



Office IECC 2015 Solutions

Design Guide
Crestron Electronics, Inc.

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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 Office - IECC 2015 solutions to use as a reference for typical layouts. Use it as guidance to make code compliance quicker and easier than ever. 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 Requirements

Summary

IECC 2015 Code Requirements

	Code Provision	Minimum Control Requirement	Code Description
ON/OFF CONTROLS	C405.2.1.1.3	Manual Controls	There must be one or more readily accessible manual lighting control(s) in each space
	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 to no more than 50%.
	C405.2.1.1.2	Automatic Full ON (Occupancy Sensing Mode)	Lighting is permitted to automatically turn to full ON.
	C405.2.1.2	Automatic Partial Off	Lighting loads must be automatically reduced by at least 50% within 30 minutes of vacancy
	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 (i.e. programmable timeclock)	All lighting must be programmed to shut OFF automatically when a space is vacant by using a programmable timeclock or signal from another control device (i.e. security system).
LIGHT LEVEL CONTROL	C405.2.3.1.4	Bi-level control (i.e. 0-10v dimming)	Lighting must have at least one intermediate step power that is at least 15% of full power, in addition to full on and full off.
	C405.2.3	Daylight-responsive controls (i.e. photocontrols)	In side daylighting zones with greater than 150W (or greater than 300W within the primary and secondary daylighting zones), daylight must be harvested using photocontrols. In top daylighting zones with greater than 150W, daylight must be harvested using photocontrols.

PRIMARY SOLUTIONS

- Zūm™ Wireless
- GLPP
- GLPAC
- Steinel

Conference Meeting, Multipurpose Rooms	Private Offices Lounge/Break Rooms, Copy/Print Rooms	Open Plan Office Large Private Offices (>250 ft ²)	Public Spaces Corridors, Lobbies	Restrooms Private, Public
X	X	X	X	X
X	X	X		
			X	X
X	X	X	X	X
-OR-	-OR-	-OR-	-OR-	
X	X	X	X	
	X			
X	X	X	X	X
X	X	X	X	X
	X		X	X
X		X	X	
	X			X

Differences between IECC 2012 Standards & 2015 Standards

Office Space, Open Office Space, and Huddle Space

	IECC 2012	IECC 2015
Motion Sensing	Vacancy Sensor	Vacancy Sensor
Daylight Harvesting	Required (for spaces with 24+ sq. ft. of windows)	Required (for spaces with 24+ sq. ft. of windows)
Timeclock	Not Required	Not Required
Manual Control	Dimmer/Scene Recall	Dimmer/Scene Recall

Conference Room, Meeting Room, Multipurpose Room

	IECC 2012	IECC 2015
Motion Sensing	Vacancy Sensor	Vacancy Sensor
Daylight Harvesting	Required (for spaces with 24+ sq. ft. of windows)	Required (for spaces with 24+ sq. ft. of windows)
Timeclock	Not Required	Not Required
Manual Control	Dimmer/Scene Recall	Dimmer/Scene Recall

Public Corridors, Stairwells, Entrances and Exits

	IECC 2012	IECC 2015
Motion Sensing	Sensor Optional	Sensor Optional
Daylight Harvesting	Required (for spaces with 24+ sq. ft. of windows)	Required (for spaces with 24+ sq. ft. of windows)
Timeclock	Required (if no occupancy sensor)	Required (if no occupancy sensor)
Manual Control	Required Device (if no occupancy sensor)	Required Device

Restroom

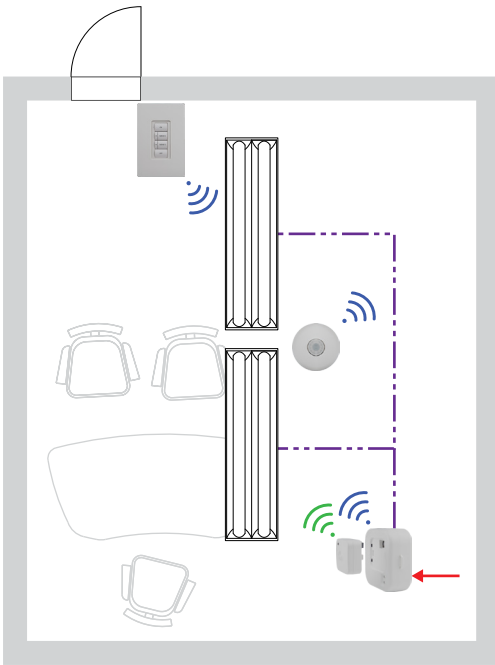
	IECC 2012	IECC 2015
Motion Sensing	Sensor Optional	Sensor Optional
Daylight Harvesting	Required (for spaces with 24+ sq. ft. of windows)	Required (for spaces with 24+ sq. ft. of windows)
Timeclock	Required (if no occupancy sensor)	Required (if no occupancy sensor)
Manual Control	Required Device (if no occupancy Sensor)	Required Device (if no occupancy Sensor)

Storage Closets, Break Rooms, Spaces <300 sq. ft.

	IECC 2012	IECC 2015
Motion Sensing	Vacancy Sensor	Vacancy Sensor
Daylight Harvesting	Required (for spaces with 24+ sq. ft. of windows)	Required (for spaces with 24+ sq. ft. of windows)
Timeclock	Not Required	Not Required
Manual Control	Required Device (if no occupancy Sensor)	Required Device (if no occupancy Sensor)

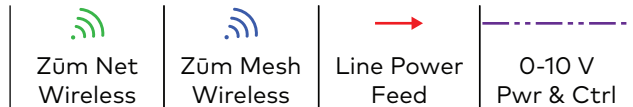
Office Space

Zūm™ Wireless



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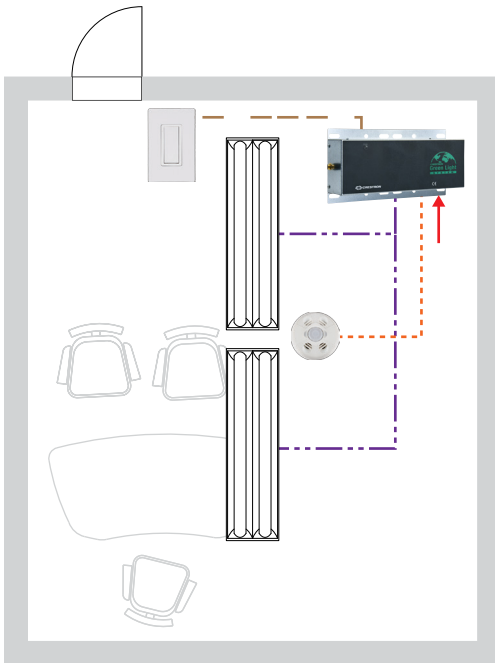
- ▶ Manual Controls (C405.2.1.1.3)
- ▶ Automatic Full Off (C405.2.1.1.1)
- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)



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

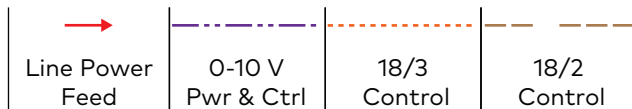
Office Space




GLPP



IECC 2015 Code Compliance:

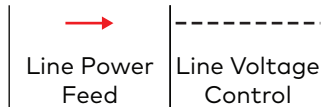
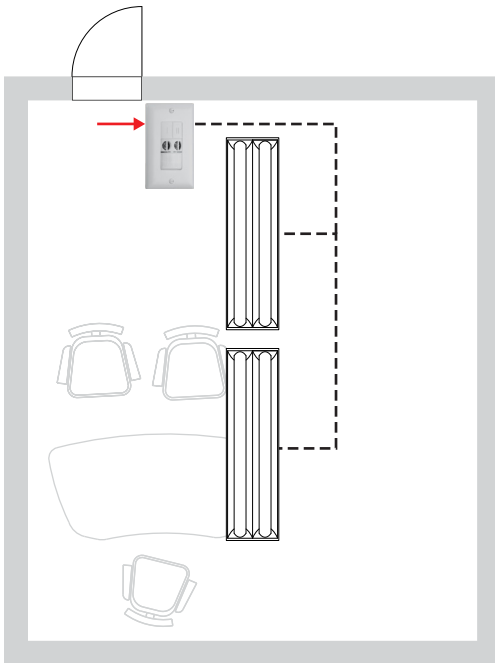
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- ▶ Automatic Full Off (C405.2.1.1.1)
- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)



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


Office Space

Steinel



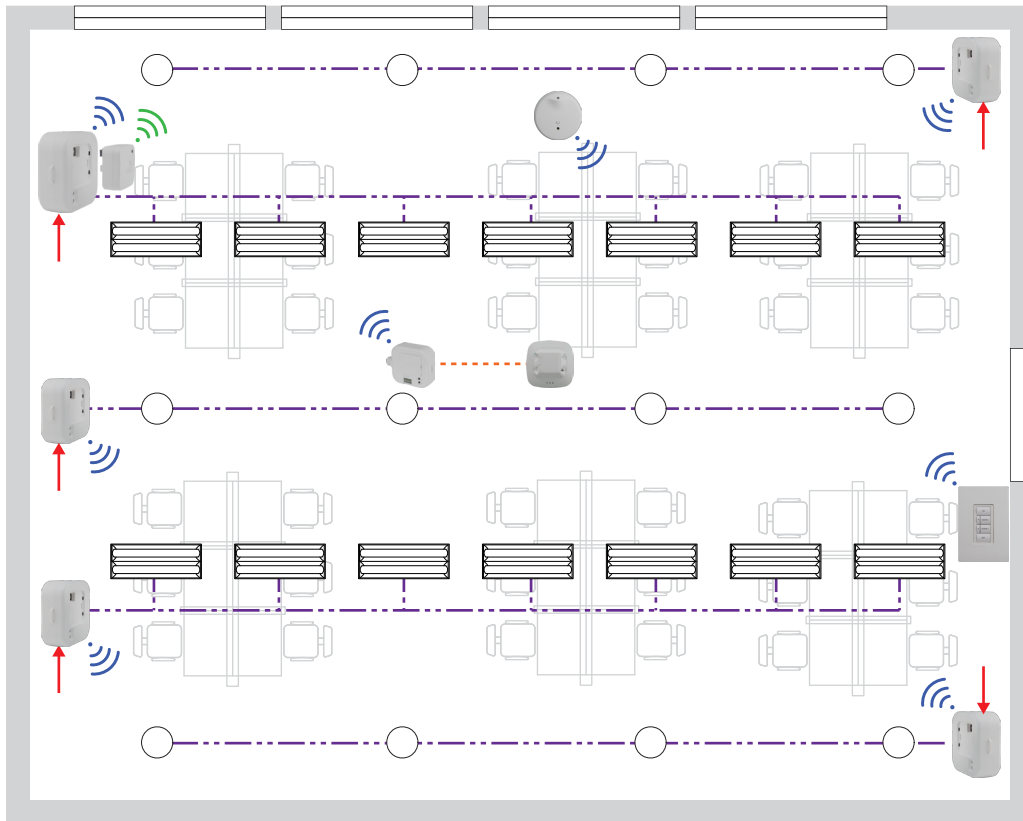
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- ▶ Daylight-responsive Controls (Photocontrols) (C405.2.3)

Symbol	Product	Qty.	Description
	GLA-DT-WLS-1	1	Dualtech PIR & 40 kHz Ultrasonic Wall Switch Occupancy Sensor, 1 Button, 180* Coverage, 120/230/277 VAC, 50/60 Hz

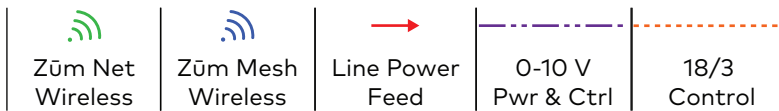
Open Office Space

Zūm™ Wireless



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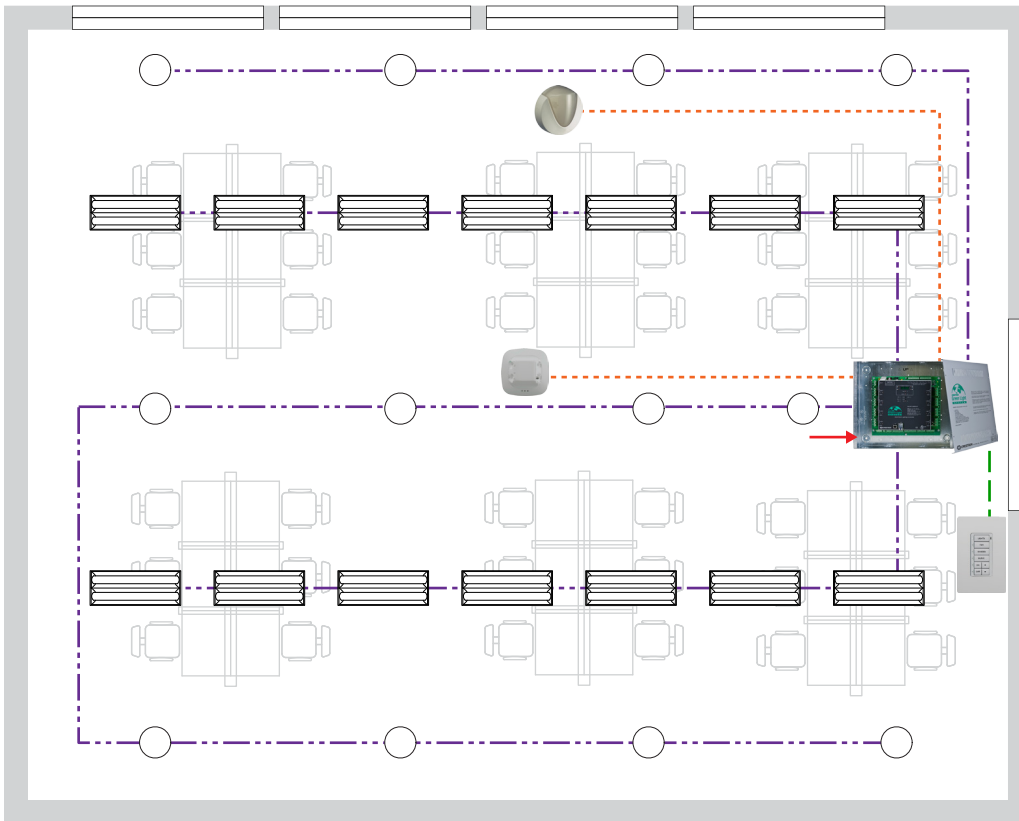
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- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)
- ▶ Daylight-responsive Controls (Photocontrols) (C405.2.3)



Symbol	Product	Qty.	Description
	GLA-DT-QUATTRO-COM1-24	1	Dual Technology Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC
	ZUMMESH-JBOX-5A-LV	5	Junction Box Zone Controller, 0-10V Dimming, 5A
	ZUMMESH-KP10CBATT	1	6-Button Battery Powered Keypad
	ZUMMESH-NETBRIDGE	1	Zūm™ Network Bridge
	ZUMMESH-JBOX-SIM	1	Zūm™ Junction Box Sensor Integration Module
	ZUMMESH-OL-PHOTOCELL	1	Open Loop Daylight Sensor

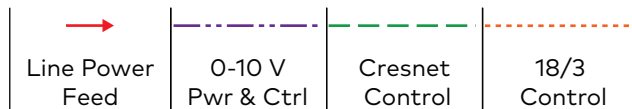
Open Office Space





GLPAC



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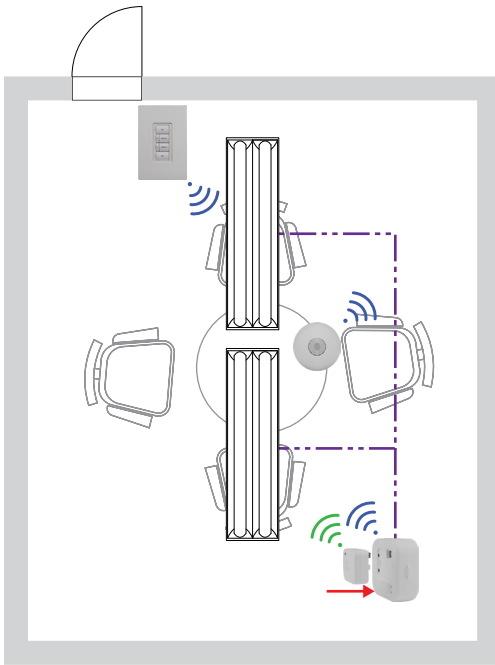
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- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)
- ▶ Daylight-responsive Controls (Photocontrols) (C405.2.3)



Symbol	Product	Qty.	Description
	GLPAC-DIMFLV4	1	Green Light Integrated Lighting System, 4-Channel
	GLA-DT-QUATTRO-COM1-24	1	Dual Technology Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC
	C2N-CBD-P	1	Cameo® Keypad, Standard Mount
	GLS-LOL	1	Crestron Green Light® Photosensor, Open-Loop

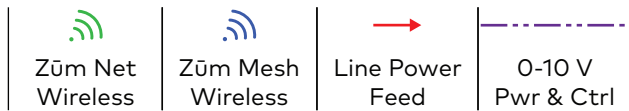
Huddle Space





Zūm™ Wireless



IECC 2015 Code Compliance:

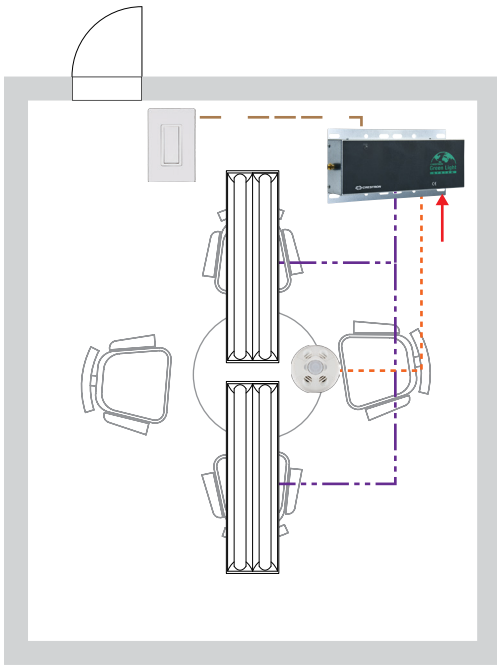
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Symbol	Product	Qty.	Description
	ZUMMESH-PIR-VACANCY-BATT	1	PIR Vacancy Sensor (AUTO-OFF)
	ZUMMESH-JBOX-5A-LV	1	Junction box Zone Controller, 0-10V Dimming, 5A
	ZUMMESH-KP10CBATT	1	6-Button Battery-Powered Keypad
	ZUMMESH-NETBRIDGE	1	Zūm™ Network Bridge

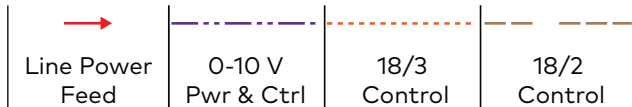
Huddle Space




GLPP



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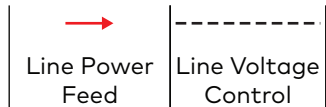
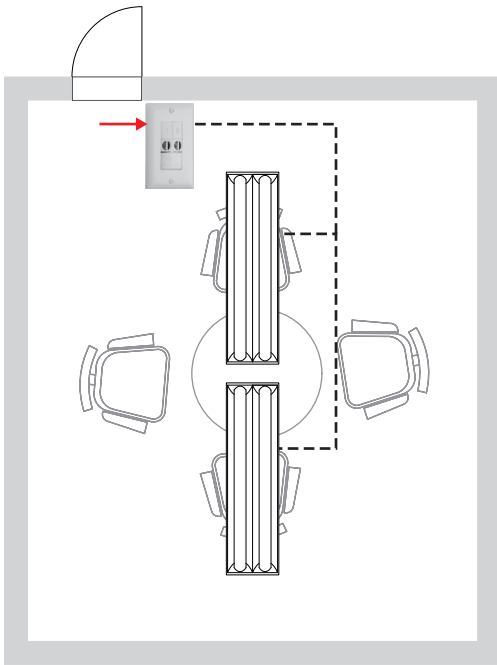
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Product	Product	Qty.	Description
	GLPP-DIMFLVCN-PM	1	1-Ch 0-10V Dimmer with Cresnet
	GLS-ODT-C-NS	1	Dual-Technology Ceiling Mount Occupancy Sensor
	GLPPA-KP	1	In-Wall Keypad for GLPP

Huddle Space

Steinel



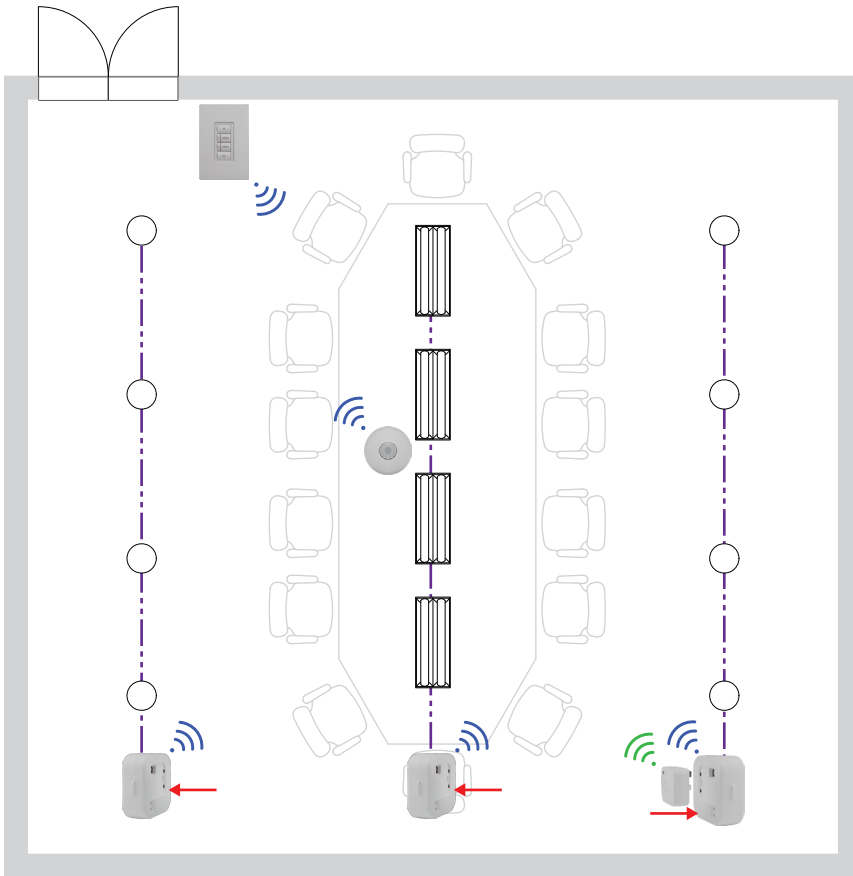
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Symbol	Product	Qty.	Description
	GLA-DT-WLS-1	1	Dualtech PIR & 40 kHz Ultrasonic Wall Switch Occupancy Sensor, 1 Button, 180* Coverage, 120/230/277 VAC, 50/60 Hz

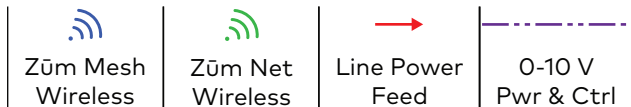
Conference Room





Zūm™ Wireless



IECC 2015 Code Compliance:

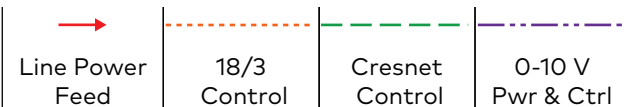
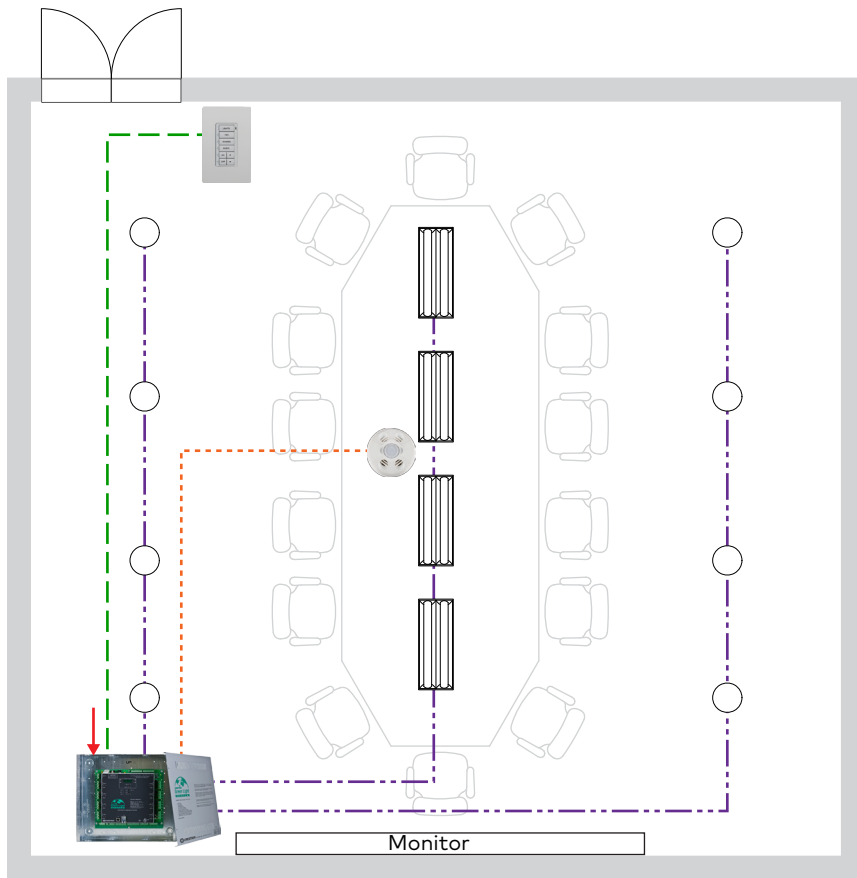
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Symbol	Product	Qty.	Description
	ZUMMESH-PIR-VACANCY-BATT	1	PIR Vacancy Sensor (AUTO-OFF)
	ZUMMESH-JBOX-5A-LV	3	Junction Box Zone Controller, 0-10V Dimming, 5A
	ZUMMESH-KP10CBATT	1	6-Button Battery Powered Keypad
	ZUMMESH-NETBRIDGE	1	Zūm™ Network Bridge




Conference Room

GLPAC



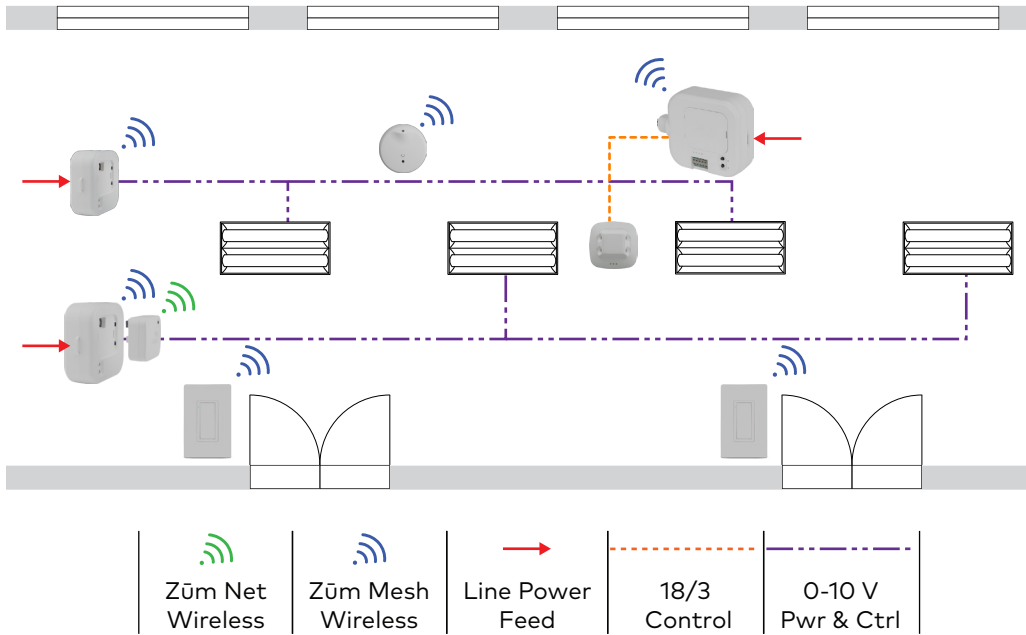
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- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)

Symbol	Product	Qty.	Description
	GLPAC-DIMFLV4	1	Green Light Integrated Lighting System, 4-Channel
	GLS-ODT-C-NS	1	Dual-Technology Ceiling Mount Occupancy Sensor
	C2N-CBD-P	1	Cameo® Keypad, Standard Mount

Corridor

Zūm™ Wireless



IECC 2015 Code Compliance:

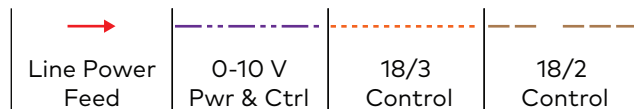
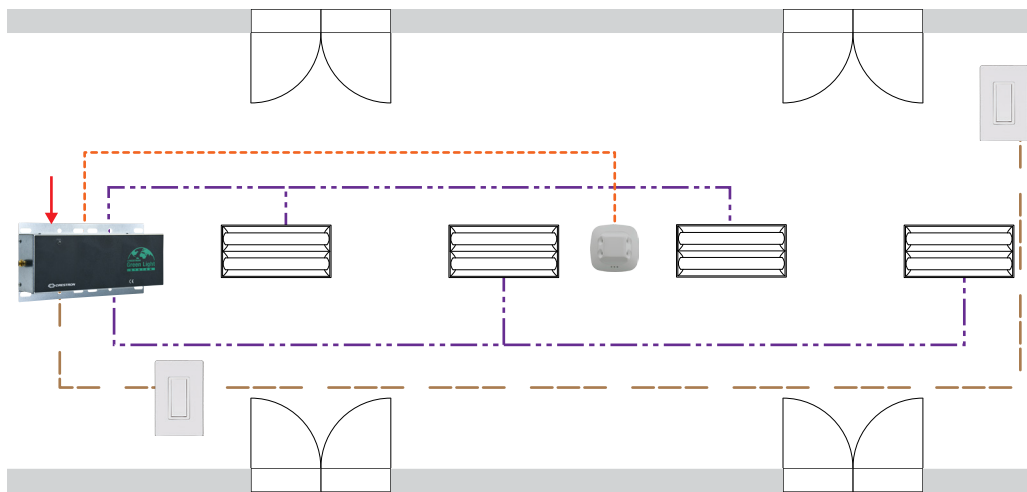
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- ▶ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)
- ▶ Automatic Full Off (C405.2.1.1.1)
- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)
- ▶ Daylight-responsive Controls (Photocontrols) (C405.2.3)

NOTE: UL924 emergency lighting devices are available for life safety.

Symbol	Product	Qty.	Description
	ZUMMESH-JBOX-SIM	1	Zūm™ Junction Box Sensor Integration Module
	GLA-US-HALLWAY-COM1-24	1	40 kHz Ultrasonic Presence Detector, Ceiling Mount, Hallway Coverage, 18-24 VAC/VDC
	ZUMMESH-JBOX-5A-LV	2	Junction Box Zone Controller, 0-10V Dimming, 5A
	ZUMMESH-NETBRIDGE	1	Zūm™ Network Bridge
	ZUMMESH-KP10ABATT	2	Rocker-Button Battery Powered Keypad
	ZUMMESH-OL-PHOTOCELL	1	Open Loop Daylight Sensor

Corridor




GLPP



IECC 2015 Code Compliance:

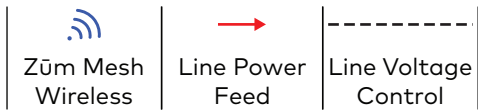
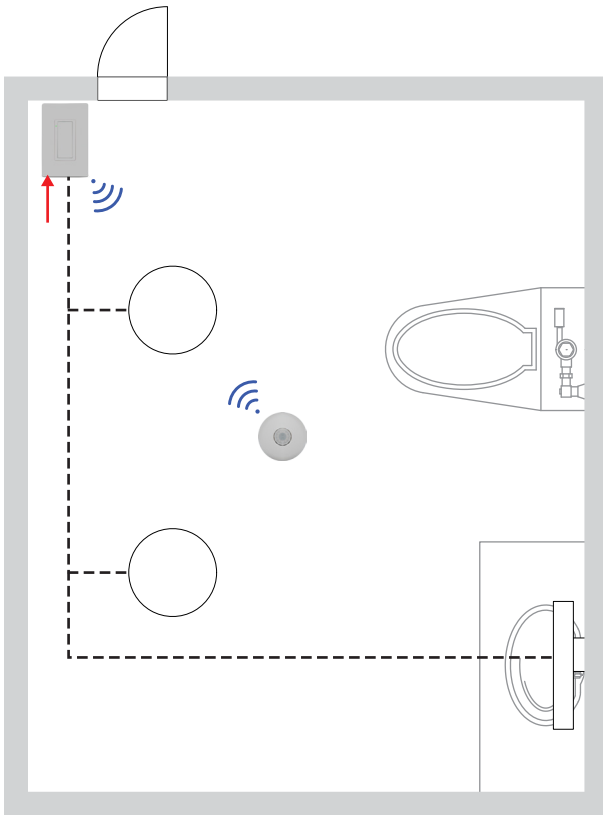
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- ▶ Bi-level Control (0-10V Dimming) (C405.2.3.1.4)

NOTE: UL924 emergency lighting devices are available for life safety.

Product	Product	Qty.	Description
	GLPP-1DIMFLV2CN-PM	1	2-Ch 0-10V Dimmer with Cresnet
	GLA-US-HALLWAY-COM1-24	1	40 kHz Ultrasonic Presence Detector, Ceiling Mount, Hallway Coverage, 18-24 VAC/VDC
	GLPPA-KP	2	In-Wall Keypad for GLPP



Private Bathroom

Zūm™ Wireless



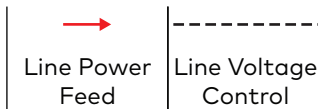
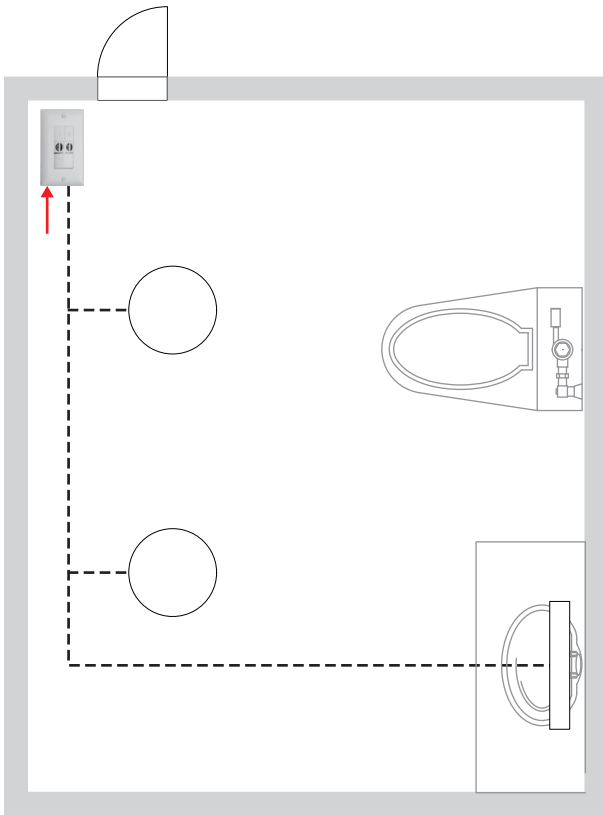
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- ▶ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)
- ▶ Automatic Full Off (C405.2.1.1.1)

Symbol	Product	Qty.	Description
	ZUMMESH-PIR-OCCUPANCY-BATT	1	PIR Occupancy Sensor (AUTO-ON, AUTO-OFF)
	ZUMMESH-5A-SW	1	Wall-Box Switch, 5A

Private Bathroom

Steinel



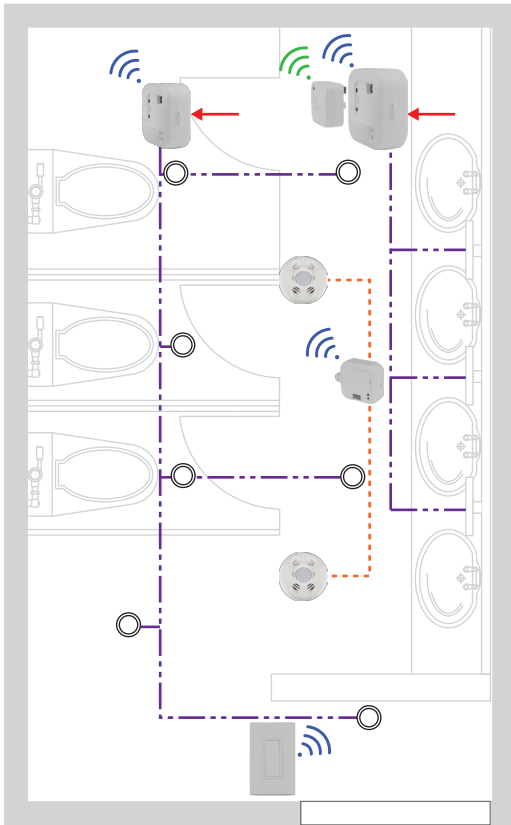
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- ▶ Automatic Full Off (C405.2.1.1.1)

Symbol	Product	Qty.	Description
	GLA-DT-WLS-1	1	Dualtech PIR & 40 kHz Ultrasonic Wall Switch Occupancy Sensor, 1 Button, 180* Coverage, 120/230/277 VAC, 50/60 Hz

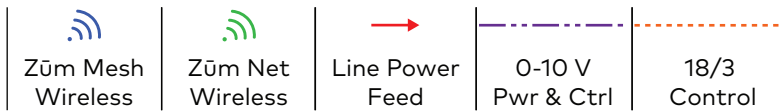
Public Restroom






Zūm™ Wireless



IECC 2015 Code Compliance:

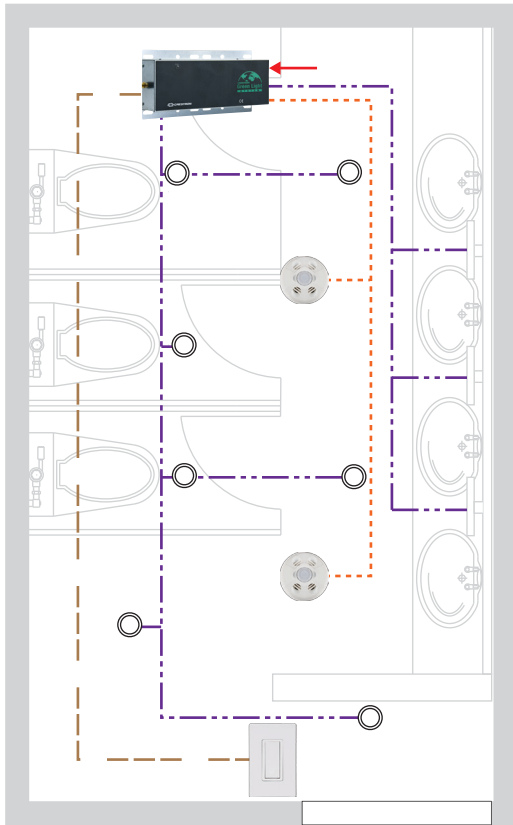
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- ▶ Automatic Full Off (C405.2.1.1.1)



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

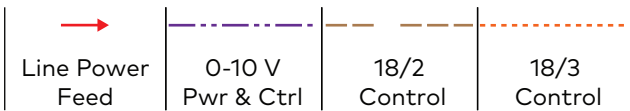
Public Restroom




GLPP



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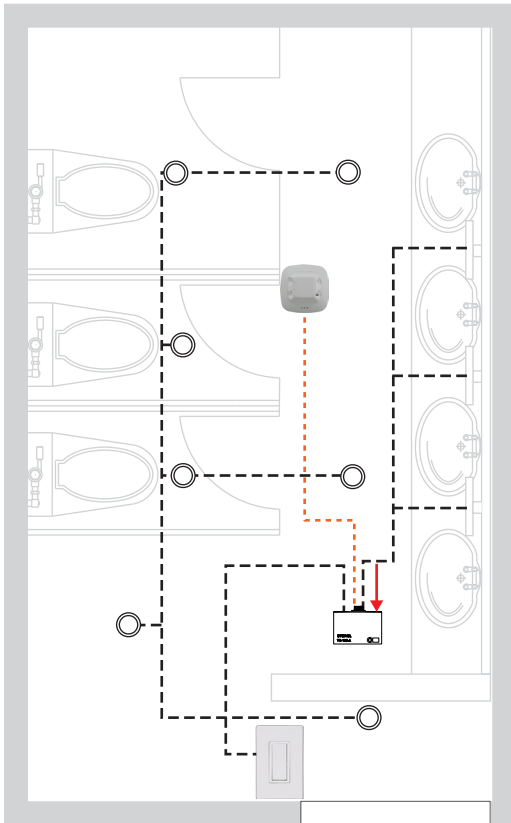
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- ▶ Automatic Full Off (C405.2.1.1.1)



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

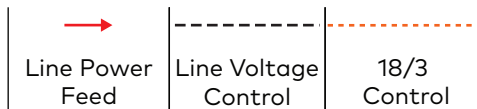
Public Restroom




Steinel



IECC 2015 Code Compliance:

- ▶ Manual Controls (C405.2.1.1.3)
- ▶ Automatic Full On (Occupancy Sensing Mode) (C405.2.1.1.2)
- ▶ Automatic Full Off (C405.2.1.1.1)



Symbol	Product	Qty.	Description
	GLA-DT-QUATTRO-COM1-24	1	Dual Technology Presence Detector, Ceiling Mount, Square & Scalable 360° Coverage, 18-24 VAC/VDC
	GLA-TR-100	1	Power Pack 120/230/277 VAC, 50/60Hz, 24 VDC, 250mA, 20 Amp. Relay, Manual/auto (on) switching
	Single-Pole Switch	1	Single-Pole Switch

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