



# Restaurants IECC 2015 Solutions

Design Guide  
Crestron Electronics, Inc.

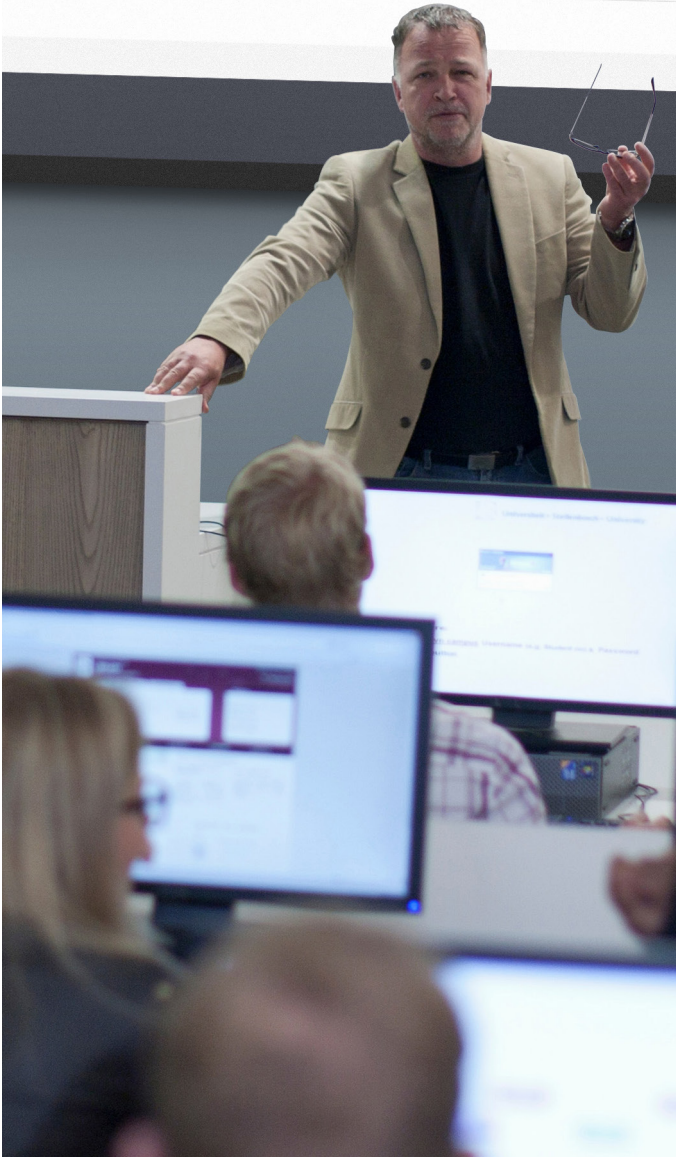
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# TOTAL ENERGY CONSUMPTION

Per capita usage; 10<sup>9</sup> BTU per person

	OIL	COAL	SOLAR
Temperate climates	2.50b	3.1b	0.25
Subtropical climates	1.23b	0.55b	1.18
Hot arid climates	0.09b	0.19b	3.73
Hot humid climates	1.15b	1.30b	2.21
	0.20b	0.82b	1.32
	<b>Total: 5.17</b>	<b>Total: 5.96</b>	<b>Total:</b>



## 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 Restaurants - 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](mailto:CLCDesign@crestron.com) or (888) 330-1502.

# IECC 2015 Code Standards

## Summary

### IECC 2015 Code Requirements

	Code Provision	Minimum Control Requirement	Code Description
ON/OFF CONTROLS	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).
LIGHT LEVEL CONTROL	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.

#### Primary Solutions

Zūm™ Wireless Light Control

GLPP

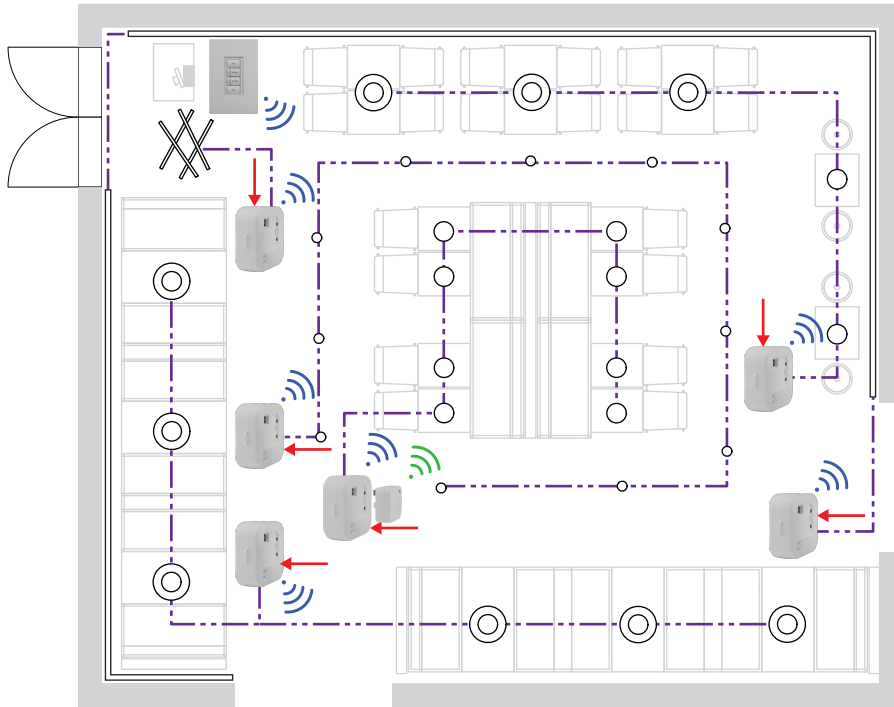
GLPAC

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

Space Type			
Dining Room	Kitchen	Small Storage / Back of House <300 sq. ft.	Restroom
✓	✓	✓	
			✓
✓	✓	✓	✓
✓	✓	✓	✓
or	or		
✓	✓		
✓	✓	✓	✓
✓	✓	✓	✓
		✓	✓
✓			

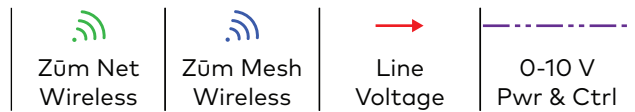
# Dining Room

## Zūm



### 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)



- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.

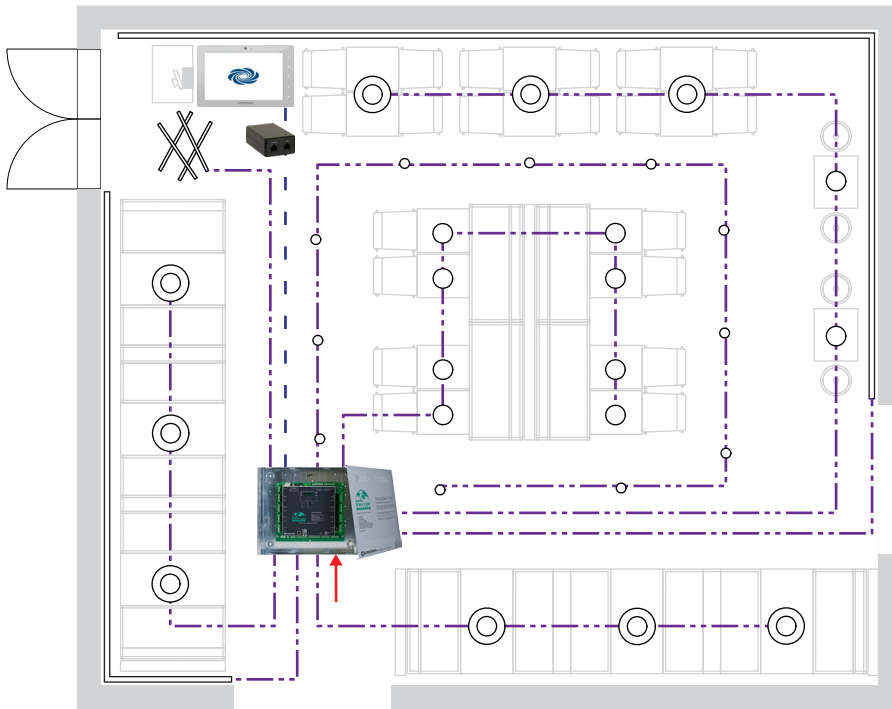
### Control:



Symbol	Qty.	Product	Description
	6	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	1	ZUMMESH-KP10CBATT	6-Button Battery-Powered Keypad

# Dining Room

## GLPAC






- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.

## 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)
- ▶ Time-switch Controls (Programmable Timeclock) (C405.2.2)

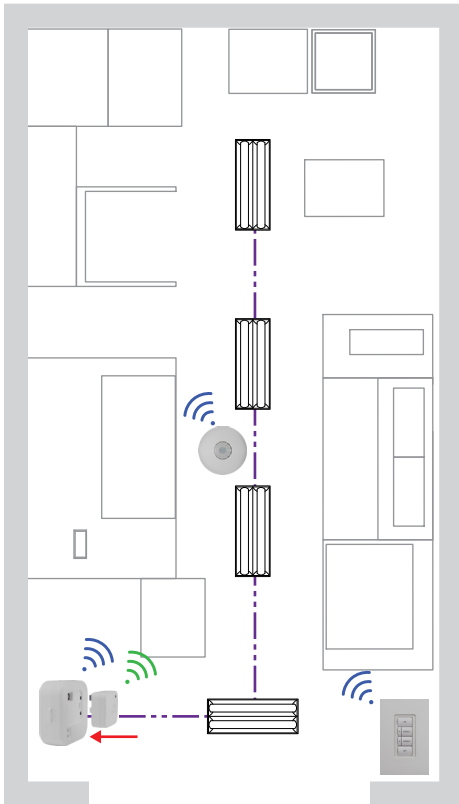
## Control:



Symbol	Qty.	Product	Description
	1	GLPAC-DIMFLV4	Green Light Integrated Lighting System, 4-Channel
	1	TSW-760	7" Touch Screen
	1	PWE-48-3RU	PoE Injector

# Kitchen

## Zūm







- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.
- ▶ Add a ZUM-FLOOR-HUB and ZUMNET-GATEWAY for time-switch controls (C405.2.2).

### 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)

### Control:

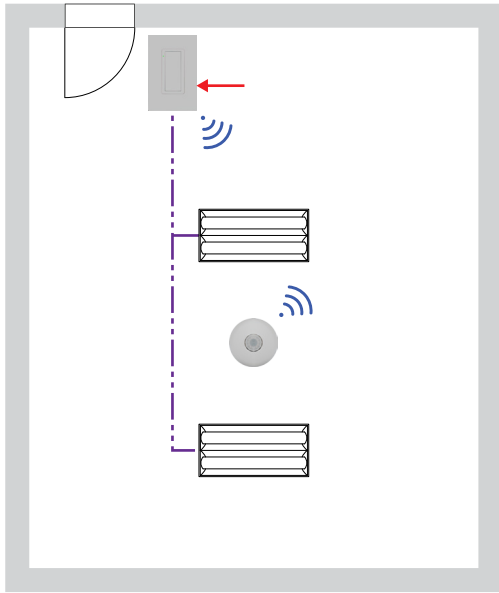


Symbol	Qty.	Product	Description
	1	ZUMMESH-JBOX-5A-LV	Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	1	ZUMMESH-KP10CBATT	6-Button Battery-Powered Keypad
	1	ZUMMESH-PIR-VACANCY-BATT	PIR Vacancy Sensor (AUTO-OFF)



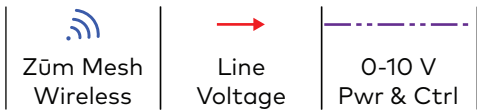
# Small Back of House / Storage

## Zūm



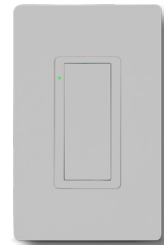
### IECC 2015 Code Compliance:



- ▶ 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)



- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.

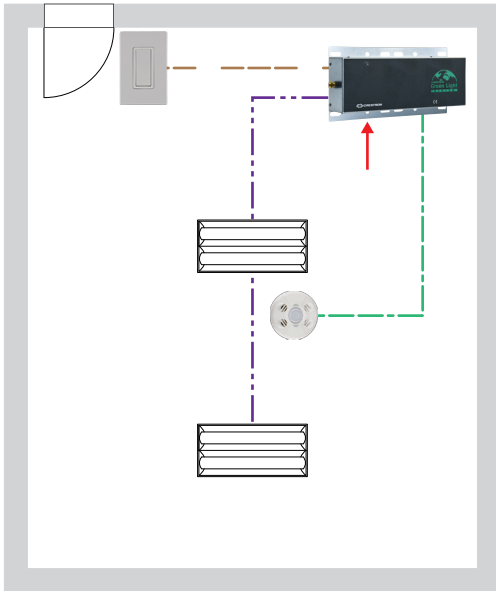
### Control:



Symbol	Qty.	Product	Description
	1	ZUMMESH-5A-LV	Zūm™ Wall-Box Dimmer, 5A
	1	ZUMMESH-PIR-VACANCY-BATT	PIR Vacancy Sensor (AUTO-OFF)

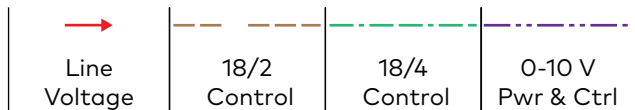
# Small Back of House / Storage

## GLPP



### 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)



- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.

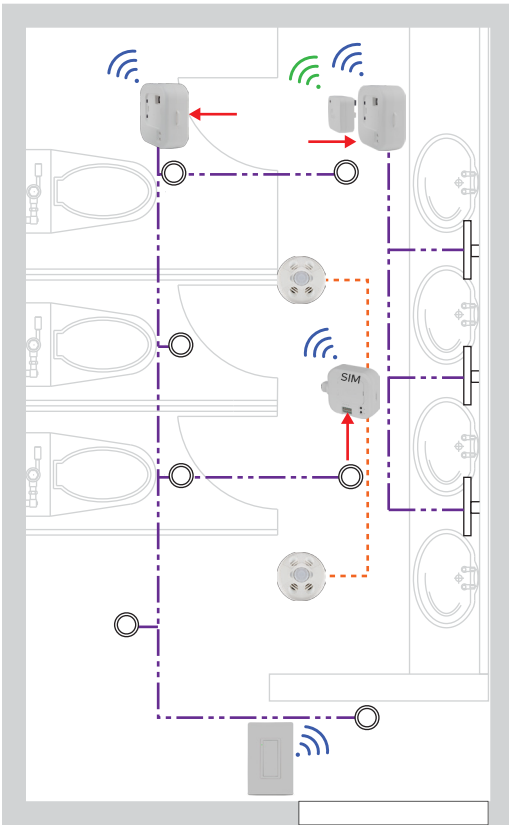
### Control:



Symbol	Qty.	Product	Description
	1	GLPP-DIMFLVCN-PM	1-Ch 0-10V Dimmer with Cresnet®
	1	GLPPA-KP	In-Wall Keypad for GLPP
	1	GLS-ODT-C-NS	Dual-Technology Ceiling Mount Occupancy Sensor, 2000 sq. ft.

# Public Restroom

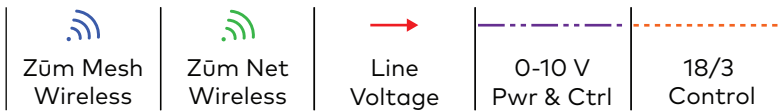
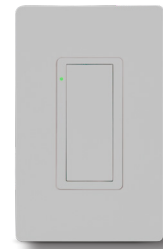
## Zūm



### 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)

### Control:

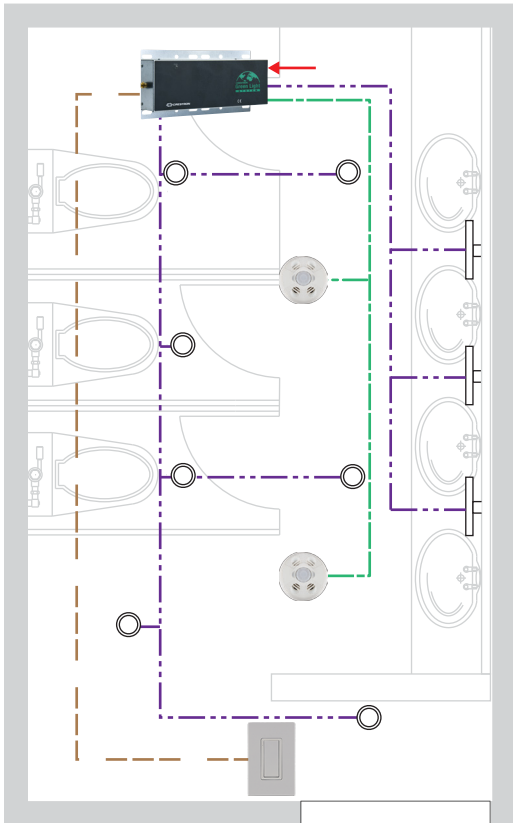


- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.

Symbol	Qty.	Product	Description
	2	ZUMMESH-JBOX-5A-LV	Zūm™ Junction Box Zone Controller, 0-10V Dimming, 5A
	1	ZUMMESH-NETBRIDGE	Zūm™ Network Bridge
	1	ZUMMESH-JBOX-SIM	Zūm™ Junction Box Sensor Integration Module
	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)

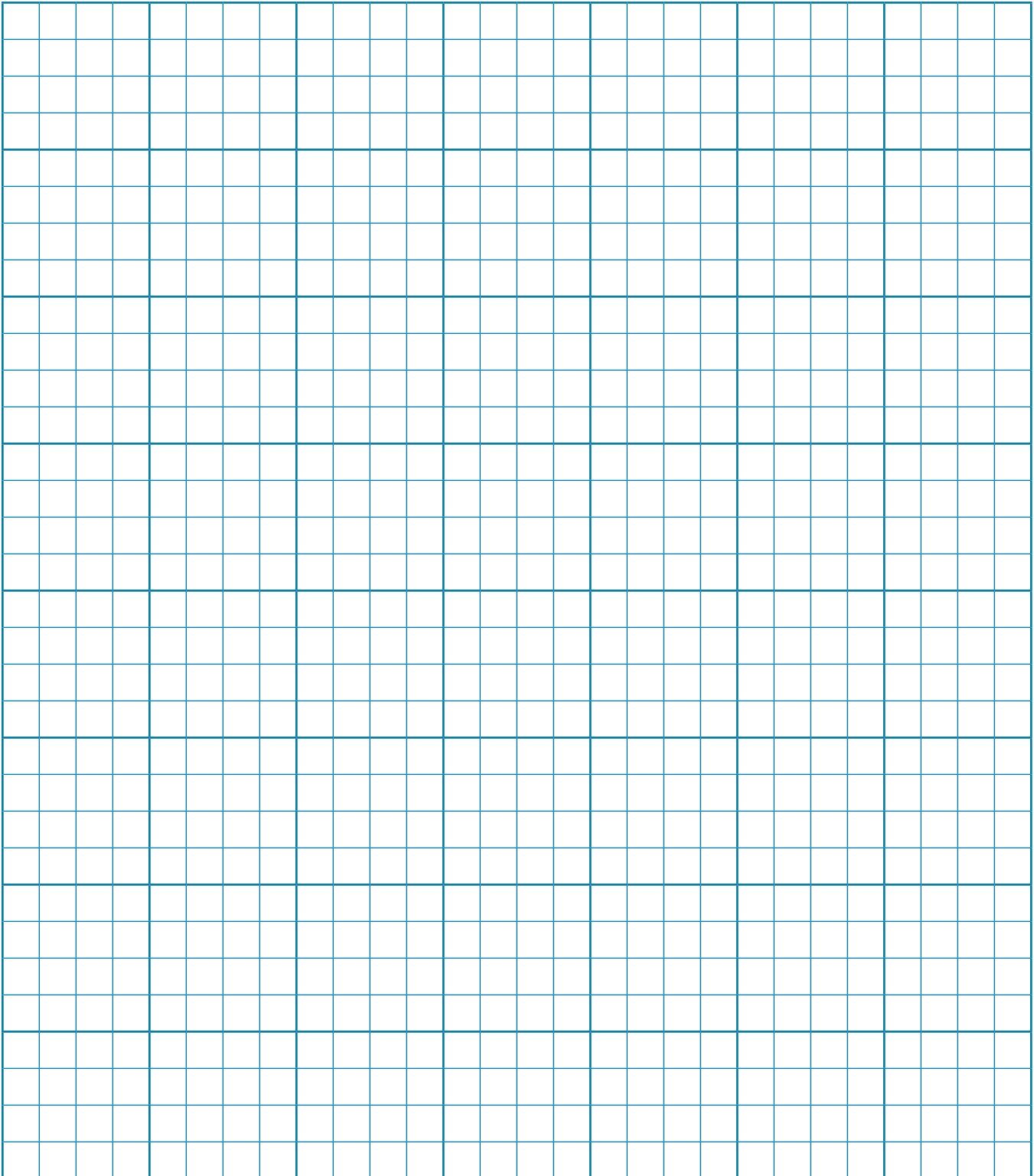
## Control:



- ▶ Daylight-responsive continuous dimming (photocontrol) (C405.2.3) may be required if windows are present.

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





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