Hospitality
IECC 2015 Solutions

Design Guide
Crestron Electronics, Inc.

Contents

About IECC 2015

The International Energy Conservation Code (IECC) 2015 is a residential and commercial building energy code that has been adopted by many states and municipalities. The goal of this code is to reduce energy consumption by providing design and construction requirements for lighting controls.

Lighting controls such as occupancy status sensors, multi-level controls, and demand response provisions allow you to synchronize indoor light levels with daylight levels in accordance with IECC 2015.

Design Guide Information

Crestron® offers this Design Guide for Hospitality - IECC 2015 solutions to use as a reference for typical layouts. Use it as guidance to make code compliance quick and easy. The Crestron team is also available to support with detailed design, submittal, and installation requirements. For additional information, please contact your Crestron representative at CLCDesign@crestron.com or (888) 330-1502.
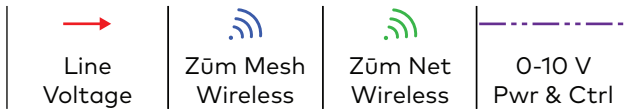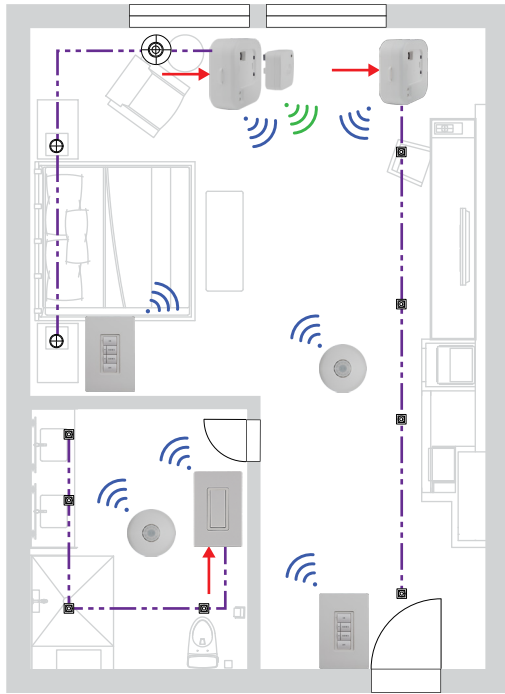
IECC 2015 Code Standards

Summary

IECC 2015 Code Requirements		
Code Provision	**Minimum Control Requirement**	**Code Description**
C405.2.1.1.2*	Manual On / Partial Auto On (Vacancy Sensing Mode)	The general lighting must either be manually turned on or automatically turned on up to 50%.
C405.2.1.1.2*	Automatic Full On (Occupancy Sensing Mode)	Lighting is permitted to automatically turn to full on.
C405.2.1.1.3 C405.2.2.2 C405.2.2.3	Manual Controls	There must be one or more readily accessible manual lighting control(s) in each space.
C405.2.1.1.1	Automatic Full Off	All lighting must be shut off within 30 minutes of vacancy.
C405.2.2	Time-switch Controls (Programmable Timeclock)	All lighting must be programmed to shut off automatically when a space is scheduled to be unoccupied by using a programmable timeclock or signal from another control device (i.e. security system).
C405.2.4.3	Master Off	Space must turn lights and switched receptacles off 20 minutes after vacancy
C405.2.3	Daylight-responsive Continuous Dimming (Photocontrol)	In primary side daylit general lighting zones using more than 150W (or using more than 300W within the primary and secondary daylit zones), daylight must be harvested using photocontrols. In top daylit general lighting zones using more than 150W, daylight must be harvested using photocontrols.
C405.2.3.1.4	Continuous Dimming (0-10v Dimming)	Lighting should continuously dim from full light output to 15 percent or lower.

ON/OFF CONTROLS applies to rows C405.2.1.1.2* through C405.2.4.3. **LIGHT LEVEL CONTROL** applies to rows C405.2.3 and C405.2.3.1.4.

Primary Solutions

Zūm™ Wireless Light Control
GLPP
GLPAC

* Not required if using time-switch controls (C405.2.2).

	Space Type				
	Guest Room	Corridor	Lobby	Ballroom	Restroom
				✔	
		✔	✔		✔
	✔	✔	✔	✔	✔
		✔	✔	✔	✔
		or	or	or	
		✔	✔	✔	
	✔				
		✔	✔	✔	✔
	✔	✔	✔		✔
		✔	✔		✔
			✔	✔	

Guest Room

Zūm

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Line Voltage	Zūm Mesh Wireless	Zūm Net Wireless	0-10 V Pwr & Ctrl

IECC 2015 Code Compliance:

▸ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

▸ Master Off (C405.2.4.3)

Local Control:

Symbol	Qty.	Product	Description
	2	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-5A-LV	Zūm™ Wall-Box Dimmer, 5A
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	2	ZUMMESH-KP10CBATT	6-Button Battery-Powered Keypad
	2	ZUMMESH-PIR-VACANCY-BATT	PIR Vacancy Sensor (AUTO-OFF)

Guest Room Suite

Zūm
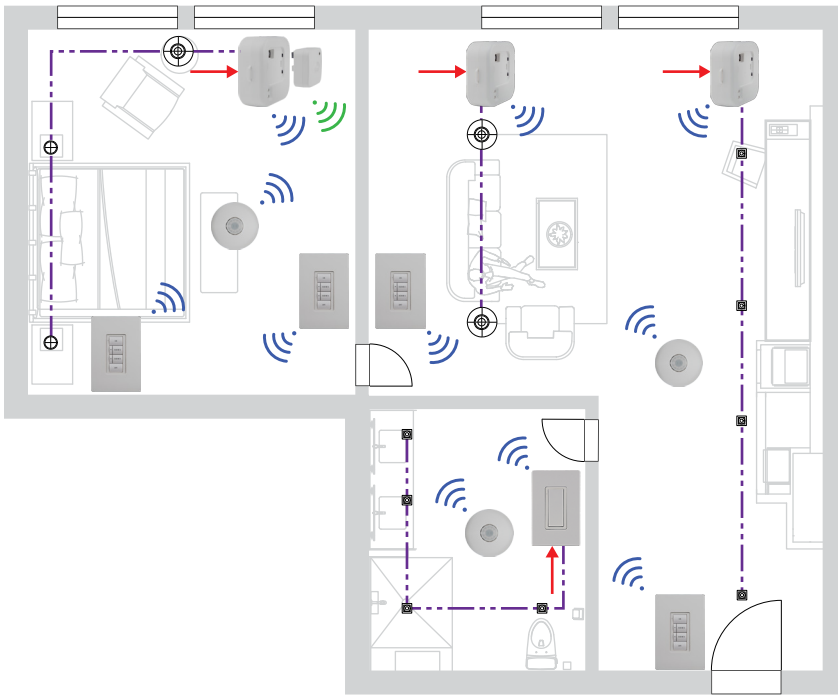
→ Line Voltage	))) Zūm Mesh Wireless	))) Zūm Net Wireless	—··— 0-10 V Pwr & Ctrl

IECC 2015 Code Compliance:

- ‣ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

- ‣ Master Off (C405.2.4.3)

Local Control:

Symbol	Qty.	Product	Description
	3	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-5A-LV	Zūm™ Wall-Box Dimmer, 5A
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	4	ZUMMESH-KP10CBATT	6-Button Battery-Powered Keypad
	3	ZUMMESH-PIR-VACANCY-BATT	PIR Vacancy Sensor (AUTO-OFF)

Lobby

Zūm

IECC 2015 Code Compliance:

▸ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

▸ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

▸ Automatic Full Off (C405.2.1.1.1)

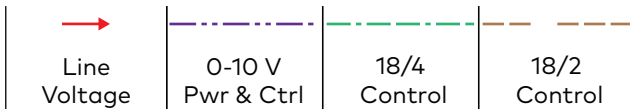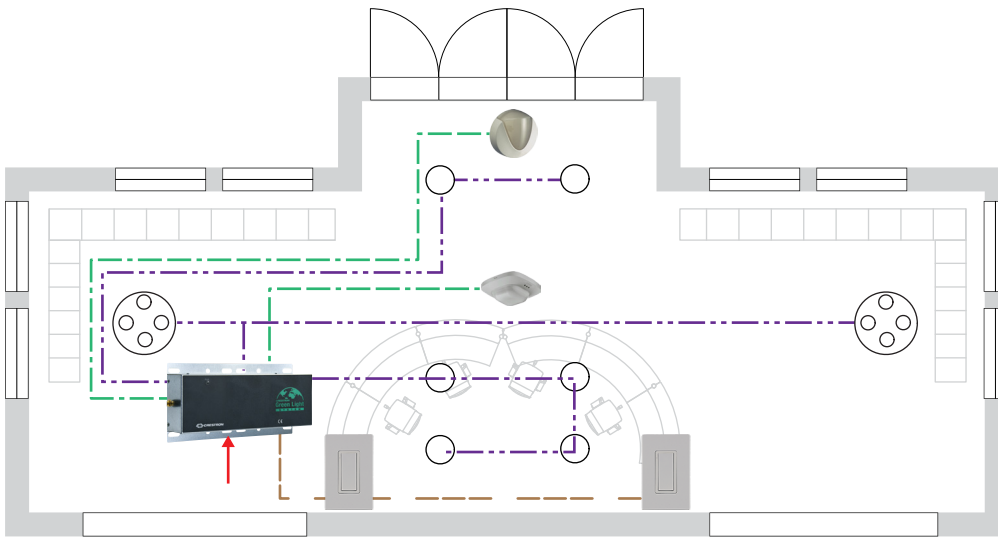▸ Daylight-responsive Continuous Dimming (Photocontrol) (C405.2.3)

Line Voltage	Zūm Net Wireless	Zūm Mesh Wireless	18/3 Control	0-10 V Pwr & Ctrl
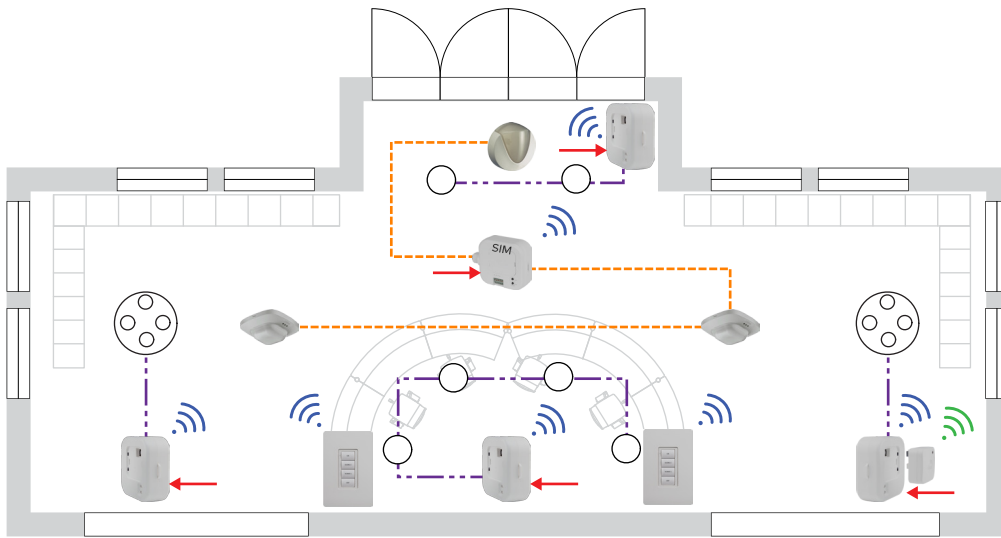
▸ Add a ZUM-FLOOR-HUB and ZUMNET-GATEWAY for time-switch controls (C405.2.2).

Local Control:

Symbol	Qty.	Product	Description
	4	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-JBOX-SIM	Zūm™ Junction Box Sensor Integration Module
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	2	ZUMMESH-KP10CBATT	6-Button Battery-Powered Keypad
	2	GLA-IR-QUATTRO-COM1-24	High Definition PIR Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC
	1	GLS-LOL	Crestron Green Light® Photosensor, Open-Loop

Lobby

GLPP

IECC 2015 Code Compliance:

- Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

- Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

- Automatic Full Off (C405.2.1.1.1)

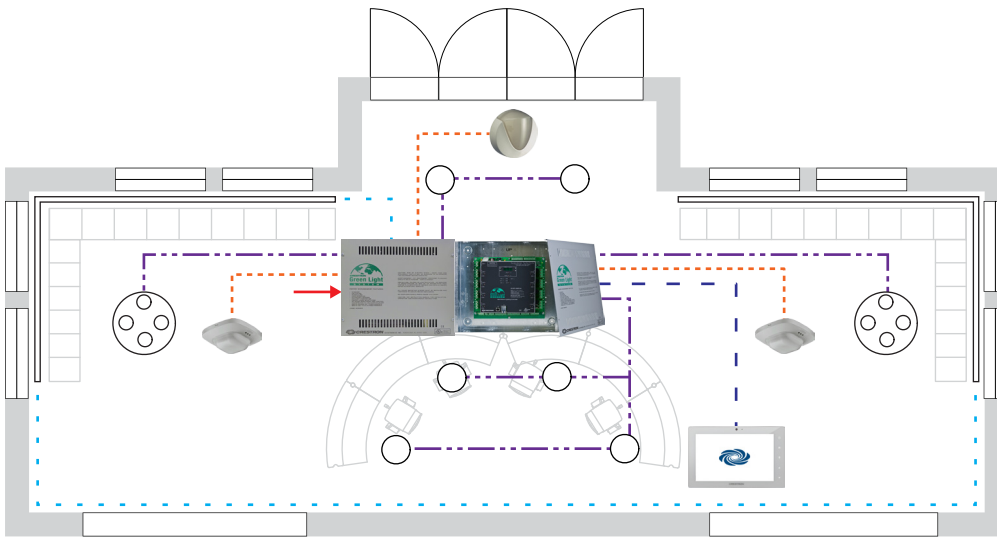- Daylight-responsive Continuous Dimming (Photocontrol) (C405.2.3)

Line Voltage	0-10 V Pwr & Ctrl	18/4 Control	18/2 Control

Local Control:

Product	Qty.	Product	Description
	1	GLPP-1DIMFLV3-CN-PM	3-Ch 0-10V Dimmer with Cresnet®
	2	GLPPA-KP	In-Wall Keypad for GLPP
	1	GLA-IR-QUATTRO-COM1-24	High Definition PIR Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC
	1	GLS-LOL	Crestron Green Light® Photosensor, Open-Loop

Lobby

GLPAC + DMX

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Line Voltage	0-10 V Pwr & Ctrl	18/3 Control	DMX Control	Ethernet Control

▸ Can use automatic full off (C405.2.1.1.1) or time-switch controls (C405.2.2) to shut the lights off.

IECC 2015 Code Compliance:

▸ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

▸ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

▸ Automatic Full Off (C405.2.1.1.1)

▸ Time-switch Controls (Programmable Timeclock) (C405.2.2)

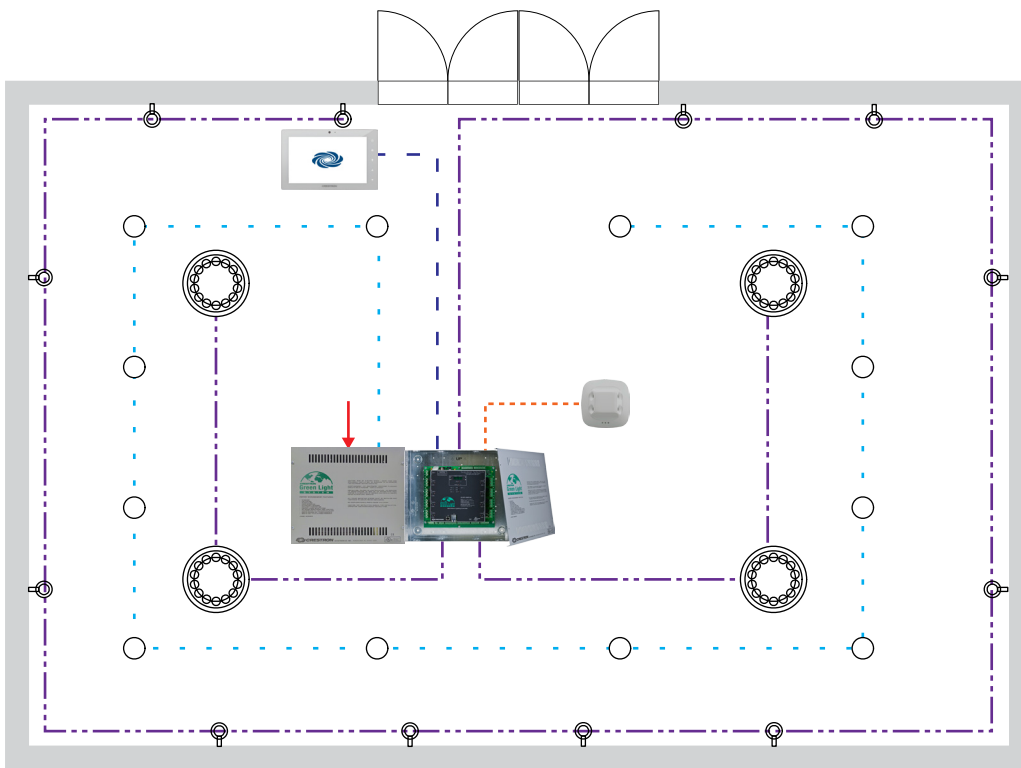▸ Daylight-responsive Continuous Dimming (Photocontrol) (C405.2.3)

Local Control:

Product	Qty.	Product	Description
	1	GLPAC-DIMFLV4	Green Light Integrated Lighting System, 4-Channel
	1	DIN-EN2x18	RMC3, DIN-SCAN-DMX, CEN-POE-SW5
	1	TSW-760	7" Touch Screen
	2	GLA-IR-QUATTRO-COM1-24	High Definition PIR Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC
	1	GLS-LOL	Crestron Green Light® Photosensor, Open-Loop

Ballroom

GLPAC + DMX

IECC 2015 Code Compliance:

‣ Manual On / Partial Auto On (Vacancy Sensing Mode) (C405.2.1.1.2)

‣ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

‣ Automatic Full Off (C405.2.1.1.1)

‣ Time-switch Controls (Programmable Timeclock) (C405.2.2)

‣ Daylight-responsive Continuous Dimming (Photocontrol) (C405.2.3)
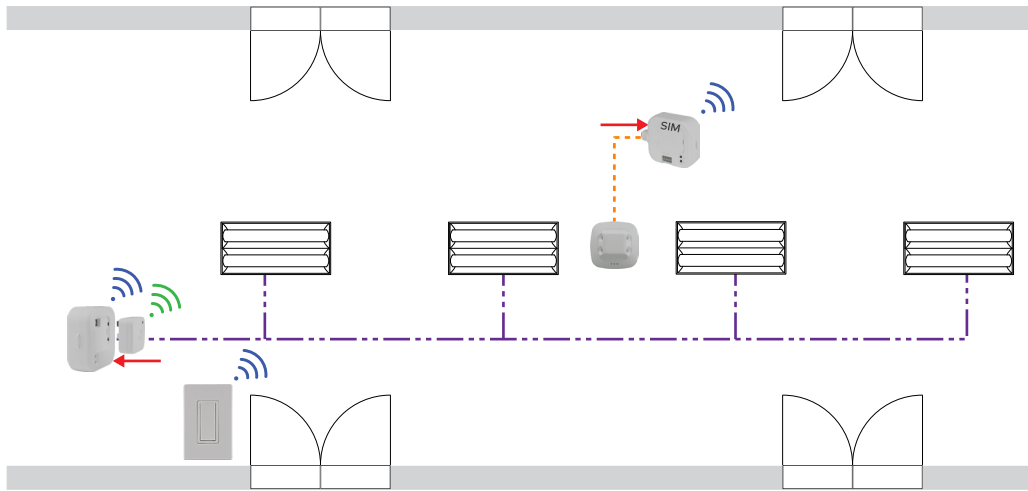
Local Control:

Line Voltage	0-10 V Pwr & Ctrl	18/3 Control	DMX Control	Ethernet Control

‣ Can use automatic full off (C405.2.1.1.1) or time-switch controls (C405.2.2) to shut the lights off.

Product	Qty.	Product	Description
	1	GLPAC-DIMFLV4	Green Light Integrated Lighting System, 4-Channel
	1	DIN-EN2x18	RMC3, DIN-SCAN-DMX, CEN-POE-SW5
	1	TSW-760	7" Touch Screen
	1	GLA-IR-QUATTRO-COM1-24	High Definition PIR Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC

Corridor

Zūm

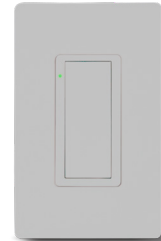|				
Line Voltage	**Zūm Net Wireless**	**Zūm Mesh Wireless**	**18/3 Control**	**0-10 V Pwr & Ctrl**

IECC 2015 Code Compliance:

▸ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

▸ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

▸ Automatic Full Off (C405.2.1.1.1)

Local Control:

Symbol	Qty.	Product	Description
	1	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-JBOX-SIM	Zūm™ Junction Box Sensor Integration Module
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	1	ZUMMESH-KP10ABATT	Rocker-Button Battery Powered Keypad
	1	GLA-US-HALLWAY-COM1-24	40 kHz Ultrasonic Presence Detector, Ceiling Mount, Hallway Coverage, 18-24 VAC/VDC, 33 ft corridor coverage, up to 8 hallway sensors per SIM

Corridor

GLPP
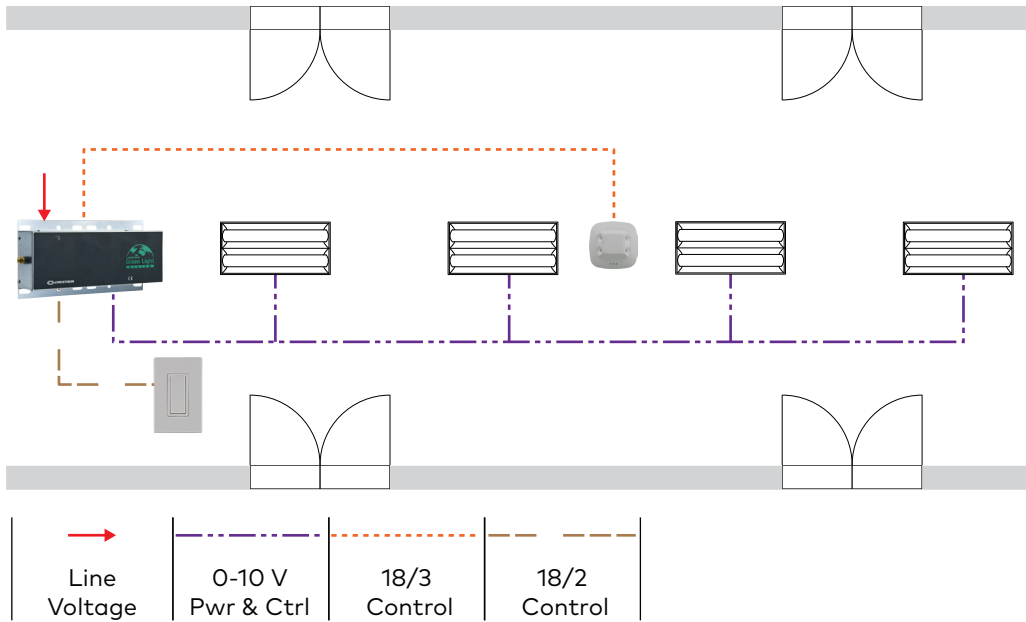
IECC 2015 Code Compliance:

▸ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

▸ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

▸ Automatic Full Off (C405.2.1.1.1)

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Line Voltage	0-10 V Pwr & Ctrl	18/3 Control	18/2 Control

▸ UL924 emergency lighting devices are available for life safety.

Local Control:

Product	Qty.	Product	Description
	1	GLPP-1DIMFLVCN-PM	1-Ch 0-10V Dimmer with Cresnet®
	1	GLPPA-KP	In-Wall Keypad for GLPP
	1	GLA-US-HALLWAY-COM1-24	40 kHz Ultrasonic Presence Detector, Ceiling Mount, Hallway Coverage, 18-24 VAC/VDC

Public Restroom

Zūm

Legend

Symbol	Label
🛜	Zūm Mesh Wireless
🛜	Zūm Net Wireless
→	Line Voltage
–··–	0-10 V Pwr & Ctrl
····	18/3 Control

▸ Automatic daylight controls (photocontrol) (9.4.1.1.e/f) may be required if windows are present.

IECC 2015 Code Compliance:

▸ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

▸ Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)

▸ Automatic Full Off (C405.2.1.1.1)

Local Control:
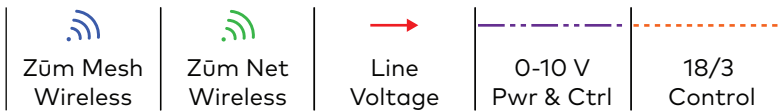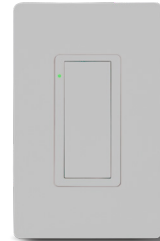
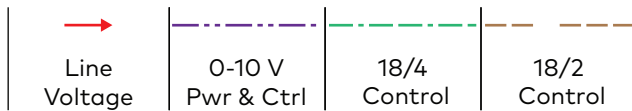| Symbol	Qty.	Product	Description
	2	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-JBOX-SIM	Zūm™ Junction Box Sensor Integration Module
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	1	ZUMMESH-KP10ABATT	Rocker-Switch Battery Powered Keypad
	2	GLS-ODT-C-NS	Dual-Technology Ceiling Mount Occupancy Sensor

Public Restroom

GLPP
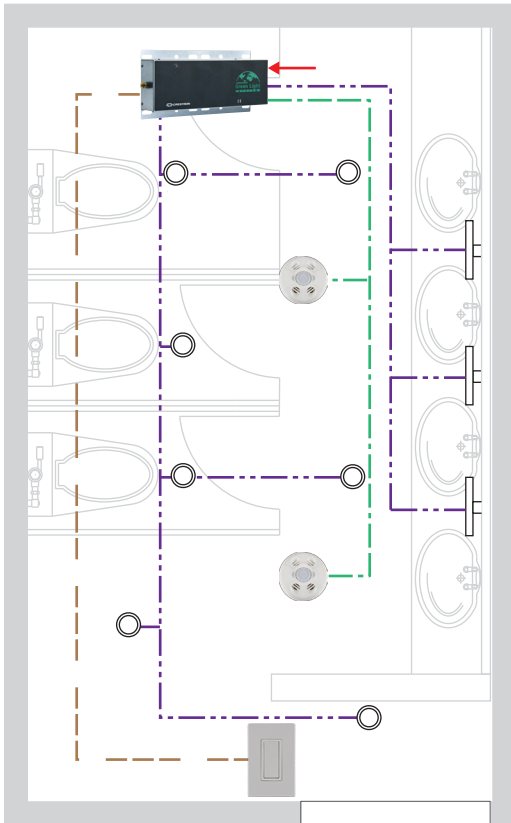
IECC 2015 Code Compliance:

- Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)

- Manual Controls (C405.2.1.1.3, C405.2.2.2, C405.2.2.3)
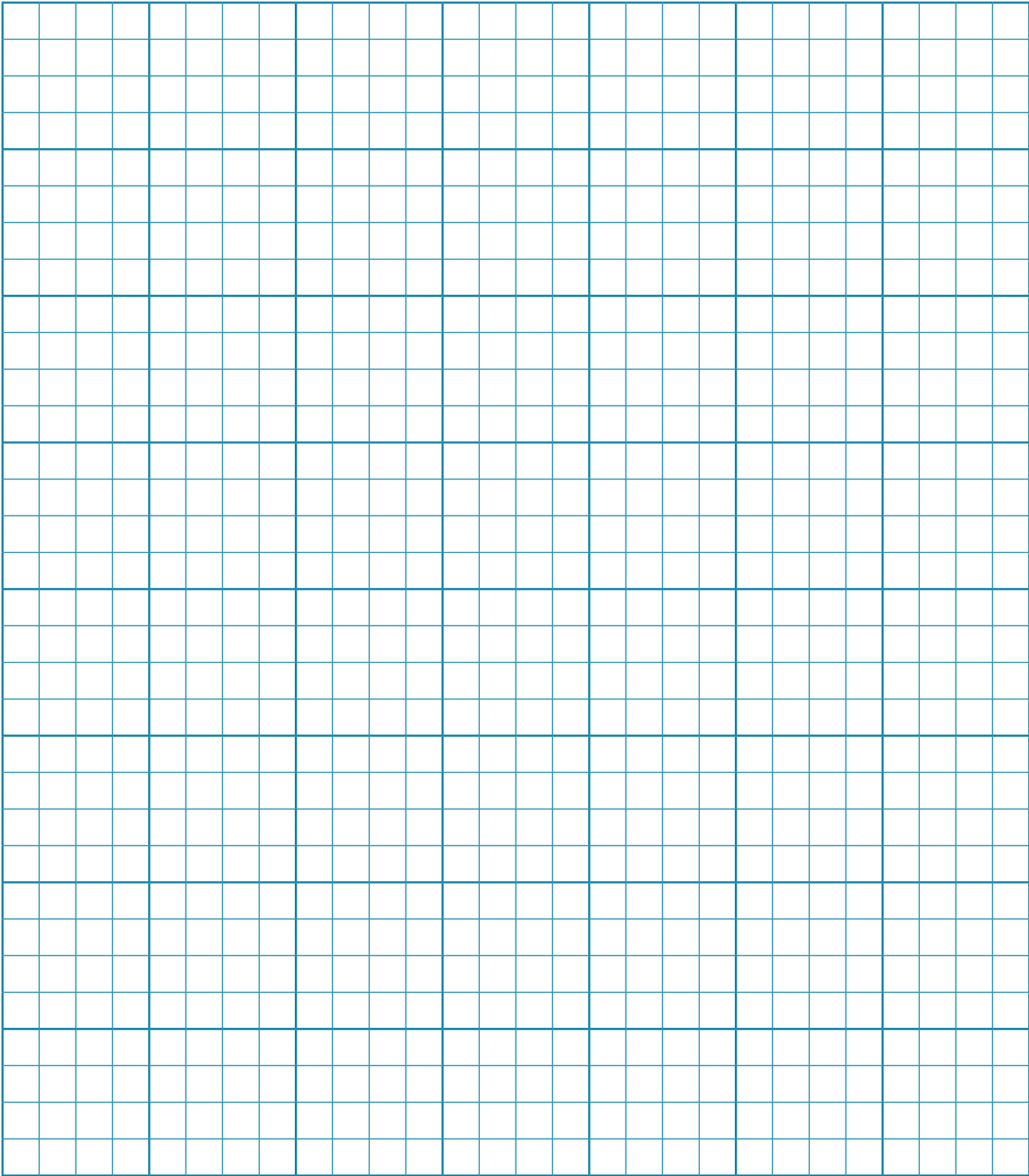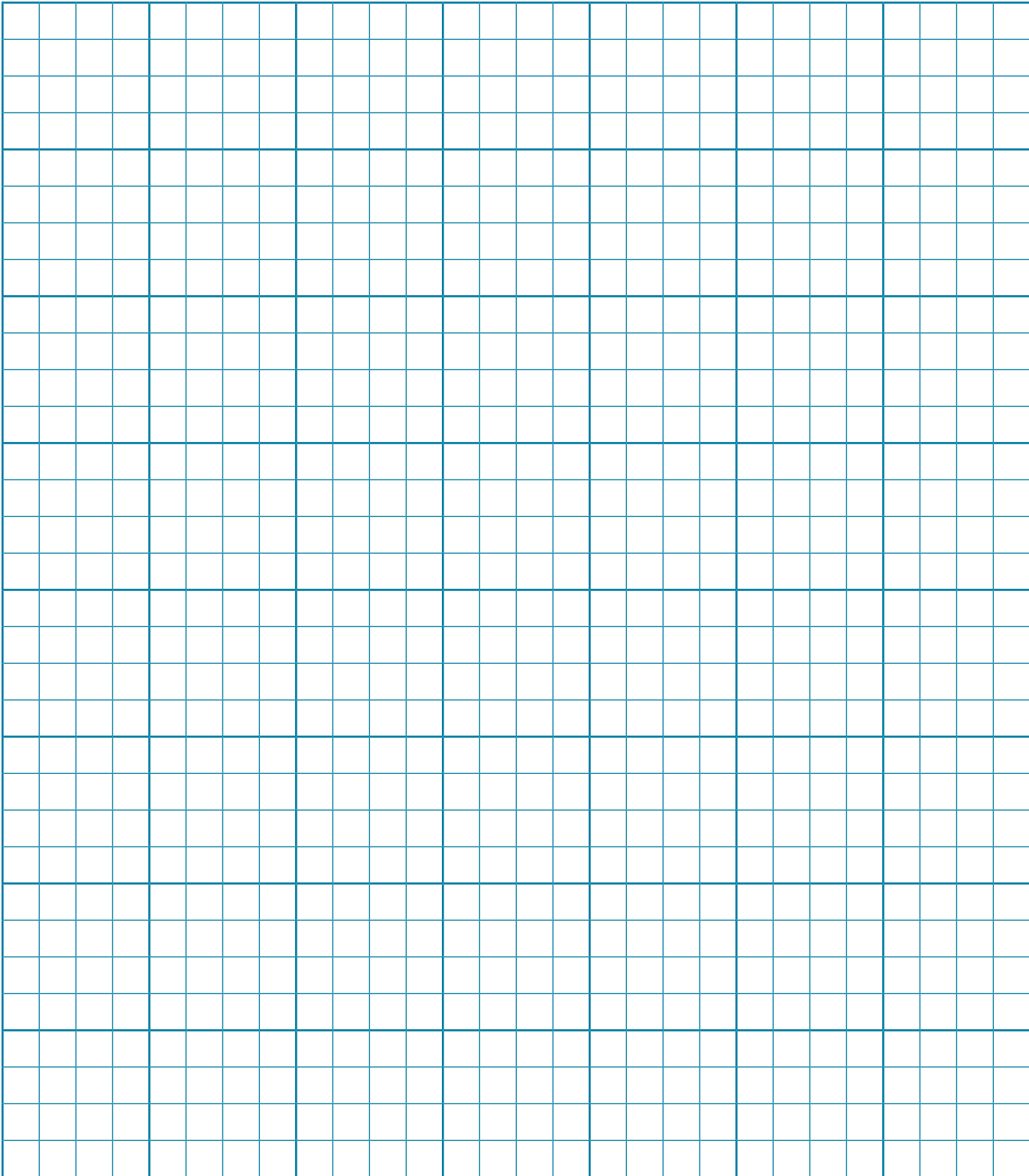
- Automatic Full Off (C405.2.1.1.1)

Line Voltage	0-10 V Pwr & Ctrl	18/4 Control	18/2 Control

▸ Automatic daylight controls (photocontrol) (9.4.1.1.e/f) may be required if windows are present.

Local Control:

Product	Qty.	Product	Description
	1	GLPP-1DIMFLV2CN-PM	2-Ch 0-10V Dimmer with Cresnet®
	1	GLPPA-KP	In-Wall Keypad for GLPP
	2	GLS-ODT-C-NS	Dual-Technology Ceiling Mount Occupancy Sensor

Notes

Notes

Notes