Wireless Connected Lighting

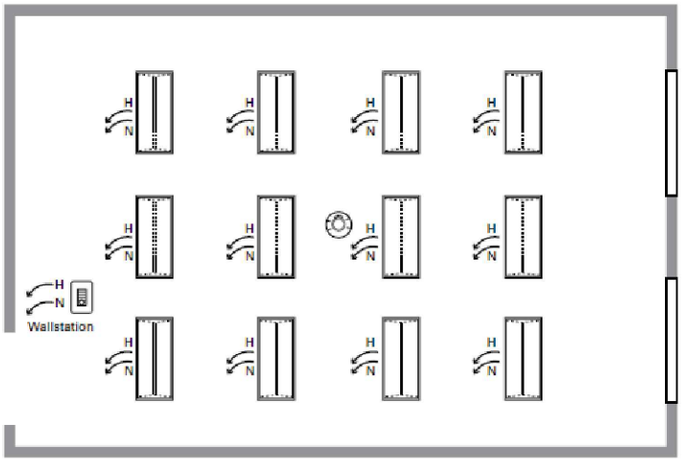
DESIGN GUIDE
NON-INTEGRATED WIRELESS CLASSROOM

WaveLinx Connected Lighting

Classroom

example 4

	Manually Switched ON / OFF	Manual Dimmer	Manual ON / Auto OFF	Occupancy Sensor	Daylighting Control	Lumen Maintenance Control	Tuning Control	Receptacle Control	Demand Response
IECC 2018	•	•	•	•	•	•	•		
ASHRAE 90.1 - 2019	•	•	•	•	•	•	•	•	•
T24 2019	•	•	•	•	•	•	•	•	•
NECB 2017	•	•	•	•	•	•	•		



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
- Not required in spaces without windows or that are less than 150W

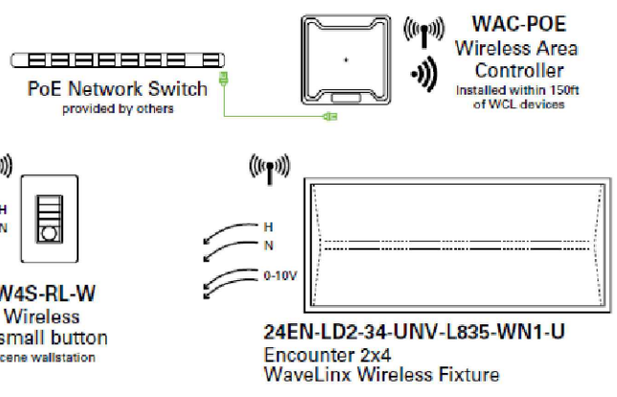
Manual Controls
- Programmable scenes
- Dominant button is 50% light level
- Scene raise / Scene lower
- All off

Additional Features
- Energy calculations (available through Trellix)
- Automatic demand response through wireless area controller
- Scheduling of partial off light levels from wireless area controller
- UL924 emergency control capabilities via luminaire battery backup
- Complies with Enhanced Digital Lighting Control section C406

Bill of Material

Quantity	Catalog #	Description
1	WAC-POE	Wireless Area Controller
1	CWPD-1500	WaveLinx ceiling sensor
1	W4S-RL-W	WaveLinx Wallstation
12	24EN-LD2-34-UNV-L835-WN1-U	Encounter 2x4 WaveLinx Wireless Fixture

Typical Wiring Detail



Design Consideration	Best Practice	Maximum
Gateway / Wireless Area Controller range	150 ft LOS	300 ft LOS
Number of interior walls	2 walls	3 walls
Distance from Wireless Area Controller to 1st WaveLinx device	150 ft	200 ft
Distance between WaveLinx devices	75 ft	150 ft
Number of hops from Wireless Area Controller	4 hops	5 hops
Number of areas per Wireless Area Controller	15 + 1 construction area	
Number of zones per area	3	16
Number of scenes per area	16	16

	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 2018	C405.2.5	C405.2.5	C405.2.2.1.2		C405.2.3.2	C405.2.3.3	C405.2.1.3	C405.2.1.1.1	C405.2.2	C405.2.4		C405.2.6	C408.3		C406. 4
ASHRAE 90.1-2019	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		C406. 4
T24 2019	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)	
NECB 2017	4.2.2.1.(3)	4.2.2.1.(3). 4.2.2.1.(6)	4.2.2.1 (8)	4.2.2.1.(9)	4.2.2.1.(10)	4.2.2.1.(13)	4.2.4.1. (16-17)	4.2.2.1. (18-19)	4.2.2.1. (20-23)			4.2.2.2 4.2.2.4			