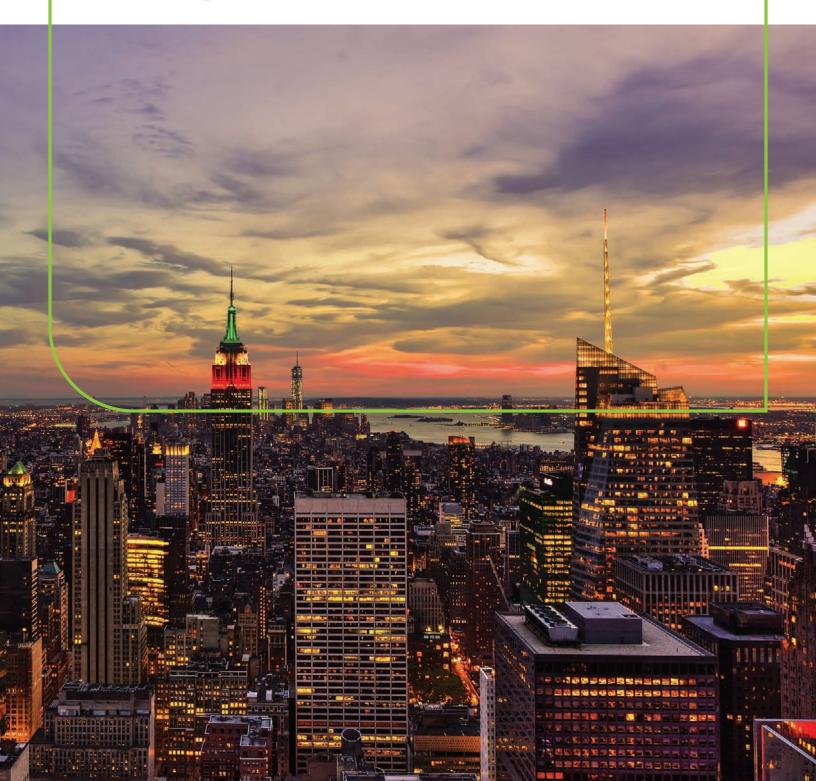


GreenMAX® DRC Design Guide



Designing a GreenMAX DRC System

How to Put It All Together

Simple Application Rules

- One Room Controller per room
- 50 network devices per Wired Room Controller; 60 network devices per Wireless Room Controller
- Network rooms together via Wi-Fi



Identify your Room Requirements

- Sequence of Operation
- Wired or Wireless System
- Sensor Requirements
- User Interface Requirement
- Load Schedule



Select the appropriate ROOM CONTROLLER

- For wired applications:
 - If have switches, receptacles, zones or any 0-10V control zones, use the Wired Line Voltage Room Controller
 - If all of your loads are Phase Cut, DALI, or DMX, use the Wired Low Voltage Room Controller DRC00-0L0) and a network power supply (DRC00-0D0)
- For wireless applications:
 - Use the Wireless Keypad Room Controller (DRKDN-Uxx)



Select your LOAD CONTROL DEVICE(S) as needed

 Each load type—0-10V, switching, forward chase control, reverse phase control, DMX, DALI, and your preference of wired vs. wireless, will guide you in your selection — see tables on pages 4-5



Add SENSORS as needed

- For spaces <500sqft where occupancy/vacancy sensing and daylight harvesting is required, add a Digital Sensor (OSR05-ICW)
- To use any Leviton Low Voltage Sensor, add the Analog Interface and the desired sensor (Leviton.com/sensors)
 - Ideal for larger spaces or those that require multi-tech sensors
 - Analog Interface (DRIDO-CO2) required; accommodates two separate sensor zones



Select your **USER INTERFACE(S)**

- Use one or more of the following:
- 1, 2, 4 or 8-Button Keypads with custom engraving available (DRKDN-CxW)
- Sapphire Touch Screen with customizable buttons and sliders (TS007-000)
- GreenMAX DRC App



For a NETWORKED SYSTEM, connect rooms with Wi-Fi access points (commonly provided by others, but can be provided by Leviton)

LOW VOLTAGE CURRENT DRAW	
Low Voltage Room Controller (DRC00-0L0)	435-210mA
Digital Switch (DRKDN)	50-25mA
Digital Sensor (OSR05-ICW)	70-35mA
2-Port AI (DRID0)	35mA + connected device consumption
LumaCAN to DALI Gateway (DRCDD)	60mA
Phase Control Dimmer (DRDDP-A40)	200mA

POWER SUPPLIES	
GreenMAX DRC Power Supply (DRC00-0D0)	500mA
LumaCAN Power Supply (PST24-R41) • Full capacity available on terminals • Commonly used with 6-Port Repeater (NPRPT-6)	3 * 1500mA on RJ45 4100mA Max
DIN Rail Power Supply (PST24-I10)	1000mA





Designing a GreenMAX DRC System

Wired

Room Controllers

- The "brain" of the GreenMAX DRC Room Control system
- Manages all the energy management functions in the space







GreenMAX DRC App

Line Voltage Room Controllers

Low Voltage Room Controller

Download at the Apple App Store or Google Play

DRC07-ED0 / DRC07-E30

DRC00-0L0

Load Controls

- Integrate lighting fixtures into the GreenMAX DRC Room Control system
- Incorporates various lighting loads seamlessly into the same GreenMAX DRC Room Control System









Smart Pack

Phase Control Dimmers

DALI Gateway

LumaCAN Gateway

DRD07-ED0 / DRD07-E30

DRDDP-A20/DRDDP-A40

DRCDD-0L0

NP00G-000

Sensors

- Gather information from the space and send consistent feedback to the GreenMAX DRC Room Controller
- Allow for daylighting, occupancy/vacancy sensing, etc.







Digital Sensor

Analog Sensors

Analog Interface (AI)
(for use with Analog Sensors)

OSR05-ICW

Visit Leviton.com/sensors

DRID0-A40

User Interfaces

- Allow users to access system features either manually from within the room or remotely
- Recall scenes, zones, dimming/switching levels, and other previously configured information





Digital Keypads

Sapphire™ Touch Screen

DRKDN-Cxx

TS007-000



Wireless

Keypad Room Controllers

- The "brain" of a GreenMAX DRC Wireless Room Control System when used with Wireless devices
- Manages all the energy management functions in the space with no extra wires





GreenMAX DRC App

Download at the Apple App Store or Google Play

Wireless Keypad Room Controllers

DRKDN-Uxx

Load Control Devices

Expand GreenMAX DRC capabilities with wireless devices. Add wireless control to any ON/OFF, 0-10V dimming or phase cut dimming device.









20A ON/OFF **Switching Power Pack**

10A 0-10V **Dimming Power Pack**

800W **Phase Cut Dimming Power Pack**

10A ON/OFF Decora® Wall Switch

0-10V Decora® Wall Dimmer, 120-277V 10A 0-10V Decora® Wall Dimmer, 347V

24V 0-10V Decora® Wall Dimmer

1000W Dimmer

Marked Controlled

ZSTLR-1HW

LU20S-DNW LU107-DNW

LU04P-1NW

ZS10S-D0Z

ZS057-D0Z

ZS057-30Z

ZS057-ALZ

DL1KD-1BZ

Receptacle

Intellect-Enabled Fixtures by Leviton Lighting Brands and Other Manufacturers*

Virtually any fixture can be Intellect-enabled with wireless occupancy/vacancy sensing and dimming control















VISCOR

ConTech Lighting

Brichwood Lighting

Intense Lighting

ALRM/ ALRA/ALRB

LRTG

LRTH

LCOMN SO

R4NCIE

R4SONCIE

R6NCIE

JAKE-LED

SS4G4DR

* Contact factory for additional information.

Sensors

- Gather information from the space and send consistent feedback to the GreenMAX DRC Keypad Room Controller
- Allow for daylighting, occupancy/vacancy sensing, etc.

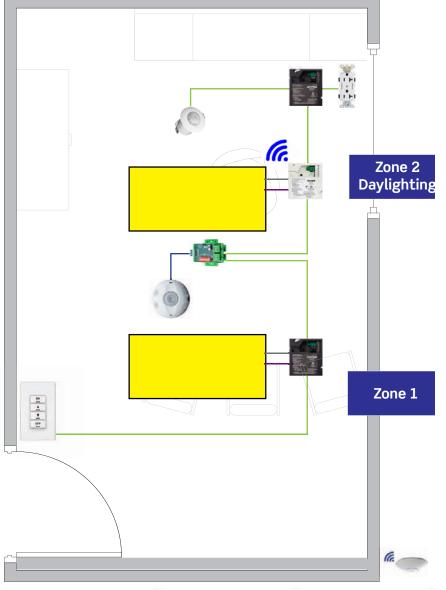




Wireless PIR Occupancy Sensors ZSC04-INW/ ZSC15-INW

Wireless Photocell LURPC-01W

GreenMAX DRC Wired for 2-Zone Plus Daylighting, Typical



Application Notes

- Room contains two separate zones of lighting, all configured through the GreenMAX DRC App.
- Room has outward-facing windows.
- Individual zones respond to ambient light within the space.
- Occupant can access scenes and dimming/switching controls via their smart device, or by utilizing the manual Keypad control.
- Emergency lighting capable.

Sequence of Operation

- All zone 1 and zone 2 lighting auto-on to 50% and controlled receptacles on when occupancy is detected.
- Local control and bi-level control of general lighting from keypad.
- Daylight zone 1 to dim based on photocell input when there is 150W or greater of lighting in the zone and sufficient daylight is available.
- All lighting and controlled receptacles to turn off automatically when the space is unoccupied after 20 minutes.
- Any designated egress lighting to be on upon loss of building power.









Alternative Solutions

Single Zone

Smart Wallbox Sensors

- Combines occupancy/vacancy sensing with 0-10V dimming or switching
- Integrated photocell for daylighting hold-OFF
- Configure additional capabilities with the Smart Sensor App

Primary and Secondary Daylight Zones

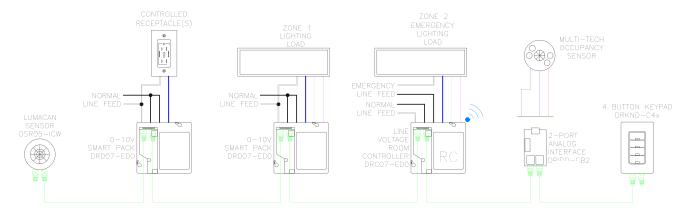


Provolt Room Controller (PRC)

• Integrates occupancy sensing, 0-10V dimming, daylighting



GreenMAX DRC Wired for 2-Zone Plus Daylighting, Typical



Room Highlights

- 2 Zones
- Occupancy/Vacancy Sensing
- Scene Control
- Daylighting
- Plug Load Control
- Emergency Lighting

What	You	Will	Need

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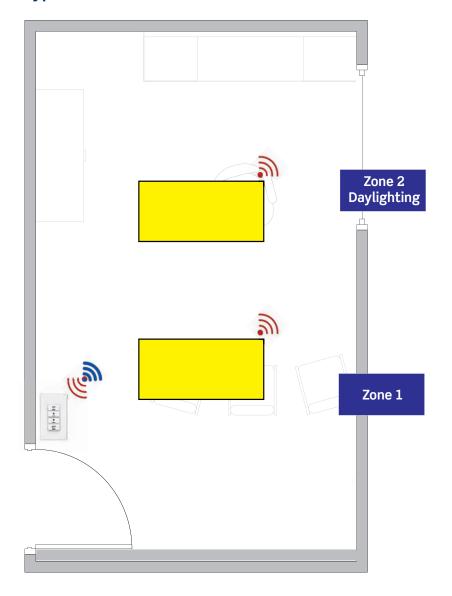
E.Z.	GreenMAX DRC Line Voltage Room Controller DRC07-ED0	1
	GreenMAX DRC 0-10V Smart Pack DRD07-ED0	2
•	GreenMAX DRC Digital Sensor OSR05-ICW	1
	GreenMAX DRC Analog Interface (AI) DRIDO-CO2	1
	Analog Occupancy Sensor OSCxx-MWW	1
* * * * * * * * * * * * * * * * * * *	GreenMAX DRC 4-Button Digital Keypad DRKDN-U4W	1
¥	Marked Controlled Receptacle 16352-2PW	1

Code Requirements*

2018 IECC		
• Section C405.2.1	Occupancy Sensors	
• Section C405.2.2.1	Automatic Time Switch Control	
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls	
• Section C405.2.3	Daylight Responsive Controls	
• Section C405.2.3.1	Daylight Zone Control	
Section C408.3	Functional Testing	
ASHRAE 90.1 2019		
• Section 8.4.2	Receptacle/Plug Load Control	
• Section 9.4.1	Lighting Control	
• Section 9.4.1.1	Interior Lighting Control	
• Section 9.4.3	Functional Testing	
2019 Title 24, Part 6		
• Section 130.1(a)	 Area Controls Manual ON/OFF	
• Section 130.1(b)	Multi-Level Controls Dimming	
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF	
• Section 130.1(d)	Daylighting	
• Section 130.1(f)	Control Interactions	
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)	
• Section 110.129(c)	Demand Management Controls	

* Note that code updates are highlighted.

GreenMAX DRC Wireless with Intellect-enabled Fixtures for 2-Zone Plus Daylight Harvesting, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Room contains two separate zones of lighting, all configured through the GreenMAX DRC App.
- · Room has outward-facing windows
- Individual zones respond to ambient light within the space.
- Occupant can access scenes and dimming/switching controls via their smart device, or by utilizing the manual Keypad control.
- Emergency lighting capable.

Sequence of Operation

- Wi-Fi interface for configuration, control and status monitoring
- All zone 1 and zone 2 lighting auto-on to 50% and controlled receptacles on when occupancy is detected.
- Local control and bi-level control of general lighting from keypad.
- Daylight zone 1 to dim based on photocell input when there is 150W or greater of lighting in the zone and sufficient daylight is available.
- All lighting to turn off automatically when the space is unoccupied after 20 minutes
- Any designated egress lighting to be on upon loss of building power.

Alternative Solutions

Single Zone

Smart Wallbox Sensors

- Combines occupancy/vacancy sensing with 0-10V dimming or switching
- Integrated photocell for daylighting hold-OFF
- Configure additional capabilities with the Smart Sensor App

Primary and Secondary Daylight Zones



Provolt Room Controller (PRC)

- Integrates occupancy sensing, 0-10V dimming, daylighting, partial-ON, partial-OFF and demand response
- Configure using the Provolt App



GreenMAX DRC Wireless with Intellect-enabled Fixtures for 2-Zone Plus Daylight Harvesting, **Typical**

ZONE 2 **ZONE 1 EMERGENCY** LIGHITNG LIGHITNG LOAD LOAD **4-BUTTON WIRELESS KEYPAD** ROOM CONTROLLER DRKDN-U4W

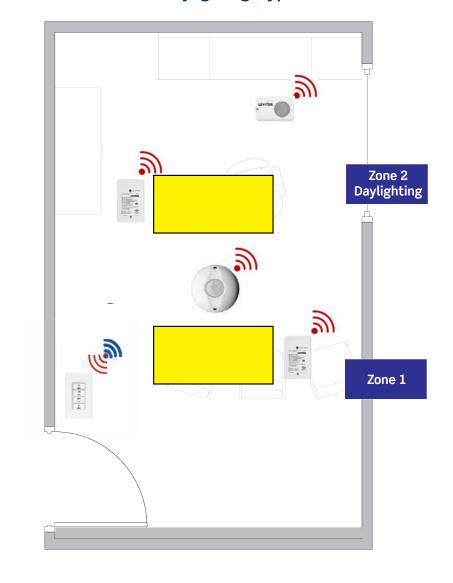
Room Highlights

- Wi-Fi Networking
- 2 Zones
- Occupancy/Vacancy Sensing
- Scene Control
- Daylighting
- Plug Load Control
- Emergency Lighting

What You Will Need		Quantity
÷ :	GreenMAX DRC 4-Button Wireless Keypad Room Controller DRKDN-U4W	1
III	Intellect-enabled Fixture LRTH2x2-LED835UNV-LV01	2

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	Area ControlsManual ON/OFF
• Section 130.1(b)	Multi-Level ControlsDimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wireless with 0-10V Dimming and Occupancy/Vacancy Sensing Control for 2-Zone Plus Daylighting, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Room contains two separate zones of lighting, all configured through the GreenMAX DRC App.
- Room has outward-facing windows
- Individual zones respond to ambient light within the space.
- Occupant can access scenes and dimming/switching controls via their smart device, or by utilizing the manual Keypad control.

Sequence of Operation

- Wi-Fi interface for configuration, control and status monitoring
- All zone 1 and zone 2 lighting auto-on to 50%.
- Local control and bi-level control of general lighting from keypad.
- Daylight zone 1 to dim based on photocell input when there is 150W or greater of lighting in the zone and sufficient daylight is available.
- All lighting to turn off automatically when the space is unoccupied after 20 minutes.

Alternative Solutions

Single Zone

Smart Wallbox Sensors

- Combines occupancy/vacancy sensing with 0-10V dimming or switching
- Integrated photocell for daylighting hold-OFF
- Configure additional capabilities with the Smart Sensor App

Primary and Secondary Daylight Zones



Provolt Room Controller (PRC)

- Integrates occupancy sensing, 0-10V dimming, daylighting, partial-ON, partial-OFF and demand response
- Configure using the Provolt App



GreenMAX DRC Wireless with 0-10V Dimming and Occupancy/Vacancy Sensing Control for 2-Zone Plus Daylighting, Typical



4-BUTTON WIRELESS KEYPAD ROOM CONTROLLER DRKDN-U4W







Room Highlights

- Wi-Fi Networking
- 2 Zones
- Occupancy/Vacancy Sensing
- Scene Control
- 0-10V Dimming

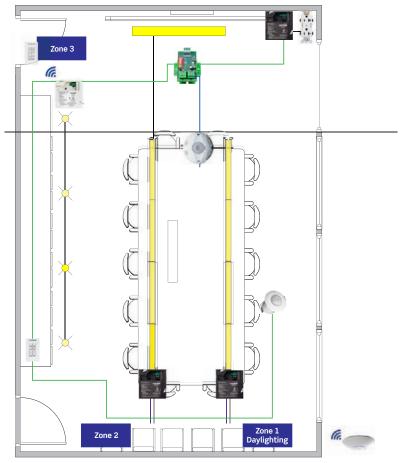
What	You W	ill Need
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*	GreenMAX DRC 4-Button Wireless Keypad Room Controller DRKDN-U4W	1
	Wireless 10A, 0-10V Dimming Power Pack LU107-DNW	2
	Wireless PIR Occupancy Sensor ZSC04-INW	1
- Married	Wireless Photocell LURPC-01W	1

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	 Area Controls Manual ON/OFF
• Section 130.1(b)	Multi-Level Controls Dimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 110.129(c)	 Demand Management Controls

GreenMAX DRC Wired for 3-Zone Plus Daylighting, Typical



For a networked system, connect spaces via Wi-Fi with the App.



Application Notes

- Space contains three separate zones of lighting, all configured through the GreenMAX DRC App.
- Zones can be rearranged, combined, or deleted with any changes to the usage or setup of the area.
- Multi-tech sensors continually monitor the area and switch all lighting, regardless of zone, off when the area is vacant, and are sensitive enough to detect minor movements, such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

- All zones 1, 2, and 3 manual on with keypads, and controlled receptacles auto-on when occupancy is detected.
- Local control, bi-level control, and any required scene control of general lighting from keypads.
- Daylight zone 3 to dim based on photocell input when there is 150W or greater of lighting in the zone and sufficient daylight is available.
- All lighting and controlled receptacles to turn off automatically when the space is unoccupied after 20 minutes.
- Any designated egress lighting to be on upon loss of building power.

Alternative Solutions

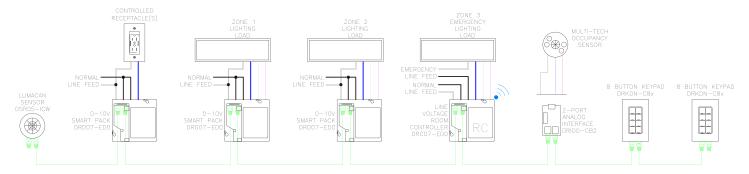


GreenMAX DRC Wireless Devices

- Add wireless control to any ON/OFF or 0-10V or phase cut dimming device
- Configure using the GreenMAX DRC App
- Add wireless occupancy/vacancy sensors and photocells with no additional wiring needed



GreenMAX DRC Wired for 3-Zone Plus Daylighting, Typical



Room Highlights

- 3 Zones
- Occupancy/Vacancy SensingScene Control
- Daylighting

- Multi-Way Switching
- Plug Load Control
- Emergency Lighting

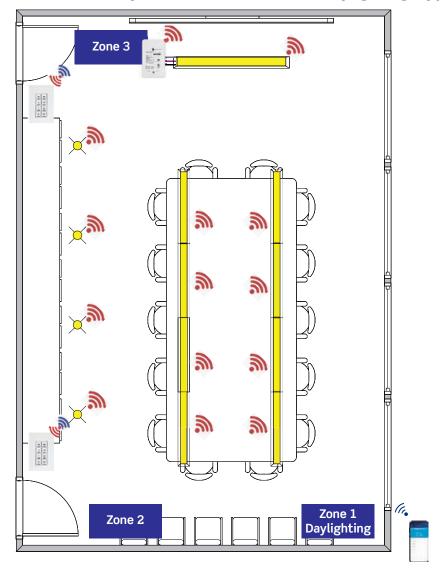
What You Will Need

	an	

	GreenMAX DRC Line Voltage Room Controller DRC07-ED0	1
	GreenMAX DRC 0-10V Smart Pack DRD07-ED0	3
•	GreenMAX DRC Digital Sensor OSR05-ICW	1
	GreenMAX DRC Analog Interface (AI) DRID0-C02	1
	Analog Occupancy Sensor OSCxx-MWW	1
CLASHIOLDS	GreenMAX DRC 8-Button Digital Keypad DRKDN-C8W	2
1:1	Marked Controlled Receptacles 16352-2PW	1

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 8.4.2	Receptacle/Plug Load Control
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	 Area Controls Manual ON/OFF
• Section 130.1(b)	Multi-Level Controls Dimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wireless with Intellect-enabled Fixtures and Wireless Devices with Single Zone 0-10V and Relay Control for 3-Zone Plus Daylighting, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Space contains three separate zones of lighting, all configured through the GreenMAX DRC App.
- Zones can be rearranged, combined, or deleted with any changes to the usage or setup of the area.
- Multi-tech sensor continually monitors the area and switch all lighting, regardless of zone, off when the area is vacant, and are sensitive enough to detect minor movements, such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

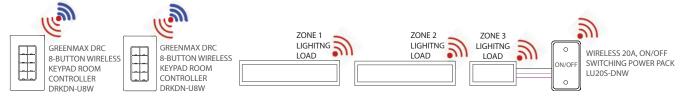
- Wi-Fi interface for configuration, control and stat on with keypads, and controlled receptacles auto-on when occupancy is detected.
- Local control, bi-level control, and any required scene control of general lighting from keypads.
- Daylight zone 3 to dim based on photocell input when there is 150W or greater of lighting in the zone and sufficient daylight is available.
- All lighting and controlled receptacles to turn off automatically when the space is unoccupied after 20 minutes.
- Any designated egress lighting to be on upon loss of building power.

Alternative Solution

Primary and Secondary Daylight Zone Provolt Room Controller (PRC) Integrates occupancy sensing, 0-10V dimming, daylighting, partial-ON, partial-OFF and demand response Configure using the Provolt App



GreenMAX DRC Wireless with Intellect-enabled Fixtures and Wireless Devices with Single Zone 0-10V and Relay Control for 3-Zone Plus Daylighting, Typical



Room Highlights

- Wi-Fi Networking
- 3 Zones
- Occupancy/Vacancy Sensing
- Scene Control

- Daylighting
- Multi-Way Switching
- Plug Load Control
- Emergency Lighting

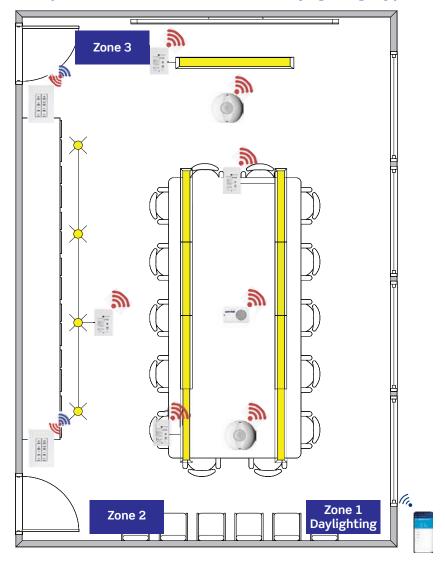
What You Will Need

Quantity

	GreenMAX DRC 8-Button Wireless Keypad Room Controller DRKDN-U8W	2
E .	Wireless 20A ON/OFF Switching Power Pack LU20S-DNW	1
11	Intellect-enabled Fixture ALRM-XX-LED	9
*	Intellect-enabled Fixture R4NCIE	4

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	 Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
Section 8.4.2	Receptacle/Plug Load Control
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	Area ControlsManual ON/OFF
• Section 130.1(b)	Multi-Level Controls Dimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wireless with 0-10V Dimming, Scene Control, Occupancy/Vacancy Sensing, Receptacle Control for 3 Zone Plus Daylighting, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Space contains three separate zones of lighting, all configured through the GreenMAX DRC App.
- Zones can be rearranged, combined, or deleted with any changes to the usage or setup of the area.
- Multi-tech sensor continually monitors the area and switch all lighting, regardless of zone, off when the area is vacant, and are sensitive enough to detect minor movements, such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

- Wi-Fi interface for configuration, control and stat on with keypads, and controlled receptacles auto-on when occupancy is detected.
- Local control, bi-level control, and any required scene control of general lighting from keypads.
- Daylight zone 3 to dim based on photocell input when there is 150W or greater of lighting in the zone and sufficient daylight is available.
- All lighting and controlled receptacles to turn off automatically when the space is unoccupied after 20 minutes.
- Any designated egress lighting to be on upon loss of building power.

Alternative Solution

Primary and Secondary Daylight Zone Control



Provolt Room Controller (PRC)

- Integrates occupancy sensing, 0-10V dimming, daylighting, partial-ON, partial-OFF and demand response
- Configure using the Provolt App



GreenMAX DRC Wireless with 0-10V Dimming , Scene Control, Occupancy/Vacancy Sensing, Receptacle Control for 3 Zone Plus Daylighting, Typical















Room Highlights

- Wi-Fi Networking
- 3 Zones
- Occupancy/Vacancy Sensing
- Scene Control

- Daylighting
- Multi-Way Switching
- Plug Load Control
- Emergency Lighting

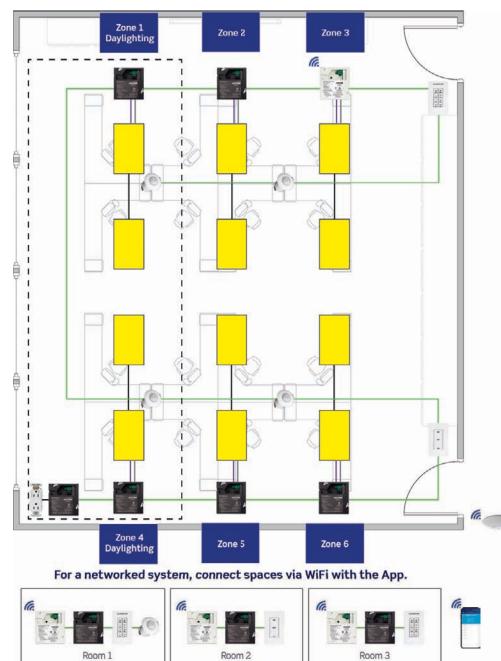
What You Will Need

Quantity

1.00 mg/m	GreenMAX DRC 8-Button Wireless Keypad Room Controller DRKDN-U8W	2
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Wireless 10A, 0-10V Dimming Power Pack LU107-DNW	3
	Wireless PIR Occupancy Sensor ZSC04-INW	2
LEVITOR .	Wireless Photocell LURPC-01W	1

2018 IECC	2018 IECC			
• Section C405.2.1	Occupancy Sensors			
• Section C405.2.2.1	Automatic Time Switch Control			
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls			
 Section C405.2.3 	Daylight Responsive Controls			
• Section C405.2.3.1	Daylight Zone Control			
• Section C408.3	Functional Testing			
ASHRAE 90.1 2019				
• Section 8.4.2	Receptacle/Plug Load Control			
• Section 9.4.1	Lighting Control			
• Section 9.4.1.1	Interior Lighting Control			
• Section 9.4.3	Functional Testing			
2019 Title 24, Part 6				
Section 130.1(a)	Area ControlsManual ON/OFF			
• Section 130.1(b)	Multi-Level Controls Dimming			
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF			
• Section 130.1(d)	Daylighting			
• Section 130.1(f)	Control Interactions			
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)			
• Section 110.129(c)	Demand Management Controls			

GreenMAX DRC Wired for 6-Zone Plus Daylighting, Typical



Application Notes

- Space contains six separate zones of lighting, all configured through the GreenMAX DRC App.
- Zones can be rearranged, combined, or deleted with any changes to the usage or setup of the area.
- Passive infrared sensors continually monitor the area and switch all lighting, regardless of zone, off when the area is vacant, and are sensitive enough to detect minor movements, such as typing, to prevent false-offs.
- Emergency lighting capable.

equence of Operation

- All lighting and controlled receptacles in zones 1, 2, 3, 4, 5, and 6 automatically turned on upon occupancy.
- Daylight zones 1 and 4 to be dimmed via photocell when sufficient daylight is available.
- Areas within the space to be divided into 600SF or smaller occupancy zones. For example: area 1 includes zones 1 and 2, area 2 includes zones 4 and 5.
- When any occupancy area is empty, lighting power in that are to be reduced by at least 80%, and daylight zones become inactive within 20 minutes of occupant leaving the space. Lighting in that area to return to 100% and daylight controls to be restored upon the area being reoccupied.
- All light to be turned off via occupancy sensor when zones 1-6 are unoccupied for 20 minutes.
- Local control and any required scene control of general lighting from keypads.
- Any designated egress lighting to be on upon loss of building power.

Alternative Solution

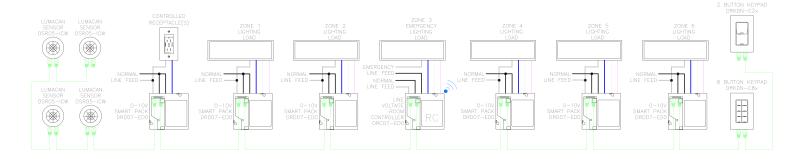


GreenMAX DRC with Intellect-enabled Fixtures

- Virtually any fixture can be Intellect-enabled with wireless occupancy/vacancy sensing and daylighting capabilities
- GreenMAX DRC Keypad Room Controllers add manual and scene control
- Configure using the GreenMAX DRC App



GreenMAX DRC Wired for 6-Zone Plus Daylighting, Typical



Room Highlights • 6 Zones

- 2 Occupancy Zones
- Occupancy/Vacancy Sensing
- Scene Control

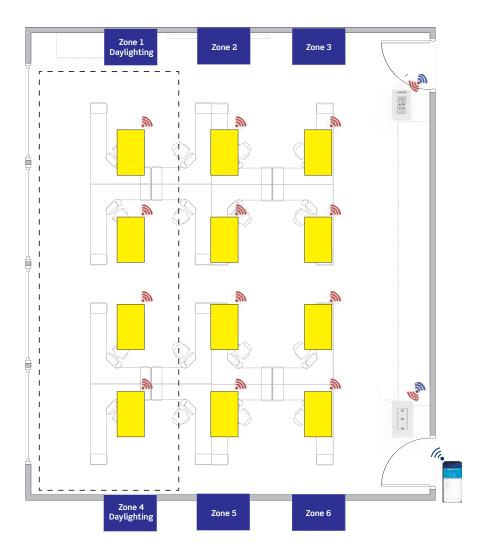
- Daylighting
- Multi-Way Switching
- Plug Load Control
- Emergency Lighting

What You Will Need Quantity

		quariery
下 不	GreenMAX DRC Line Voltage Room Controller DRC07-ED0	1
	GreenMAX DRC 0-10V Smart Pack DRD07-ED0	6
•	GreenMAX DRC Digital Sensor OSR05-ICW	4
CLERROOD	GreenMAX DRC 8-Button Digital Keypad DRKDN-C8W	1
or or	GreenMAX DRC 1-Button Digital Keypad DRKDN-C1W	1
1:1	Marked Controlled Receptacles 16352-2PW	1

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
 Section C405.2.3 	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 8.4.2	Receptacle/Plug Load Control
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	Area Controls Manual ON/OFF
• Section 130.1(b)	Multi-Level Controls Dimming
• Section 130.1(c)	Shut-Off Requirements Occupancy Control Partial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wireless with Intellect-enabled Fixtures for 6-Zone Plus Daylighting, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Space contains six separate zones of lighting, all configured through the GreenMAX DRC App. such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

- All lighting and controlled receptacles in zones 1, 2, 3, 4, 5, and 6 automatically turned on upon occupancy.
- Daylight zones 1 and 4 to be dimmed via photocell when sufficient daylight is available.
- Areas within the space to be divided into 600SF or smaller occupancy zones. For example: area 1 includes zones 1 and 2, area 2 includes zones 4 and 5.
- When any occupancy area is empty, lighting power in that are to be reduced by at least 80%, and daylight zones become inactive within 20 minutes of occupant leaving the space. Lighting in that area to return to 100% and daylight controls to be restored upon the area being reoccupied.
- All light to be turned off via occupancy sensor when zones 1-6 are unoccupied for 20 minutes.
- Local control and any required scene control of general lighting from keypads.

Alternative Solution

Individual Wireless Fixture Control

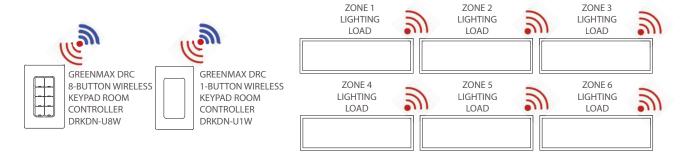


Wireless Devices

- Add wireless control to any ON/OFF or 0-10V or phase cut dimming device
- Configure using the GreenMAX DRC App
- Add wireless occupancy/vacancy sensors and photocells with no additional wiring needed



GreenMAX DRC Wireless with Intellect-enabled Fixtures for 6-Zone Plus Daylighting, Typical



Room Highlights

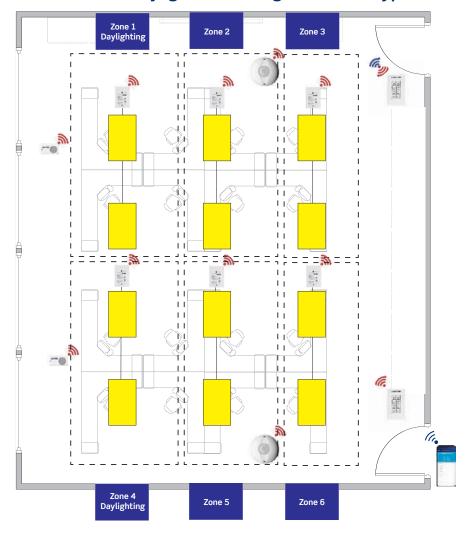
- Wi-Fi Networking
- 6 Zones
- 2 Occupancy Zones
- Occupancy/Vacancy Sensing
- Scene Control
- Daylighting
- Multi-Way Switching
- Emergency Lighting

What You Will Need Quantity

Customicos	GreenMAX DRC 8-Button Wireless Keypad Room Controller DRKDN-U8W	1
or or	GreenMAX DRC 1-Button Wireless Keypad Room Controller DRKDN-U1 W	1
	Intellect-enabled Fixture LRTH2x2-LED835UNV-LV01	12

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
Section 130.1(a)	Area ControlsManual ON/OFF
• Section 130.1(b)	Multi-Level Controls Dimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wireless for 0-10V Dimming, Scene Control, Occupancy/Vacancy Sensing, and Multi-Zone Daylight Harvesting For 6 Zone, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Space contains six separate zones of lighting, all configured through the GreenMAX DRC App. such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

- All lighting and controlled receptacles in zones 1, 2, 3, 4, 5, and 6 automatically turned on upon occupancy.
- Daylight zones 1 and 4 to be dimmed via photocell when sufficient daylight is available.
- Areas within the space to be divided into 600SF or smaller occupancy zones. For example: area 1 includes zones 1 and 2, area 2 includes zones 4 and 5.
- When any occupancy area is empty, lighting power in that are to be reduced by at least 80%, and daylight zones become inactive within 20 minutes of occupant leaving the space. Lighting in that area to return to 100% and daylight controls to be restored upon the area being reoccupied.
- All light to be turned off via occupancy sensor when zones 1-6 are unoccupied for 20 minutes.
- Local control and any required scene control of general lighting from keypads.

Alternative Solution

Primary and Secondary Daylight Zones



Provolt Room Controller (PRC)

- Integrates occupancy sensing, 0-10V dimming, daylighting, partial-ON, partial-OFF and demand response
- Configure using the Provolt App



GreenMAX DRC Wireless for 0-10V Dimming, Scene Control, Occupancy/Vacancy Sensing, and Multi-Zone Daylight Harvesting For 6 Zone, Typical



Room Highlights

- Wi-Fi Networking
- 6 Zones
- 2 Occupancy Zones
- Occupancy/Vacancy Sensing
- Scene Control
- Multi-Zone Daylight Harvesting
- Multi-Way Switching
- Emergency Lighting

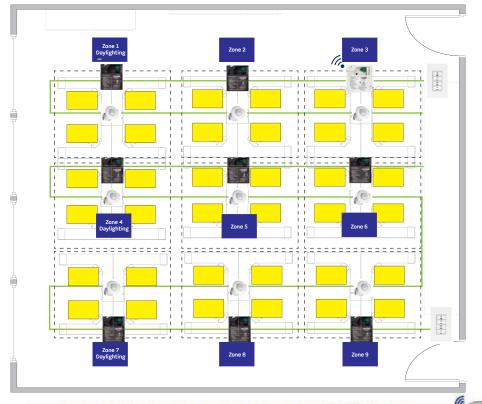
What You Will Need

Quantity

100	GreenMAX DRC 8-Button Wireless Keypad Room Controller DRKDN-U8W	1
	8-Button Wireless Remote Keypad ZLDNK-08W	1
in the state of th	Wireless 10A, 0-10V Dimming Power Pack LU107-DNW	6
	Wireless PIR Occupancy Sensor ZSC04-INW	2
armed .	Wireless Photocell LURPC-01W	2

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	 Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	Area ControlsManual ON/OFF
• Section 130.1(b)	Multi-Level ControlsDimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 130.5(d)	Receptacle/Plug Load Control (optional in classrooms)
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wired for 9-Zone Plus Daylighting, Typical



For a networked system, connect spaces via WiFi with the App.







Application Notes

- Room contains nine separate zones of lighting and three daylighting zones all configured through the GreenMAX DRC App.
- Zones can be rearranged, combined, or deleted with any changes to the usage or setup of the area.
- Passive infrared sensors continually monitor the area and switch all lighting, regardless of zone, off when the area is vacant, and are sensitive enough to detect minor movements, such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

- All lighting in zones 1-9 automatically turned on upon occupancy.
- Daylight zones 1, 4, and 7 to be dimmed via photocell when sufficient daylight is available.
- Areas within the space to be divided into 600SF or smaller occupancy zones.
- When any occupancy area is empty, lighting power in that are to be reduced by at least 80%, and daylight zones become inactive within 20 minutes of occupant leaving the space. Lighting in that area to return to 100% and daylight controls to be restored upon the area being reoccupied.
- All light to be turned off via occupancy sensor when zones 1-9 are unoccupied for 20 minutes.

Alternative Solution

Individual Wireless Fixture Control

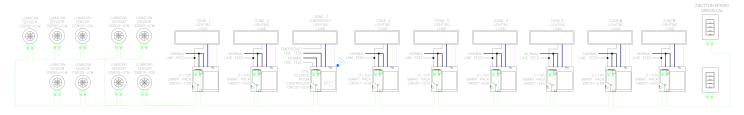


Wireless Devices

- Add wireless control to any ON/OFF or 0-10V or phase cut dimming device
- Configure using the GreenMAX DRC App
- Add wireless occupancy/vacancy sensors and photocells with no additional wiring needed



GreenMAX DRC Wired for 9-Zone Plus Daylighting, Typical



Room Highlights

- 9 Zones
- 9 Occupancy Zones
- Occupancy/Vacancy Sensing
- Scene Control

- DaylightingMulti-Way Switching
- Emergency Lighting

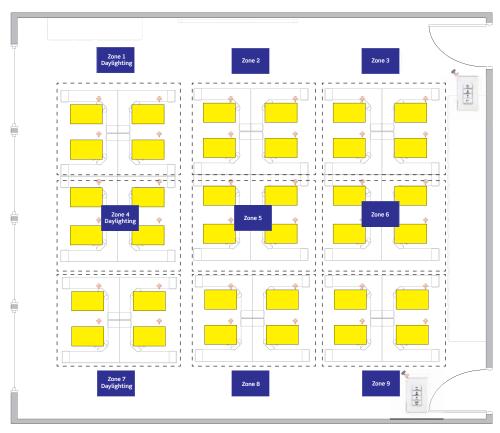
What You Will Need

Quantity

The state of the s	GreenMAX DRC Line Voltage Room Controller DRC07-ED 0	9
	GreenMAX DRC 0-10V Smart Pack DRD07-ED0	8
•	GreenMAX DRC Digital Sensor OSR05-ICW	9
÷ :	GreenMAX DRC 4-Button Digital Keypad DRKDN-C4W	2

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	Area ControlsManual ON/OFF
• Section 130.1(b)	Multi-Level ControlsDimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 110.129(c)	Demand Management Controls

GreenMAX DRC Wireless with Intellect-enabled Fixtures for 9-Zone Plus Daylighting, Typical



Application Notes

- Wireless interface for configuration, control and status monitoring.
- Room contains nine separate zones of lighting and three daylighting zones all configured through the GreenMAX DRC App.
- Zones can be rearranged, combined, or deleted with any changes to the usage or setup of the area.
- Passive infrared sensors continually monitor the area and switch all lighting, regardless of zone, off when the area is vacant, and are sensitive enough to detect minor movements, such as typing, to prevent false-offs.
- Emergency lighting capable.

Sequence of Operation

- Wi-Fi interface for configuration, control and status monitoring.
- All lighting in zones 1-9 automatically turned on upon occupancy.
- Daylight zones 1, 4, and 9 to be dimmed via photocell when sufficient daylight is available.
- When any occupancy area is empty, lighting power in that are to be reduced by at least 80%, and daylight zones become inactive within 20 minutes of occupant leaving the space.

Lighting in that area to return to 100% and daylight controls to be restored upon the area being reoccupied.

 All light to be turned off via occupancy sensor when zones 1-9 are unoccupied for 20 minutes.

Alternative Solution

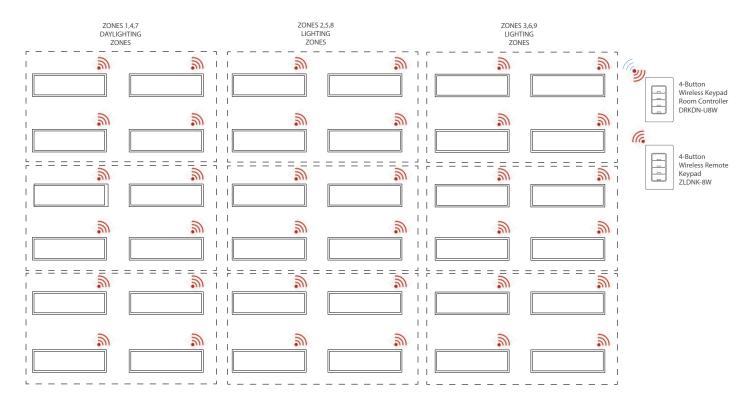
Individual Wireless Fixture Control

Wireless Devices

- Add wireless control to any ON/OFF or 0-10V or phase cut dimming device
- Configure using the GreenMAX DRC App
- Add wireless occupancy/vacancy sensors and photocells with no additional wiring needed



GreenMAX DRC Wireless with Intellect-enabled Fixtures for 9-Zone Plus Daylighting, Typical



Room Highlights

- Wi-Fi Networking
- 9 Zones
- 9 Occupancy Zones
- Occupancy/Vacancy Sensing
- Scene Control
- Daylighting
- Multi-Way Switching
- Emergency Lighting

What You Will Need Quantity

* : : : : : : : : : : : : : : : : : : :	GreenMAX DRC 4-Button Wireless Keypad Room Controller DRKDN-U4W	2
III	Intellect-enabled Fixture LRTH2x2-LED835UNV-LV01	48

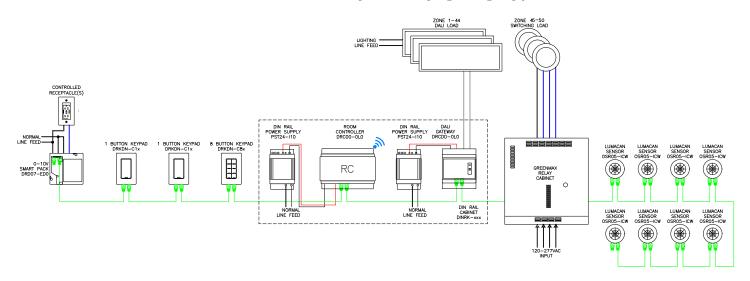
Code Requirements*

2018 IECC	
• Section C405.2.1	Occupancy Sensors
• Section C405.2.2.1	Automatic Time Switch Control
• Section C405.2.2.2	Interior Manual Lighting ControlsLight Reduction Controls
• Section C405.2.3	Daylight Responsive Controls
• Section C405.2.3.1	Daylight Zone Control
• Section C408.3	Functional Testing
ASHRAE 90.1 2019	
• Section 9.4.1	Lighting Control
• Section 9.4.1.1	Interior Lighting Control
• Section 9.4.3	Functional Testing
2019 Title 24, Part 6	
• Section 130.1(a)	 Area Controls Manual ON/OFF
• Section 130.1(b)	Multi-Level Controls Dimming
• Section 130.1(c)	Shut-Off RequirementsOccupancy ControlPartial-ON / Partial-OFF
• Section 130.1(d)	Daylighting
• Section 130.1(f)	Control Interactions
• Section 110.129(c)	Demand Management Controls

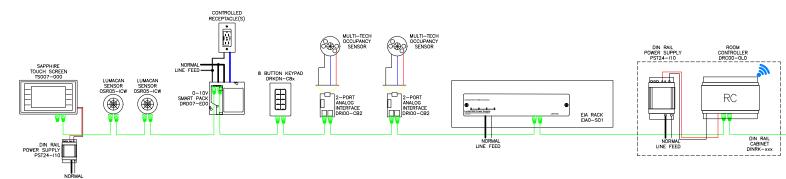
* Note that code updates are highlighted.

More Application Diagrams

GreenMAX DRC 70-Zone DALI and 8-Zone Relay Plus Daylighting, Typical

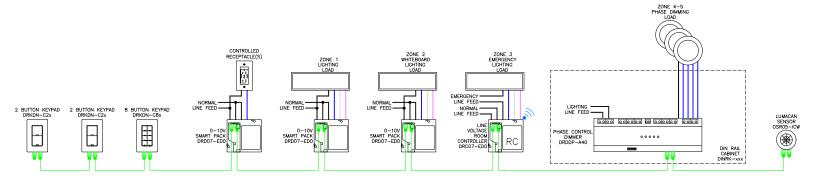


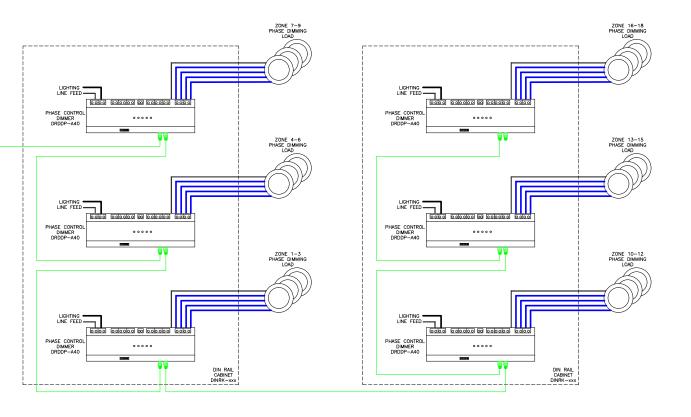
GreenMAX DRC 18-Zone Phase Control Dimming, Typical





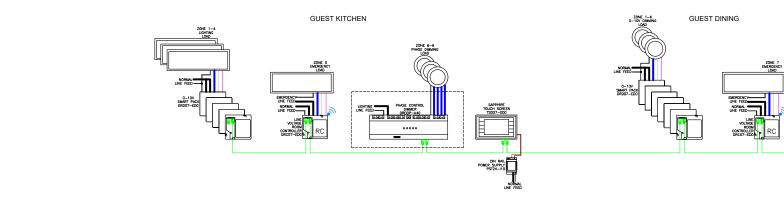
GreenMAX DRC 3-Zone 0-10V and 2-Zone Phase Control Dimming Plus Daylighting, Typical

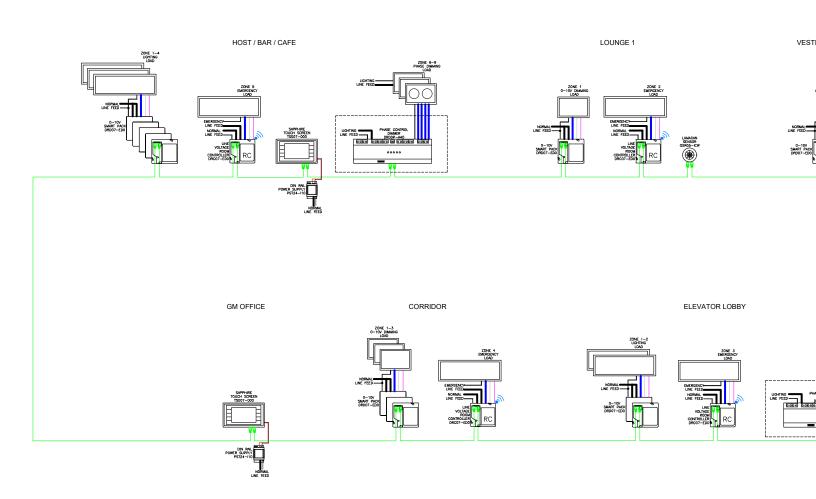




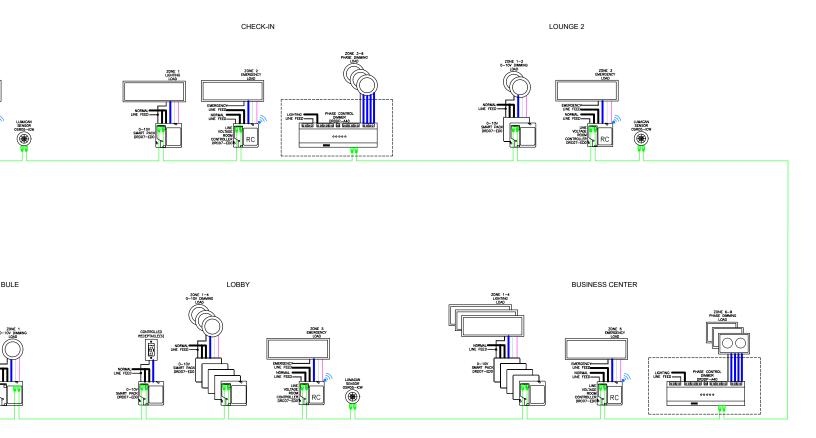
More Application Diagrams

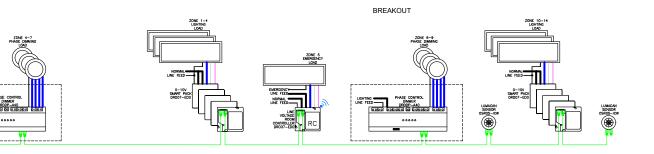
GreenMAX DRC Hospitality Public Areas, Typical











Standalone Solutions

Smart Wallbox Sensors

Smart Wallbox Sensors combine occupancy/vacancy sensing with 0-10V dimming or ON/OFF switching control to deliver a simple solution for easy energy savings, local control and code compliance. Enable and configure additional features with the Smart Sensor App.

Smart Wallbox Sensors offer easy programming and configuration. This includes an out-of-the-box default mode for auto-ON/auto-OFF operation with a 10-minute timeout as well as convenient pushbutton programming for common room settings. The Smart Sensor App can also be used to configure and enable additional features like sensor sensitivity, timeouts, daylighting hold-OFF, partial-ON, partial-OFF and more.

Smart Wallbox Sensors				
Description	Cat. No.	Color *	Rating	Coverage
Smart PIR 0-10V Dimming Wallbox Sensor	ODD10-ID	W, I	General Purpose @ 120V: 10A General Purpose @ 277V: 10A LED/Electronic Ballast @ 120V: 8A LED/Electronic Ballast @ 277V: 5A Standard Ballast @ 120V, 277V: 10A Tungsten @ 120V, 277V: 6.67A Motor @ 120V: 1/4HP (FLA 5.8A) Motor @ 277V: 1/3HP (FLA 3.0)	
Smart PIR 24V Dimming Wallbox Sensor	ODD24-ID	W	12-24VDC	- 180°. 1100SF
Smart PIR Wall Switch Sensor	ODS15-ID	W, I	General Purpose @ 120V, 277V: 20A LED/Electronic Ballast @ 120V, 277V: 10A Standard Ballast @ 120V, 277V: 10A Tungsten @ 120V, 277V: 6.67A Motor @ 120V: 1/4HP (FLA 5.8A) Motor @ 277V: 1/3HP (FLA 3.0)	(102SM)
Smart PIR Wall Switch Sensor	ODS15-I1	W, I	General Purpose @ 120V: 20A LED/Electronic Ballast @ 120V: 10A Standard Ballast @ 120V: 10A Tungsten @ 120V: 6.67A Motor @ 120V: 1/4HP (FLA 5.8A)	
Smart Dimming Wallbox Sensor Color Change Kit	ODDKT-00x*	B, R, G, I, A, W	-	-
Smart Switching Wallbox Sensor Color Change Kit	ODSKT-00x*	B, R, G, I, A, W	-	-

 $^{{}^*\}operatorname{Replace} \times \operatorname{to} \operatorname{indicate} \operatorname{color:} \operatorname{Black} (B), \operatorname{Red} (R), \operatorname{Gray} (G), \operatorname{Ivory} (I), \operatorname{Light} \operatorname{Almond} (A) \operatorname{and} \operatorname{White} (W).$





ODS15



Provolt Room Controller (PRC)

The Leviton exclusive Provolt Room Controller offers a self-contained solution for occupancy sensing and dimming applications. Enable additional capabilities with the Provolt App for partial-ON, partial-OFF and daylight harvesting. Add an OPP20 Power Pack for plug load control.

Requires only two devices to be installed—the Provolt Room Controller and a Provolt Keypad for a full suite of lighting control strategies that can be enabled and configured using the Provolt App—the only setup tool needed.

Provolt Room Controller (PRC)	
Description	Cat. No.
Provolt Line Room Controller, primary daylighting control, ceiling mount, M/T, 2,000 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included)	05C20-MDW
Provolt Line Room Controller, primary and secondary daylighting control, ceiling mount, M/T, 2,000 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included)	06C20-MDW
Provolt Line Room Controller, primary daylighting control, ceiling mount, PIR, 450-1,500 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included)	05C04-IDW
Provolt Line Room Controller, primary and secondary daylighting control, ceiling mount, PIR, 450-1,500 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included)	06C04-IDW
Provolt Keypads, 1-button ON/OFF controller for use with Provolt Room Controllers	PLVSW-1LW
Provolt Keypads, 2-button ON/OFF controller for use with Provolt Room Controllers	PLVSW-2LW
Provolt Keypads, 4-button ON/OFF controller for use with Provolt Room Controllers	PLVSW-4LW
1-button Color Change Kit (blank)	RDGSW-1Ex*
2-button Color Change Kit (blank)	RDGSW-2Ex*
4-button Color Change Kit (blank)	RDGSW-4Ex*
1-button Custom Engraved Color Change Kit	RDGSW-1Fx*
2-button Custom Engraved Color Change Kit	RDGSW-2Fx*
4-button Custom Engraved Color Change Kit	RDGSW-4Fx*

^{*} Replace x to indicate color: Black (B), Red (R), Gray (G), Ivory (I), Light Almond (A) and White (W). Color change kits are blank and available for custom engraving for button markings.



Service and Support

During Every Step of the Process.

There is much more to making lighting more energy efficient than just installing a simple device or two. System design, product selection, installation and service: it all has to come together. That's where Leviton service and support options come in. We'll help you design your GreenMAX DRC Room Control system and make the right product selections so you can create a solution that does exactly what you want it to do while saving electricity, meeting codes and standards, and even garnering rebates.

It all starts with the Leviton sales representative. Our lighting control specialists are here to support you every step of the way. They can perform on-site facility audits and suggest the best GreenMAX DRC Room Control System configuration to meet your needs and preferences.

Exclusive Wealth of Resources

- Exclusive Training—contact your local Leviton representative to have a GreenMAX DRC expert provide training in person or online exclusively for your team
- **GreenMAX DRC Resource Library**—all of our data sheets, cookbooks, solution sheets and more in one easy-to-access place visit **www.leviton.com/greenmaxdrc**
- **GreenMAX DRC Remote Support**—allows users to connect to Leviton's expert Technical Support staff via an Android, iOS, Windows or Mac device for remote troubleshooting and configuration support
- **GreenMAX DRC App**—configure and control the entire GreenMAX DRC Room Control System from the palm of your hand download at **Apple App Store or Google Play**
- ez-Learn™—get Leviton smart from the comfort of your home or office with this exclusive 24/7 online training—go to www.leviton.com/ezlearn
- Lighting control specialists at your disposal
- Field service engineers for top-level support
- Factory commissioning service
- Dedicated technical support via phone at 800 959-6004



Leviton Manufacturing Co., Inc. Lighting & Controls

20497 SW Teton Avenue, Tualatin, OR 97062 tel 800-736-6682 tech line (6:00AM-4:00PM PT Monday-Friday) 800-954-6004

Leviton Manufacturing Co., Inc. Global Headquarters

201 North Service Road, Melville, NY 11747 tel 800-323-8920 tech line (8:30AM-7:30PM ET Monday-Friday) 800-824-3005