Energy Codes
Connected Lighting
simplified by Eaton
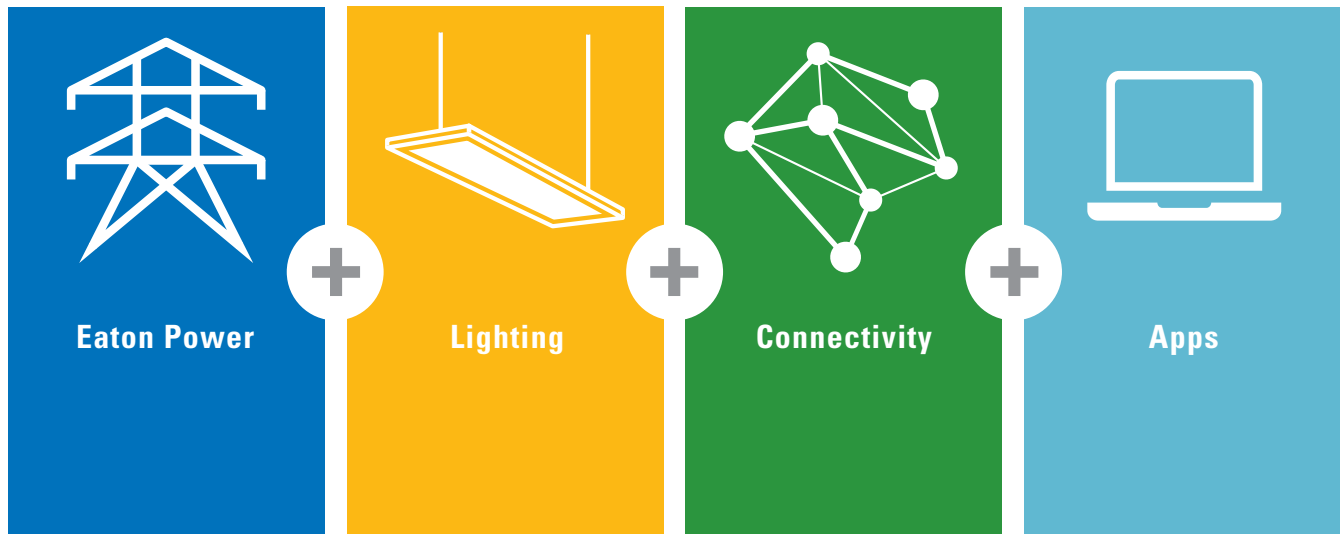
design and application guide

E·T·N

Powering Business Worldwide

We make connections work*

Eaton Power	+	Lighting	+	Connectivity	+	Apps

Simplified connected lighting solutions
for **Buildings, Communities & Homes**

* Eaton's portfolio of connected lighting solutions leverages the real-estate of the physical light fixture to increase building, business and community operating efficiency through controls and data. With connected lighting solutions, we go beyond controlling light to solve higher complexity problems enabled by sensing and communication capabilities within the light fixture itself.

With innovation you can rely on, and connections you can build on; that's how Eaton makes connections work.

www.Eaton.com/ConnectedLighting

Table of Contents

Energy Codes

WaveLinx applications & typical wiring diagrams

DLVP applications & typical wiring diagrams

Energy Codes application notes

ANSI / ASHRAE / IES Standard 90.1-2016

Energy Standard for Buildings Except Low-Rise Residential Buildings (Standard 90.1-2016) adopted as of September 2016. This code significantly fine-tunes the design requirements for code-compliant lighting controls systems, mechanical systems, and the building envelope. This application note summarizes the new mandatory lighting control requirements and highlights where they can be used in various spaces. Please note: this document is intended to provide a general reference and design professionals should consult Standard 90.1-2013 and the authority having jurisdiction for project-specific requirements and interpretation.

ASHRAE 90.1 was recognized by the U.S. Department of Energy (DOE) as the national energy reference standard.

Below summarizes changes from 90.1-2013 to 90.1-2016:

- Reduced occupancy-sensor time delay from 30 to 20 minutes
- Requires partial-off to 50% in spaces where lights should remain ON, such as corridors and stairwells
- Requires daylight controls in primary, secondary and top light zones
- Requires functional testing requirements

International Energy Conservation Code (IECC) 2015

IECC 2015 establishes minimum energy efficiency requirements for new and renovated buildings. This latest iteration contains dramatic changes to the prescriptive and performance-based criteria that previously defined IECC-compliant lighting and lighting control systems. ASHRAE 90.1 is recognized by the DOE as the national reference standard, however IECC is adopted by many states. Please note: this document is intended to provide a general reference and design professionals should consult IECC 2015 and the authority having jurisdiction for project-specific requirements and interpretation.

Below summarizes changes from 2012 to 2015:

- Daylighting Controls Revamped and Redefined
- Continuous Dimming Now Required in Certain Daylit Spaces
- Reduce Exterior Lights at Night
- Use a Digital Lighting Control System to Satisfy Additional Energy Efficiency Options
- New Commissioning Documents Deadline

California Title 24

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2016 Standards will continue to improve upon the 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The effective date of the 2016 Standards is January 1, 2017.

Below summarizes changes from 2013 to 2016:

- Mandatory controls eliminates power adjustment factors
- Simplify multilevel lighting controls
- Clarify partial-ON and partial-OFF requirements
- Clarified alterations controls requirements

Energy saving lighting control strategies

STRATEGY	DESCRIPTION	ESTIMATED SAVINGS
Manual Dimmer	Manual dimming control is one of five methods that satisfy the multi-level lighting control requirements.	**10-20%**
Occupancy Sensor	Occupancy/vacancy control turns lights Off (or partially Off) when a room is unoccupied. Lights can be turned On automatically or manually, when a person enters a room.	**20-60%**
Daylighting Control	Daylighting control automatically adjusts lighting levels in response to the amount of daylight available in the space.	**20-45%**
Manual ON/ Auto OFF	Manual ON/Automatic OFF or Vacancy Mode is designed to ensure that lighting does not turn ON automatically.	**40%-60%**
Tuning Control	High-end tuning lowers the maximum light level, creating energy savings.	**10-30%**
Demand Response	Demand Response reduces light levels in response to a signal from an OpenADR device or BMS closure.	**10-40%**
Manually Switched ON/OFF	Manually switched ON/OFF method allows users to manually control the lighting within the space and complies with local control requirements.	**10-20%**
Receptacle Control	Plug load control turns controlled receptacles On, when the space is occupied, and Off, when the space is vacant.	**15-50% Controlled loads**
UL924 (Energy Back-up Circuit)	The ability to control emergency lighting along with normal lighting while ensuring they go to full bright during normal power loss.	**15-30%**

	ASHRAE 90.1 2016	IECC 2015	T24 2016	Atrium	Banking	Classroom / Training / Lecture	Conference / Meeting room
Local Control	9.4.1(a)	C405.2.2.3	130.1(a), (b)	🔵	🔵	🔵	🔵
Manual ON	9.4.1(b)	C405.2.2.3	130.1(a), (b)	⚪	⚪	⚪	⚪
Partial Automatic ON	9.4.1(c)	C405.2.1.1	130.1(b)	⚪	⚪	⚪	⚪
Bi-level Lighting	9.4.1(d)					🔵	🔵
Daylighting Side lighting	9.4.1(e)	C405.2.3.2	130.1(d)	🔵	🔵	🔵	🔵
Daylighting Top lighting	9.4.1(f)	C405.2.3.1	130.1(d)	🔵	🔵	🔵	🔵
Automatic Partial OFF	9.4.1(g)	C405.2.1.2	130.1(c).6				
Automatic Full OFF	9.4.1(h)	C405.2.1.1	130.1(c).5	🟠	🟠	🟠	🟠
Scheduled Shutoff	9.4.1(i)	C405.2.2.1	130.1(c)	🟠	🟠	🟠	🟠
Receptacle Control	8.4.2	C405.2.4	130.5(d)		🔵	🔵	🔵
Energy Monitoring	8.4.3.2		130.5(b)	🟢	🟢	🟢	🟢
Parking Garage Lighting Control	9.4.2	C405.2.5	130.1(a), (b)				
Functional Testing	9.4.3	C408.2.3	130.1(a), (b)	🔵	🔵	🔵	🔵
Demand Response			130.1(a), (b)	🟢	🟢	🟢	🟢
Enhanced Digital Lighting Controls		C406.4		🟢	🟢	🟢	🟢

🔵 Required   🟢 Choose one   🟠 Choose one   ⚪ Choose one

Copy / Print room	Corridor	Courtroom	Dining area	Food preparation	Library	Office	Restroom	Sales area	Stairwell
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
Choose one (gray)		Choose one (gray)	Choose one (gray)	Choose one (gray)	Choose one (gray)	Choose one (gray)	Choose one (gray)	Choose one (gray)	Choose one (gray)
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Required	Required	Required	Required	Required	Required	Required		Required	Required
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
									Required
Choose one (orange)	Choose one (orange)	Choose one (orange)	Choose one (orange)	Choose one (orange)	Choose one (orange)	Required	Choose one (orange)	Choose one (orange)	Choose one (orange)
Choose one (orange)	Choose one (orange)	Choose one (orange)	Choose one (orange)	Choose one (orange)	Choose one (orange)		Choose one (orange)	Choose one (orange)	Choose one (orange)
Required			Required		Required	Required	Required	Required	
Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)
Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)	Choose one (green)

Legend:
- ● Required
- ○ Choose one (green)
- ○ Choose one (orange)
- ○ Choose one (gray)

Terminology

HIGH-LEVEL TERMINOLOGY	RECOMMENDED PRODUCTS*
Local control • If the controlled space is ≤10,000 ft2 , a control device shall not control more than 2500 ft2 • If the controlled space is larger than 10,000 ft2, no device shall control more than 10,000 ft2 • The installed device shall be readily accessible and the load being controlled shall be visible when operating the control	• WaveLinx • DLVP • Room Controller System • Fifth Light • Wallbox dimmers/sensors • GDS when connected to LiteKeeper, ControlKeeper
Restricted to Manual ON • Vacancy modes must be used such that lights will not turn on automatically	• WaveLinx • DLVP • Room Controller System • Fifth Light • VSW, VNW, VNLW • VAC
Restricted to Partial Automatic ON • When in occupancy mode, automatic ON shall not exceed 50% of the lighting power	• WaveLinx • DLVP • Room Controller System • Fifth Light • LiteKeeper/, ControlKeeper

Bi-level Lighting Control
• The general lighting in a space must have the following functionality:
• Full ON, Full OFF, and Dimming
  • Dimming may be continuous or through step dimming
  • If step dimming, at least one intermediate step shall be between 30% and 50% of full lighting power
	• WaveLinx
	• DLVP
	• Room Controller System
	• Fifth Light
	• LiteKeeper, ControlKeeper
	• OAC, OAWC with Low Voltage Switches

Automatic Daylight Responsive Controls for Sidelighting • Primary sidelighted areas with combined input power at 150W or greater shall be controlled by photocontrols • Secondary sidelighted areas with combined input power at 300W or greater, the area shall be controlled by photocontrols • Controls must also: be readily accessible for calibration, control primary and secondary sidelighted areas independently, and shall incorporate daylight dimming	• WaveLinx • DLVP • Room Controller System • Fifth Light • Analog Photosensors with ControlKeeper

Automatic daylight responsive controls for toplighting
• Space within any daylight area that has combined input power for all general lighting at 150W or greater shall be controlled by photocontrols.
• Control must:
  • Be readily accessible for calibration adjustments
  • Have daylight response through continuous dimming or Step dimming with a point between 50% and 70%, a point between 20% and 40% (or lowest dimming level that the technology permits), and a third point at full off
• General lighting with overlapping toplighted and sidelighted areas shall be controlled together
	• WaveLinx
	• DLVP
	• Room Controller System
	• Fifth Light
	• Analog Photosensors with ControlKeeper

Automatic partial OFF (full OFF complies) • Within 20 minutes of occupants leaving a space, lighting power shall automatically decrease at least 50%	• WaveLinx • DLVP • Room Controller System • Fifth Light • ControlKeeper

Additional product combinations may be code compliant. Please contact your Eaton's Lighting Systems representative for more information.

Exceptions: more detailed information may apply, please reference your local code for more detailed information.

Terminology

HIGH-LEVEL TERMINOLOGY	RECOMMENDED PRODUCTS*
Automatic full OFF • Within 20 minutes of occupants leaving a space, lighting shall be automatically shut OFF • Each control shall not control more than 5000 ft2	• WaveLinx • DLVP • Room Controller System • Fifth Light • LiteKeeper, ControlKeeper • Wallbox and Ceiling Sensors
Scheduled Shut-off • When a space is scheduled to be vacant, lighting shall be automatically shut OFF. Any override control shall revert back to the schedule within 2 hours of the last action	• WaveLinx • DLVP • Room Controller System • Fifth Light • LiteKeeper, ControlKeeper
Receptacle Control • Automatically turn off plug loads when the space is unoccupied by sensor or time schedule	• WaveLinx • DLVP • Room Controller System • Fifth Light • LiteKeeper, ControlKeeper
Energy Monitoring • Provide energy measurement data on the system collected at a minimum of every 15 minute and reported at least hourly	• WaveLinx (included with system) • Fifth Light (included with system) • PowerXpert (external measurement for all other systems)

WaveLinx

Wireless Connected Lighting System

Wireless, code-compliant, and cost-effective, WaveLinx Wireless Connected Lighting System offers the most out-of-the-box functionality on the market. It's also one of the easiest connected lighting systems to install and manage.

Automatic code compliance? Yes, it's true

- Automatic code commissioning meets or exceeds code requirements

- Wireless integrated sensors ensure maximum efficiency and flexibility

- A simple mobile app allows building managers to easily adjust settings, even after the project has finished, with no need to go back into the wall

- Connected fixtures provide a platform for future scalability

Wireless, code-compliant, and cost-effective for today

IECC 2015:
Classroom example 1

IECC 2015

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control

Lumen Maintenance Control	Tuning Control	Manual ON/ Auto OFF

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices
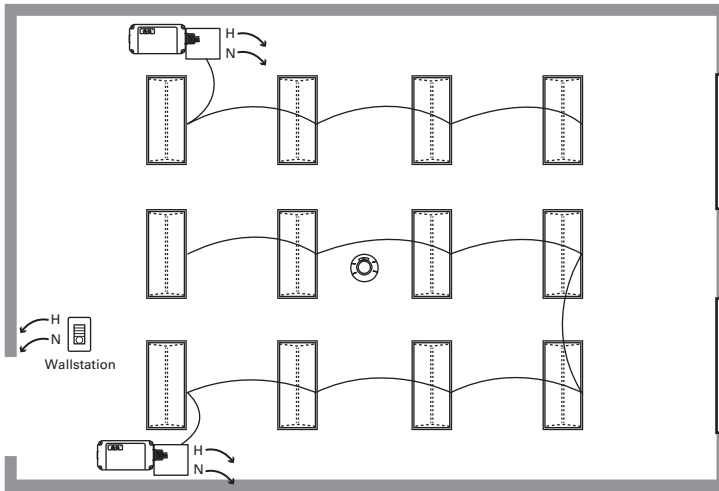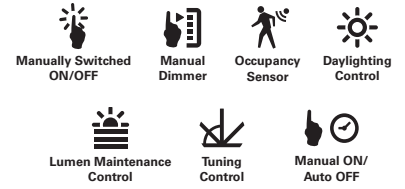
Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	WSP-MV-010	WaveLinx Relay Switchpack with 0-10V dimming
1	CWPD-1500	WaveLinx ceiling sensor
1	W4S-RL-W	WaveLinx Wallstation
12	24EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x4	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Daylight dimming zones of no more than eight luminaires
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Daylighting not required for indoor spaces without windows
Not required in spaces without windows or that are less than 150W

Manual Controls
Programmable scenes
Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch provided by others

WAC-POE Wireless Area Controller Installed within 150ft of WCL devices

W4S-RL-W Wireless 4 small button scene wallstation

2x4 recessed light fixture with 0-10V dimming

WR-15 Wireless Receptacle

CWPD-1500 Wireless Ceiling Sensor occupancy sensor

WSP-MV-010 20A Relay w/ 0-10V Dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.2.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

Manually Switched ON/OFF Manual Dimmer Occupancy Sensor Daylighting Control

Lumen Maintenance Control Tuning Control Manual ON/ Auto OFF

IECC 2015:
Classroom example 2

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Wallstation

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
12	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on/off with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces
Not required in spaces without windows that are less than 150W
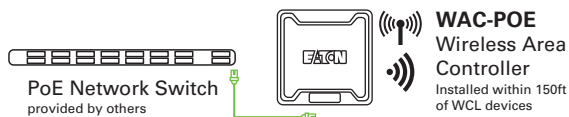
Manual Controls
Programmable scenes
Dominant button is 50% light level
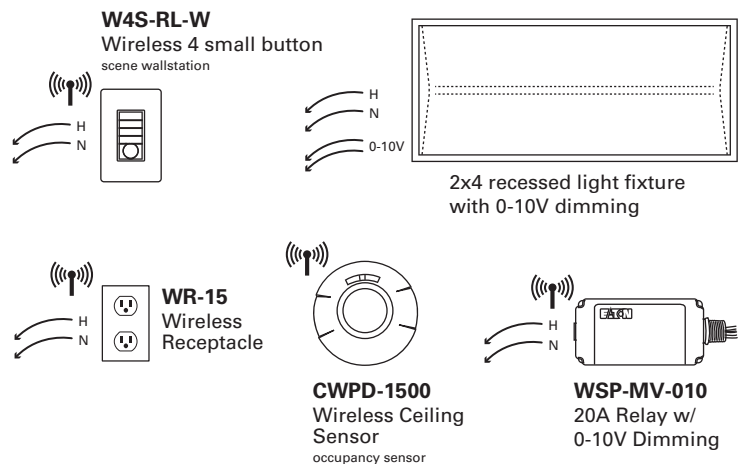Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
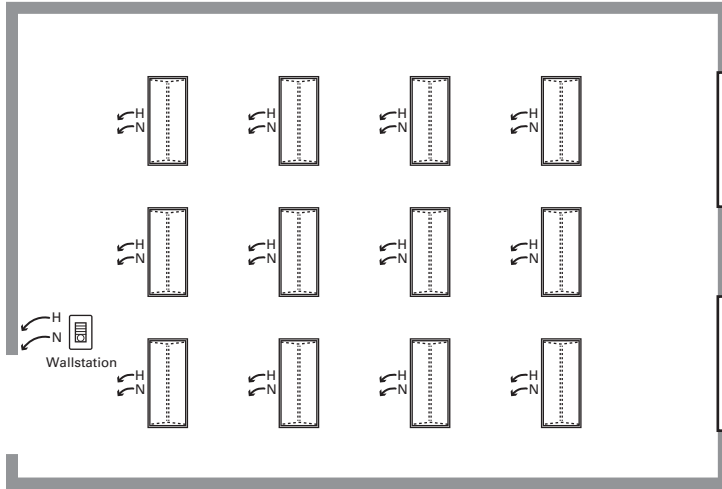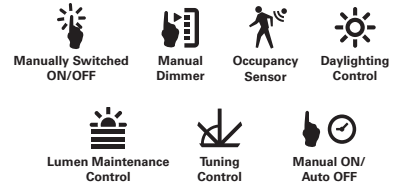UL924 emergency control capabilities available via luminaire battery backup
Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W1L-RL-W
Wireless 1 large button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

Conference room example 1

Manually Switched ON/OFF · Manual Dimmer · Occupancy Sensor · Daylighting Control

Lumen Maintenance Control · Tuning Control · Manual ON/ Auto OFF

Wallstation

Occupancy/Daylight Sensor

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
3	LD4 OR LD6	Portfolio Commercial Recessed LED
4	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows or that are less than 150W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
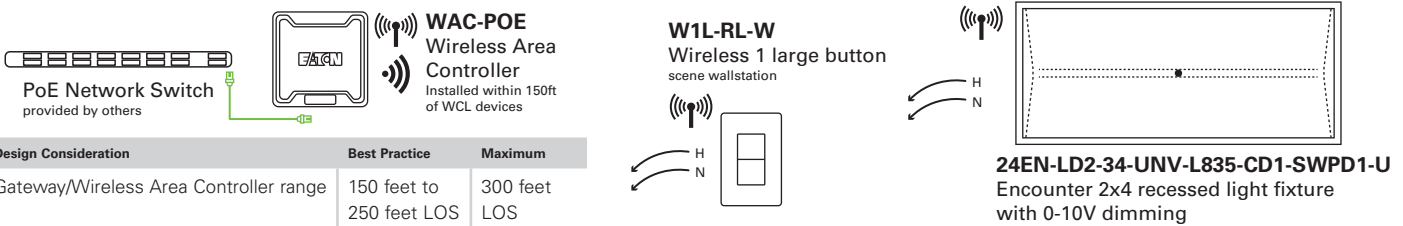Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
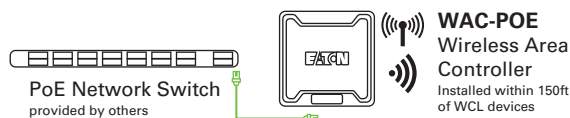Portfolio
Commercial Recessed LED

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

Conference room example 2

H N Wallstation

H N

H N

H N Occupancy/Daylight Sensor

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
3	LD4 OR LD6	Portfolio Commercial Recessed LED
2	DSI-WS-3L35-1D-UNV-AC48-T1-8-STD-SW-W	Divide Suspended with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Individually addressable luminaires
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on/off with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
Not required in spaces without windows or that are less than 150W

Manual Controls
Programmable Scenes
Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
Complies with Enhanced Digital Lighting Control section C406

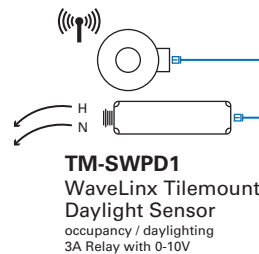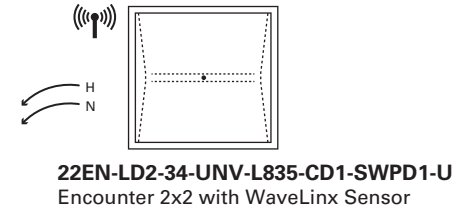## Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

DSI-WS-3L35-1D-UNV-AC48-T1-8-STD-SW-W
Divide Suspended 8ft with WaveLinx Sensor

H N

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

H N

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

H N

LD4/LD6
Portfolio Commercial Recessed LED

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

Office corridor example

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control

Lumen Maintenance Control	Tuning Control	Manual ON/ Auto OFF

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Wallstation

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W1L-RL-W	WaveLinx Wallstation
6	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Individually addressable luminaires
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows or that are less than 150W

Manual Controls
Programmable Scenes
Dominant button is 50% light level
Manual on/off
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

W1L-RL-W
Wireless 1 large button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

IECC 2015:
Private office example

Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Daylighting Control

Lumen Maintenance Control | Tuning Control | Manual ON/ Auto OFF

H N Wallstation

H N

H N

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
2	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows or that are less than 150W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
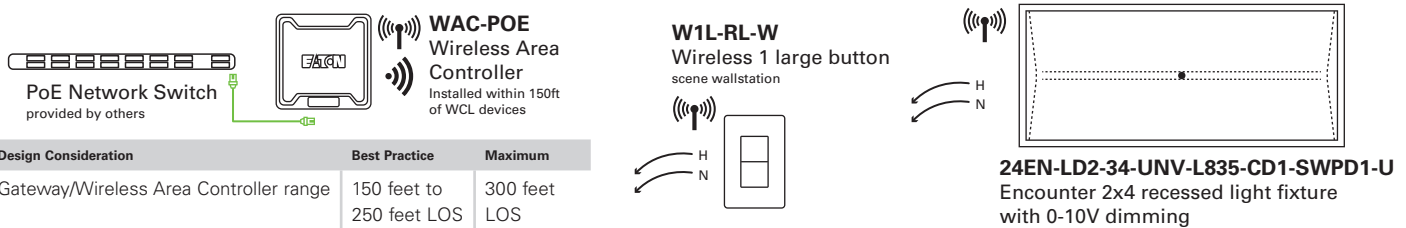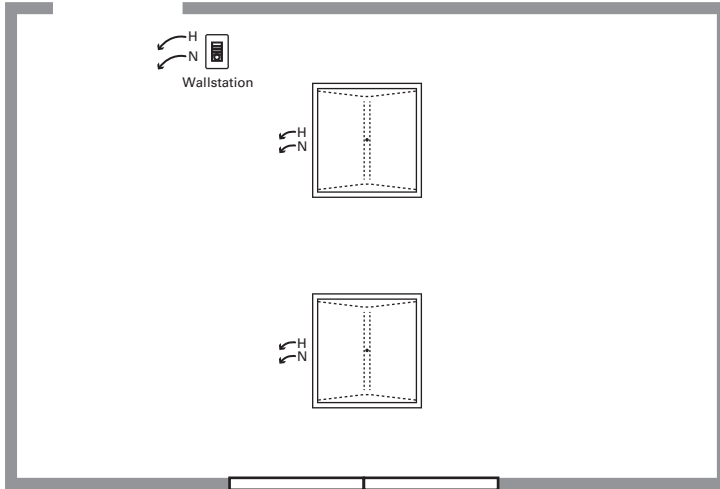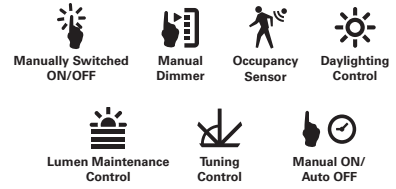Remaining buttons trigger scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area
Controller
Installed within 150ft
of WCL devices

W4S-RL-W
Wireless 4 small button
scene wallstation

H N

H N

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

IECC 2015:
Lobby example

Wallstation

Occupancy/Daylight Sensor

Wallstation

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4S-RL-W	WaveLinx Wallstation
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
6	LD4 OR LD6	Portfolio Commercial Recessed LED
2	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
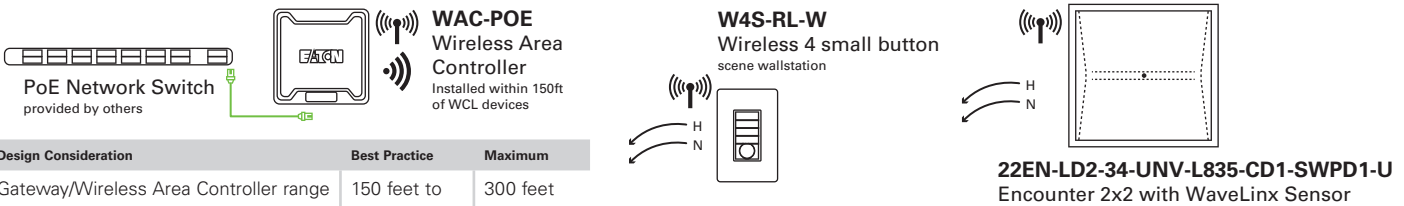Not required in spaces without windows or that are less than 150W

Manual Controls
Dominant button half lights (sets lights to 50% or less)
Programmable scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
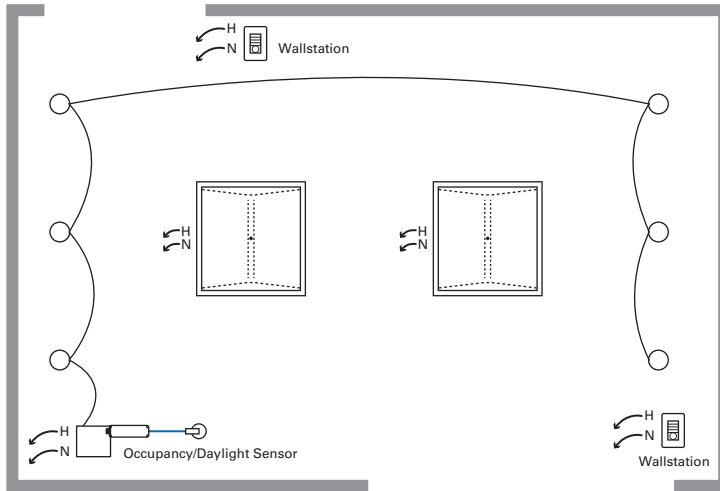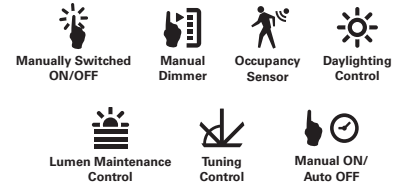Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio
Commercial Recessed LED

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

IECC 2015:
Open office example

Manually Switched ON/OFF · Manual Dimmer · Occupancy Sensor · Daylighting Control

Lumen Maintenance Control · Tuning Control · Manual ON/ Auto OFF

Wallstation

Wallstation

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4SL-RL-W	WaveLinx Wallstation
24	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on/off with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
Not required in spaces without windows or that are less than 150W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
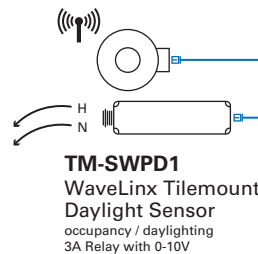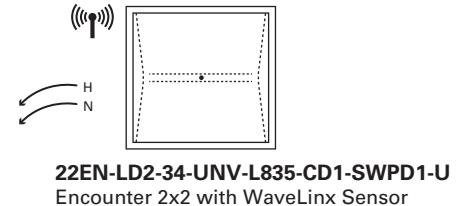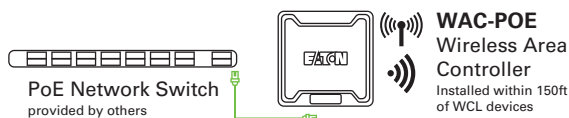Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

IECC 2015:

Restaurant example

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
5	W4SL-RL-W	WaveLinx Wallstation
24	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Individually addressable luminaires
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on/off with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
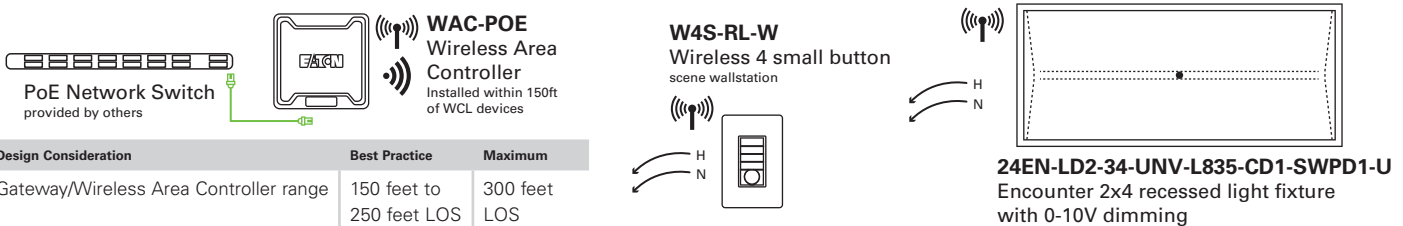Not required in spaces without windows or that are less than 150W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
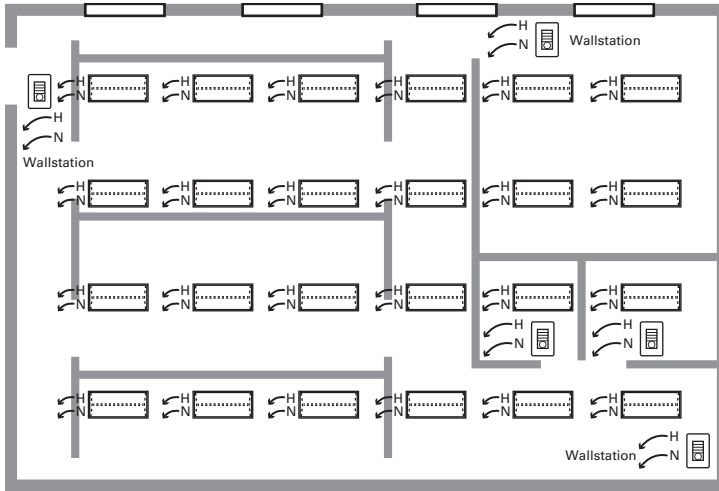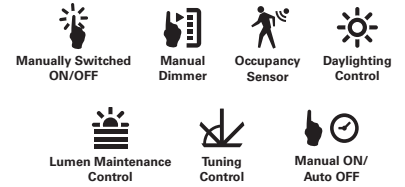Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

IECC 2015:

Retail example

Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Daylighting Control

Lumen Maintenance Control | Tuning Control | Manual ON/ Auto OFF

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
6	W4SL-RL-W	WaveLinx Wallstation
4	WSP-MV-010	WaveLinx Relay Switchpack with 0-10V dimming
4	LDCM-PL-120-277-010V-GR	Linear Dimming Control Modules
23	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on/off with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
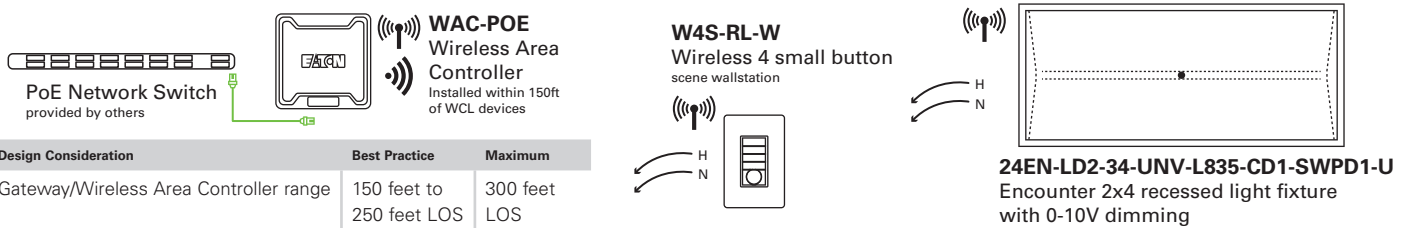Not required in spaces without windows or that are less than 150W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup
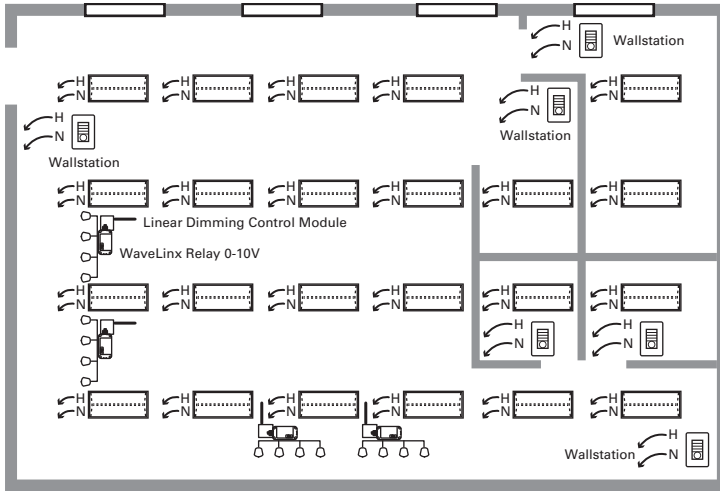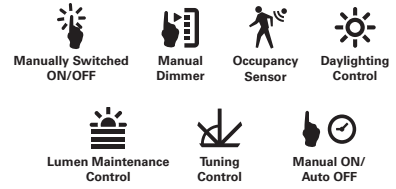Complies with Enhanced Digital Lighting Control section C406

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

W4S-RL-W
Wireless 4 small button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

WSP-MV-010
20A Relay w/
0-10V Dimming

LDCM-PL-120-277-0-10V-GR
Linear Dimming
Control Module

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
IECC 2015	C405. 2.2.3	C405. 2.2.3	C405. 2.1.1		C405. 2.3.2	C405. 2.3.1	C405. 2.1.2	C405. 2.1.1	C405. 2.2.1	C405. 2.4		C405. 2.5	C405. 2.3		C406. 4

ASHRAE 90.1 2016:
Classroom example 1

ASHRAE 90.1 2016

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/ Auto OFF

Receptacle Control

Wallstation

Receptacle Control

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
2	WSP-MV-010	WaveLinx Relay Switchpack with 0-10V dimming
1	CWPD-1500	WaveLinx ceiling occupancy sensor
12	24EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x4	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Daylighting not required for indoor spaces without windows
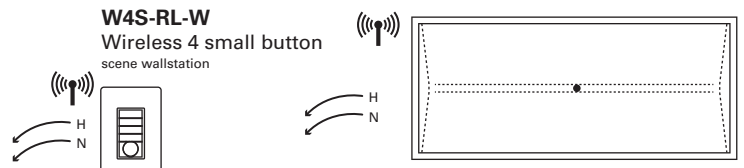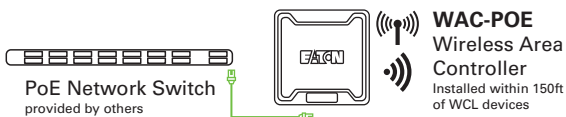Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
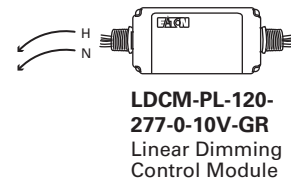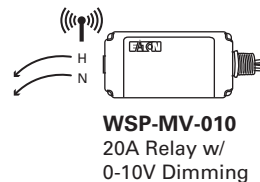Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

2x4 recessed light fixture
with 0-10V dimming

WR-15
Wireless Receptacle

CWPD-1500
Wireless Ceiling Sensor
occupancy sensor

WSP-MV-010
20A Relay w/
0-10V Dimming

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

ASHRAE 90.1 2016:

Classroom example 2

Manually Switched ON/OFF   **Manual Dimmer**   **Occupancy Sensor**   **Daylighting Control**   **Receptacle Control**

Lumen Maintenance Control   **Demand Response**   **Tuning Control**   **Manual ON/ Auto OFF**

Receptacle Control

Wallstation

Receptacle Control

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
12	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with INstinct Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
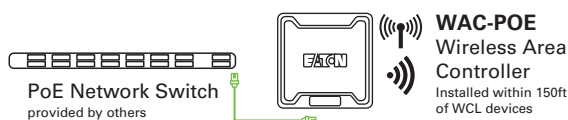Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
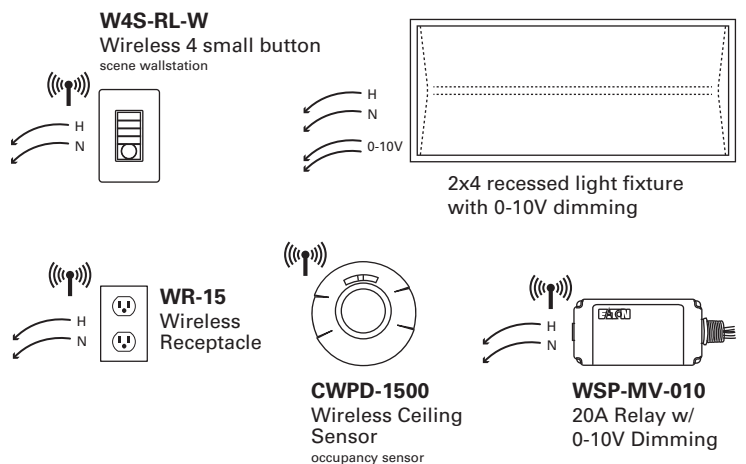UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

W4S-RL-W
Wireless 4 small button
scene wallstation

WR-15
Wireless
Receptacle

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

ASHRAE 90.1 2016:
Conference room example 1

ASHRAE 90.1 2016

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/ Auto OFF

Wallstation

Receptacle Control

Occupancy/Daylight Sensor

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
3	LD4 OR LD6	Portfolio Commercial Recessed LED
4	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Scene raise
Scene lower
All off

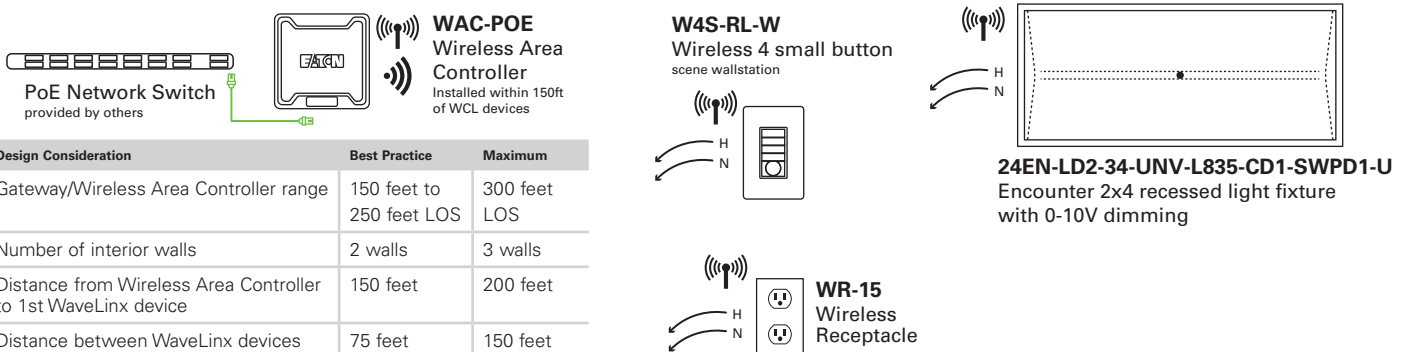**Additional Features**
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area
Controller
Installed within 150ft
of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

WR-15
Wireless
Receptacle

TM-SWPD1
WaveLinx Tilemount
Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio
Commercial
Recessed LED

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

ASHRAE 90.1 2016:
Conference room example 2

ASHRAE 90.1 2016

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/Auto OFF

Wallstation
Receptacle Control
Occupancy/Daylight Sensor

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
6	LD4 OR LD6	Portfolio Commercial Recessed LED
2	DSI-WS-3L35-1D-UNV-AC48-T1-8-STD-SW-W Divide Suspended with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimming zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable Scenes
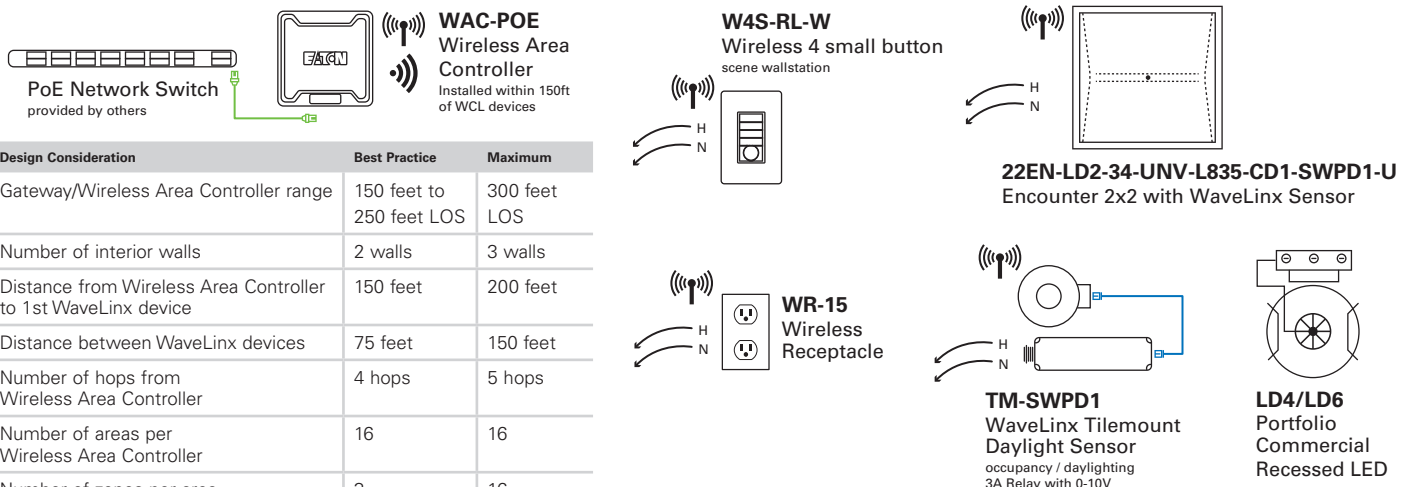Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

DSI-WS-3L35-1D-UNV-AC48-T1-8-STD-SW-W
Divide Suspended 8ft with WaveLinx Sensor

WR-15
Wireless Receptacle

W4S-RL-W
Wireless 4 small button
scene wallstation

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio Commercial Recessed LED

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

Office corridor example

ASHRAE 90.1 2016

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/ Auto OFF

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable Scenes
Dominant button is 50% light level
Manual on/off
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
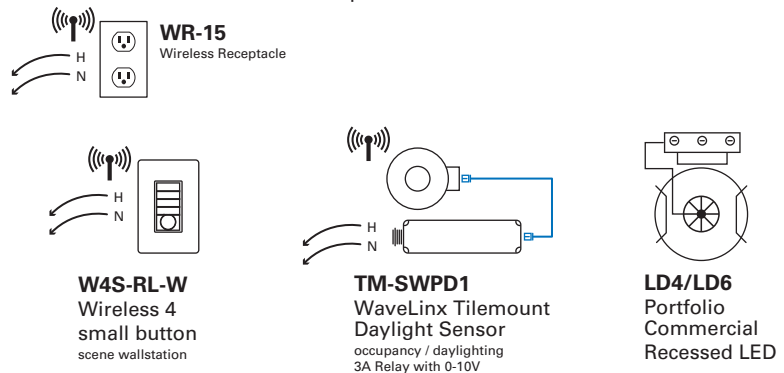UL924 emergency control capabilities available via luminaire battery backup

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4SL-RL-W	WaveLinx Wallstation
6	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Typical wiring detail

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

PoE Network Switch
provided by others

W4S-RL-W
Wireless 4 small button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

Private office example

ASHRAE 90.1 2016

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/ Auto OFF

H N
Wallstation

H N

Receptacle Control
H N

H N

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
2	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
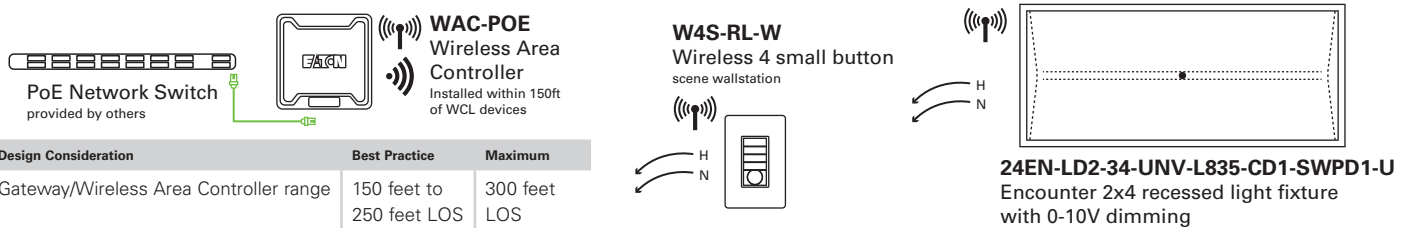Remaining buttons trigger scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

H N

WR-15
Wireless Receptacle

H N

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

H N

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

ASHRAE 90.1 2016:
Lobby example

H N Wallstation

H N Receptacle Control

H N

H N

H N Occupancy/Daylight Sensor

H N Wallstation

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
6	LD4 OR LD6	Portfolio Commercial Recessed LED
2	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor space without windows
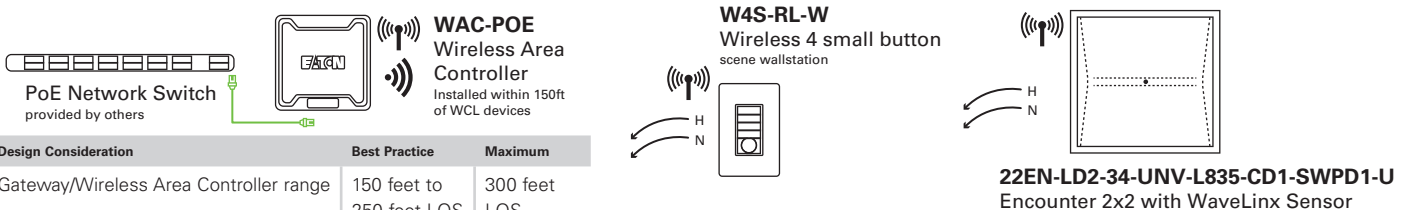Not required in spaces without windows or that are less than 120W

Manual Controls
Dominant button half lights (sets lights to 50% or less)
Programmable scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
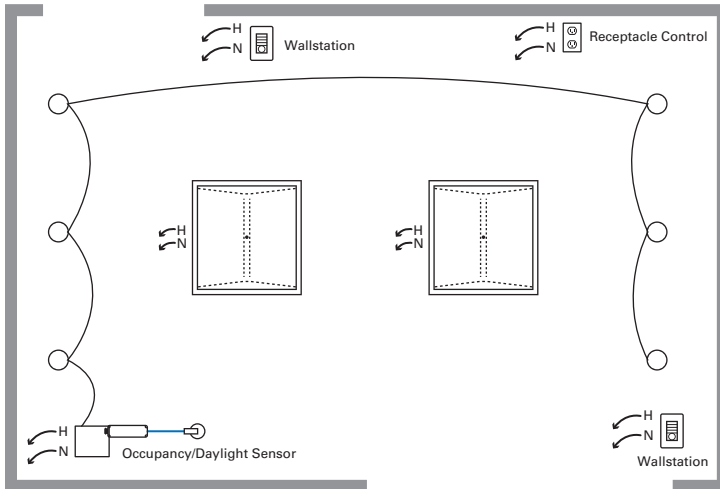UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation
H N

H N
22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

H N
WR-15
Wireless Receptacle

H N
TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio Commercial Recessed LED

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

ASHRAE 90.1 2016:

Open office example

ASHRAE 90.1 2016

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/ Auto OFF

Receptacle Control
Wallstation
Wallstation
Receptacle Control

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4SL-RL-W	WaveLinx wallstation
2	WR-15	WaveLinx Receptacle
24	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows that are less
than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Raise
Lower
All off

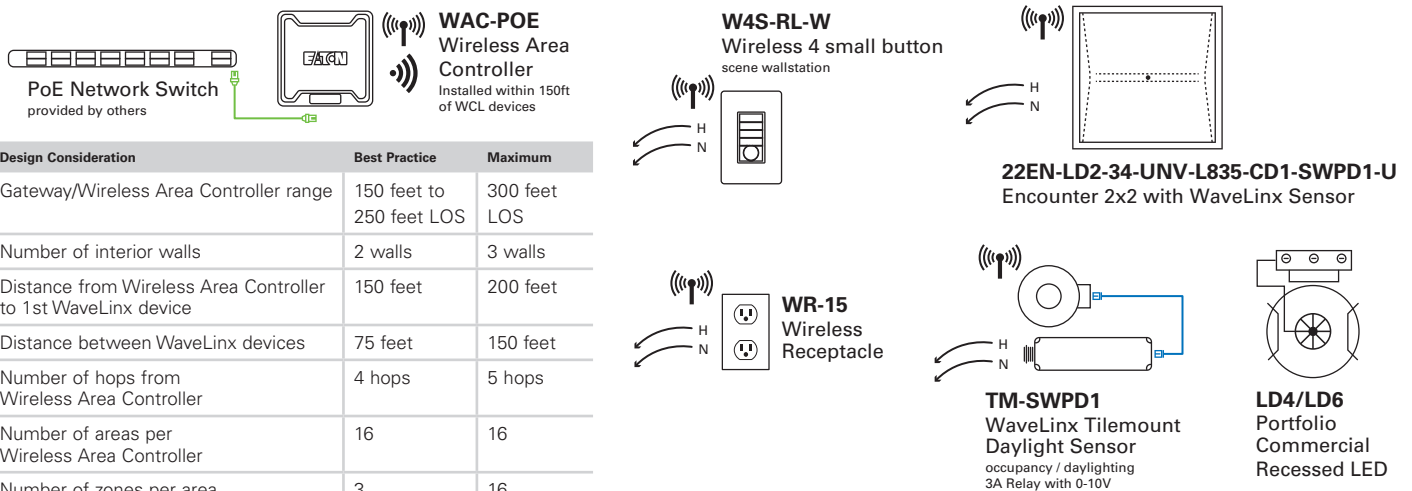**Additional Features**
Power measurement reporting through mobile application
Automatic demand response available from wireless
area controller
Scheduling of partial off light levels and times from
wireless area controller
UL924 emergency control capabilities available via luminaire
battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area
Controller
Installed within 150ft
of WCL devices

W4S-RL-W
Wireless 4 small button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

WR-15
Wireless
Receptacle

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

ASHRAE 90.1 2016:

Restaurant example

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
5	W4SL-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
24	24EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x4 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
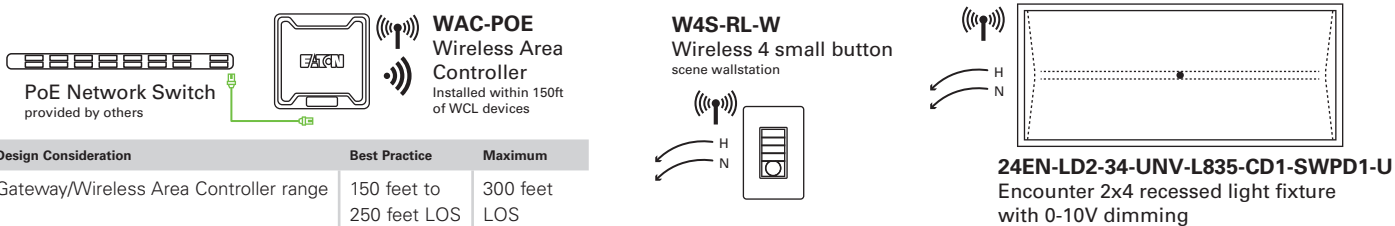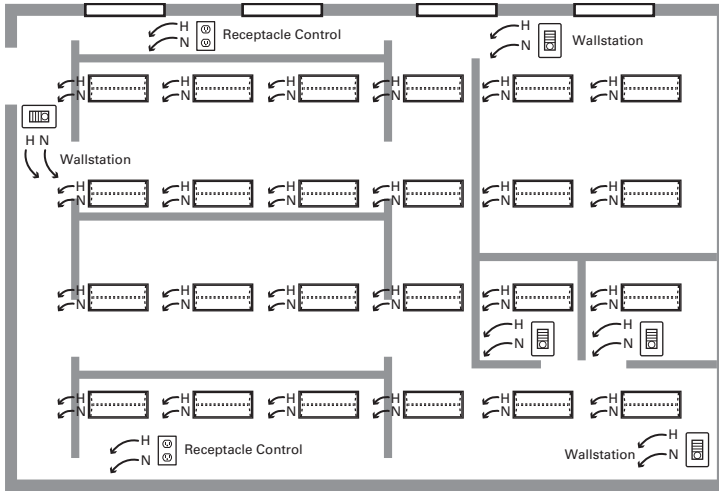Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

WR-15
Wireless Receptacle

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

Manually Switched ON/OFF	Manual Dimmer	Occupancy Sensor	Daylighting Control	Receptacle Control

Lumen Maintenance Control	Demand Response	Tuning Control	Manual ON/ Auto OFF

ASHRAE 90.1 2016:

Retail example

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
6	W4SL-RL-W	WaveLinx Wallstation
4	WSP-MV-010	WaveLinx Relay Switchpack with 0-10V dimming
2	WR-15	WaveLinx Receptacle
4	LDCM-PL-120-277-010V-GR	Linear Dimming Control Modules
23	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
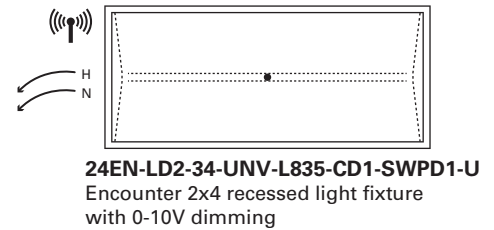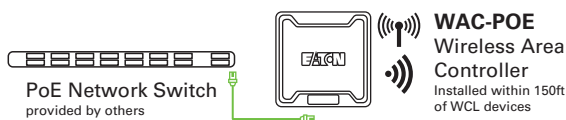Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

WR-15
Wireless Receptacle

WSP-MV-010
20A Relay w/ 0-10V Dimming

LDCM-PL-120-277-0-10V-GR
Linear Dimming Control Module

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response
ASHRAE 90.1-2016	9.4.1 (a)	9.4.1.1 (b)	9.4.1.1 (c)	9.4.1.1 (d)	9.4.1.1 (e)	9.4.1.1 (f)	9.4.1.1 (g)	9.4.1.1 (h)	9.4.1.1 (i)	8.4.2	8.4.3.2	9.4.1.2	9.4.3	

TITLE 24 2016:
Classroom example 1

TITLE 24 2016

| Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Receptacle Control |
| Lumen Maintenance Control | Demand Response | Tuning Control | Manual ON/ Auto OFF |

Receptacle Control

H
N

H
N
Wallstation

H
N
Receptacle Control

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
2	WSP-MV-010	WaveLinx Relay Switchpack with 0-10V dimming
1	CWPD-1500	WaveLinx ceiling occupancy sensor
12	24EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x4	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Daylighting not required for indoor spaces without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
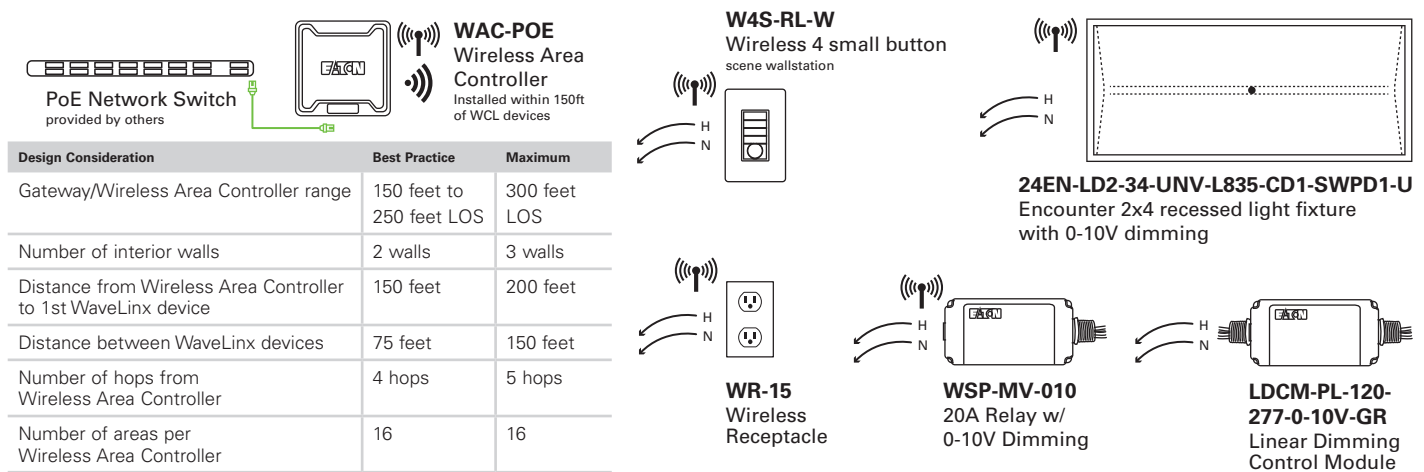Programmable scenes
Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
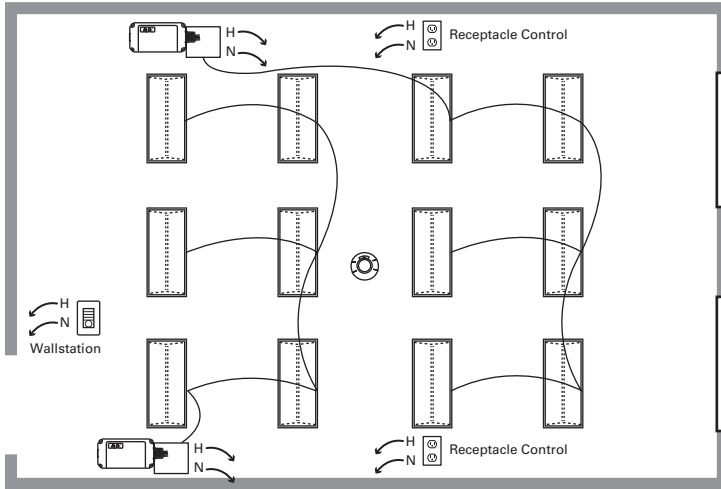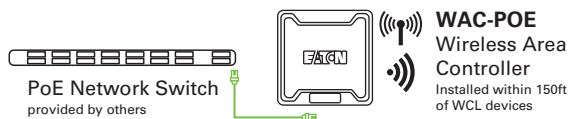UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

H
N

H
N
0-10V

2x4 recessed light fixture
with 0-10V dimming

WR-15
Wireless
Receptacle

H
N

CWPD-1500
Wireless Ceiling
Sensor
occupancy sensor

WSP-MV-010
20A Relay w/
0-10V Dimming

H
N

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:

Classroom example 2

Receptacle Control

Wallstation

Receptacle Control

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
12	24EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x4 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows that are less than 120W

Manual Controls
Programmable scenes
Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
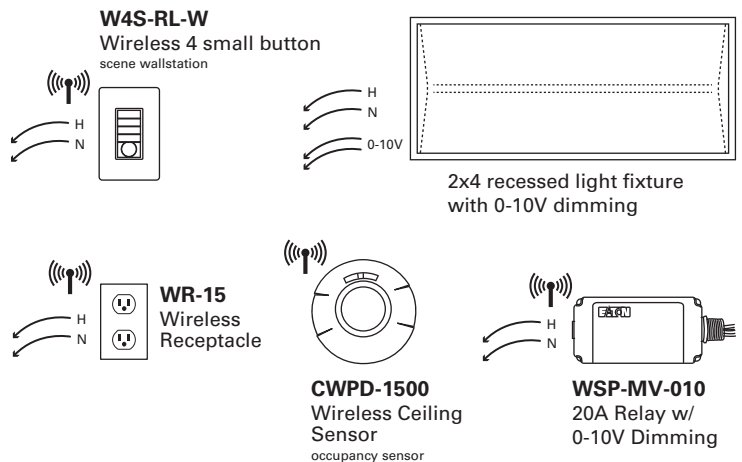UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

WR-15
Wireless Receptacle

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:
Conference room example 1

Manually Switched ON/OFF · **Manual Dimmer** · **Occupancy Sensor** · **Daylighting Control** · **Receptacle Control**

Lumen Maintenance Control · **Demand Response** · **Tuning Control** · **Manual ON/ Auto OFF**

Wallstation

Receptacle Control

Occupancy/Daylight Sensor

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
3	LD4 OR LD6	Portfolio Commercial Recessed LED
4	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
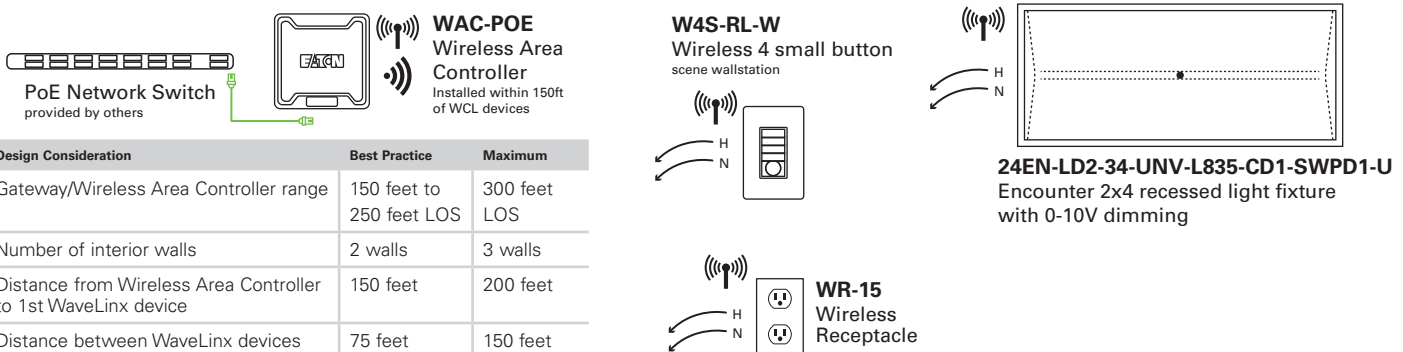Not required in spaces without windows or that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
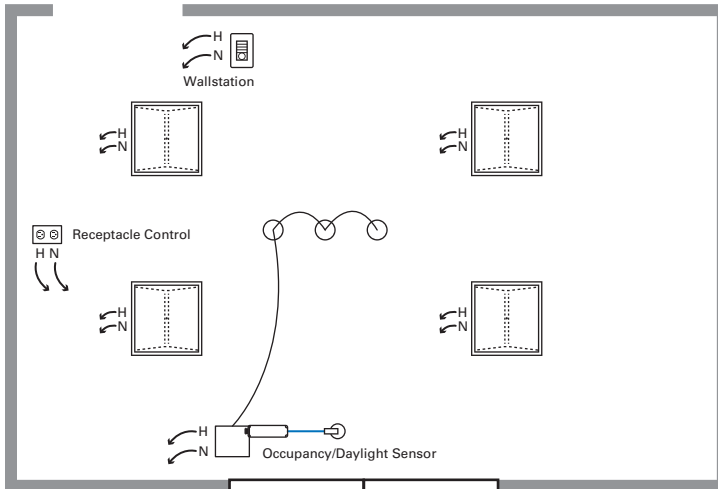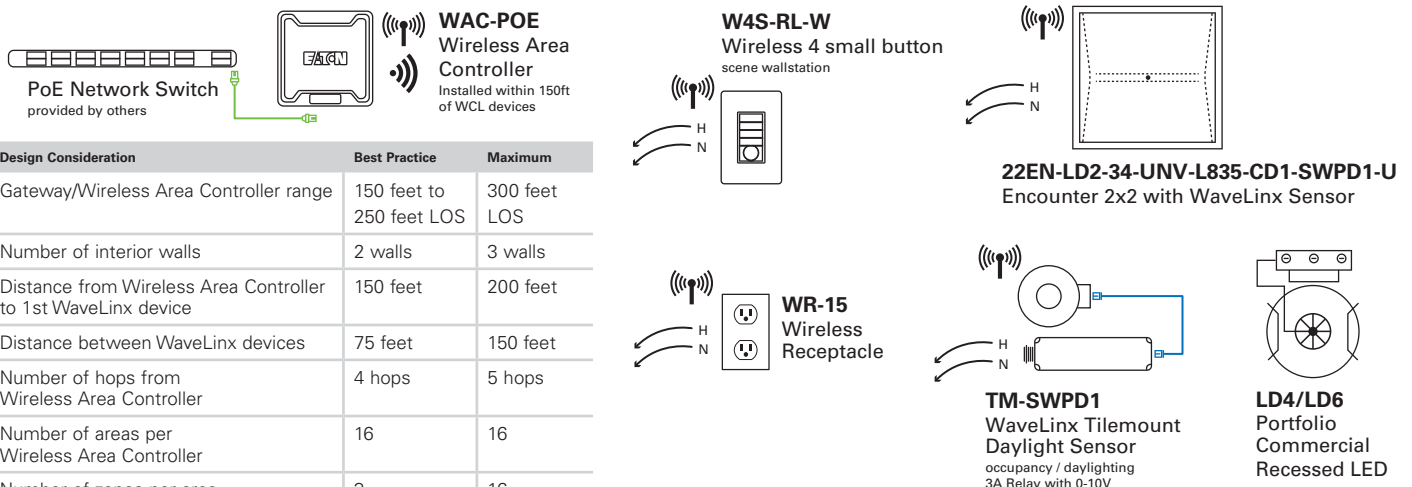UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button scene wallstation

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

WR-15
Wireless Receptacle

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio Commercial Recessed LED

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

Conference room example 2

Wallstation

Receptacle Control

Occupancy/Daylight Sensor

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
6	LD4 OR LD6	Portfolio Commercial Recessed LED
2	DSI-WS-3L35-1D-UNV-AC48-T1-8-STD-SW-W Divide Suspended with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimming zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable Scenes
Dominant button is 50% light level
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

DSI-WS-3L35-1D-UNV-AC48-T1-8-STD-SW-W
Divide Suspended 8ft with WaveLinx Sensor

WR-15
Wireless Receptacle

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio Commercial Recessed LED

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

Manually Switched ON/OFF **Manual Dimmer** **Occupancy Sensor** **Daylighting Control** **Receptacle Control**

Lumen Maintenance Control **Demand Response** **Tuning Control** **Manual ON/ Auto OFF**

TITLE 24 2016:

Office corridor example

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Wallstation

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Optional plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable Scenes
Dominant button is 50% light level
Manual on/off
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W1L-RL-W	WaveLinx Wallstation
6	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x2 with WaveLinx Sensor

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W1L-RL-W
Wireless 1 large button scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

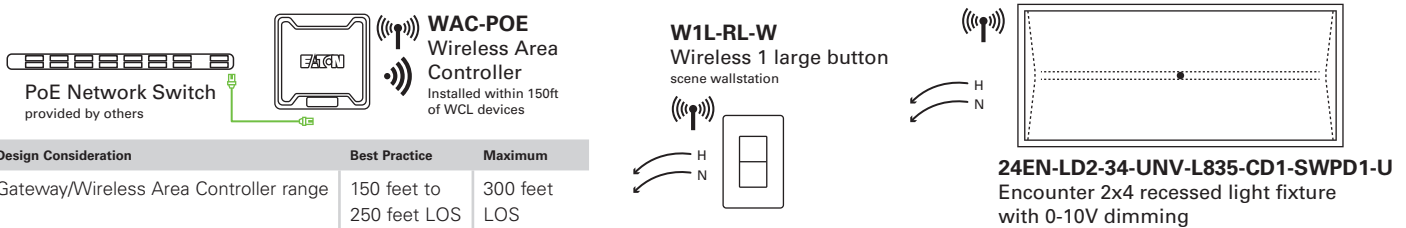| Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:
Private office example

Manually Switched ON/OFF Manual Dimmer Occupancy Sensor Daylighting Control Receptacle Control

Lumen Maintenance Control Demand Response Tuning Control Manual ON/ Auto OFF

H
N
Wallstation

H
N

Receptacle Control
H N

H
N

WAC-POE
Wireless Area Controller Installed within 150ft of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
2	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation
H
N

H
N
22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor
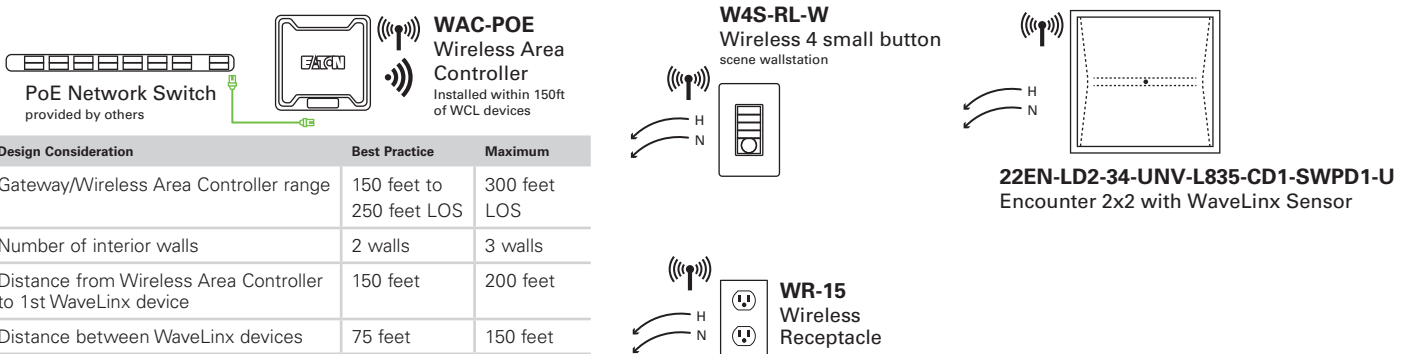
H
N
WR-15
Wireless Receptacle

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:
Lobby example

Manually Switched ON/OFF · **Manual Dimmer** · **Occupancy Sensor** · **Daylighting Control** · **Receptacle Control**

Lumen Maintenance Control · **Demand Response** · **Tuning Control** · **Manual ON/ Auto OFF**

H N Wallstation

H N Receptacle Control

H N

H N

H N Occupancy/Daylight Sensor

H N Wallstation

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4S-RL-W	WaveLinx Wallstation
1	WR-15	WaveLinx Receptacle
1	TM-SWPD1	WaveLinx Tilemount Daylight Sensor
6	LD4 OR LD6	Portfolio Commercial Recessed LED
2	22EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x2 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic auto on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows or that are less than 120W

Manual Controls
Dominant button half lights (sets lights to 50% or less)
Programmable scenes
Scene raise
Scene lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

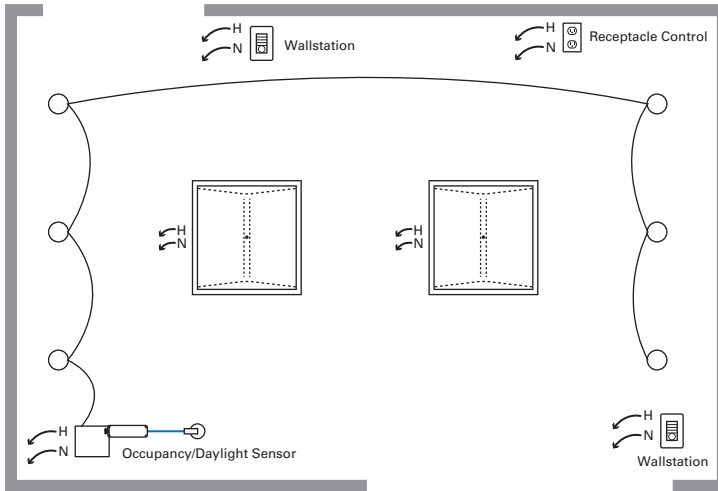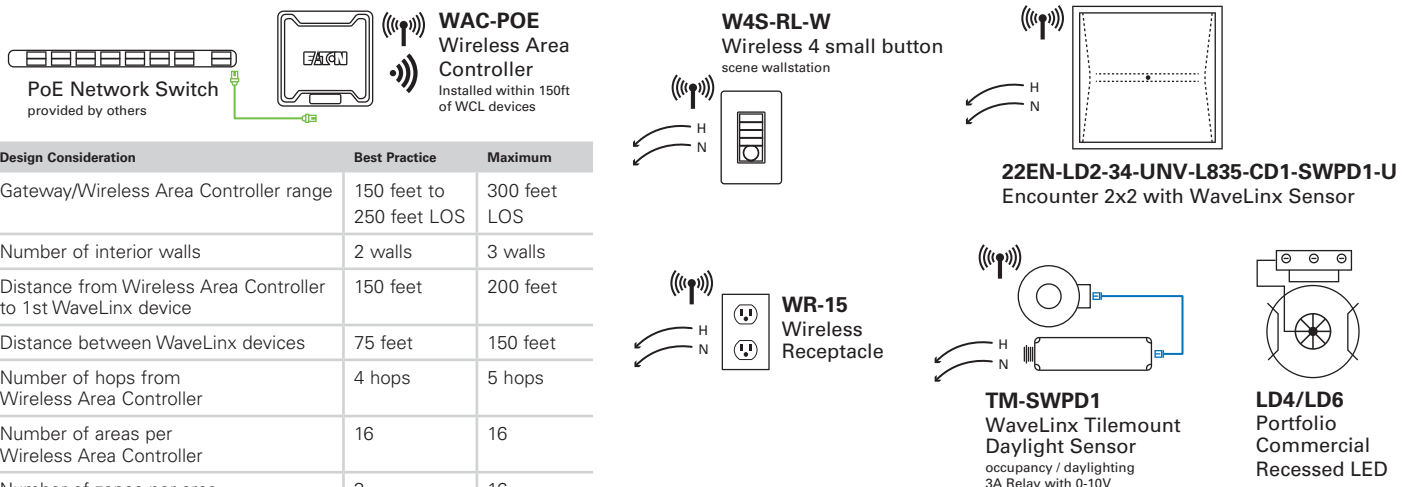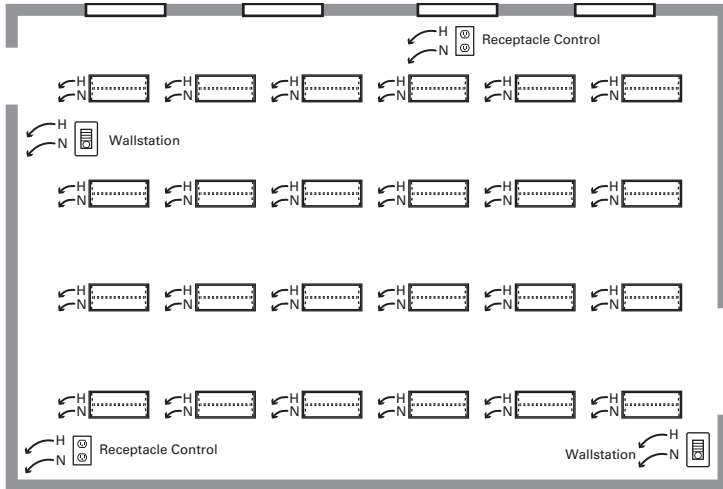## Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

H N

22EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x2 with WaveLinx Sensor

H N

WR-15
Wireless Receptacle

H N

TM-SWPD1
WaveLinx Tilemount Daylight Sensor
occupancy / daylighting
3A Relay with 0-10V

LD4/LD6
Portfolio Commercial Recessed LED

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:
Open office example

TITLE 24 2016

Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Daylighting Control | Receptacle Control

Lumen Maintenance Control | Demand Response | Tuning Control | Manual ON/ Auto OFF

Receptacle Control
Wallstation
Receptacle Control
Wallstation

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
2	W4SL-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
24	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor offices without windows
Not required in spaces without windows that are less than 120W

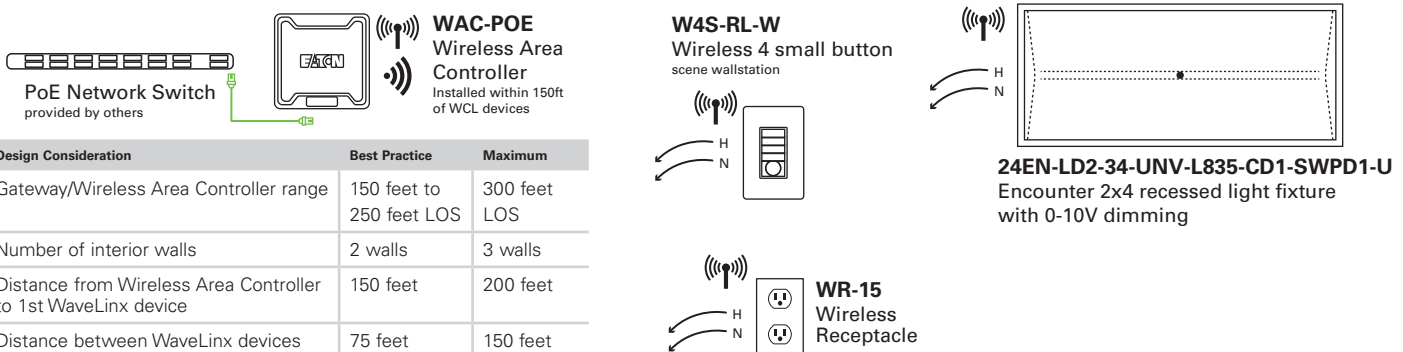**Manual Controls**
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
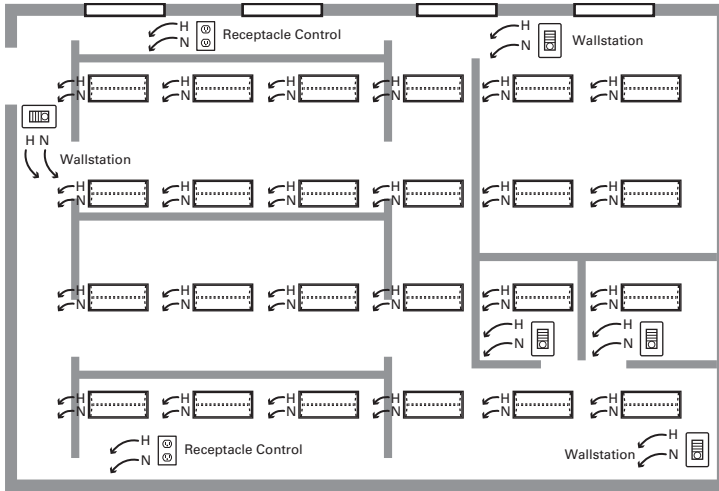UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

W4S-RL-W
Wireless 4 small button scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture with 0-10V dimming

WR-15
Wireless Receptacle

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:

Restaurant example

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
5	W4SL-RL-W	WaveLinx Wallstation
2	WR-15	WaveLinx Receptacle
24	24EN-LD2-34-UNV-L835-CD1-SWPD1-U Encounter 2x4 with WaveLinx Sensor	

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
Not required in spaces without windows that are less
than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
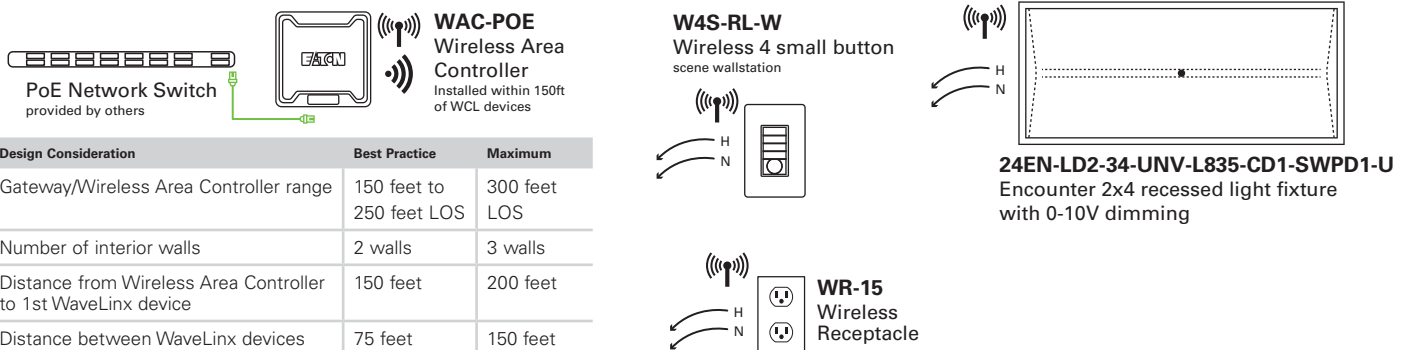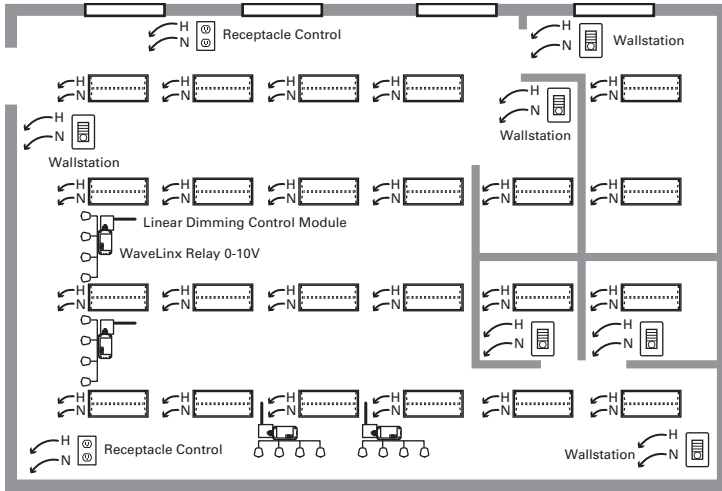Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless
area controller
Scheduling of partial off light levels and times from
wireless area controller
UL924 emergency control capabilities available via luminaire
battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area
Controller
Installed within 150ft
of WCL devices

W4S-RL-W
Wireless 4 small button
scene wallstation

WR-15
Wireless
Receptacle

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

TITLE 24 2016:

Retail example

WAC-POE
Wireless Area Controller
Installed within 150ft
of WCL devices

Bill of Materials

Qty	Catalog #	Description
1	WAC-POE	Wireless Area Controller
6	W4SL-RL-W	WaveLinx Wallstation
4	WSP-MV-010	WaveLinx Relay Switchpack with 0-10V dimming
2	WR-15	WaveLinx Receptacle
4	LDCM-PL-120-277-010V-GR	Linear Dimming Control Modules
23	24EN-LD2-34-UNV-L835-CD1-SWPD1-U	Encounter 2x4 with WaveLinx Sensor

Sequence of operations

Lighting
0-10V lighting loads
Up to 3 dimmable zones
Out of the box 75% high end trim

Occupancy
Automatic on to 50%
Optional vacancy mode
Optional auto on to scene
Plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual luminaire daylight dimming to approximately 500 lux
Daylighting not required for indoor spaces without windows
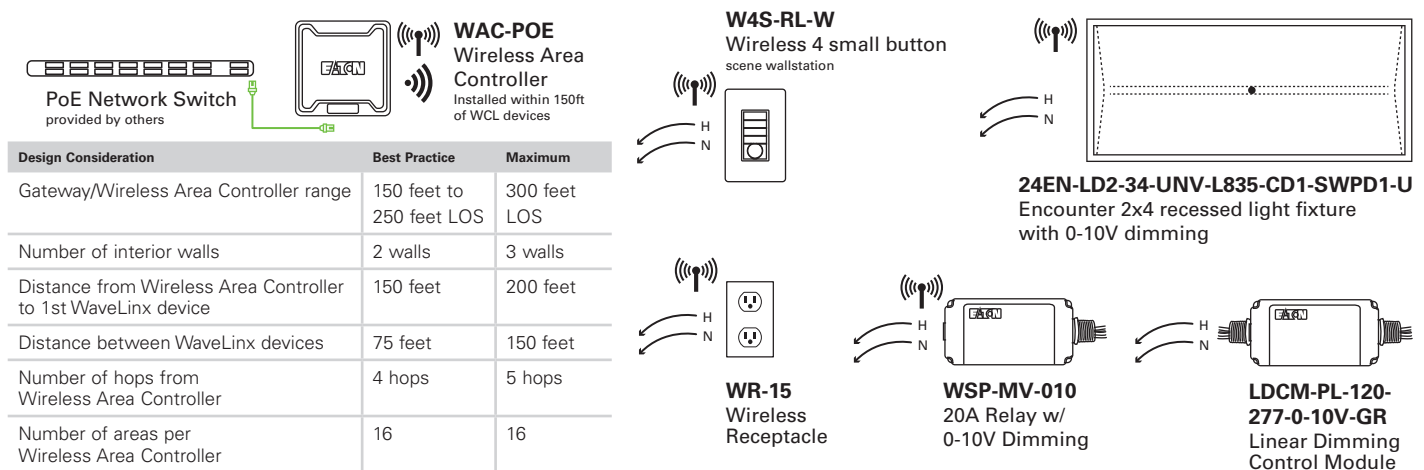Not required in spaces without windows that are less than 120W

Manual Controls
Top or dominant button half lights (sets lights to 50% or less)
Remaining buttons trigger scenes
Raise
Lower
All off

Additional Features
Power measurement reporting through mobile application
Automatic demand response available from wireless area controller
Scheduling of partial off light levels and times from wireless area controller
UL924 emergency control capabilities available via luminaire battery backup

Typical wiring detail

PoE Network Switch
provided by others

WAC-POE
Wireless Area Controller
Installed within 150ft of WCL devices

Design Consideration	Best Practice	Maximum
Gateway/Wireless Area Controller range	150 feet to 250 feet LOS	300 feet LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 feet	200 feet
Distance between WaveLinx devices	75 feet	150 feet
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	16	16
Number of zones per area	3	16
Number of scenes per area	6	10

W4S-RL-W
Wireless 4 small button
scene wallstation

24EN-LD2-34-UNV-L835-CD1-SWPD1-U
Encounter 2x4 recessed light fixture
with 0-10V dimming

WR-15
Wireless
Receptacle

WSP-MV-010
20A Relay w/
0-10V Dimming

LDCM-PL-120-277-0-10V-GR
Linear Dimming
Control Module

	Local Control	Manual ON	Partial ON	Bilevel Lighting	Daylight Side	Daylight Top	Partial OFF	Automatic OFF	Scheduled OFF	Receptacle Control	Energy Monitoring	Parking Garage	Functional Testing	Demand Response	Enhanced Digital
T24 2016	130.1 (a)(b)	130.1 (a)(b)	130.1 (b)		130.1 (d)	130.1 (d)	130.1 (c).6	130.1 (c).5	130.1 (c)	130.5 (d)	130.5 (b)	130.1 (d)	130.4	130.1 (e) 130.1 (e)	

Distributed Low-Voltage Power System

The low-voltage system that's practically plug and play.
No more struggling to find qualified electrical labor for your job site. No more waiting weeks for commissioning teams. No more compliance woes. Eliminate costly project delays with our groundbreaking Distributed Low-Voltage Power System, and save up to 20% on the total installed cost of your LED lighting and controls system.

Designed to meet the code requirements of your project

The DLVP system was designed entirely with compliance in mind, to rid you of unnecessary project snarls. Combined with Eaton's highly efficient low-voltage LED fixtures, integrated or external sensors drive energy efficiency throughout the building.

Features like scene control, receptacle control, and automatic turn-off help you customize your system to meet your area's requirements, and can achieve energy savings of up to 65%.
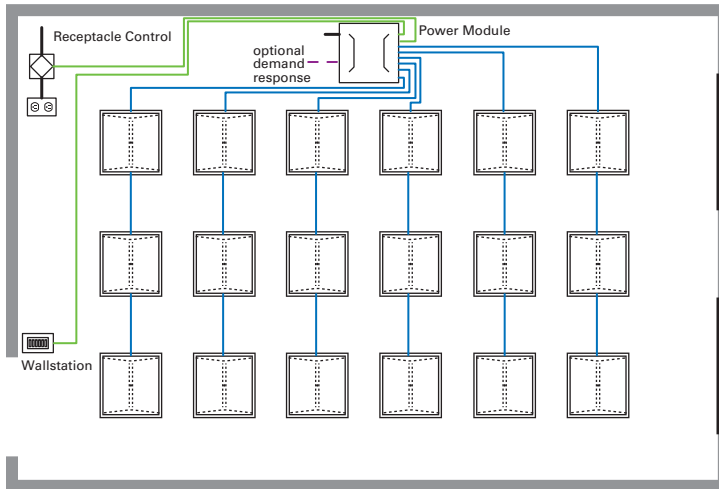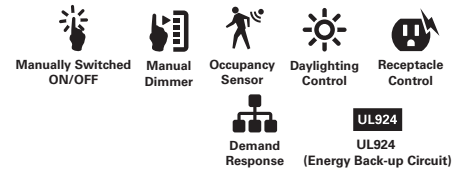
Code compliance, out-of-the-box

Meets or exceeds the requirements of ASHRAE/ANSI/IES, IECC and Title 24 energy codes.

Line-voltage in.
Low-voltage out.

Classroom, 2x2 fixtures with integrated sensors

Manually Switched ON/OFF   Manual Dimmer   Occupancy Sensor   Daylighting Control   Receptacle Control

Demand Response   UL924 (Energy Back-up Circuit)

Receptacle Control
optional demand response
Power Module
Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-06-100-03	600W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
18	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
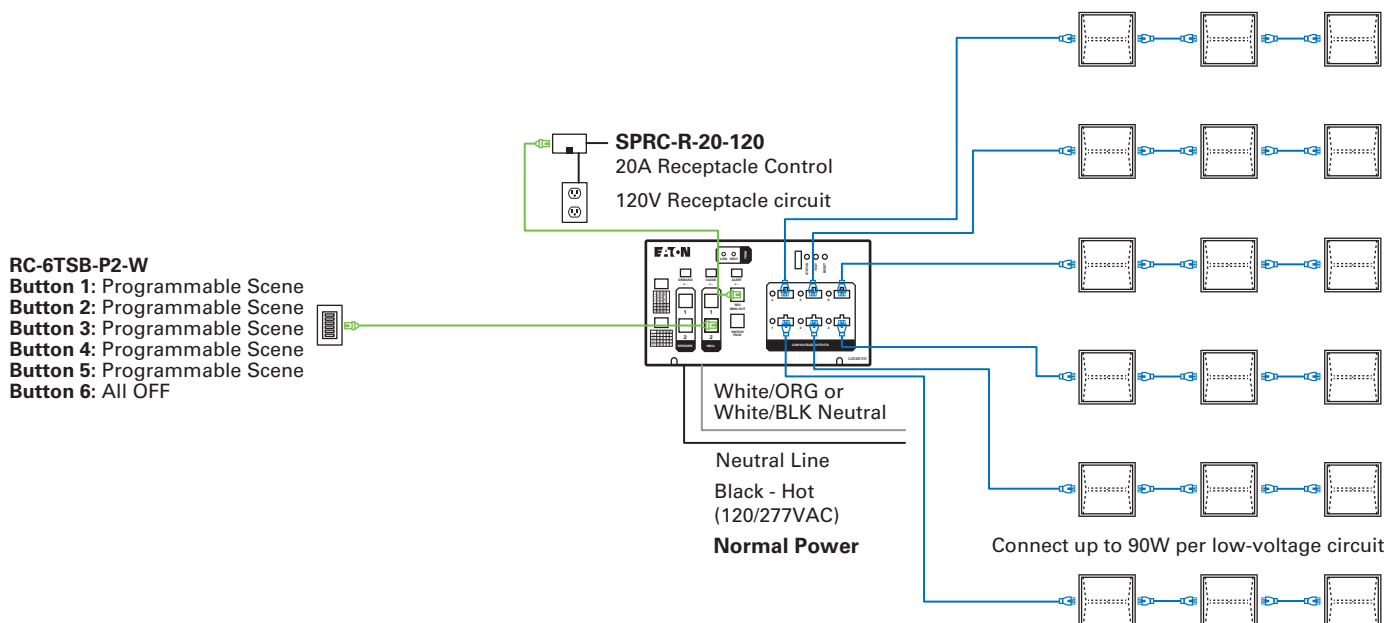Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1-SV (23 watts)

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

White/ORG or White/BLK Neutral
Neutral Line
Black - Hot (120/277VAC)
Normal Power

Connect up to 90W per low-voltage circuit

Classroom, 2x2 fixtures

Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Daylighting Control | Receptacle Control | Demand Response | UL924 (Energy Back-up Circuit)

Receptacle Control
Power Module
optional demand response
OCC-RJ45
Occupancy Sensor
Wallstation
Daylight Sensor

Bill of Materials

Qty	Catalog #	Description
1	LVPM-06-100-03	600W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	OACT-DT-2000	2000 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	GGRJ45-106-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
18	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load vacancy

Daylighting
Continuous dimming to off
Out of the box 3 daylight zone support
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
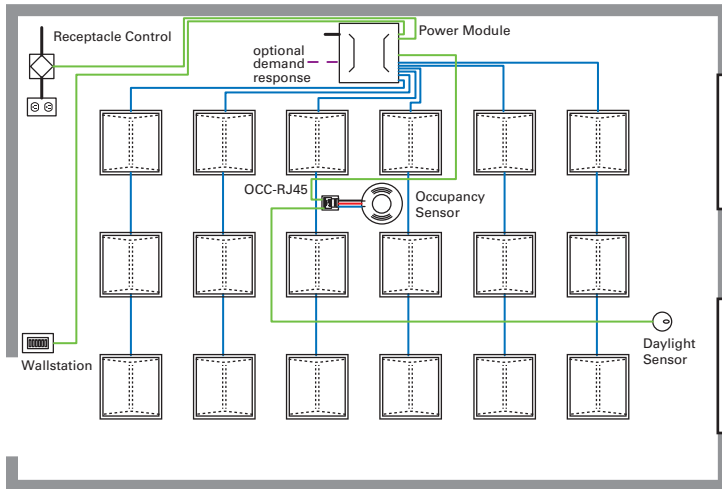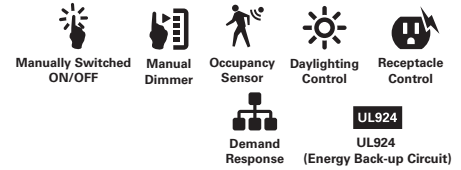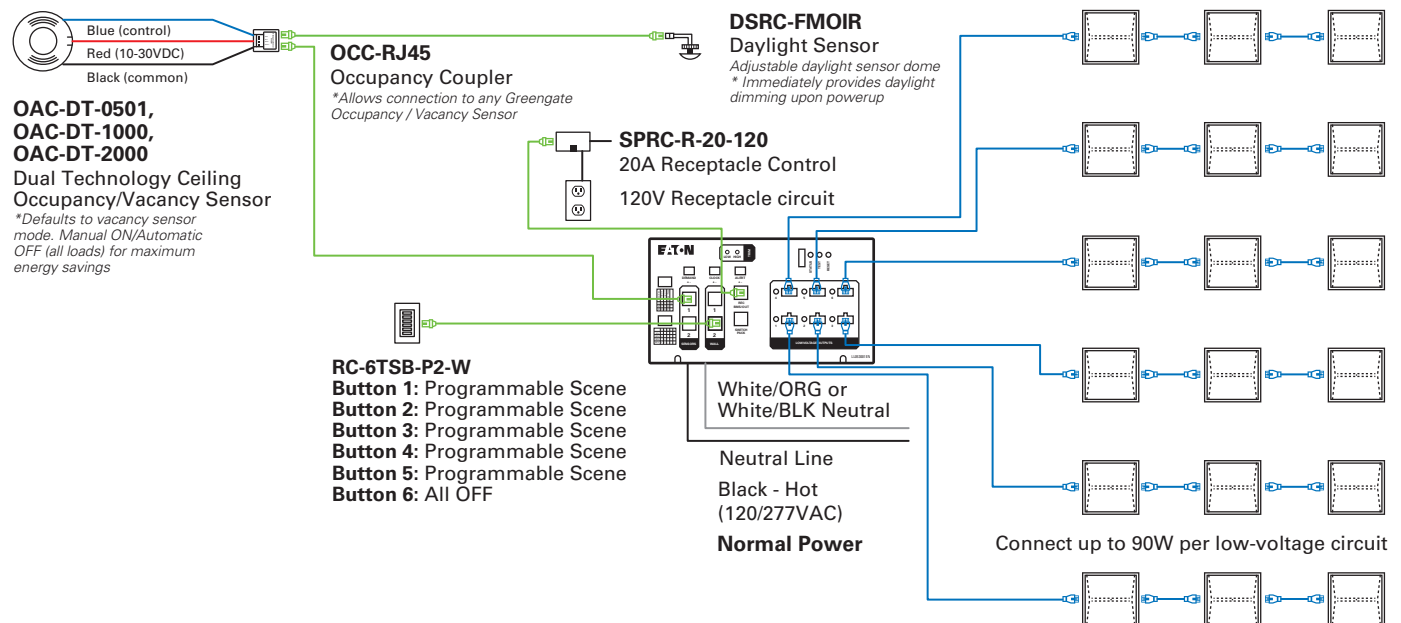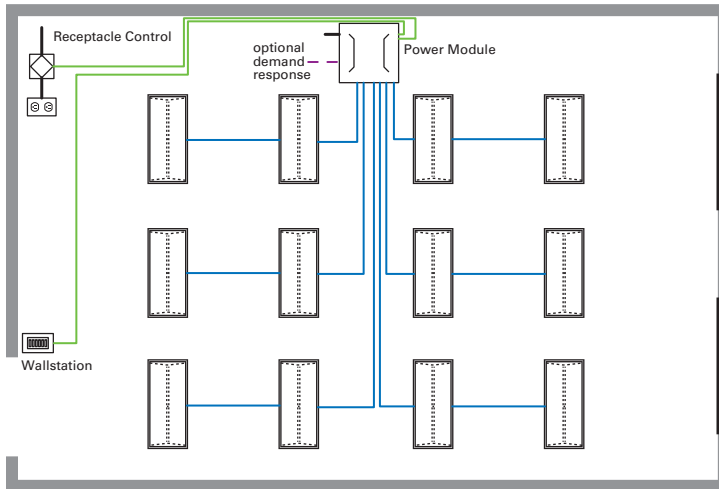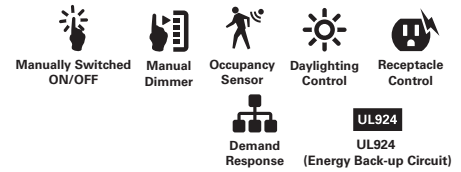
XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

Blue (control)
Red (10-30VDC)
Black (common)

**OAC-DT-0501,
OAC-DT-1000,
OAC-DT-2000**
Dual Technology Ceiling Occupancy/Vacancy Sensor
*Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

OCC-RJ45
Occupancy Coupler
*Allows connection to any Greengate Occupancy / Vacancy Sensor

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
* Immediately provides daylight dimming upon powerup

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

White/ORG or White/BLK Neutral
Neutral Line
Black - Hot (120/277VAC)
Normal Power

Connect up to 90W per low-voltage circuit

Classroom, 2x4 fixtures with integrated sensors

Manually Switched ON/OFF — Manual Dimmer — Occupancy Sensor — Daylighting Control — Receptacle Control — Demand Response — UL924 (Energy Back-up Circuit)

Receptacle Control — optional demand response — Power Module — Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-06-100-03	600W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
10	LVC-15P	low-voltage lighting cable, 15 feet
2	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
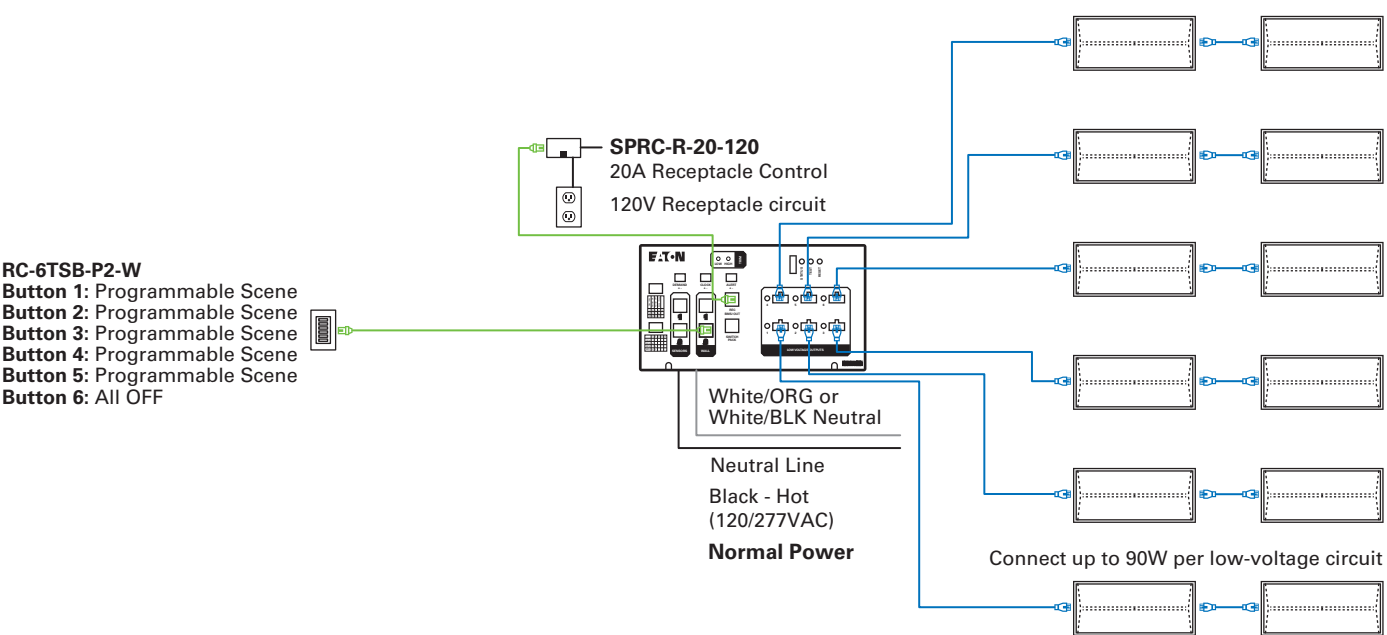UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-SLVPD1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

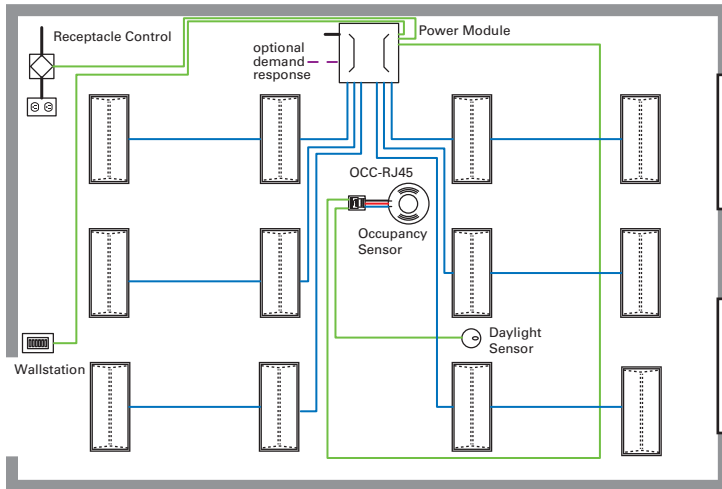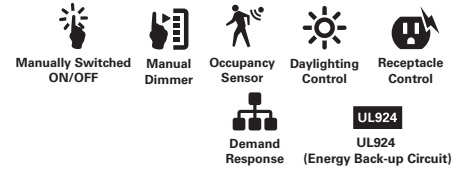**XX= color temperature**
35 - 3500K
40 - 4000K

Typical wiring detail

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

White/ORG or White/BLK Neutral

Neutral Line
Black - Hot (120/277VAC)
Normal Power

Connect up to 90W per low-voltage circuit

Classroom, 2x4 fixtures

Receptacle Control — optional demand response — Power Module — OCC-RJ45 — Occupancy Sensor — Daylight Sensor — Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-06-100-03	600W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	OACT-DT-2000	2000 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
10	LVC-15P	low-voltage lighting cable, 15 feet
2	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load vacancy

Daylighting
Continuous dimming to off
Out of the box 3 daylight zone support
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
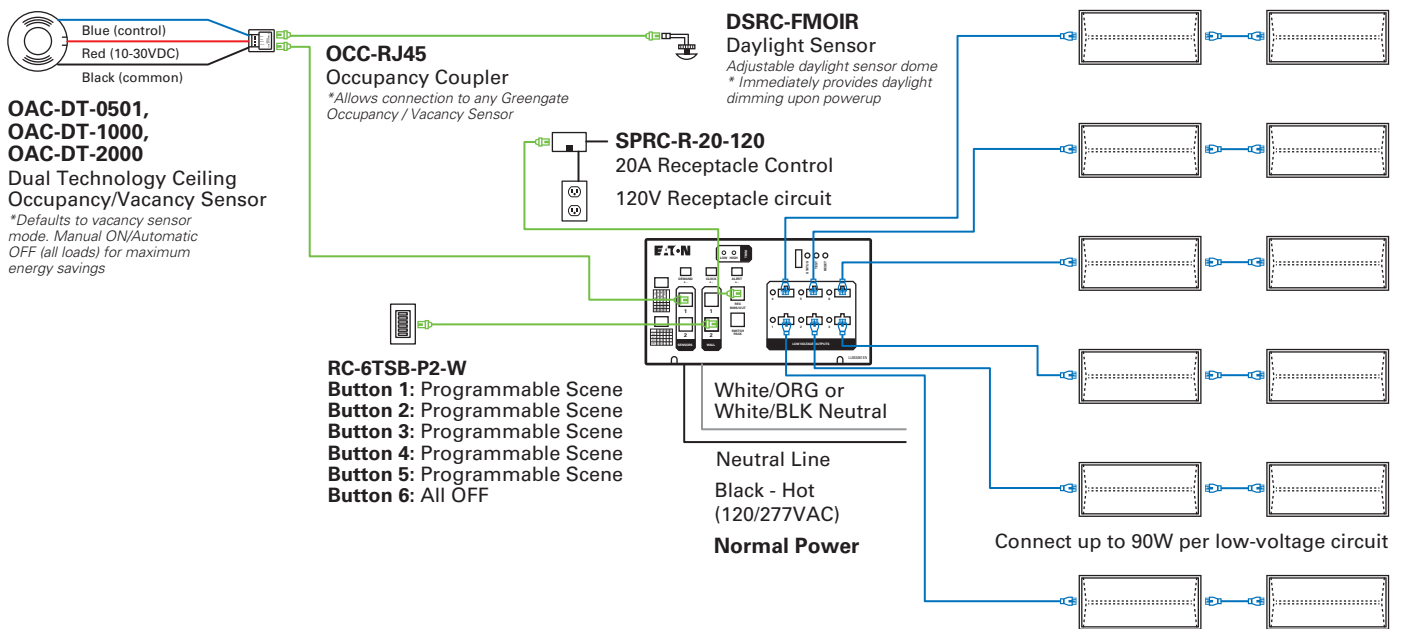Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
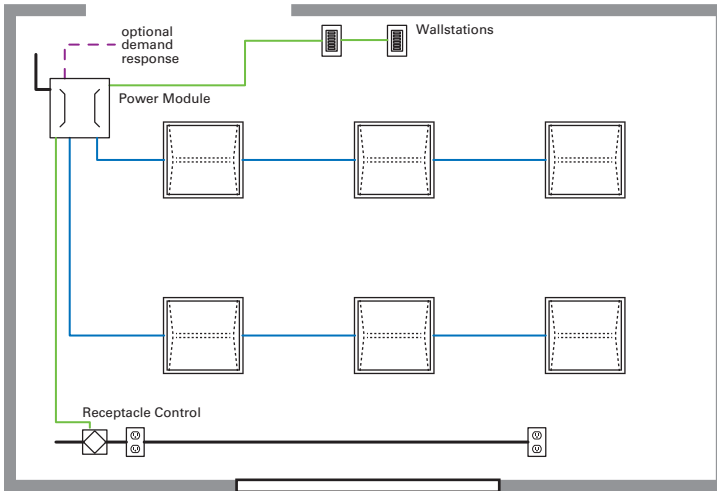Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

Blue (control)
Red (10-30VDC)
Black (common)

OAC-DT-0501, OAC-DT-1000, OAC-DT-2000
Dual Technology Ceiling Occupancy/Vacancy Sensor
Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

OCC-RJ45
Occupancy Coupler
Allows connection to any Greengate Occupancy / Vacancy Sensor

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
* Immediately provides daylight dimming upon powerup

White/ORG or White/BLK Neutral

Neutral Line

Black - Hot (120/277VAC)

Normal Power

Connect up to 90W per low-voltage circuit

Conference room, 2x2 fixtures with integrated sensors

Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Daylighting Control | Receptacle Control

Demand Response | UL924 (Energy Back-up Circuit)

optional demand response
Wallstations
Power Module
Receptacle Control

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	RC-6TSB-ZAD-W	6 button raise/lower (white)
1	OACT-DT-0501	500 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	SPRC-20-120	20AMP receptacle control
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	GGRJ45-006-G	pre-terminated control cable, 6 inches
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
6	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
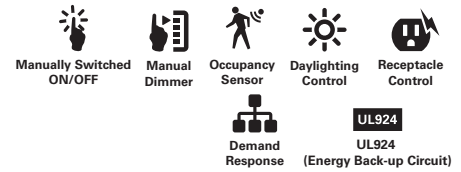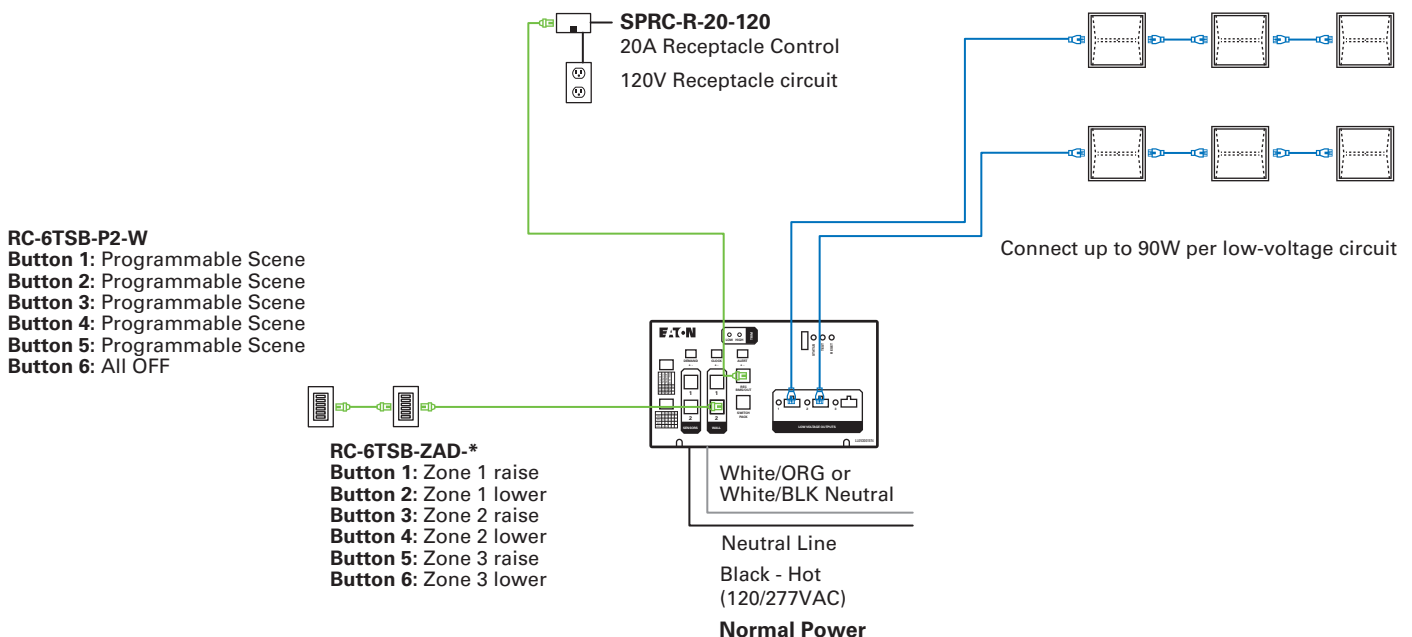Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

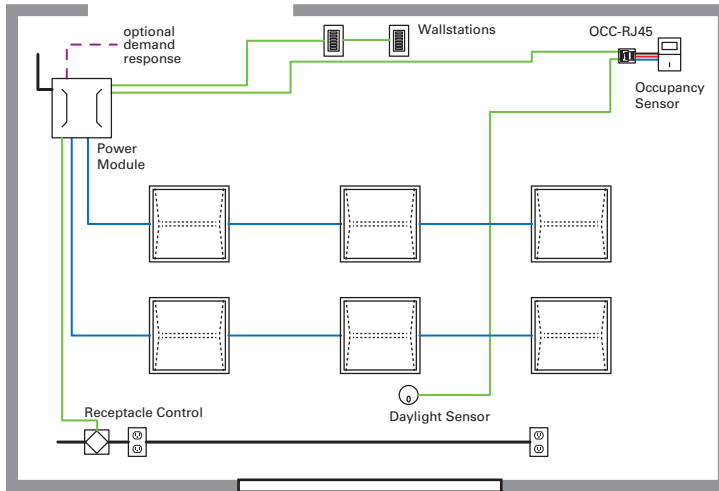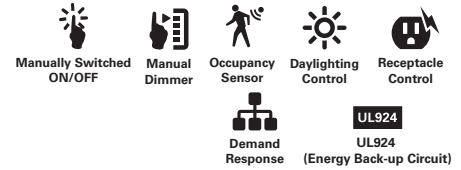**XX= color temperature**
35 - 3500K
40 - 4000K

Typical wiring detail

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

Connect up to 90W per low-voltage circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

RC-6TSB-ZAD-*
Button 1: Zone 1 raise
Button 2: Zone 1 lower
Button 3: Zone 2 raise
Button 4: Zone 2 lower
Button 5: Zone 3 raise
Button 6: Zone 3 lower

White/ORG or White/BLK Neutral

Neutral Line

Black - Hot (120/277VAC)

Normal Power

Conference room, 2x2 fixtures

Manually Switched ON/OFF | **Manual Dimmer** | **Occupancy Sensor** | **Daylighting Control** | **Receptacle Control**

Demand Response | **UL924** **UL924 (Energy Back-up Circuit)**

optional demand response

Wallstations

OCC-RJ45

Occupancy Sensor

Power Module

Receptacle Control

Daylight Sensor

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	RC-6TSB-ZAD-W	6 button raise/lower (white)
1	OAWC-P-120W	500 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	SPRC-20-120	20AMP receptacle control
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	GGRJ45-006-G	pre-terminated control cable, 6 inches
3	GGRJ45-10P-G	pre-terminated control cable, 10 feet
3	GGRJ45-25P-G	pre-terminated control cable, 25 feet
6	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load vacancy

Daylighting
Continuous dimming to off
Out of the box 3 daylight zone support
Not required in spaces without windows or that are less than 120W

Manual Controls
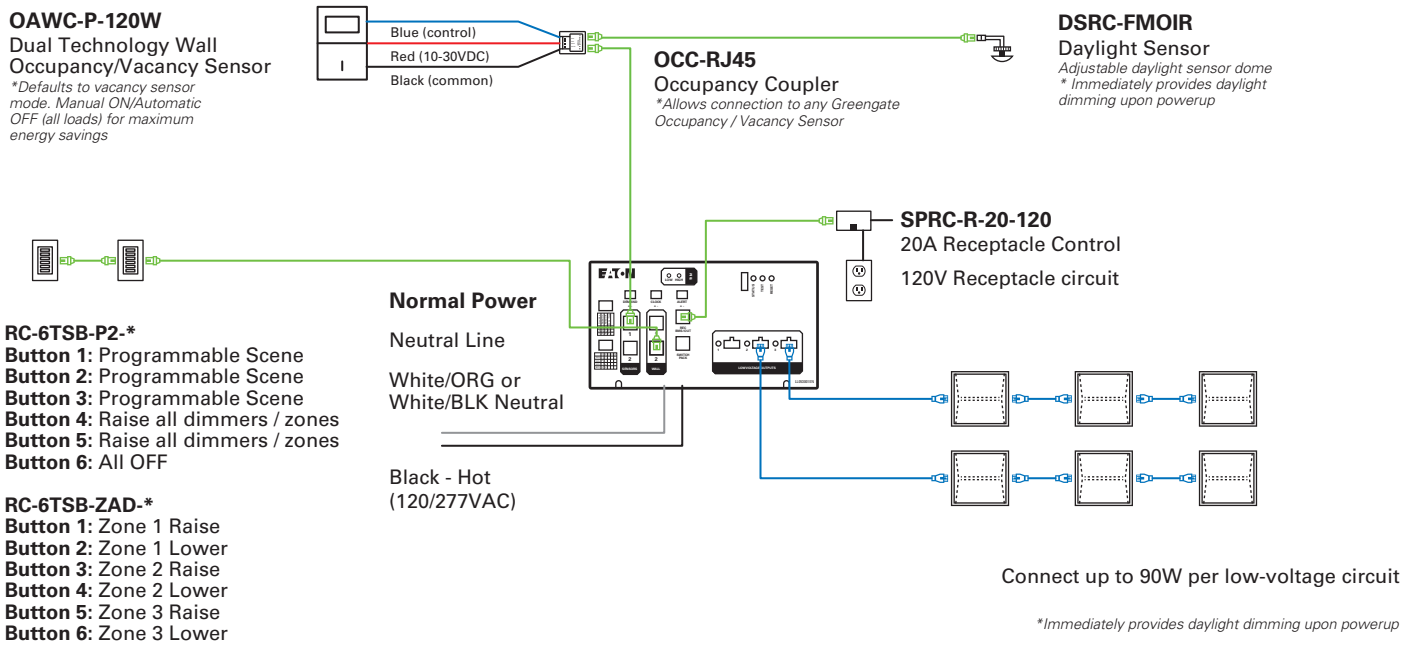Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
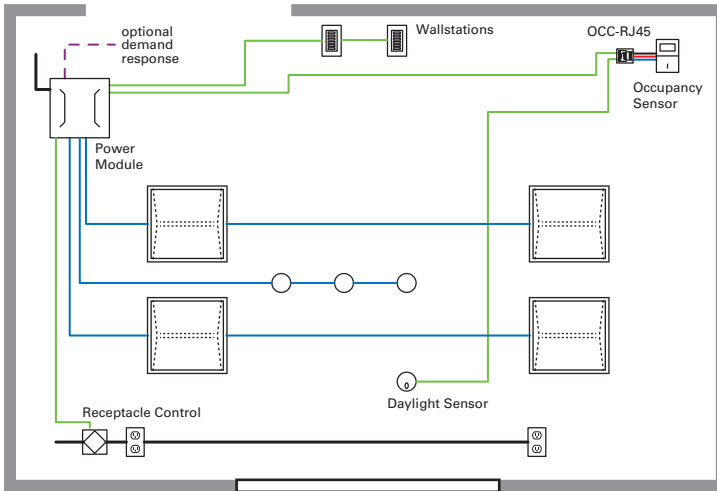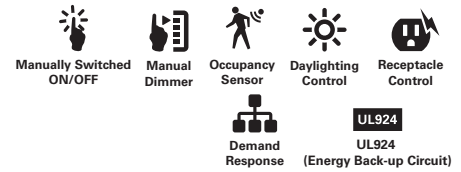Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

OAWC-P-120W
Dual Technology Wall Occupancy/Vacancy Sensor
*Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

Blue (control)
Red (10-30VDC)
Black (common)

OCC-RJ45
Occupancy Coupler
*Allows connection to any Greengate Occupancy / Vacancy Sensor

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
* Immediately provides daylight dimming upon powerup

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-*
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Raise all dimmers / zones
Button 5: Raise all dimmers / zones
Button 6: All OFF

RC-6TSB-ZAD-*
Button 1: Zone 1 Raise
Button 2: Zone 1 Lower
Button 3: Zone 2 Raise
Button 4: Zone 2 Lower
Button 5: Zone 3 Raise
Button 6: Zone 3 Lower

Normal Power
Neutral Line
White/ORG or White/BLK Neutral
Black - Hot (120/277VAC)

Connect up to 90W per low-voltage circuit

*Immediately provides daylight dimming upon powerup

Conference room, 2x2 fixtures and downlights

Power Module
optional demand response
Wallstations
OCC-RJ45
Occupancy Sensor
Receptacle Control
Daylight Sensor

Bill of Materials

Qty	Catalog #	Description
1	LVPM-06-100-03	600W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	RC-6TSB-ZAD-W	6 button raise/lower (white)
1	OAWC-P-120W	500 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	SPRC-20-120	20AMP receptacle control
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	GGRJ45-006-G	pre-terminated control cable, 6 inches
2	GGRJ45-10P-G	pre-terminated control cable, 10 feet
3	GGRJ45-25P-G	pre-terminated control cable, 25 feet
2	LVC-8P	low-voltage lighting cable, 8 feet
4	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy

Daylighting
Continuous dimming to off
Out of the box 3 daylight zone support
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
Portfolio: LD6B15DLV EU6B102080XX 6LBM1H (16 watts)
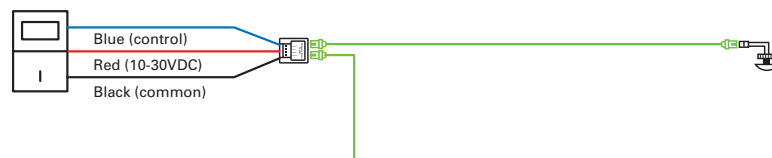Halo Commercial: PD615DLVB PDM6B8XX 61VH (14 watts

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

OAWC-P-120W
Dual Technology Wall Occupancy/Vacancy Sensor
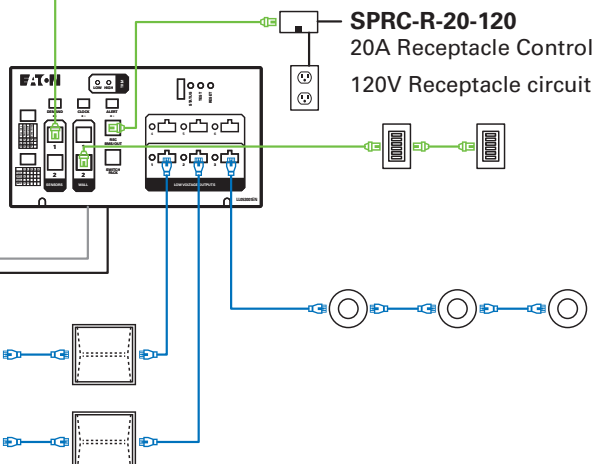*Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings*

Blue (control)
Red (10-30VDC)
Black (common)

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
* Immediately provides daylight dimming upon powerup

SPRC-R-20-120
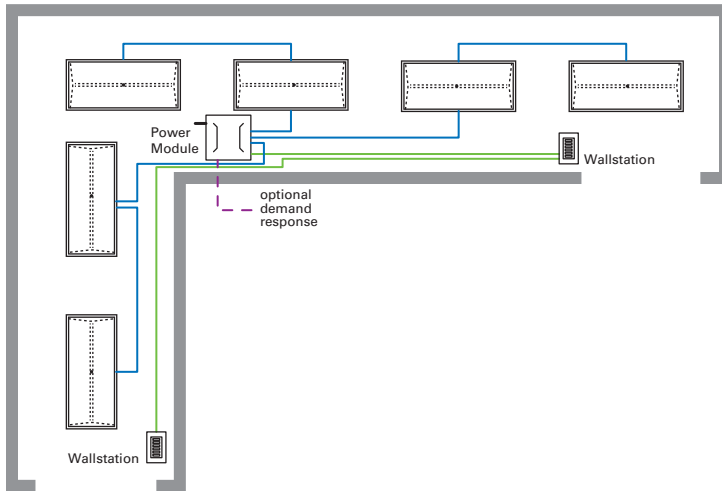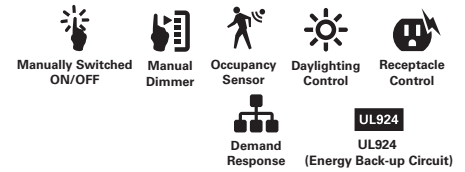20A Receptacle Control
120V Receptacle circuit

Normal Power

Neutral Line

White/ORG or White/BLK Neutral

Black - Hot (120/277VAC)

Corridor/Hall, 2x4 fixtures with integrated sensors

Manually Switched ON/OFF **Manual Dimmer** **Occupancy Sensor** **Daylighting Control** **Receptacle Control**

Demand Response **UL924 (Energy Back-up Circuit)**

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional partial on/partial off
Optional auto on to scene
Automatic off of lighting on vacancy
Automatic partial off of lighting on vacancy

Manual Controls
On/off/raise lower
Single or multiple zones

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
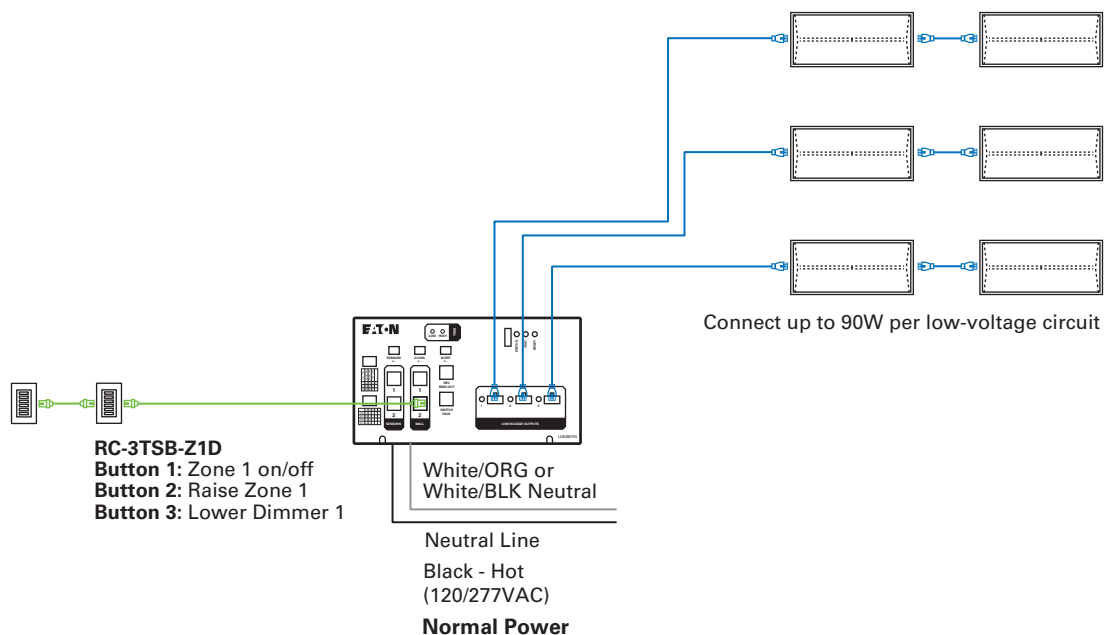
Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-SLVPD1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
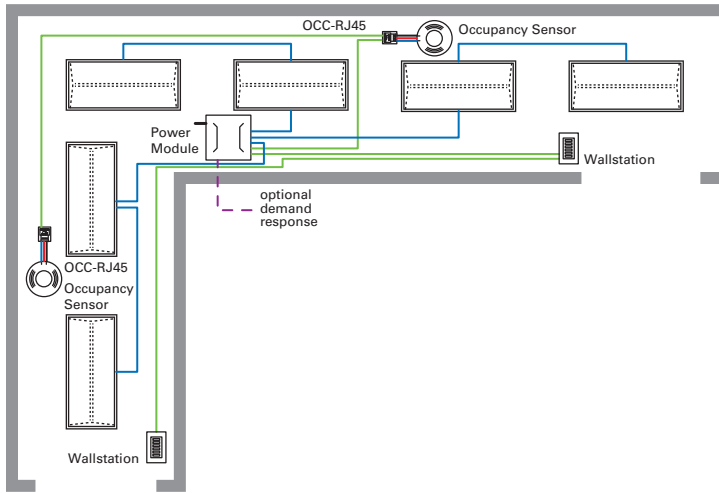
XX= color temperature
35 - 3500K
40 - 4000K

Power Module

optional demand response

Wallstation

Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
2	RC-3TSB-Z1D-W	3 button zone raise/lower (white)
1	LVHH-02	DLVP personal remote
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
1	LVC-8P	low-voltage lighting cable, 8 feet
5	LVC-15P	low-voltage lighting cable, 15 feet

Typical wiring detail

RC-3TSB-Z1D
Button 1: Zone 1 on/off
Button 2: Raise Zone 1
Button 3: Lower Dimmer 1

RC-3TSB-Z1D
Button 1: Zone 1 on/off
Button 2: Raise Zone 1
Button 3: Lower Dimmer 1

Connect up to 90W per low-voltage circuit

White/ORG or White/BLK Neutral

Neutral Line

Black - Hot (120/277VAC)

Normal Power

Corridor/Hall, 2x4 fixtures

Manually Switched ON/OFF · Manual Dimmer · Occupancy Sensor · Daylighting Control · Receptacle Control

Demand Response · UL924 (Energy Back-up Circuit)

OCC-RJ45 · Occupancy Sensor

Power Module

Wallstation

optional demand response

OCC-RJ45 Occupancy Sensor

Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
2	RC-3TSB-Z1D-W	3 button zone raise/lower (white)
2	OACT-DT-2000	2000 sqft. dual tech sensor
2	OCC-RJ45	input/output device
1	LVHH-02	DLVP personal remote
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
6	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional partial on/partial off
Automatic off of lighting on vacancy
Automatic partial off of lighting on vacancy

Manual Controls
On/off/raise lower
Single or multiple zones

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
Substitute any Greengate low-voltage occupancy sensor
Switchpack power supply may be needed to power more than two occupancy sensors

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

XX= color temperature
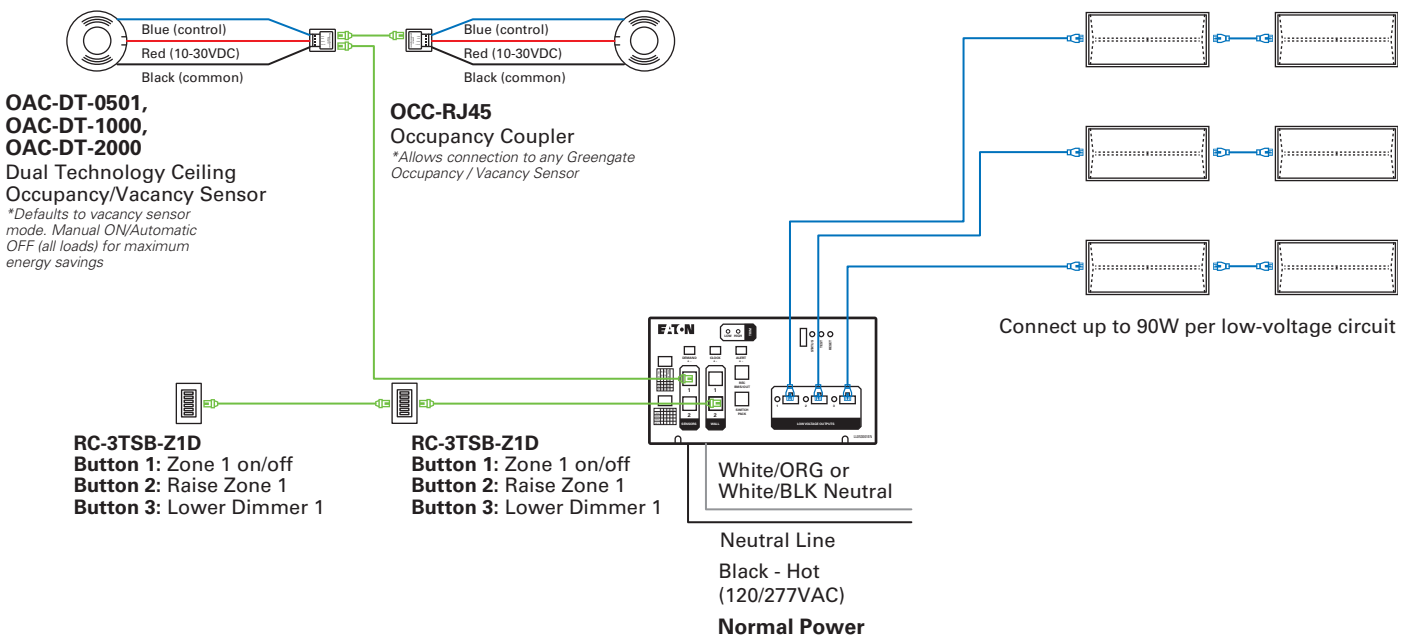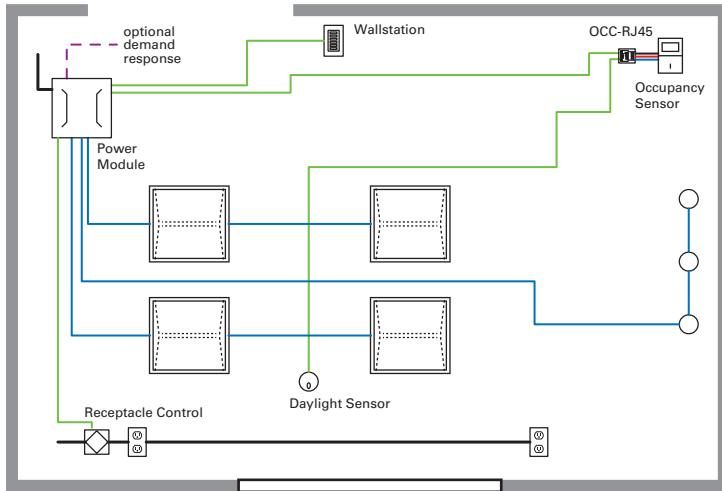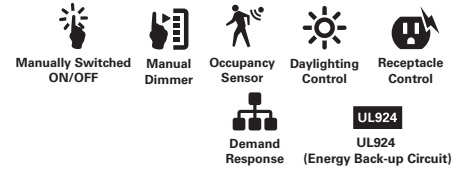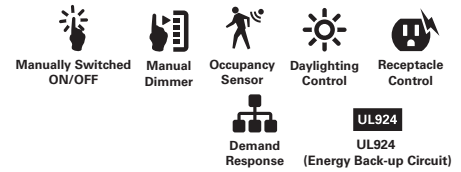35 - 3500K
40 - 4000K

Typical wiring detail

Blue (control) · Red (10-30VDC) · Black (common)

Blue (control) · Red (10-30VDC) · Black (common)

OAC-DT-0501, OAC-DT-1000, OAC-DT-2000
Dual Technology Ceiling Occupancy/Vacancy Sensor
Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

OCC-RJ45
Occupancy Coupler
Allows connection to any Greengate Occupancy / Vacancy Sensor

RC-3TSB-Z1D
Button 1: Zone 1 on/off
Button 2: Raise Zone 1
Button 3: Lower Dimmer 1

RC-3TSB-Z1D
Button 1: Zone 1 on/off
Button 2: Raise Zone 1
Button 3: Lower Dimmer 1

Connect up to 90W per low-voltage circuit

White/ORG or White/BLK Neutral

Neutral Line

Black - Hot (120/277VAC)

Normal Power

50   EATON   Connected Lighting Energy Codes

Executive office, 2x2 fixtures

Manually Switched ON/OFF · **Manual Dimmer** · **Occupancy Sensor** · **Daylighting Control** · **Receptacle Control**

Demand Response · **UL924 (Energy Back-up Circuit)**

optional demand response
Wallstation
OCC-RJ45
Occupancy Sensor
Power Module
Receptacle Control
Daylight Sensor

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
1	RC3DE-PL	room controller
1	RC-6TSB-P4-W	6 button scene station (white)
1	OAWC-P-120W	500 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	SPRC-20-120	20AMP receptacle control
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	HHPRG-RC	handheld daylight programming remote
1	GGRJ45-006-G	pre-terminated control cable, 6 inches
2	GGRJ45-10P-G	pre-terminated control cable, 10 feet
3	GGRJ45-25P-G	pre-terminated control cable, 25 feet
2	LVC-8P	low-voltage lighting cable, 8 feet
5	LVC-15P	low-voltage lighting cable, 15 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Automatic off of lighting on vacancy
Automatic partial off of lighting on vacancy

Daylighting
Continuous dimming to off
Out of the box 3 daylight zone support
Not required in spaces without windows or that are less than 120W

Manual Controls
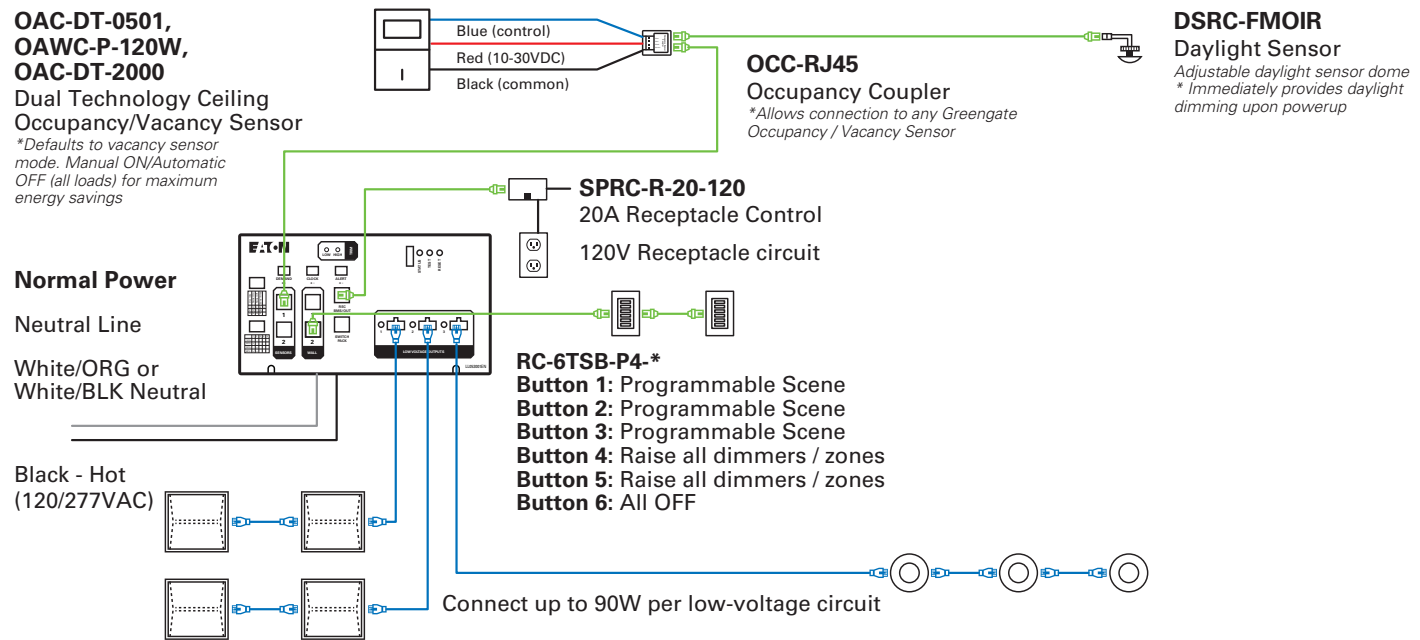Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
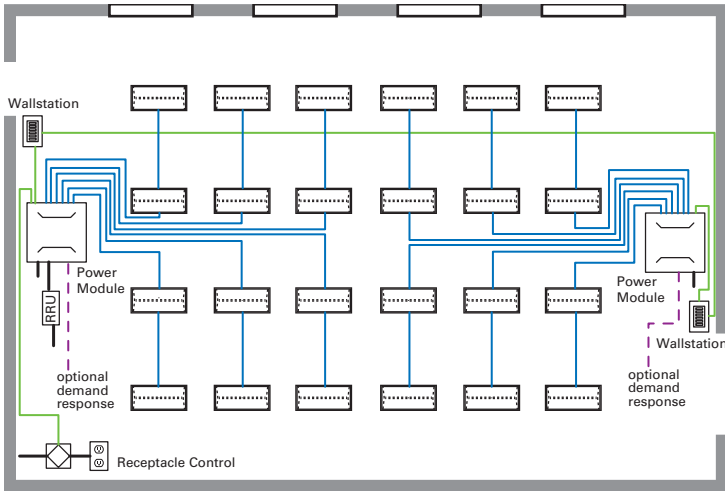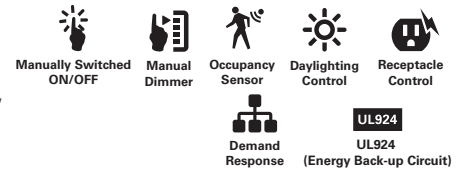Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
Portfolio: LD6B15DLV EU6B102080XX 6LBM1H (16 watts)
Halo Commercial: PD615DLVB PDM6B8XX 61VH (14 watts

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

OAC-DT-0501, OAWC-P-120W, OAC-DT-2000
Dual Technology Ceiling Occupancy/Vacancy Sensor
Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

Blue (control)
Red (10-30VDC)
Black (common)

OCC-RJ45
Occupancy Coupler
Allows connection to any Greengate Occupancy / Vacancy Sensor

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
Immediately provides daylight dimming upon powerup

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

Normal Power

Neutral Line

White/ORG or White/BLK Neutral

Black - Hot (120/277VAC)

RC-6TSB-P4-*
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Raise all dimmers / zones
Button 5: Raise all dimmers / zones
Button 6: All OFF

Connect up to 90W per low-voltage circuit

Open office, 2x4 fixtures with integrated sensors and emergency

Manually Switched ON/OFF Manual Dimmer Occupancy Sensor Daylighting Control Receptacle Control

Demand Response UL924 (Energy Back-up Circuit)

Wallstation

Power Module

RRU

optional demand response

Power Module

Wallstation

optional demand response

Receptacle Control

Bill of Materials

Qty	Catalog #	Description
2	LVPM-06-100-03	600W low-voltage power module
2	RC-6TSB-P4-W	6 button zone raise/lower (white)
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	RRU-XXX	Remote Relay Unit 120v or 277v
2	GGRJ45-10P-G	pre-terminated control cable, 10 feet
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
4	LVC-8P	low-voltage lighting cable, 8 feet
13	LVC-15P	low-voltage lighting cable, 15 feet
7	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
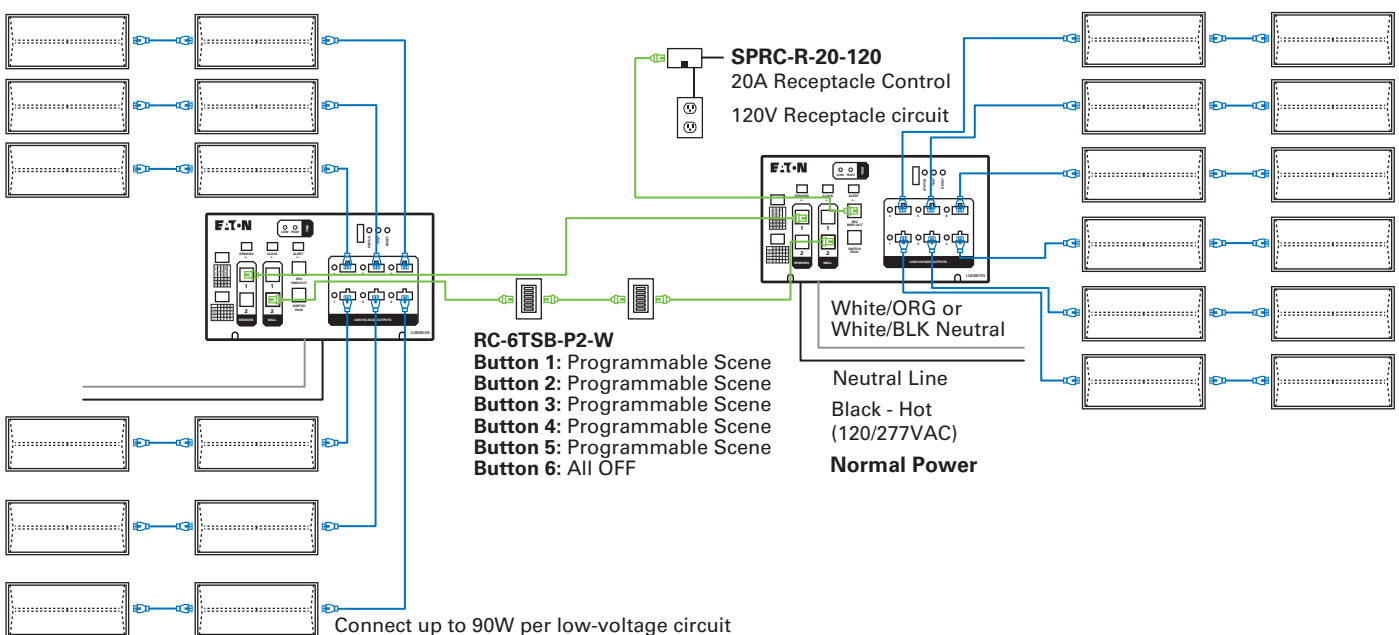Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

SPRC-R-20-120
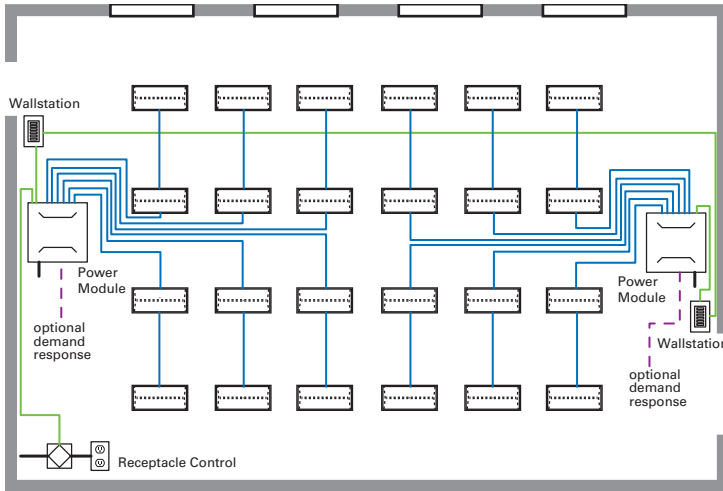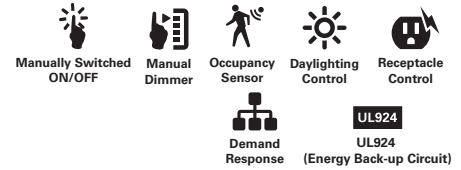20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

White/ORG or White/BLK Neutral

Neutral Line

Black - Hot (120/277VAC)

Normal Power

Connect up to 90W per low-voltage circuit

Open office, 2x4 fixtures with integrated sensors

Wallstation

Power Module

optional demand response

Power Module

Wallstation

optional demand response

Receptacle Control

Bill of Materials

Qty	Catalog #	Description
2	LVPM-06-100-03	600W low-voltage power module
2	RC-6TSB-P2-W	6 button scene station (white)
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
2	GGRJ45-10P-G	pre-terminated control cable, 10 feet
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-100P-G	pre-terminated control cable, 100 feet
4	LVC-8P	low-voltage lighting cable, 8 feet
16	LVC-15P	low-voltage lighting cable, 15 feet
4	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic partial off of lighting on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-SLVPD1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
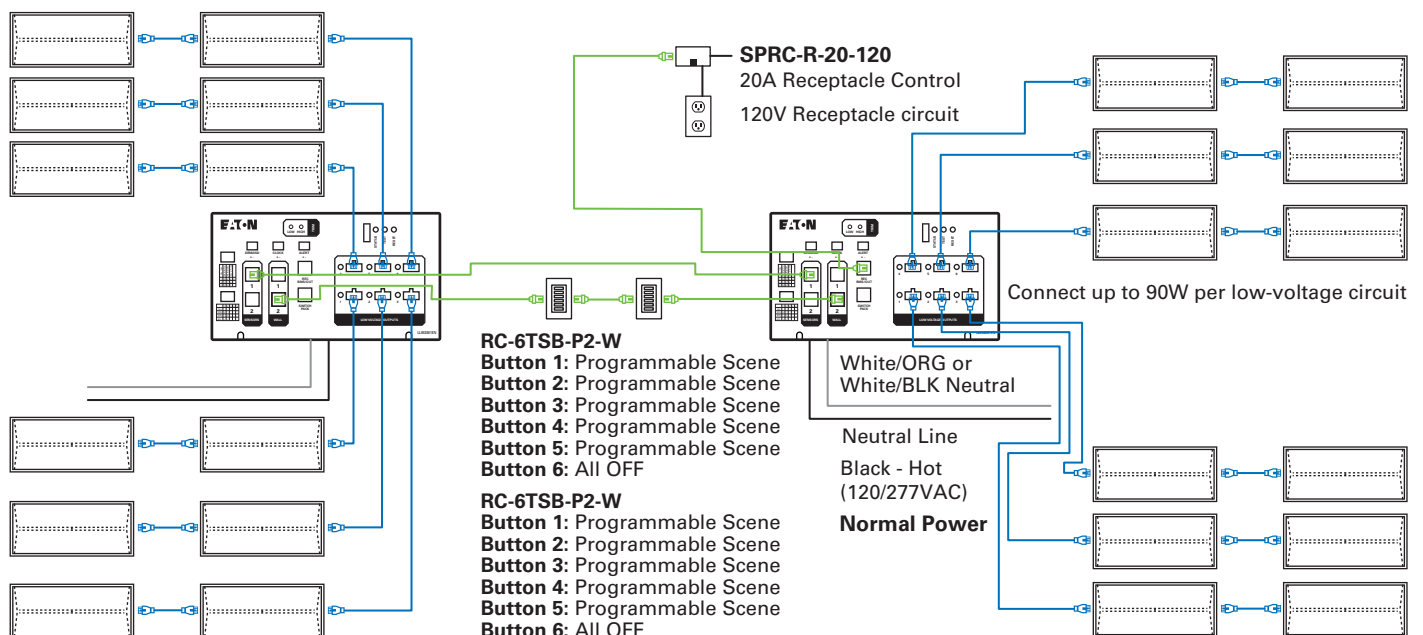Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
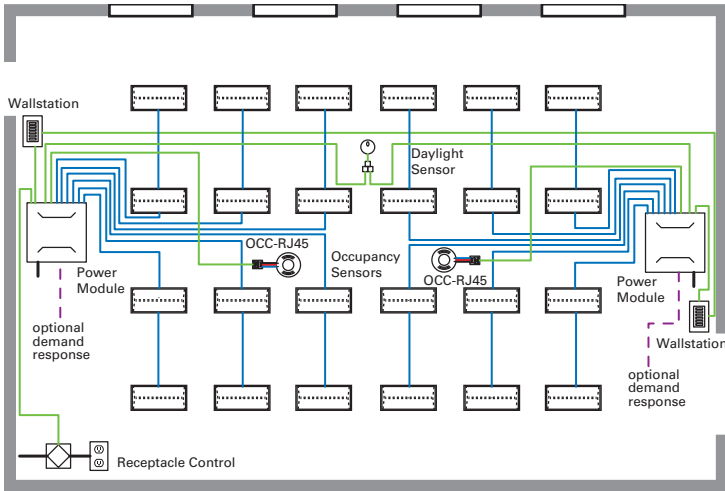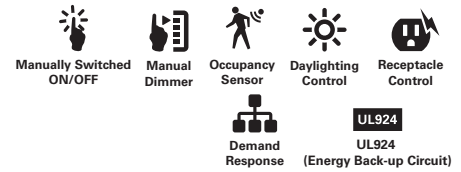
XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

Connect up to 90W per low-voltage circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

White/ORG or White/BLK Neutral

Neutral Line

Black - Hot (120/277VAC)

Normal Power

Open office, 2x4 fixtures

Wallstation

Daylight Sensor

OCC-RJ45

Power Module

optional demand response

Occupancy Sensors

OCC-RJ45

Power Module

Wallstation

optional demand response

Receptacle Control

Bill of Materials

Qty	Catalog #	Description
2	LVPM-06-100-03	600W low-voltage power module
2	RC-6TSB-P2-W	6 button scene station (white)
2	OACT-DT-2000	2000 sqft. dual tech sensor
2	OCC-RJ45	input/output device
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	GGRC-SPLITTER	RJ45 cable splitter
2	GGRJ45-10P-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
2	GGRJ45-50P-G	pre-terminated control cable, 50 feet
1	GGRJ45-100P-G	pre-terminated control cable, 100 feet
4	LVC-8P	low-voltage lighting cable, 8 feet
16	LVC-15P	low-voltage lighting cable, 15 feet
4	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (20 watts)
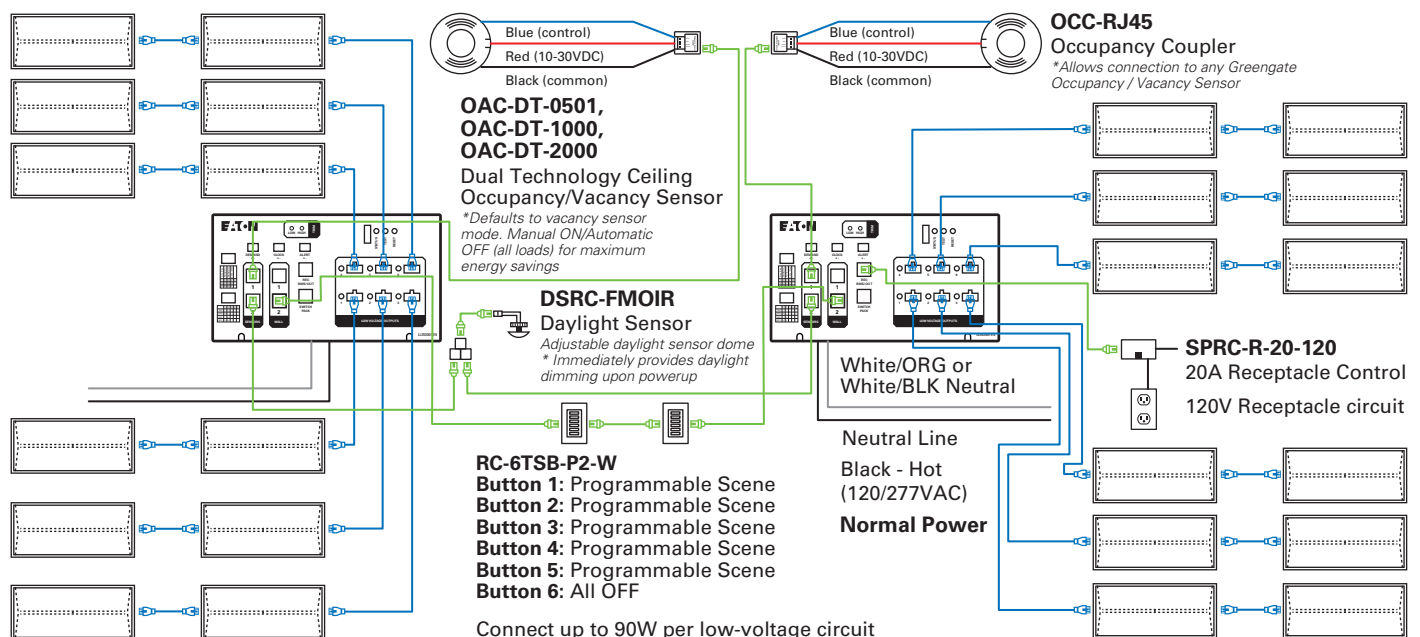Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
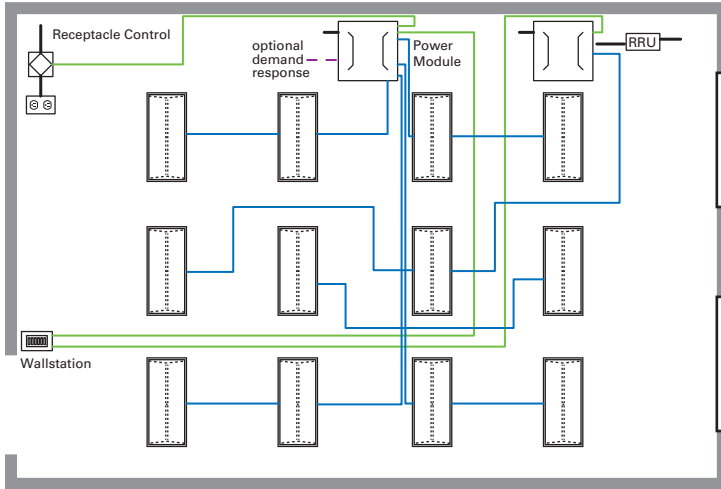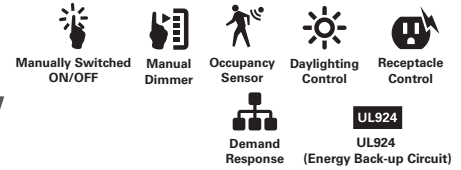
XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

Blue (control)
Red (10-30VDC)
Black (common)

Blue (control)
Red (10-30VDC)
Black (common)

OCC-RJ45
Occupancy Coupler
*Allows connection to any Greengate Occupancy / Vacancy Sensor

OAC-DT-0501, OAC-DT-1000, OAC-DT-2000
Dual Technology Ceiling Occupancy/Vacancy Sensor
*Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
* Immediately provides daylight dimming upon powerup

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

White/ORG or White/BLK Neutral

Neutral Line
Black - Hot (120/277VAC)

Normal Power

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

Connect up to 90W per low-voltage circuit

Open office, 2x4 fixtures with integrated sensors and emergency

Receptacle Control
optional demand response
Power Module
RRU
Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-06-100-03	600W low-voltage power module
1	LVPM-03-100-03	300W low-voltage power module
1	RC-6TSB-P2-W	6 button scene station (white)
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	RRU-XXX	Remote Relay Unit 120v or 277v
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
1	GGRJ45-50P-G	pre-terminated control cable, 50 feet
2	LVC-8P	low-voltage lighting cable, 8 feet
8	LVC-15P	low-voltage lighting cable, 15 feet
2	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-SLVPD1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)
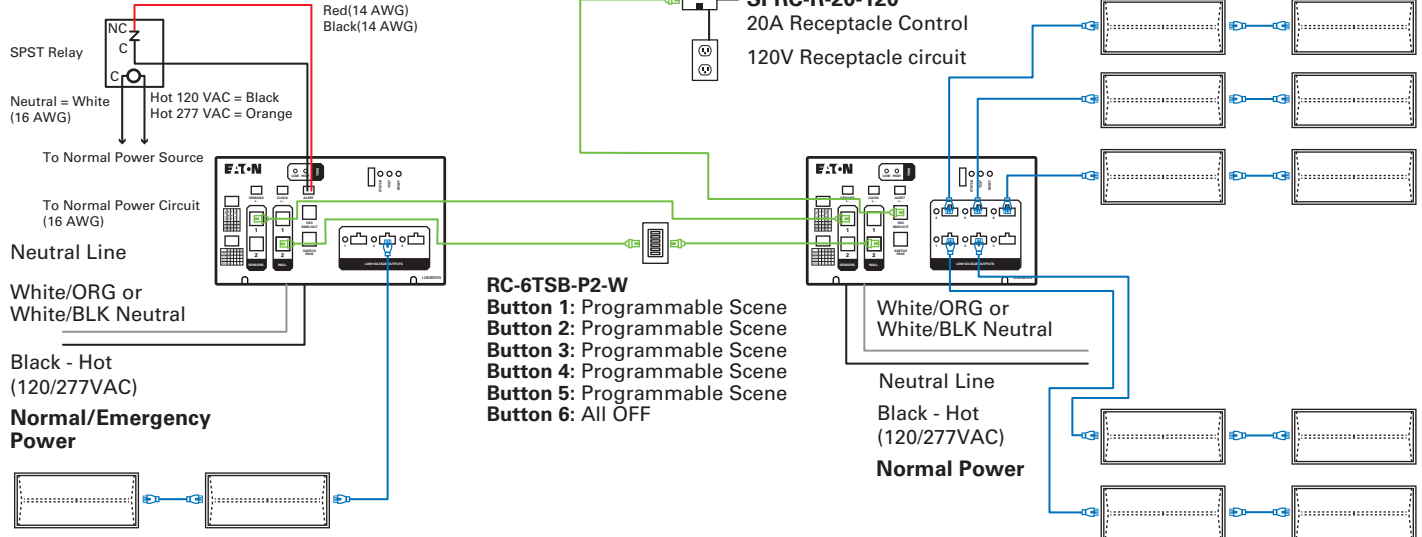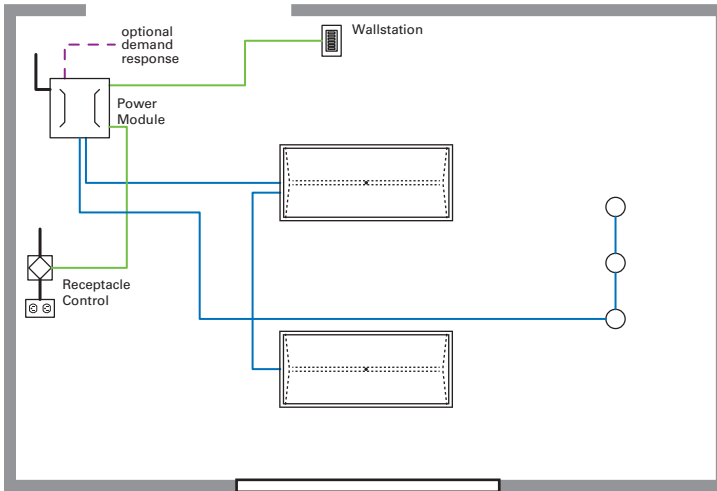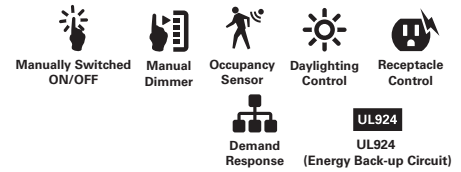
XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

Relay Interface Module (RRU)
NC
C
C
SPST Relay
Red(14 AWG)
Black(14 AWG)
Neutral = White (16 AWG)
Hot 120 VAC = Black
Hot 277 VAC = Orange
To Normal Power Source
To Normal Power Circuit (16 AWG)
Neutral Line
White/ORG or White/BLK Neutral
Black - Hot (120/277VAC)
Normal/Emergency Power
Connect up to 90W per low-voltage circuit

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

RC-6TSB-P2-W
Button 1: Programmable Scene
Button 2: Programmable Scene
Button 3: Programmable Scene
Button 4: Programmable Scene
Button 5: Programmable Scene
Button 6: All OFF

White/ORG or White/BLK Neutral
Neutral Line
Black - Hot (120/277VAC)
Normal Power

Private office, 2x4 fixtures with integrated sensors

Manually Switched ON/OFF | Manual Dimmer | Occupancy Sensor | Daylighting Control | Receptacle Control

Demand Response | UL924 (Energy Back-up Circuit)

optional demand response

Wallstation

Power Module

Receptacle Control

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (39 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (40 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (42 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (38 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (38 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (39 watts)
Portfolio: LD6B15DLV EU6B102080XX 6LBM1H (16 watts)
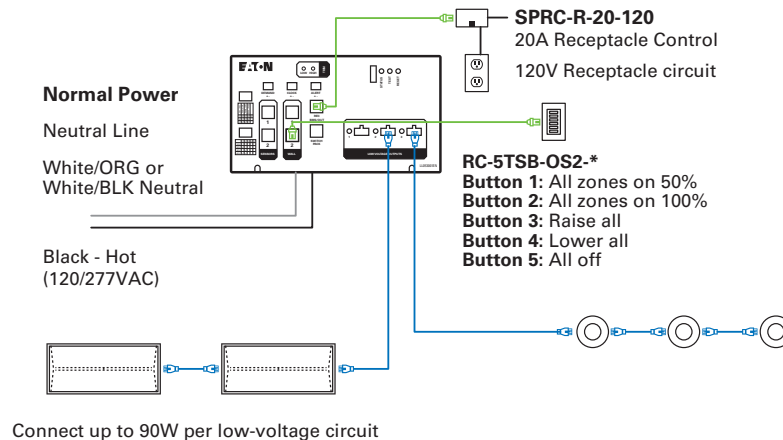Halo Commercial: PD615DLVB PDM6B8XX 61VH (14 watts)

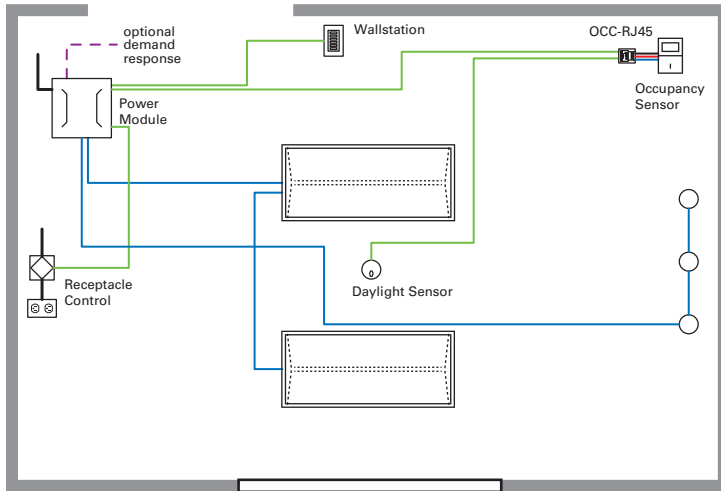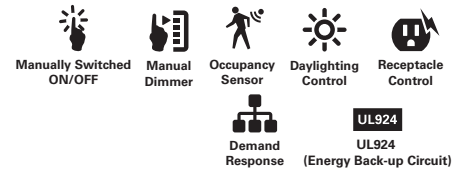**XX= color temperature**
35 - 3500K
40 - 4000K

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
1	RC-5TSB-P2-W	5 button scene station (white)
1	LVHH-02	DLVP personal remote
1	SPRC-20-120	20AMP receptacle control
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
1	GGRJ45-25P-G	pre-terminated control cable, 25 feet
2	LVC-8P	low-voltage lighting cable, 8 feet
3	LVC-15P	low-voltage lighting cable, 15 feet

Typical wiring detail

SPRC-R-20-120
20A Receptacle Control

120V Receptacle circuit

Normal Power

Neutral Line

White/ORG or White/BLK Neutral

Black - Hot (120/277VAC)

RC-5TSB-OS2-*
Button 1: All zones on 50%
Button 2: All zones on 100%
Button 3: Raise all
Button 4: Lower all
Button 5: All off

Connect up to 90W per low-voltage circuit

Private office, 2x4 fixtures

optional demand response

Power Module

Wallstation

OCC-RJ45

Occupancy Sensor

Receptacle Control

Daylight Sensor

Sequence of operations

Lighting
Up to 3 dimmable zones

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Out of the box plug load turns on with occupancy
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Programmable scenes
Individual dimming zone raise/lower
All off

Additional Features
Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit
Substitute any Greengate low-voltage occupancy sensor

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-U (39 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-U (40 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-U (42 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-U (38 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-U (38 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (39 watts)
Portfolio: LD6B15DLV EU6B102080XX 6LBM1H (16 watts)
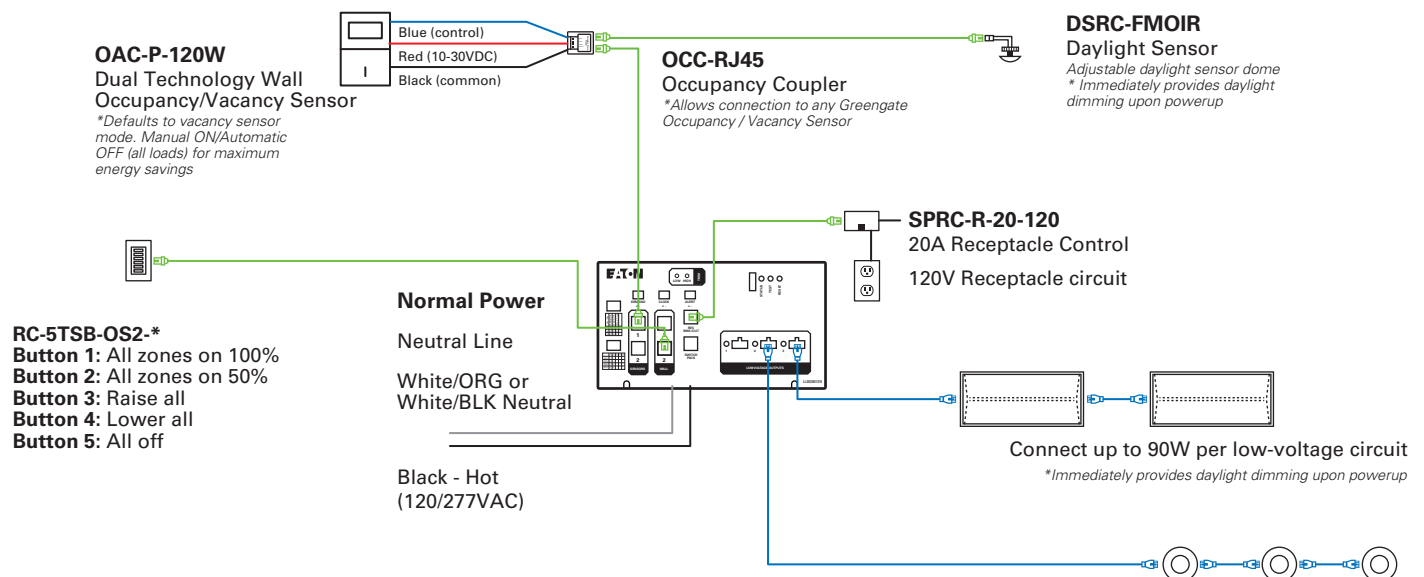Halo Commercial: PD615DLVB PDM6B8XX 61VH (14 watts)
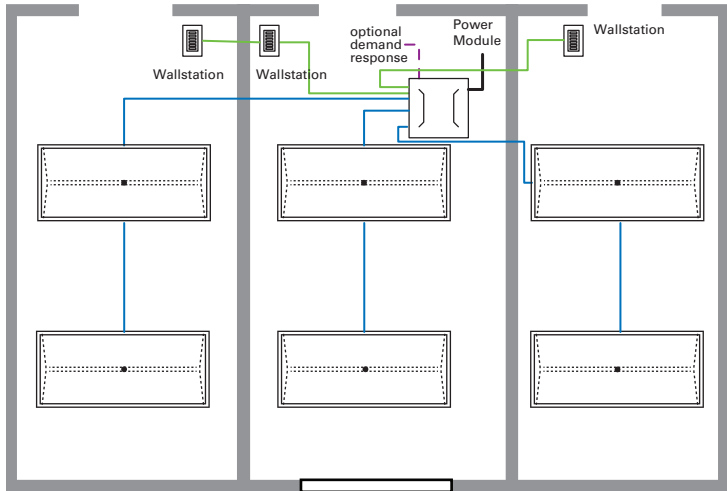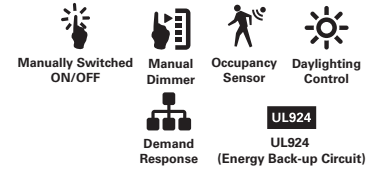
XX= color temperature
35 - 3500K
40 - 4000K

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
1	RC-5TSB-OS2-W	5 button scene station (white)
1	OACT-DT-0501	500 sqft. dual tech sensor
1	OCC-RJ45	input/output device
1	SPRC-20-120	20AMP receptacle control
1	DSRC-FMOIR	3 zone daylight sensor/ir receiver
1	LVHH-02	DLVP personal remote
1	GGRJ45-006-G	pre-terminated control cable, 6 inches
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
2	LVC-8P	low-voltage lighting cable, 8 feet
3	LVC-15P	low-voltage lighting cable, 15 feet

Typical wiring detail

OAC-P-120W
Dual Technology Wall Occupancy/Vacancy Sensor
*Defaults to vacancy sensor mode. Manual ON/Automatic OFF (all loads) for maximum energy savings

Blue (control)
Red (10-30VDC)
Black (common)

OCC-RJ45
Occupancy Coupler
*Allows connection to any Greengate Occupancy / Vacancy Sensor

DSRC-FMOIR
Daylight Sensor
Adjustable daylight sensor dome
* Immediately provides daylight dimming upon powerup

RC-5TSB-OS2-*
Button 1: All zones on 100%
Button 2: All zones on 50%
Button 3: Raise all
Button 4: Lower all
Button 5: All off

Normal Power

Neutral Line

White/ORG or White/BLK Neutral

Black - Hot (120/277VAC)

SPRC-R-20-120
20A Receptacle Control
120V Receptacle circuit

Connect up to 90W per low-voltage circuit
*Immediately provides daylight dimming upon powerup

Private offices, 2x4 fixtures with integrated sensors

Manually Switched ON/OFF   Manual Dimmer   Occupancy Sensor   Daylighting Control

Demand Response   UL924 (Energy Back-up Circuit)

Wallstation   Wallstation   optional demand response   Power Module   Wallstation

Bill of Materials

Qty	Catalog #	Description
1	LVPM-03-100-03	300W low-voltage power module
1	RC-3TLB-Z1D	3 button raise/lower toggle
1	RC-3TLB-Z2D	3 button raise/lower toggle
1	RC-3TLB-Z3D	3 button raise/lower toggle
1	GGRJ45-10P-G	pre-terminated control cable, 10 feet
2	GGRJ45-25P-G	pre-terminated control cable, 25 feet
5	LVC-15P	low-voltage lighting cable, 15 feet
1	LVC-30P	low-voltage lighting cable, 30 feet

Sequence of operations

Lighting
Up to 3 dimmable zones/spaces

Occupancy
Out of the box vacancy mode
Optional auto on to 50%
Optional auto on to scene
Automatic off of lighting and plug load on vacancy

Daylighting
Continuous dimming to off
Individual fixture daylight dimming
Not required in spaces without windows or that are less than 120W

Manual Controls
Individual dimming zone raise/lower
All off

Additional Features
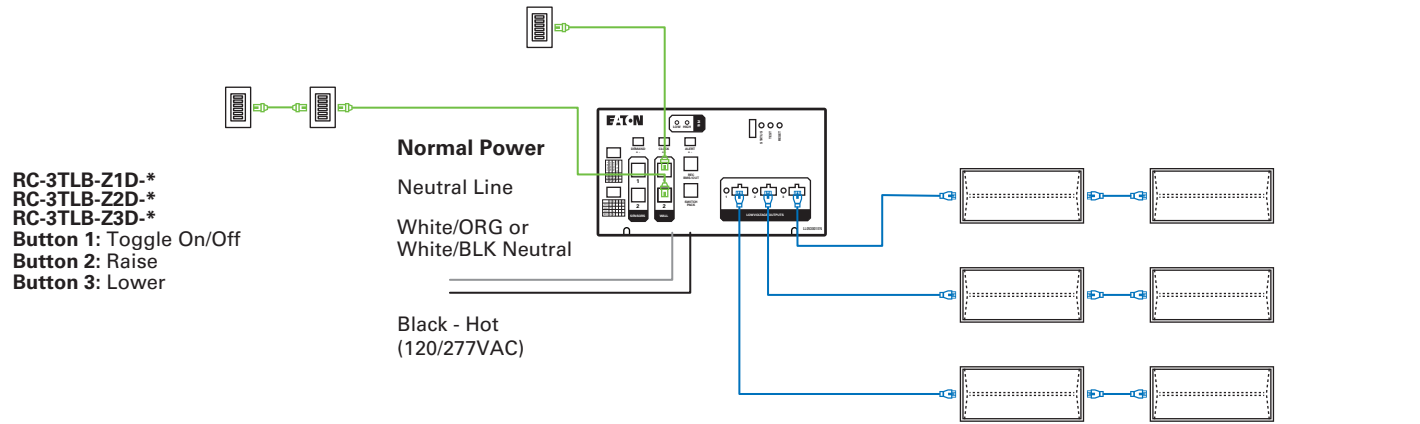Automatic demand response available with open ADR compliant device
UL924 emergency control capabilities with remote relay unit

Available Fixture Models
Metalux Encounter: 22EN-LD2-25-48V-L8XX-LV1-SLVPD1-U (22 watts)
Metalux SkyRidge: 22SR-LD2-29-C-48V-L8XX-LV1-SLVPD1-U (23 watts)
Metalux ArcLine: 22ALNG-LD4-25-48V-L8XX-LV1-SLVPD1-U (21 watts)
Metalux Cruze: 22CZ-LD5-24-48V-L8XX-LV1-SLVPD1-U (20 watts)
Metalux FRLED: 24FR-LD4-40-48V-L8XX-LV1-SLVPD1-U (35 watts)
Metalux GRLED: 22GR-LD4-24-F1-48V-L8XX-LV1-SLVPD1-U (20 watts)
Corelite Bridge: BRG-WS-2LXX-LD2-48V-22-LV1 (23 watts)

XX= color temperature
35 - 3500K
40 - 4000K

Typical wiring detail

RC-3TLB-Z1D-*
RC-3TLB-Z2D-*
RC-3TLB-Z3D-*
Button 1: Toggle On/Off
Button 2: Raise
Button 3: Lower

Normal Power

Neutral Line

White/ORG or White/BLK Neutral

Black - Hot (120/277VAC)

Connect up to 90W per low-voltage circuit
Immediately provides daylight dimming upon powerup

Energy Codes application notes

Lighting Product Lines

Halo
Halo Commercial
Portfolio
Iris
RSA
Metalux
Corelite
Neo-Ray
Fail-Safe
MWS
Ametrix
Shaper
io
Lumark
McGraw-Edison
Invue
Ephesus
Lumière
Streetworks
AtLite
Sure-Lites

Controls Product Lines

Greengate
iLumin
Zero 88
Fifth Light Technology
iLight (International Only)

Connected Lighting Systems

LumaWatt Pro
WaveLinx
Distributed Low-Voltage Power
ConnectWorks

EAT•N

Powering Business Worldwide