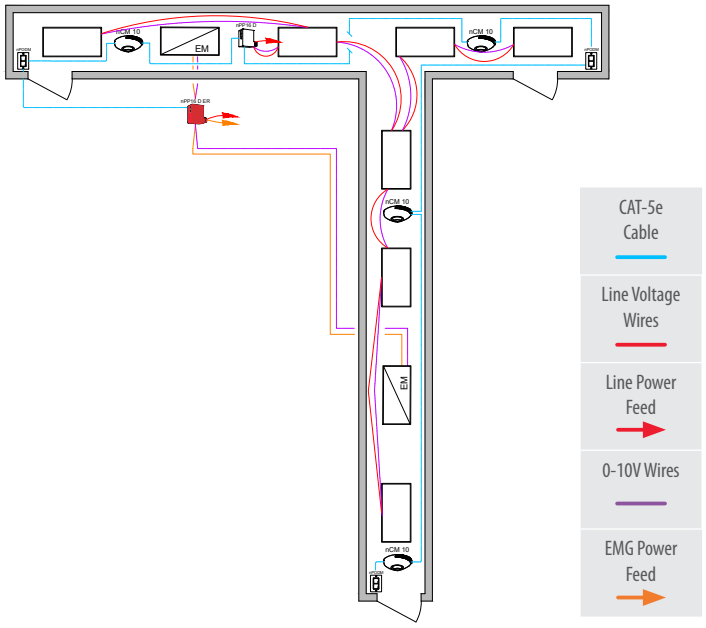
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

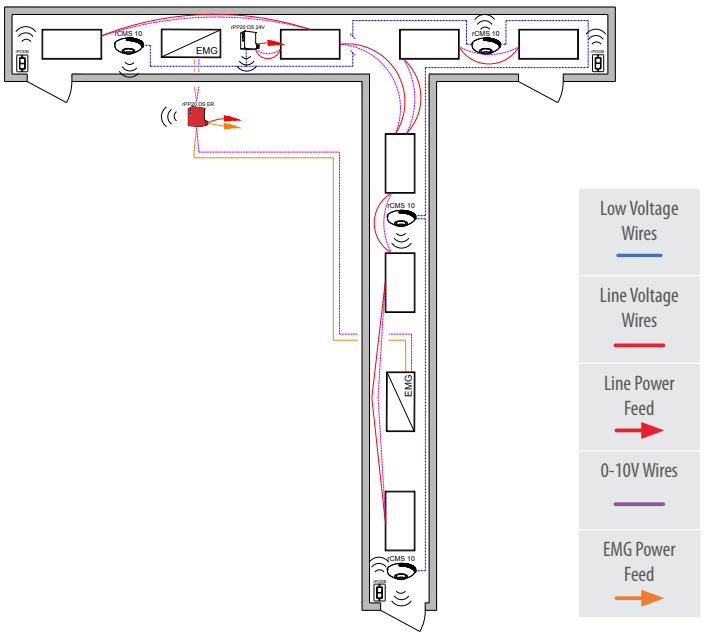
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE® controller
- Wireless fixture embedded control and occupancy/daylighting sensor options 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 ER G2	Emergency Relay Pack with 0-10V Dimming Output
	4	rCMS 10 G2	Occupancy Sensor
	3	rPODB G2	On/Off WallPod

/ OPERATION DETAILS:

Light Fixtures:
- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting of at least 50% when space becomes vacant

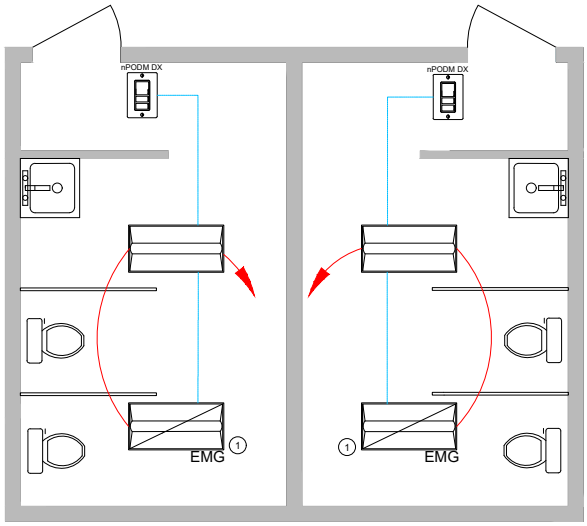
Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Daylight zones defined by relay packs

Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

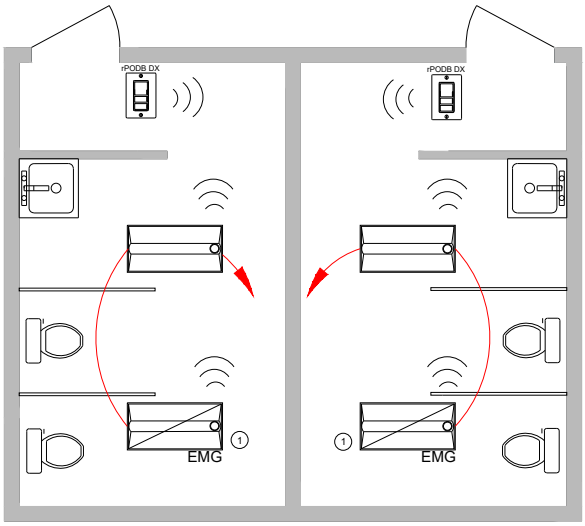
Wired



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

CAT-5e Cable | Line Voltage Wires | Line Power Feed

Wireless



1 Fixtures assumed to be battery backup

Line Voltage Wires | Line Power Feed

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

/ OPERATION 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:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Fixture automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

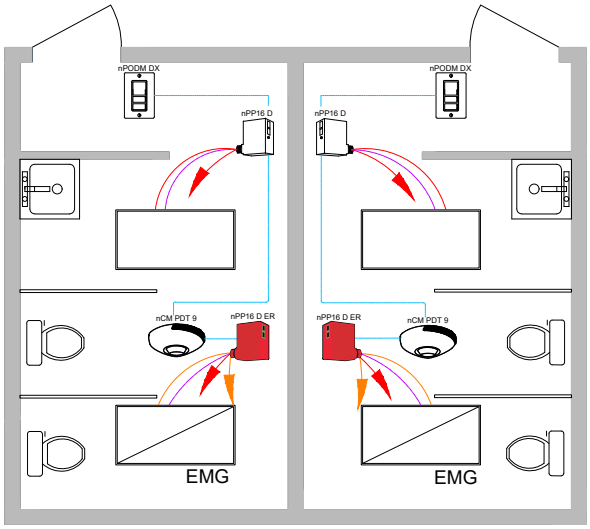
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

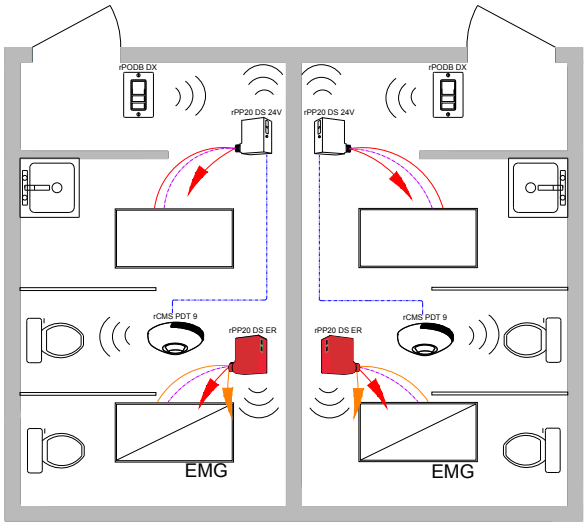
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

Wired



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

Wireless



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

/ OPERATION DETAILS:

Light Fixtures:
- All fixtures are dimmable
- Fixtures are controlled based on power pack line voltage and 0-10V wiring
- Maximum level can be task tuned to any percentage via programming

Occupancy Control:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Fixture automatically turn off when room becomes vacant

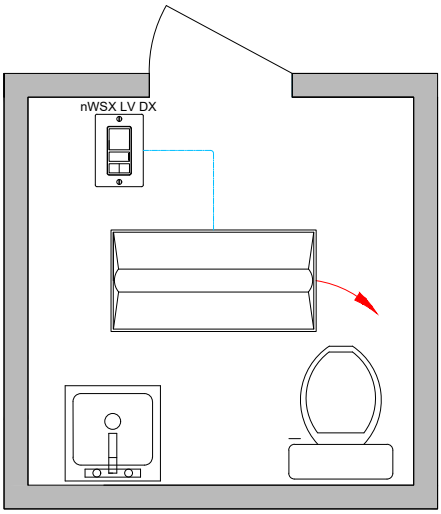
Daylight Control:
- Not required if room has < 24 ft^2. of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Daylight zones defined by relay packs

Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

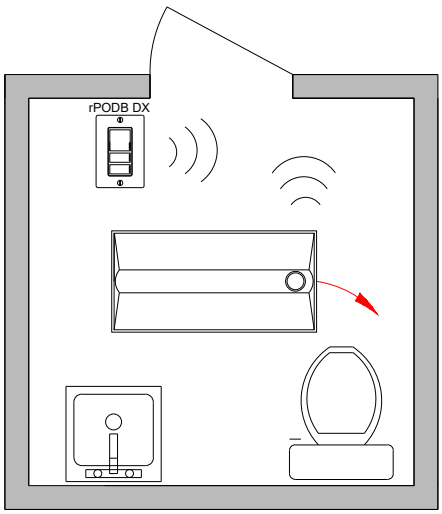
- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- HVAC control available through system-wide BACnet® interface option on the ECLYPSE controller or through occupancy sensor auxiliary relay (AR) contact option
- Wireless 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

/ OPERATION DETAILS:

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

Occupancy Control:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Fixture automatically turn off when room becomes vacant

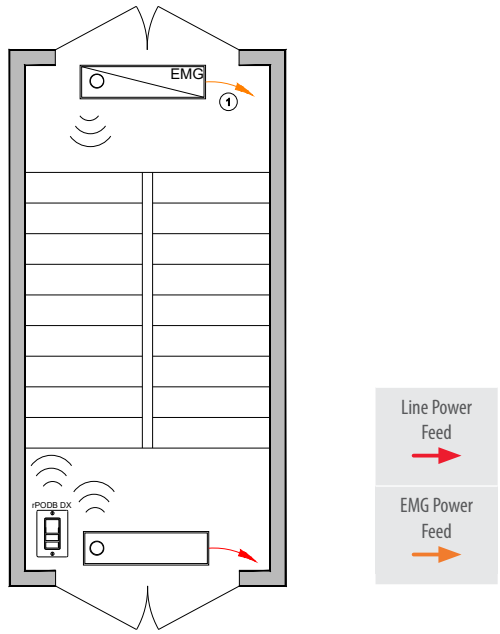
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

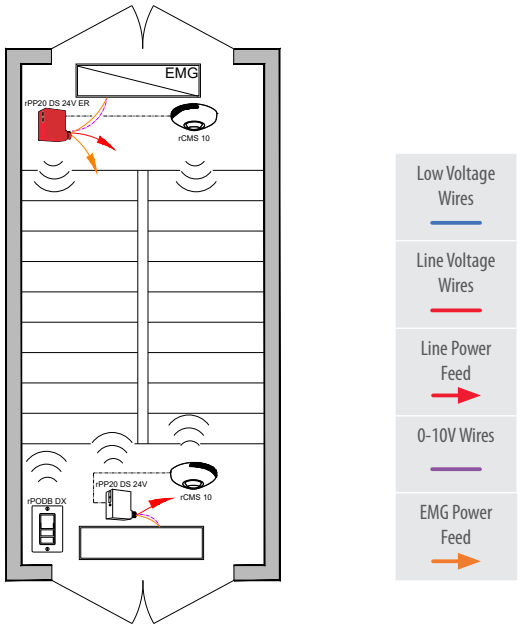
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

Wireless with nLight Enabled Fixtures



① Fixtures assumed to be battery backup

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
	1	rPODB DX G2	On/Off, Raise/ Lower 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
	2	rCMS 10 G2	Occupancy and Daylight Sensor
	1	rPODB DX G2	On/Off, Raise/ Lower WallPod

/ OPERATION 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 turn off or optionally can be configured to drop to low dim setting of at least 50% when space becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

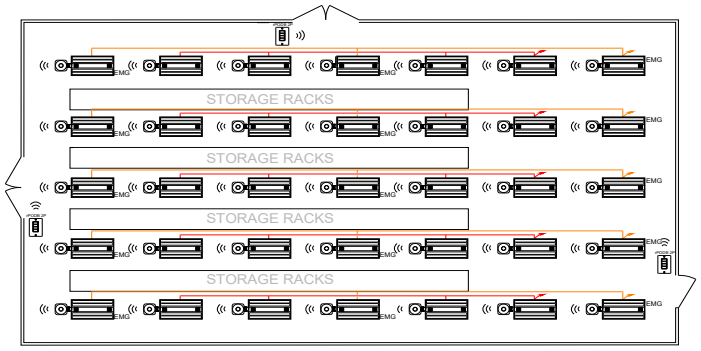
Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

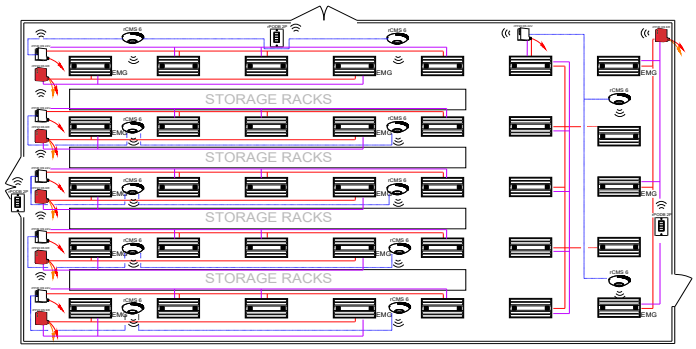
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

Wireless with nLight Enabled Fixtures



Line Voltage Wires | Line Power Feed | EM Power Feed

Wireless with 0-10V Dimming Fixtures



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

Bill of Materials

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

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

/ OPERATION DETAILS:

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

Occupancy Control:
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting of at least 50% when space becomes vacant

Daylight Control:
- Not required if room has < 24 ft². of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming

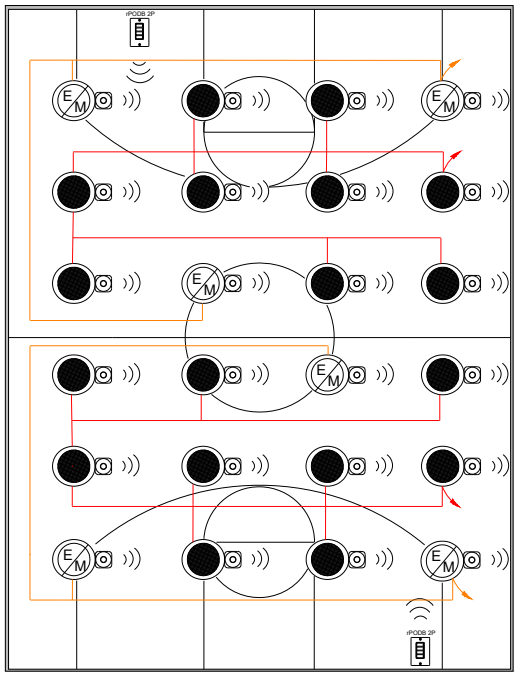
Manual Control:
- On/off control of two zones of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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

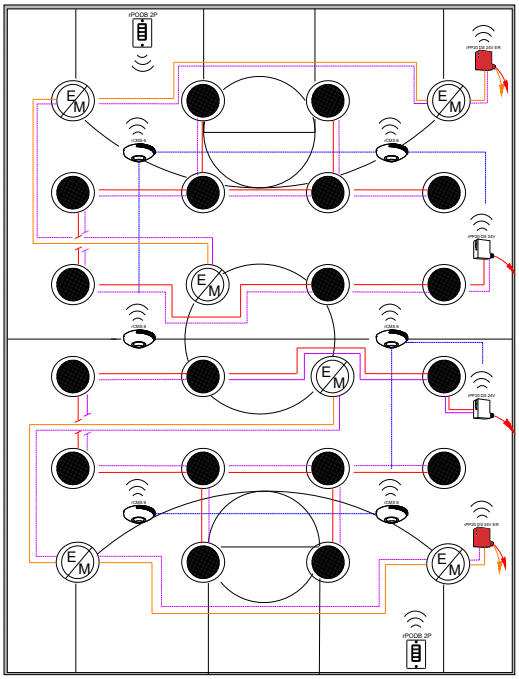
Note: *Contact your local lighting agent for more information on nLight enabled fixtures.*

Wireless with nLight Enabled Fixtures



Line Voltage Wires | Line Power Feed | EM Power Feed

Wireless with 0-10V Dimming Fixtures



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

Bill of Materials

Symbol	Qty	Product #	Description
	18	See Notes	nLight AIR Enabled Fixture
	6	See Notes	nLight AIR 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

/ OPERATION DETAILS:

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

Occupancy Control:
- Partial-on occupancy sensors automatically activate between 50-70% of controlled lighting power or fixtures must be turned on manually
- Fixture automatically turn off when room becomes vacant

Daylight Control:
- Not required if room has < 24 ft^2. of glazing or lighting load < 120W in the skylit and the sidelit daylit zone
- Smooth continuous dimming

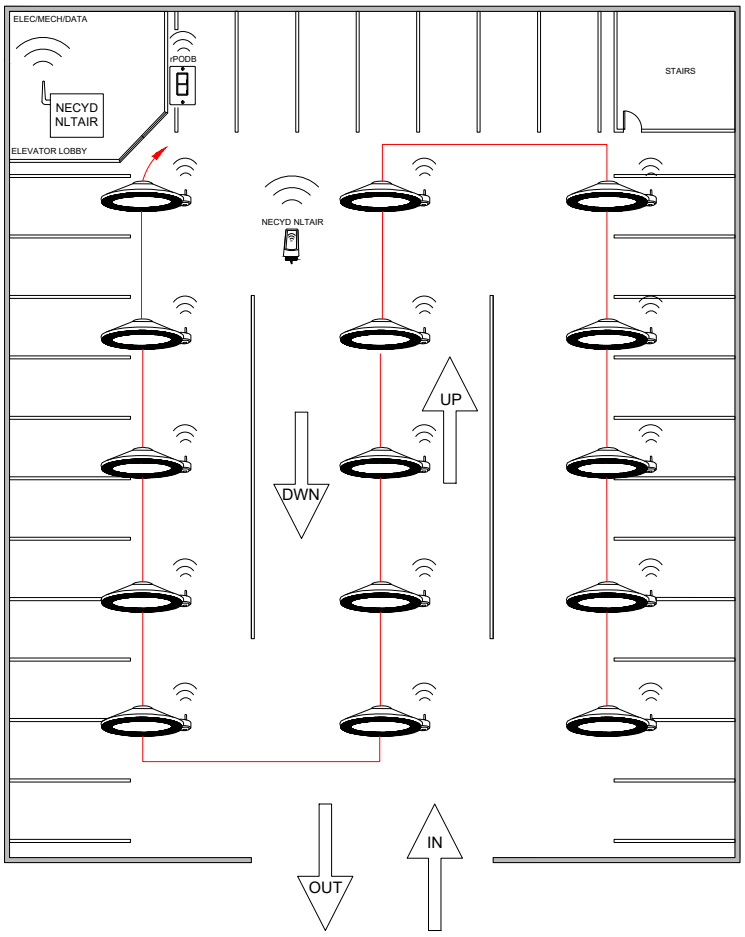
Manual Control:
- On/off control of two zones of fixtures

/ ADDITIONAL OPTIONS:

- Room can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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 Parking Garage



Bill of Materials

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

/ OPERATION 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 turn off or optionally can be configured to drop to low dim setting of 20-50% when space becomes vacant

Daylight Control:
- Not required if room has < 36 ft². of glazing or lighting load < 60W in the sidelit daylit zone
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)

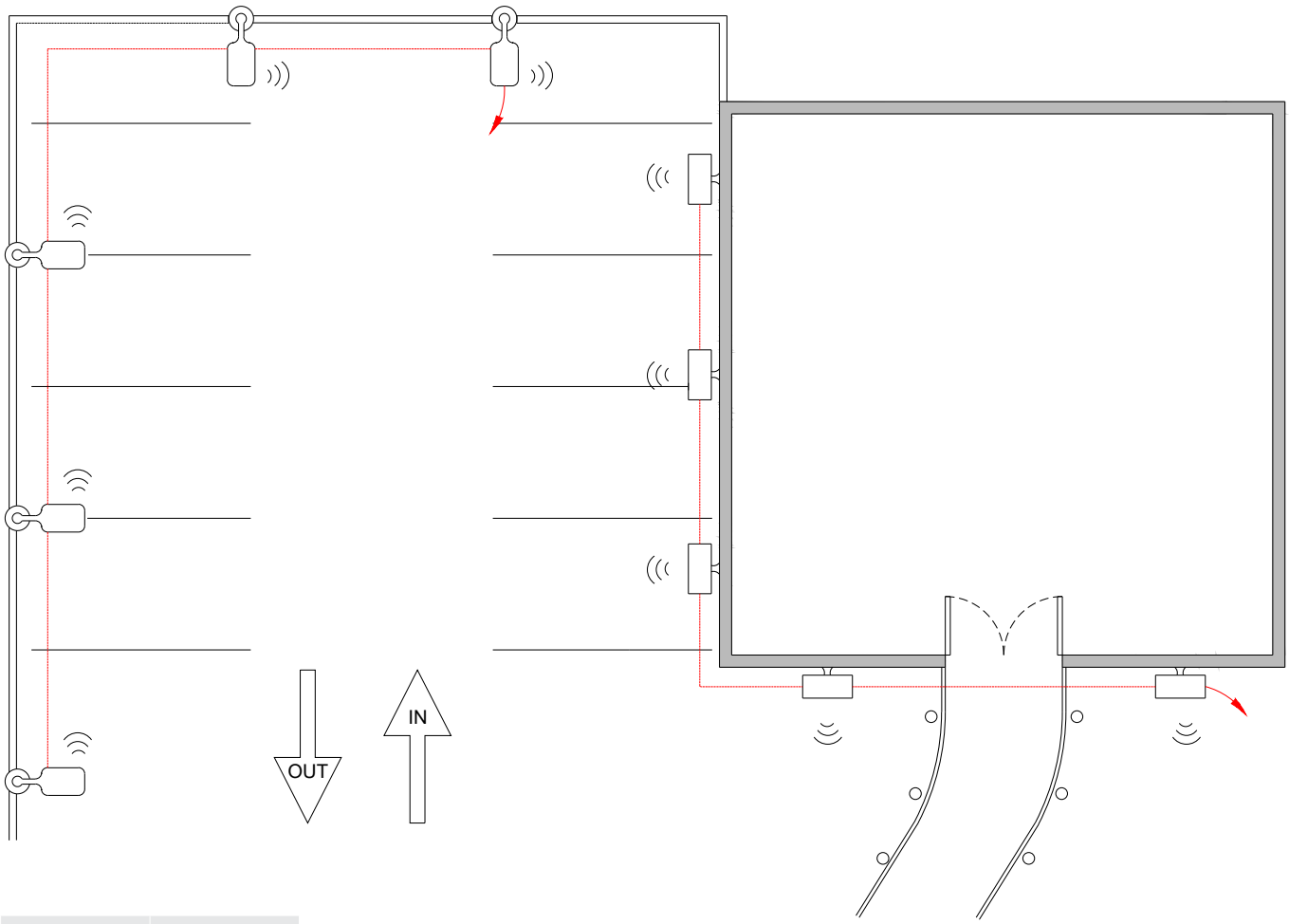
Manual Control:
- On/off control of fixtures

/ ADDITIONAL OPTIONS:

- Devices can be connected to nLight backbone to enable network control, time schedules and Automated Demand Response (OpenADR 2.0a)
- 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 Site Lighting



Bill of Materials

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

/ OPERATION 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 reduce power by at least 50-90% when space becomes unoccupied

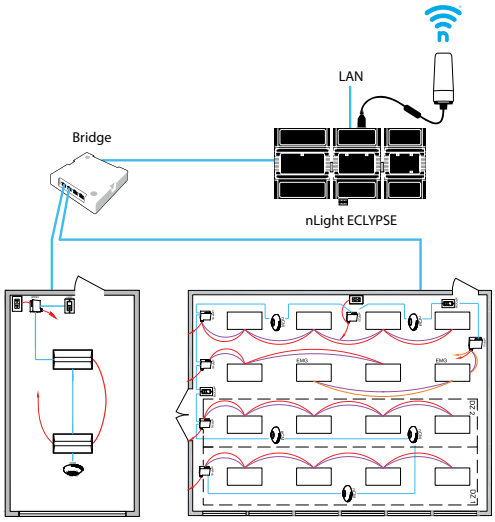
Daylight Control:
- Daylight responsive controls lights to full off when adequate daylight present

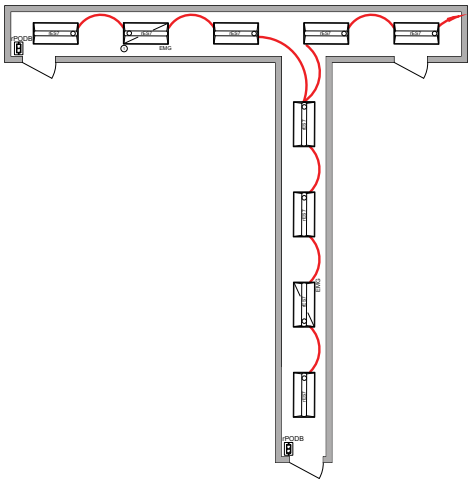
/ ADDITIONAL OPTIONS:

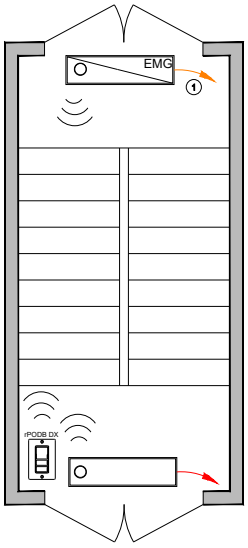
- Devices can be connected to nLight backbone to enable network control, time schedules, astronomical time schedules, and Automated Demand Response (OpenADR 2.0a)
- Wireless fixture embedded control and occupancy/daylighting sensor options available, please see the fixture specification sheet

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

nLight Hybrid Networked Lighting Control: Programmable Time Clock and Automatic Demand Response







① Fixtures assumed to be battery backup

Bill of Materials

Symbol	Qty	Product #	Description
	1	nBRG 8 KIT	8-Port Backbone Bridge
	1	nECY	nLight ECLYPSE System Controller and Optional BMS Interface and OpenADR 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 Control Zone can be connected via an nLight backbone to create a networked nLight lighting control system capable of meeting the requirements of CA Title 24, Part 6, automatic time-switch and demand response provisions [sections 130.1(c)1 and 130.1(e), respectively]. A networked system also enables astronomical time clock control.

Automatic Demand Response (ADR):

In buildings larger than 10,000 square feet, lighting power must be capable of being automatically reduced by a minimum of 15% in response to an automatic demand response signal (ADR) to meet the requirements of CA Title 24, Part 6, demand response control [section 130.1(e)]. OpenADR is an open and standardized way for electricity providers to communicate demand response signals with their customers using a common language over any existing IP-based communications network, such as the Internet.

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.

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.

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.

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

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.

	Control Requirement	Code Provision	nLight Solution Details	
Shut-Off Control	Area Control	130.1(a)	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.	
			Push-Button WallPod	**Graphic WallPod***
			nPODM Series rPODB Series 	Graphic WallPod® 
			Traditional tactile buttons and LED user feedback.	Full-color touch screen provides a sophisticated look and feel.
	Programmable Timeclock and Automatic Scheduling Controls	130.1(c)1 130.2(c)2	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).	
			Network System Controller	
			Network System Controller 	
			Additional benefits of installing an nLight backbone include remote status monitoring, system-wide configuration changes, and BMS interface capability, and ADR interface capability.	
	Automatic Full-Off via Occupancy Sensor	130.1(c) 5	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.	
	Automatic Partial-Off via Occupancy Sensor	130.1(c) 6 & 7	**360° Occupancy Sensor**	**120° WideView Corner Sensor***
			nCM Series rCMS Series 	nWV Series 
			Surface mounts to ceiling tiles or sheetrock/plaster.	Directly mounts in corner or to ceiling via repositionable ceiling bracket.

**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.

	Control Requirement	Code Provision	nLight Solution Details	
Light Level Control	Multi-Level Lighting Controls and Outdoor Lighting Controls	130.1(b) 130.2(c)1 130.2(c)3	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.	
			nLight Enabled Acuity Brands Fixtures	**Dimming Relay Packs**
				nPP16 Series rPP20 Series 
			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.
	Automatic Multi-Level Daylight Controls	130.1(d)	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.	
			Ceiling Mount Dimming Photocell	**Recessed Mount Dimming Photocell***
			nCM Series rCMS Series 	nRM Series 
Additional Controls	Receptacle (i.e., Plug Load) Control	130.5(d)	The nLight Plug Load Relay Pack is capable of switching an entire 20A receptacle load. Simply add an occupancy sensor to an nLight Control Zone (room) and the sensor will automatically switch off when the room is vacant.	
			Plug Load / Receptacle Relay Pack	
			 nPP20 PL Series	 rPP20 Series

nLight®

Title 24 2019 Applications Guide

In addition to being North America's leading manufacturer of indoor and outdoor luminaires, Acuity Brands offers an extensive portfolio of advanced lighting control and building technology solutions for indoor and outdoor applications, from single-room control to fully connected smart building management and space utilization. Our products, technology, expertise and support include occupancy and photosensors, centralized and distributed systems, panels, luminaire-integrated wired/wireless networked controls and IoT platform services, including space utilization solutions.

nLight Solution Typical Layout Drawings

https://www.acuitybrands.com/resources/customer-tools/typicals

California Energy Commission 2019 Energy Standards

https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency

California Lighting Technology Center

https://cltc.ucdavis.edu/article/nonresidential-lighting-whats-new-2019-title-24-part-6-energy-code

Energy Code Ace

http://energycodeace.com/

Use the Following Sections of the Title 24 Code as Reference:

Section 100.1 – Definitions and rules of construction
Section 110.9 – Mandatory requirements for lighting control devices and systems, ballasts and luminaires
Section 130.0 – Lighting controls and equipment - general
Section 130.1 – Indoor lighting controls that shall be installed
Section 130.2 – Outdoor lighting controls and equipment
Section 130.4 – Lighting control acceptance and installation certificate requirements
Section 130.5 – Electrical power distribution systems
Section 140.3 – Prescriptive requirements for building envelopes
Section 140.6 – Prescriptive requirements for indoor lighting







CAN BE USED TO COMPLY WITH 2016 TITLE 24 PART 6 [1]

1 Dimmer controls requirements (other lighting control device requirements, see list above)

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