



Energy Code Solution Guide

# California Title 24-2019

## Introduction

Current enables intelligent environments with a powerful combination of LED lighting solutions, digital controls and energy management. The purpose of this guide is to provide recommendations for deploying the Daintree® wireless lighting controls in compliance with the California Title 24 Energy Code.

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# California Title 24-2019

Title 24 establishes minimum requirements for energy-efficient buildings using prescriptive- and performance-related provisions.

For more information, visit [energy.ca.gov](http://energy.ca.gov).

The recommendations in this document are based on our understanding and interpretation of the code. In order to ensure full compliance, please reference the official published code.

# Daintree Wireless Controls

The Daintree wireless solution suite includes wireless lighting controls, edge hardware devices and an intuitive web-based software platform. Our three levels of Daintree wireless controls are upgradeable, cost-effective and, most importantly, code-compliant. For those interested in a wired solution, LightSweep® offers a reliable and scalable solution.

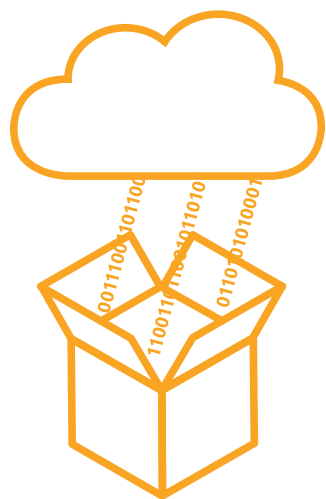
Daintree wireless controls are available integrated and preinstalled in many Current lighting fixtures. For a complete list of integrated sensors, look for the Daintree Wireless Controls icon on the product pages on [LED.com](http://LED.com).



WIRELESS



SIMPLE COMMISSIONING



OPEN ARCHITECTURE








CODE-COMPLIANT



	WIRELESS			WIRED
Single-Fixture Control	✓	✓	✓	
Daylight Harvesting	✓	✓	✓	✓
Occupancy Sensing	✓	✓	✓	✓
Embedded Luminaire Sensors	✓	✓	✓	
Multiple-Fixture Control		✓	✓	✓
Commissioning App		✓		
Energy Harvesting Wireless Switch		✓		
HVAC Controls			✓	✓
Environmental Monitoring and Alarms			✓	✓
Automated Demand Response			✓	✓
Plug Load Control			✓	✓
Centralized Managed Controls			✓	✓
Third-Party Sensor Compatibility			✓	✓
Third-Party Software Compatibility			✓	✓*
Cloud Deployment			✓	
DLC Certification			✓	

\*Via BACNet

LIGHTING CONTROL STRATEGIES			
SYMBOL	CONTROL STRATEGY	DESCRIPTION	
	<b>Occupancy</b>	Detects and alerts the system when the presence of people in a given area.	
	<b>Vacancy</b>	Detects and alerts the system when people are no longer in a given area.	
	<b>SETTINGS</b>	<b>Full Auto-On</b>	Automatic control involves an occupancy sensor that turns the lights to full brightness when occupancy is detected. Light levels can be overridden with a dimmer switch.
		<b>Full Auto-Off</b>	Also referred to as Vacancy detection, turns the lights off after a set time. California Title 24 requires Full Auto-Off after 20 minute vacancy of most common spaces.
		<b>Partial Auto-On</b>	Lights will automatically turn on to a set light level when a room has occupancy. Light levels can be adjusted by the user with a manual control.
	<b>Auto-Partial Off</b>	In certain environments (such as open offices or egress stairwells), it is allowed and desirable to dim lights rather than turn them off when the area is vacant. The off-delay time is a maximum of 20 minutes.	
	<b>Multi-level Control</b>	Reduce lighting levels by dimming or multi-steps, usually with a scene switch. All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.	
	<b>Demand Response</b>	The control system has the capability of automatically reducing lighting power when a participating utility sends a peak demand signal. Daintree can also adjust integrated HVAC systems to reduce energy during peak demand times.	
	<b>Emergency Fixture</b>	Emergency fixtures are required by building codes and may be powered by a fixture-integrated battery backup or unswitched power circuit. To fully control an emergency fixture/zone without impeding its function during a power loss event, an automatic load control relay must be used to disable the control signal and switch the fixture/zone to emergency power.	
	<b>Daylight Harvesting</b>	Title 24 requires lights near windows and skylights to dim automatically and take advantage of sunlight entering the building. Photosensors in each zone are required to keep light levels consistent. The areas where this is necessary are daylighting zones, which have specific dimensions based on window size and ceiling height. For an in-depth explanation of these zones, see page 10 of this guide.	

LIGHTING CONTROL STRATEGIES			
SYMBOL	CONTROL STRATEGY	DESCRIPTION	
	<b>Scheduling</b>	Title 24 allows or requires adjustment of lighting behavior based on normally occupied days/times. This is often in lieu of occupancy controls in areas (e.g., atriums) that may not be conducive to occupancy sensors. The controls system must be able to account for days of the week and holiday overrides.	
	<b>Top Trimming</b>	LED lights are extremely efficient and may project more light than expected, even when considering their lumen rating. Top trimming limits the maximum power of the luminaire to save additional energy and extend the life of the chips and driver. As time goes on, trimming can be removed or reduced to increase light levels as a fixture ages.	
	<b>Scene Control</b>	Scene control is a helpful and efficient way to create custom dimming levels for different areas of the room. Although not explicitly required by any energy codes, this strategy meets bilevel dimming requirements and is popular in conference rooms for presentations.	
	<b>Plug Load Control</b>	Plug Load control turns off receptacle devices to curb phantom or vampire loads of devices like printers, coffee pots, monitors, and other non-critical electronic devices.	
	<b>SCHEMES</b>	<b>Zonal</b>	A zonal design wires multiple lights together as a single control group. Zonal designs require less equipment and can offer a higher ROI. Zonal control groups are fixed in place and must be rewired if changes are necessary. <i>*In a zonal scheme, the Daintree wireless lighting control adapter (WAPM) can govern 10 or more fixtures. Note that a single WAPM cannot be used to control fixtures on two different circuits.</i>
		<b>Granular</b>	A granular lighting design provides independent control of fixtures and requires the least amount of effort to deploy. Granular control allows the highest level of flexibility as lighting zones can be redefined and reprogrammed at any time. This scheme requires more equipment than a zonal design. In all cases, it is best to consult with a lighting estimator who can help optimize product and installation strategy.

The following control strategies are the way Current, interprets the energy code and the products and sequence of operation that support the code. Always check with local ordinances and the code to ensure compliance with all state and local codes.

# Daintree System Symbol Guide

Room: The application space z: Independently controlled zone dx: Device labeling

WALL DEVICES			
Wireless wall dimmer (WWD2-2xx)		Wireless scene switch (WWD2-4xx)	
EZ Connect wireless dimmer switch (ZBT-S1AWH)			
OCCUPANCY SENSORS			
Wireless PIR occupancy sensor (WOS2-RM-E)		Wireless PIR occupancy sensor (WOS2-CM-E)	
Wireless PIR occupancy sensor (WOS2-WM-L)		Wireless PIR occupancy sensor (WOS2-WM-W)	
Integrated fixture control with daylight and occupancy (WIZ100) (Model number is specified with fixture)		High bay sensor (WHS20)	
EZ Connect multisensor adapter (WIT100)			
PHOTOCELL		WIRELESS NETWORKED AREA CONTROLLER	
Wireless photocell (WPS1)		Wireless area controller (WAC60)	
ADAPTERS			
Wireless lighting control adapter (WA100-PM)		Wireless general adapter (WGA100) Receptacle control	
Wireless fixture adapter (WFA100-SN)		Wireless sensor adapter (WSA10)	
Wireless highbay adapter (WHS100)		WHS100 (occupancy sensor not used)	
OTHER EDGE DEVICES			
Wireless thermostat (WTS10)		Zigbee-enabled luminaire with room, zone, device labeling	
NON-Zigbee-enabled luminaire with room, zone, device labeling		Automatic load control relay (0-10V) (RRU-X-UNV)	
Aux relay (BZ200/250) Receptacle control or 2-pole lighting		Phase to 0-10v converter (LDCM-PL-120-277-010V-GR)	

## Daintree Lighting Control General Notes

1. Installer is responsible for the final location of all sensors, switches and controllers, and for conforming with the manufacturer's recommendations and meeting the functional requirements of the system.
2. Daintree Networked leverages a wireless area controller (WAC60) to network components or nodes. A node is any Daintree wireless device that connects and communicates to the Daintree Networked platform. Multiple rooms or zones can connect to a WAC60, and each WAC60 can support up to 175 nodes.
3. Daintree Control Software utilizes distributed control for on/off and dim state on the Daintree Networked platform. Existing relay panels and line-side switches must be overridden or removed. All wireless adapters must be provided with uninterrupted/unswitched power.
4. During installation, the last four digits of the IEEE address for each wireless component must be recorded on the shop drawing set corresponding to the location of the component.
5. During wireless adapter installation, follow these steps as defined in the device installation guide in the following order:
  - Confirm wireless adapter DIP switches are set correctly.
  - Reset adapter (all adapters).
  - Perform proper test suite.
6. Installer must become familiar with the published installation guides for the products in the project scope. Daintree installation guides can be found at [LED.com](http://LED.com).
7. Daintree EZ Connect sensors can be configured by the Daintree EZ Connect app. This is a free download available on the Apple® App Store.



## Daintree Power/Receptacle Control General Notes

1. Installer is responsible for the final location of all sensors, switches and controllers, and for conforming with the manufacturer's recommendations and meeting the functional requirements of the system.

2. Daintree Control Software utilizes distributed control for on/off and dim state. Existing relay panels and line voltage switches must be overridden or removed. All wireless adapters must be provided with uninterrupted/unswitched power.
3. During installation, the last four digits of the IEEE address for each wireless component must be recorded on the shop drawing set corresponding to the location of the component.
4. During wireless adapter installation, follow these steps as defined in the device installation guide in the following order:
  - Confirm wireless adapter DIP switches are set correctly.
  - Reset adapter (all adapters).
  - Perform proper test suite.
5. Installer must become familiar with the published installation guides for the products in the project scope. Daintree installation guides can be found at [LED.com](http://LED.com).

## Daintree Mechanical Control General Notes

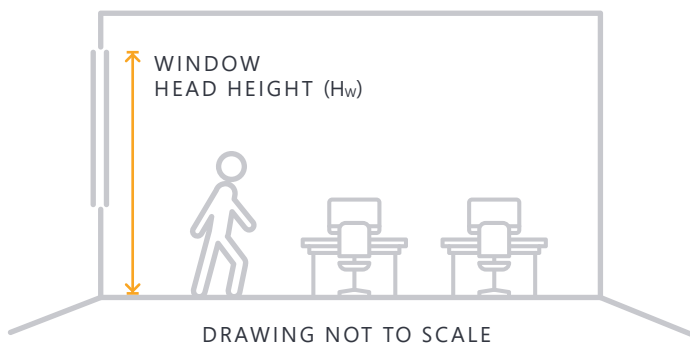
1. All wireless adapters must be provided with uninterrupted/unswitched power. WSA10 wireless sensor adapters require 24V power.
2. During installation, the last four digits of the IEEE address for each wireless component must be recorded on the shop drawing set corresponding to the location of the component.
3. For any sensors attached to a wireless adapter, the last four digits of the IEEE address for the respective adapter must be recorded.
4. During wireless adapter installation, follow these steps as defined in the device installation guide in the following order:
  - Confirm wireless adapter DIP switches are set correctly.
  - Reset adapter (all adapters).
  - Perform proper test suite.
5. Installer must become familiar with the published installation guides for the products in the project scope. Daintree installation guides can be found at [LED.com](http://LED.com).
6. Electrical contractor is responsible for procurement and install of Daintree and related components pertaining to IT/data, lighting, power and HVAC.

# Daylight Zone Requirements

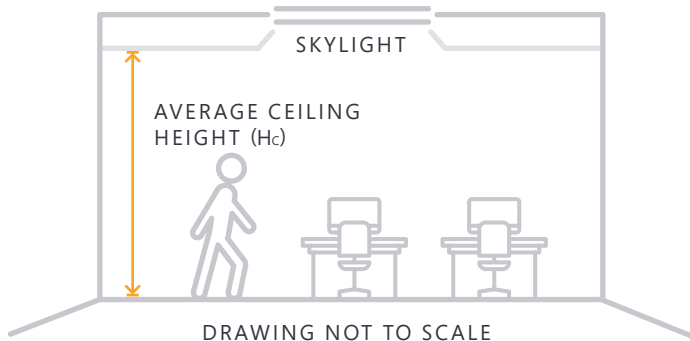
## DAYLIGHT ZONE REQUIREMENTS

- Sidelight daylight zones should be controlled separately from toplighted zones.
- The north, south, east and west zones should be controlled separately.
- For areas other than garages (such as classrooms, office spaces, labs and libraries) ensure that when daylight illuminance is greater than 150% of the design illuminance received at full power, the daylight zone is reduced by a minimum of 65%.
- Lighting must continuously dim to achieve a reduction of at least <35% of full power and must contain two daylighting zones.

## SIDELIGHTING (WINDOW)



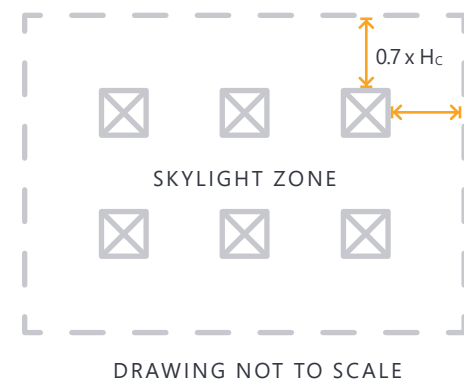
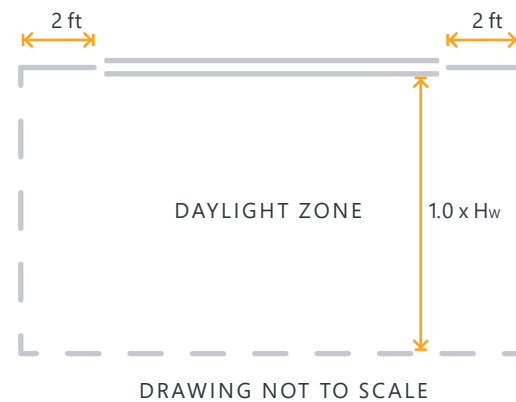
## TOPLIGHTING (SKYLIGHT)



## DAYLIGHT ZONE EXCEPTIONS

- Total lighting power is 150W or less.
- Total glazing area is 24 sq. ft. or less.
- Space types include healthcare patient areas, sleeping units and special application lighting.
- There may be additional exceptions based on space type, window area, neighboring obstructions and glass transmittance.

*Please refer to the energy code.*



# Demand Response

## WHAT IS DEMAND RESPONSE?

Demand response is a change in the power consumption of an electric utility customer to better match the demand for power with the supply. Until recently electric energy could not be easily stored, so utilities have traditionally matched demand and supply by throttling the production rate of their power plants, taking generating units on or off line, or importing power from other utilities. There are limits to what can be achieved on the supply side, because some generating units can take a long time to come up to full power, some units may be very expensive to operate, and demand can at times be greater than the capacity of all the available power plants put together. Demand response seeks to adjust the demand for power instead of adjusting the supply.

## WHY IS AUTOMATED DEMAND RESPONSE IMPORTANT?

Automated Demand Response (ADR) can be used to reduce energy usage during peak power consumption to reduce strain on the power grid.

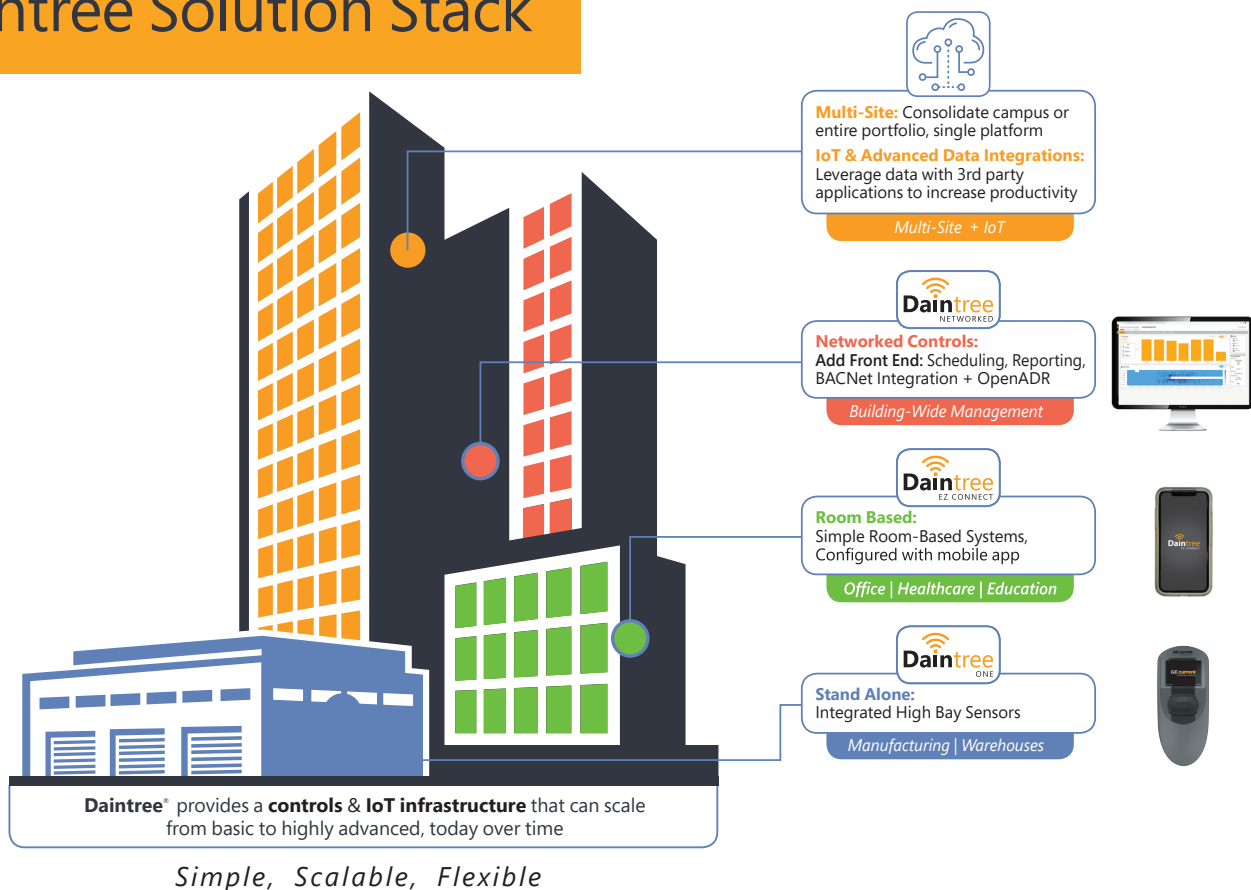
## CALIFORNIA TITLE 24 DEMAND RESPONSE REQUIREMENTS

**Provision 110.12(c) – Demand Responsive Lighting Controls.** Lighting controls in nonresidential buildings larger than 10,000 square feet shall be capable of automatically reducing lighting power in response to a Demand Response Signal. General lighting shall be reduced in a manner consistent with the uniform level of illumination requirements in TABLE 130.1-A.

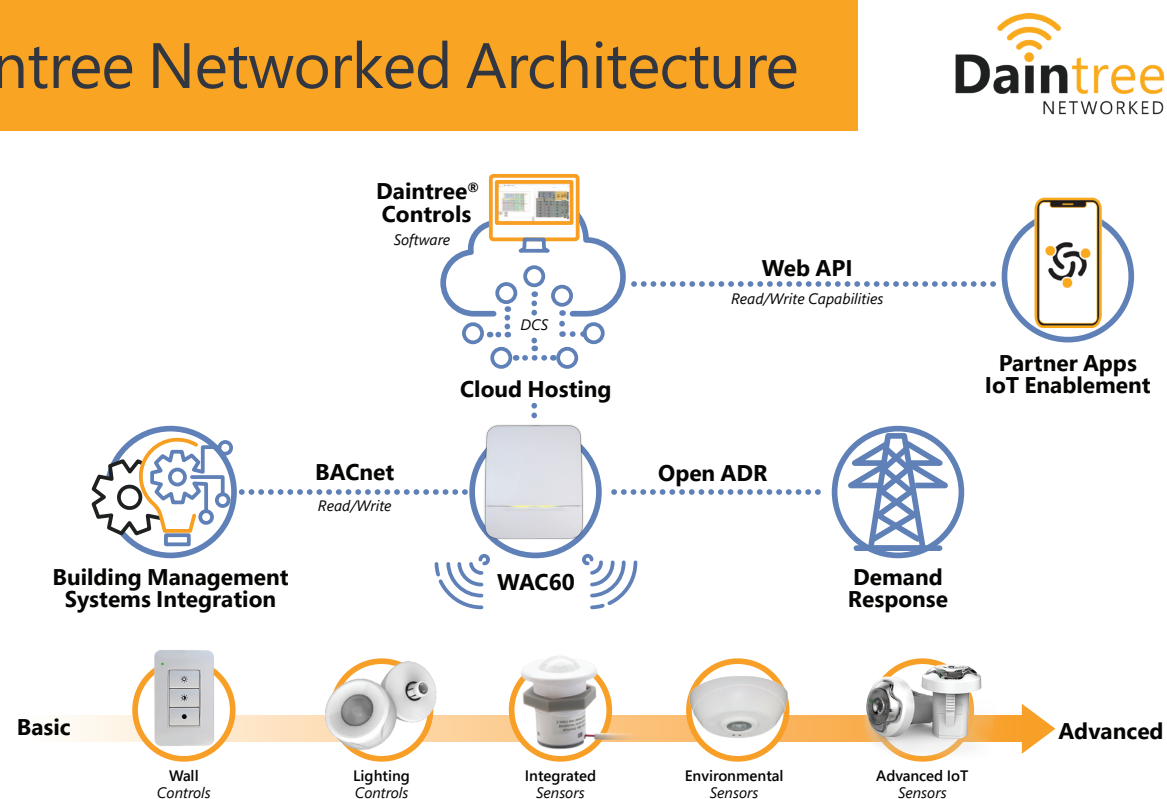
**Provision 110.12(c)1** – For compliance testing, the lighting controls shall demonstrate a lighting power reduction in controlled spaces of a minimum of 15 percent below the total installed lighting power. The controls may provide additional demand responsive functions or abilities.

**EXCEPTION 1 to 110.12(c):** Spaces with a lighting power density of 0.5 watts per square foot or less are not required to install demand responsive controls and do not count toward the 10,000 square foot threshold.

# Daintree Solution Stack



# Daintree Networked Architecture



# How to Use This Guide

**Room type**: Conference Room

**Configuration**: Zonal Control Option

**Conference Room Daintree Networked**

- 2-WA100-PM-Wireless lighting control adapter
- 1-WOS2-CM-E-Wireless PIR occupancy sensor
- 1-WWD2-2xx-Wireless wall dimmer
- 2-WPS1-Wireless photocell
- 1-BZ200-20 Amp Auxiliary Relay

• Each WA100-PM is capable of supporting 5mA sink or source on its 0-10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.  
 • BZ200 is capable of supporting 20 amp plug load receptacles.

**CONTROL STRATEGIES**

- OCCUPANCY/VACANCY CONTROL** 130.1(c)1A, 130.1(c)5, 130.1(c)5A or 130.1(c)5B
- TOP TRIMMING\***
- MANUAL-ON** 130.1(a)
- DAYLIGHT HARVESTING** 130.1(d)
- SCENE CONTROL\*\***
- MULTI-LEVEL CONTROL** 130.1(b)
- EMERGENCY LIGHTING**

**LIGHTING BEHAVIOR**

- Lights turn on automatically to 50% when an occupant enters the space. Max light level trimmed to 80%.
- Lights adjust brightness based on daylight availability while the room is occupied. There is one perimeter daylighting zone.
- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off within 20 minutes after all occupants exit.

**SOLUTION COMPONENTS**

Picture	Symbol	Model Number	Description	Quantity
	WAPM	WA100-PM	Wireless lighting control adapter	2
	WWD2	WWD2-2xx	Wireless wall dimmer	1
	WOS2	WOS2-CM-E	Wireless PIR occupancy sensor	1
	WPS1	WPS1	Wireless photocell	2
	WAC60	WAC60**	Wireless access controller	1
	BZ200	BZ200	Power pack	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.  
 \*\* Optional: can be used for scene control or control of more than one room.  
 \*\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.  
 Note: Many Current indoor fixtures can be ordered with IQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

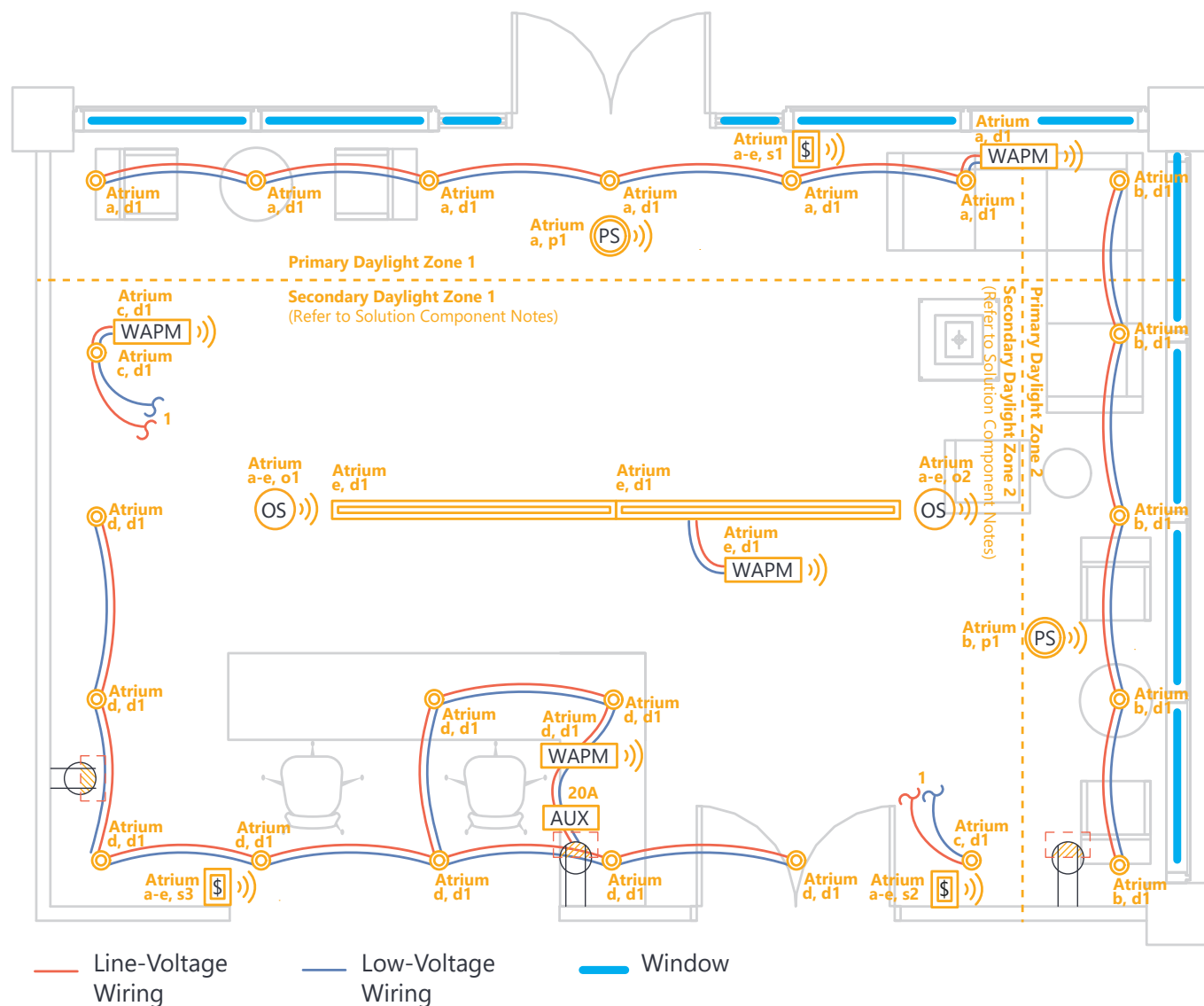
Important notes related to the proposed solution

Wiring diagram showing the light fixtures, placement of control devices and line voltages

Bill of materials for the solution being described

# Atrium

Zonal Control Option



## Atrium Daintree Networked

- 4-WA100-PM-Wireless lighting control adapter
- 2-WOS2-CM-E-Wireless PIR occupancy sensor
- 3-WWD2-2xx-Wireless wall dimmer
- 2-WPS1-Wireless photocell
- 1-BZ200-20 Amp Auxillary Relay

- Each WA100-PM is capable of supporting 5mA sink or source on its 0-10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
  - Emergency zones should be fitted with an automatic load control relay (per WA100-PM), which would bypass normal controls and cause the light level to change to 100% after a loss of normal power.
  - BZ200 is capable of supporting 20 amp plug load receptacles.
  - All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity
- Exception to 130.1(c): An exception allows up to 0.2 watts per foot<sup>2</sup> for a "path of egress" to not be controlled by manual area control.*
- Exception to Section 140.3(c): For skylight located in an atrium, the skylit daylight zone shall apply to the floor area directly under the atrium and the top floor area directly adjacent to the atrium.*

## CONTROL STRATEGIES

- SCHEDULING** 130.1(c)
- TOP TRIMMING\***
- MANUAL-ON** 130.1(a)
- MULTI-LEVEL CONTROL** 130.1(b)
- DAYLIGHT HARVESTING** <130.1(d)
- SCENE CONTROL\*\***
- EMERGENCY LIGHTING**
- PLUG LOAD CONTROL**

## LIGHTING BEHAVIOR

- Lights turn on and off based on time clock scheduling for normal occupied hours.
- Lights automatically adjust brightness based on daylight availability.
- Occupants may use wall dimmers to set desired light levels.
- Scene control is optional.
- All installed indoor lighting shall be equipped with controls able to automatically reduce lighting power when the space is typically unoccupied.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	4
		WWD2-2xx	Wireless wall dimmer	3
		WOS2-CM-E	Wireless PIR occupancy sensor	2
		WPS1	Wireless photocell	2
		WWD2-4xx	Wireless Scene Switch	1**
		WAC60***	Wireless area controller	1
		BZ200	Power pack	1

\* Top trimming maximum light output is not required by code, but is a recommended practice for energy savings.

\*\* Optional; can be used for scene control or control of more than one WA100-PM instead of or in addition to a WWD2-2xx.

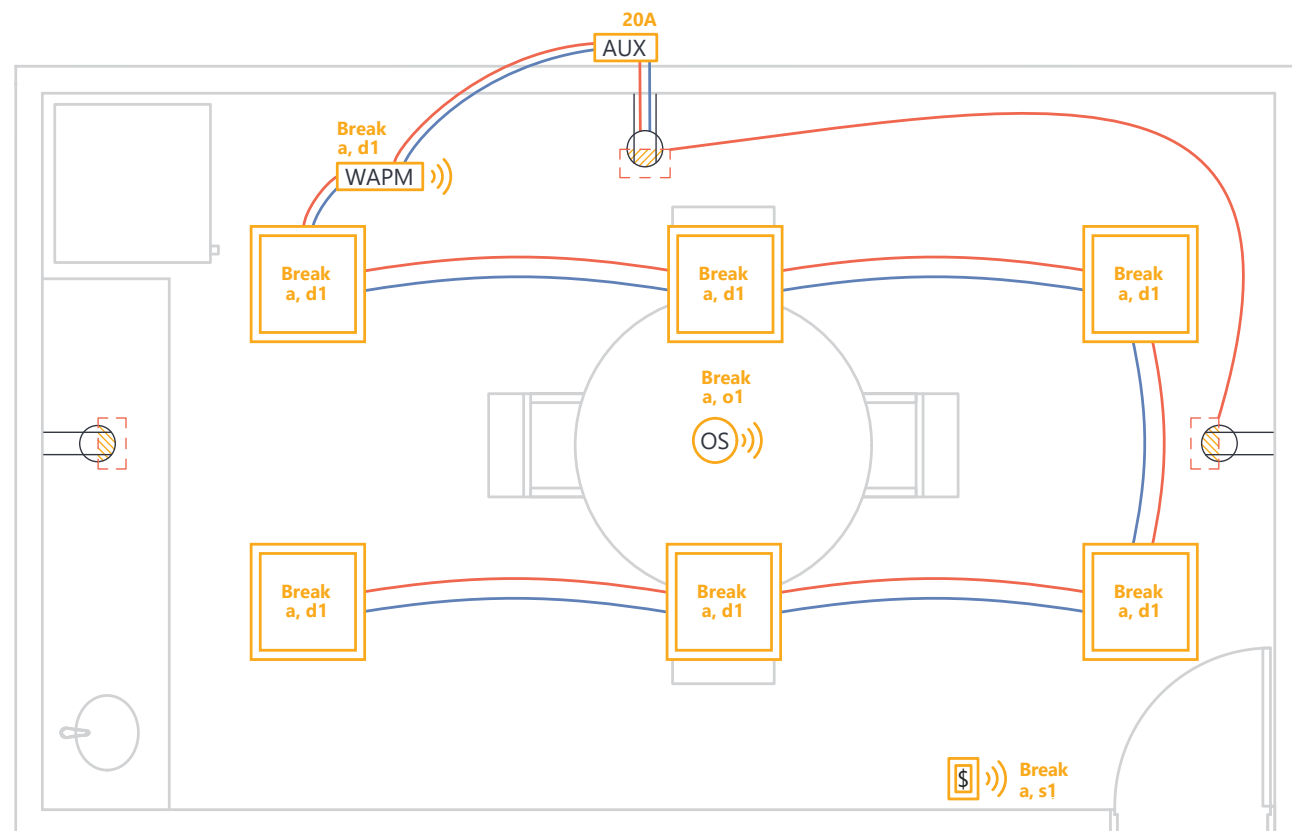
\*\*\* Daintree Networked leverages a wireless area controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Note:** Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logics support Daintree Networked zonal control.



# Break Room

Zonal Control Option



— Line-Voltage Wiring    — Low-Voltage Wiring

## Break Room Daintree Networked

- 1-WA100-PM-Wireless lighting control adapter
- 1-WOS2-CM-E-Wireless PIR occupancy sensor
- 1-WWD2-2xx-Wireless wall dimmer
- 1-BZ200-20 Amp Auxillary Relay

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
- BZ200 is capable of supporting 20 amp plug load receptacles.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A



**TOP TRIMMING\***



**PLUG LOAD CONTROL**



**MANUAL-ON**  
130.1(a)



**MULTI-LEVEL CONTROL**  
130.1(b)



**EMERGENCY LIGHTING**

## LIGHTING BEHAVIOR

- Lights turn on when an occupant enters the space. Max light level trimmed to 80%.
- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off after all occupants exit.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WWD2-2xx	Wireless wall dimmer	1
		WOS2-CM-E	Wireless PIR occupancy sensor	1
		WAC60**	Wireless access controller	1
		BZ200	Power pack	1

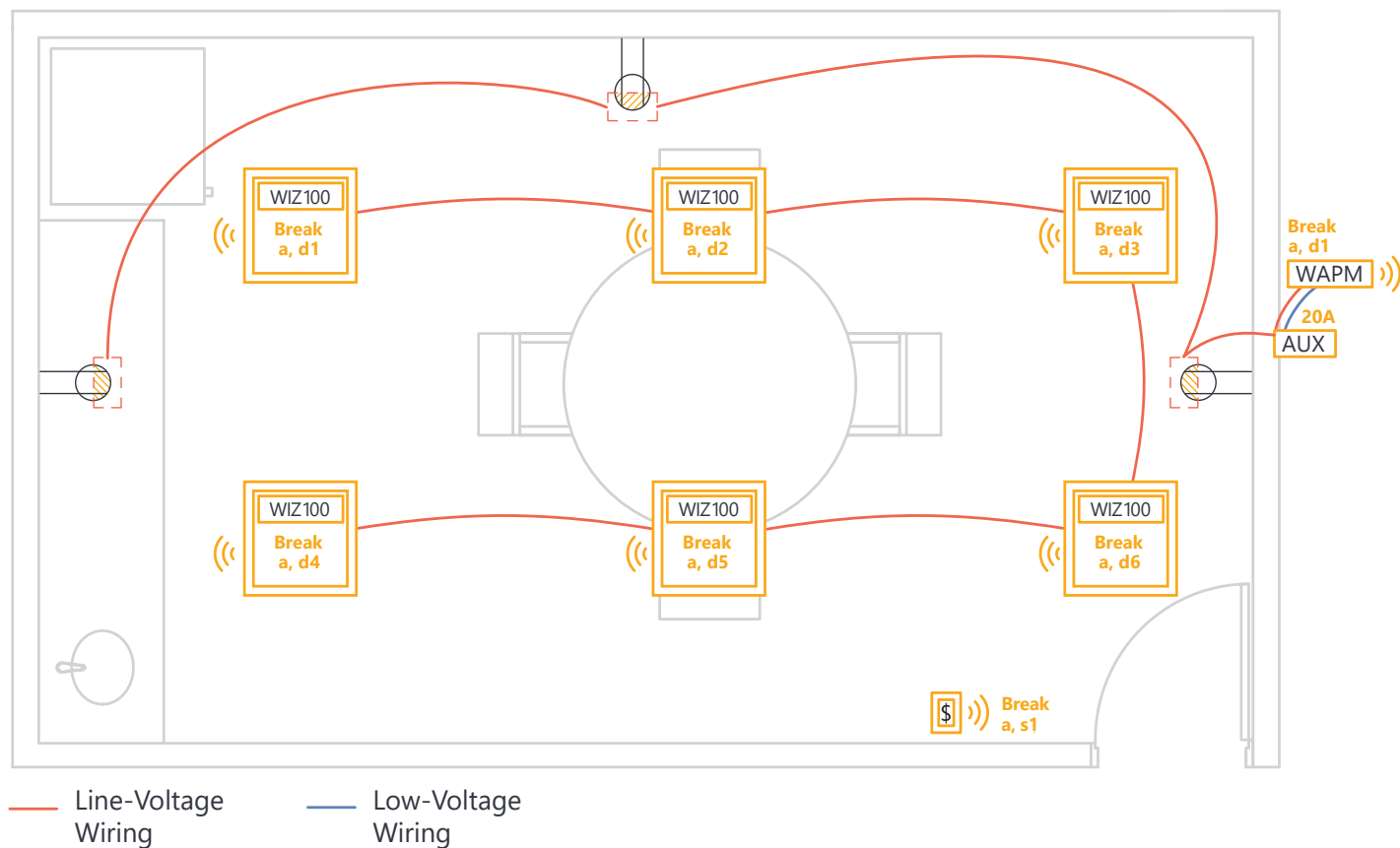
\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Note:** Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logice support Daintree Networked zonal control.

# Break Room

Sensor Integrated Fixture Option



## Break Room Daintree Networked

6-WIZ100-Integrated fixture control with daylight and occupancy

1-WA100-PM-Wireless lighting control adapter

1-WWD2-Wireless wall dimmer

1-BZ200-20 Amp Auxillary Relay

- Many Lumination® LED luminaires come preinstalled with WIZ100 sensors and can be ordered with Daintree Networked "TZ" Controls Catalog logic. For a complete list of Daintree Integrated Fixtures, visit [LED.com](http://LED.com).
- BZ200 is capable of supporting 20 amp plug load receptacles.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A



**TOP TRIMMING\***



**PLUG LOAD CONTROL**



**MANUAL-ON**  
130.1(a)



**SCENE CONTROL\*\***



**MULTI-LEVEL CONTROL**  
130.1(b)

## LIGHTING BEHAVIOR

- Max light level trimmed to 80%.
- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off after all occupants exit.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WIZ100	Integrated fixture control with daylight and occupancy***	6
		WWD2-2xx	Wireless wall dimmer	1
		WAC60****	Wireless access controller	1
		BZ200	Power pack	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

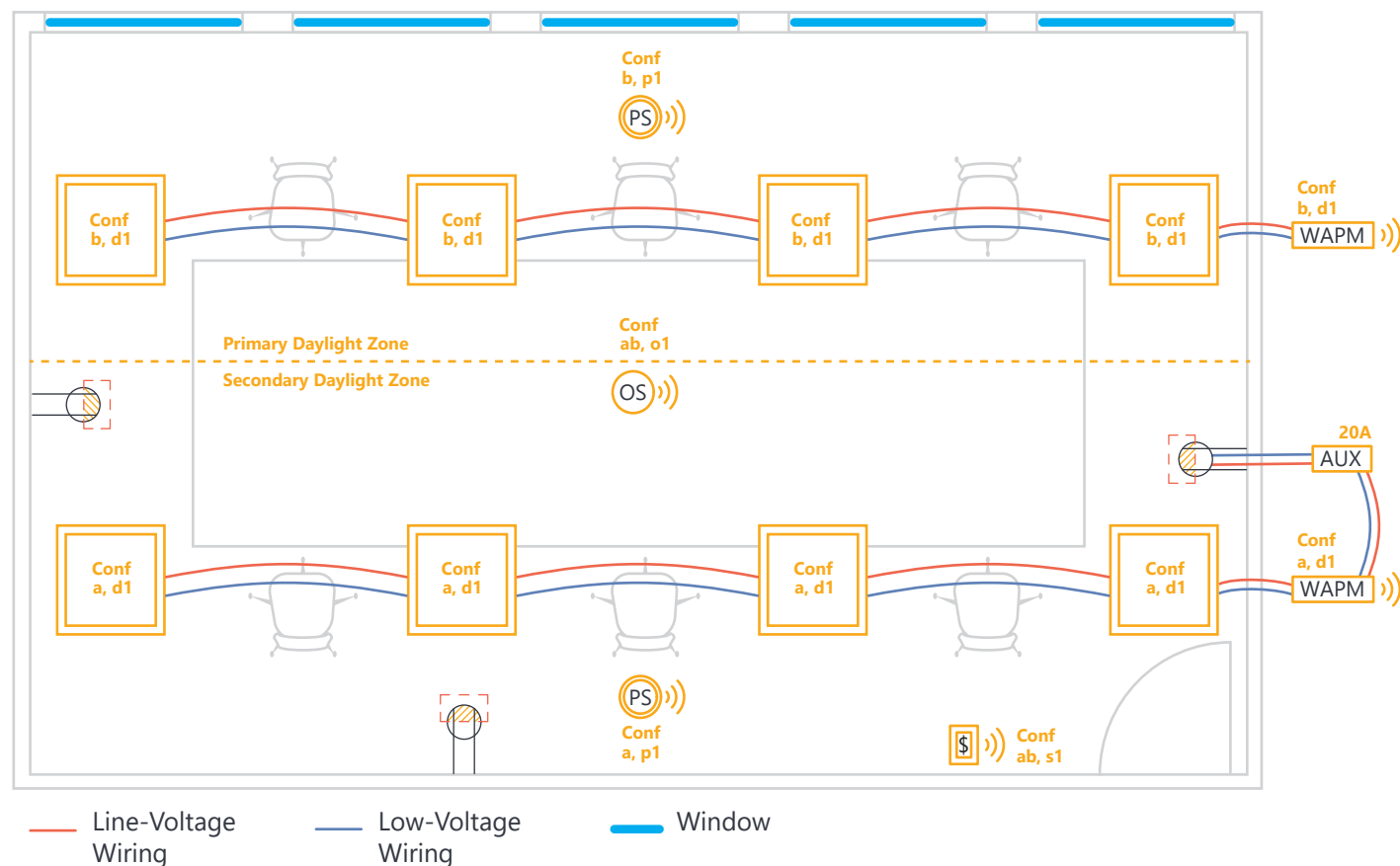
\*\* Optional; can be used for scene control or in addition to a WWD2-2xx.

\*\*\* Order Lumination fixtures with "TZ" catalog logic for sensors preinstalled in fixtures.

\*\*\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

# Conference Room

## Zonal Control Option



### Conference Room Daintree Networked

- 2-WA100-PM-Wireless lighting control adapter
- 1-WOS2-CM-E-Wireless PIR occupancy sensor
- 1-WWD2-2xx-Wireless wall dimmer
- 2-WPS1-Wireless photocell
- 1-BZ200-20 Amp Auxillary Relay

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
- BZ200 is capable of supporting 20 amp plug load receptacles.

### CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)5, 130.1(c)5A or 130.1(c)5B



**TOP TRIMMING\***



**MANUAL-ON**  
130.1(a)



**PLUG LOAD CONTROL**



**DAYLIGHT HARVESTING**  
130.1(d)



**SCENE CONTROL\*\***



**MULTI-LEVEL CONTROL**  
130.1(b)



**EMERGENCY LIGHTING**

### LIGHTING BEHAVIOR

- Lights turn on automatically to 50% when an occupant enters the space. Max light level trimmed to 80%.
- Lights adjust brightness based on daylight availability while the room is occupied. There is one perimeter daylighting zone.

- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off within 20 minutes after all occupants exit.
- Plug load control will operate based on occupancy and scheduling of the room.

### SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
	WAPM	WA100-PM	Wireless lighting control adapter	2
	\$	WWD2-2xx	Wireless wall dimmer	1
	OS	WOS2-CM-E	Wireless PIR occupancy sensor	1
	PS	WPS1	Wireless photocell	2
	\$ 4	WWD2-4xx	Wireless scene switch	1**
	NET WAC	WAC60***	Wireless access controller	1
	20A AUX	BZ200	Power pack	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

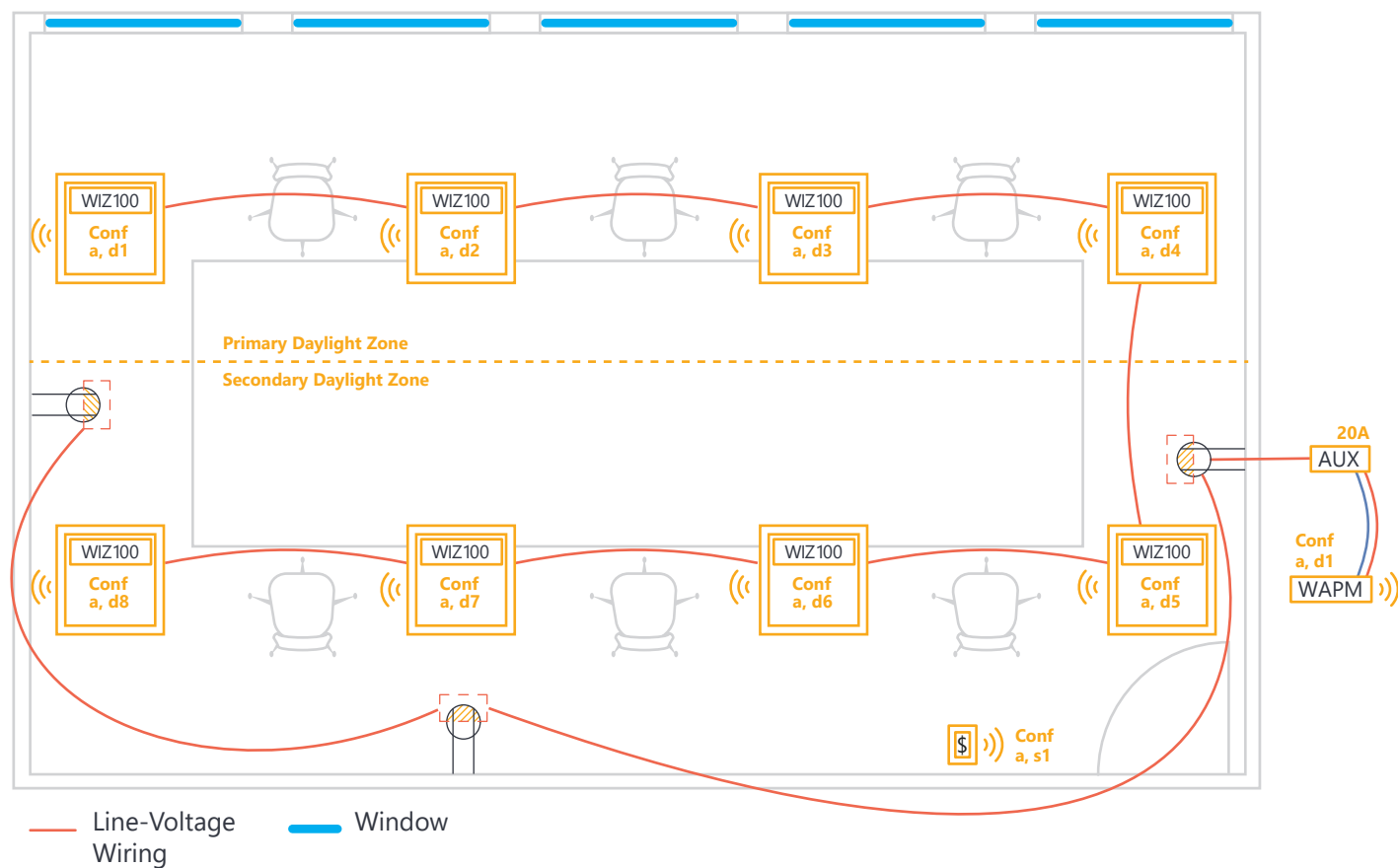
\*\* Optional; can be used for scene control or control of more than one WA100-PM instead of or in addition to a WWD2-2xx.

\*\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Note:** Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

# Conference Room

Sensor Integrated Fixture Option



## Conference Room Daintree Networked

- 8-WIZ100-Integrated fixture control with daylight and occupancy
- 1-WA100-PM-Wireless lighting control adapter

- 1-WWD2-Wireless wall dimmer
- 1-BZ200-20 Amp Auxillary Relay

- Many Lumination® LED luminaires come preinstalled with WIZ100 sensors and can be ordered with Daintree Networked "TZ" Controls Catalog logic. For a complete list of Daintree Integrated Fixtures, visit [LED.com](http://LED.com).
- BZ200 is capable of supporting 20 amp plug load receptacles.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)5, 130.1(c)5A or 130.1(c)5B



**TOP TRIMMING\***



**MANUAL-ON**  
130.1(a)



**PLUGLOAD CONTROL**



**DAYLIGHT HARVESTING**  
130.1(d)



**SCENE CONTROL\*\***



**MULTI-LEVEL CONTROL**  
130.1(a)



**EMERGENCY LIGHTING**

## LIGHTING BEHAVIOR

- Lights turn on automatically to 50% when an occupant enters the space. Max light level trimmed to 80%.
- Lights adjust brightness based on daylight availability while the room is occupied. There is one perimeter daylighting zone.

- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off within 20 minutes after all occupants exit.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WIZ100	Integrated fixture control with daylight and occupancy***	8
		WWD2-2xx	Wireless wall dimmer	1
		WWD2-4xx	Wireless scene switch	1**
		BZ200	Power pack	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Optional; can be used for scene control or control of more than one WA100-PM instead of or in addition to a WWD2-2xx.

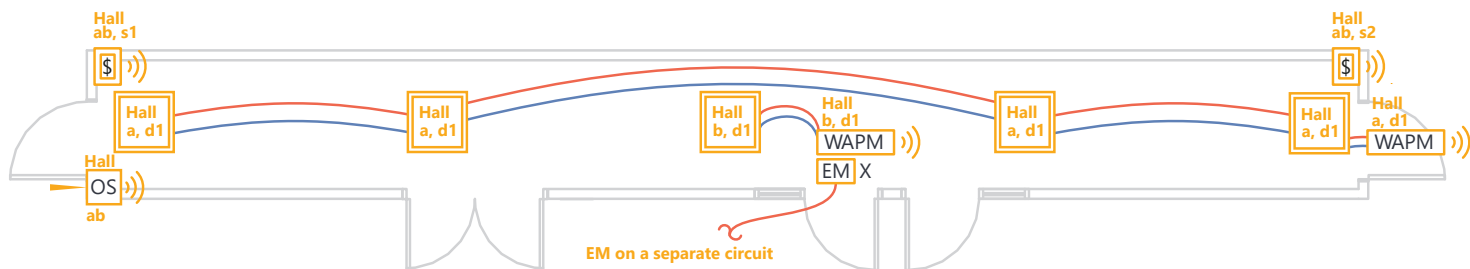
\*\*\* Order Lumination fixtures with "TZ" catalog logic for sensors preinstalled in fixtures.

# Egress Corridor

## Zonal Control Option



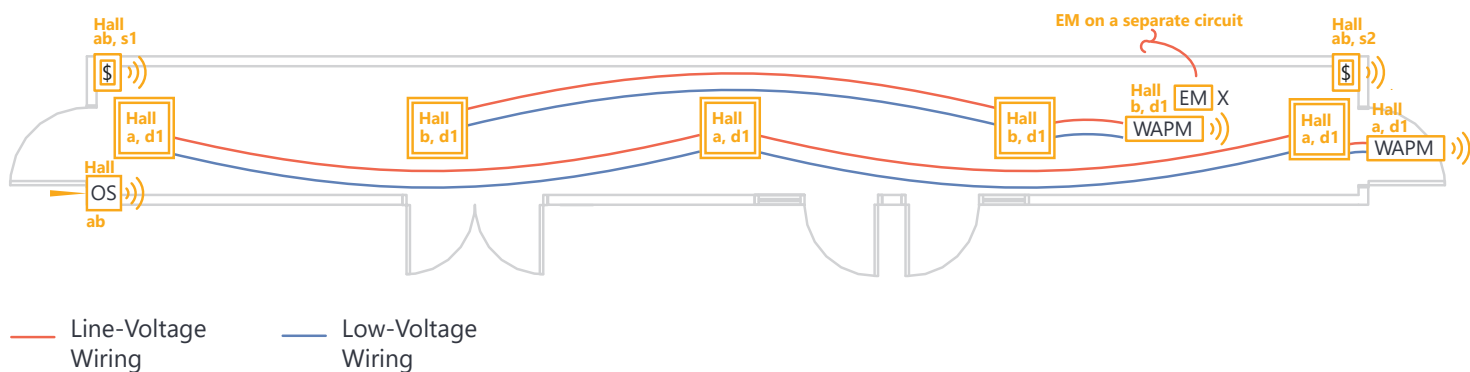
### Option 1—Single Fixture Emergency Generator Circuit



### Egress Corridor Daintree Networked

- 2–WA100PM-Wireless lighting control adapter
- 2–WWD2-2-Wireless wall dimmer
- 1–WOS2-WM-L-Wireless PIR occupancy sensor
- 1–RRU-X-UNV-Automatic load control relay (0–10v)

### Option 2—Multiple Fixture Emergency Generator Circuit



### Egress Corridor Daintree Networked

- 2–WA100-PM-Wireless lighting control adapter
- 2–WWD2-2-Wireless wall dimmer
- 1–WOS2-WM-L-Wireless PIR occupancy sensor
- 1–RRU-X-UNV-Automatic load control relay (0–10v)

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
- Add a daylight sensor for corridors with daylight zones.
- Emergency fixtures may require an automatic load control relay (per WA100), which would bypass normal controls and cause the light level to change to 100% after a loss of normal power.
- Emergency fixture will dim but not turn off.
- If full-off is desired, a separate wireless adapter may be used at the emergency fixture. Locating the WA100 for the zone at the emergency fixture will also allow for this. An automatic load control relay will be required.
- Wire Emergency Battery Packs per code.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)5, 130.1(c)5A or 130.1(c)5B, 130.1(c)6c

**TOP TRIMMING\***



**EMERGENCY LIGHTING**



**DAYLIGHT HARVESTING**  
130.1(d)



**MANUAL-ON**  
130.1(a)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters.
- Lights on nonemergency and emergency circuits dim to 50% when the area is vacant.
- Lights connected to emergency circuits default to 100% output during a power loss.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WWD2-2	Wireless wall dimmer	2
		WOS2-WM-L	Wireless PIR occupancy sensor	1
		RRU-X-UNV	Automatic load control relay (0–10v) - Double pole double throw (DPDT)	1
		WAC60	Wireless access controller	1**

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

When the RRU-X senses loss of regular power, the RRU-X disconnects the 0–10V output from the WA100-PM and the emergency light fixture operates at maximum output from the emergency power circuit. If the RRU-X is not installed, the emergency fixture will dim to minimum because the WA100-PM 0–10V output shorts when the adapter loses power.

Ceiling sensors can be used in place of wall-mount sensors.

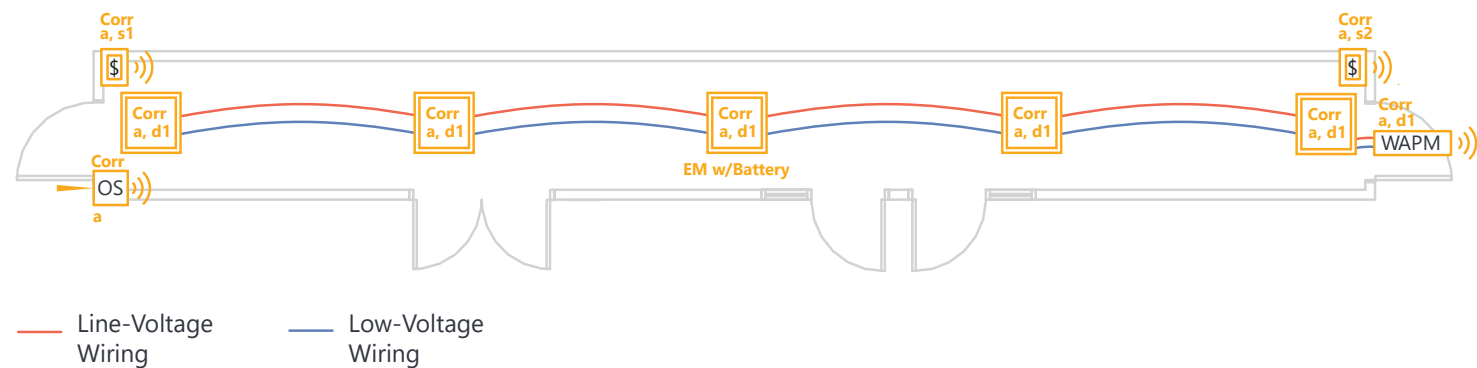
Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

# Egress Corridor

Zonal Control Option



## Emergency Battery Pack Wired to Normal Circuit



### Egress Corridor Daintree Networked

- 1-WA100-PM-Wireless lighting control adapter
- 2-WWD2-Wireless wall dimmer
- 1-WOS2-WM-L-Wireless PIR occupancy sensor

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
- Add a daylight sensor for corridors with daylight zones.
- Emergency fixtures may require an automatic load control relay (per WA100), which would bypass normal controls and cause the light level to change to 100% after a loss of normal power.
- Emergency fixture will dim but not turn off.
- If full-off is desired, a separate wireless adapter may be used at the emergency fixture. Locating the WA100 for the zone at the emergency fixture will also allow for this. An automatic load control relay will be required.
- Wire Emergency Battery Packs per code.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)5, 130.1(c)5A or 130.1(c)5B, 130.1(c)6c

**TOP TRIMMING\***



**EMERGENCY LIGHTING**



**DAYLIGHT HARVESTING**  
130.1(d)



**MANUAL-ON**  
130.1(a)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters.
- Lights connected to emergency circuits default to 100% output during a power loss.
- Lights on nonemergency and emergency circuits dim to 50% when the area is vacant.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WWD2	Wireless wall dimmer	2
		WOS2-WM-L	Wireless PIR occupancy sensor	1
		WAC60	Wireless access controller	1**

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

Ceiling sensors can be used in place of wall-mount sensors.

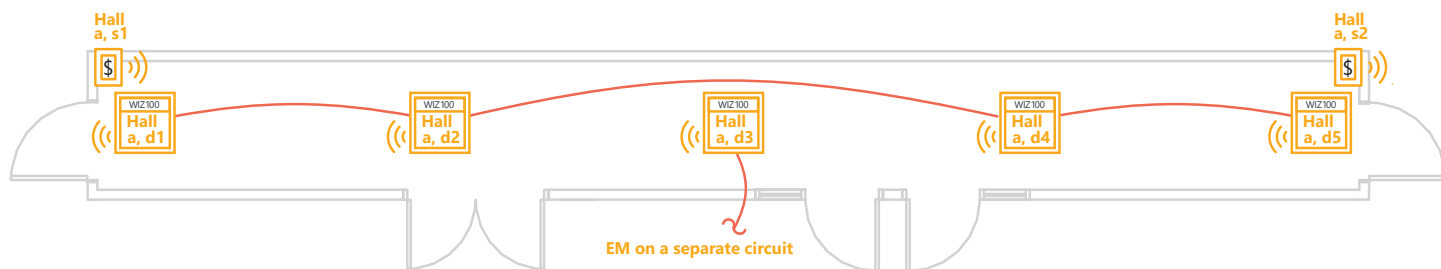
Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logics support Daintree Networked zonal control.

# Egress Corridor

Standalone Fixture Control Option



## Emergency Generator Circuit



— Line-Voltage Wiring

### Egress Corridor Daintree One

5–WIZ100–Integrated fixture control with daylight and occupancy

2–WWD2–Wireless wall dimmer

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)5, 130.1(c)5A or 130.1(c)5B, 130.1(c)6c

**TOP TRIMMING\***



**EMERGENCY LIGHTING**



**DAYLIGHT HARVESTING**  
130.1(d)



**MANUAL-ON**  
130.1(a)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters.
- Lights connected to emergency circuits default to 100% output during a power loss.
- Lights on nonemergency and emergency circuits dim to 50% when the area is vacant.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WIZ100	Integrated fixture control with daylight and occupancy	5
		WWD2	Wireless wall dimmer	2

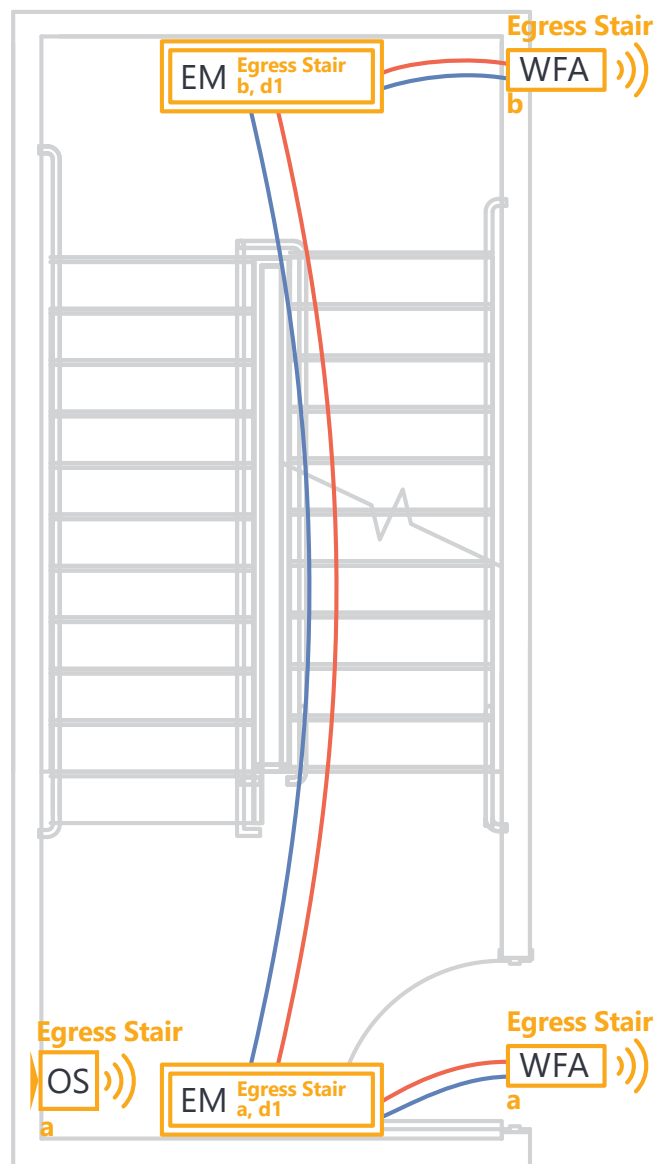
\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

# Egress Stairwell

Zonal Control Option



On Dedicated Emergency Circuit



— Line-Voltage Wiring — Low-Voltage Wiring

## Egress Stairwell Daintree Networked

- 1-WOS2-WM-W-Wireless PIR occupancy sensor
- 2-WFA100-SN-Wireless fixture adapter
- 2-RRU-X-UNV-Automatic load control relay (0-10v)

- Lighting providing means of egress illumination, as the term is used in the California Building Code, shall be configured to provide no less than the amount of light required by California Building Code Section 1008 while in the partial-off mode.
- Wire Emergency Battery Packs per code.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)1B, 130.1(c)5, and exception



**TOP TRIMMING\***



**EMERGENCY LIGHTING**



**MULTI-LEVEL CONTROL**  
130.1(b)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters.
- Lights dim to 50% when the area is vacant.
- Lights connected to emergency circuits default to 100% output during a power loss.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WFA100-SN	Wireless fixture adapter	2
		WOS2-WM-W	Wireless PIR occupancy sensor	1
		RRU-X-UNV	Automatic load control relay (0-10v)	2
		WAC60	Wireless access controller	1**

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

When the RRU-X senses loss of regular power, the RRU-X disconnects the 0-10V output from the WA100-PM and the emergency light fixture operates at maximum output from the emergency power circuit. If the RRU-X is not installed, the emergency fixture will dim to minimum because the WA100-PM 0-10V output shorts when the adapter loses power.

Ceiling sensors can be used in place of wall-mount sensors.

Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logice support Daintree Networked zonal control.

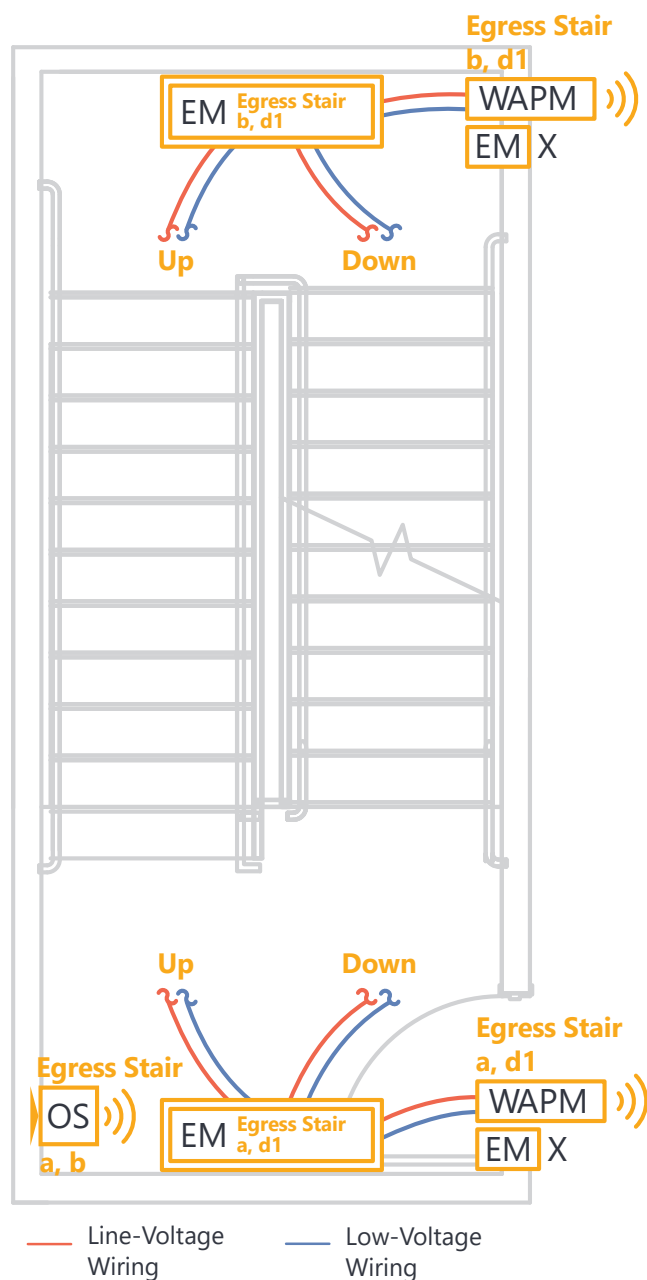


# Egress Stairwell

Zonal Control Option



On Dedicated Emergency Circuit



## Egress Stairwell Daintree Networked

- 2-WA100-PM-Wireless lighting control adapter
- 1-WOS2-WM-W-Wireless PIR occupancy sensor

2-RRU-X-UNV-Automatic load control relay (0-10v)

- Wire Emergency Battery Packs per code.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)1B, 130.1(c)5, and exception



**TOP TRIMMING\***



**EMERGENCY LIGHTING**



**MULTI-LEVEL CONTROL**  
130.1(b)

## LIGHTING BEHAVIOR

- Lights turn on automatically to maximum when an occupant enters.
- Lights dim to 10% when the area is vacant for at most 20 minutes.
- Lights connected to emergency circuits default to 100% output during a power loss.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	2
		WOS2-WM-W	Wireless PIR occupancy sensor	1
		RRU-X-UNV	Automatic load control relay (0-10v)	2
		WAC60	Wireless access controller	1**

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

When the RRU-X senses loss of regular power, the RRU-X disconnects the 0-10V output from the WA100-PM and the emergency light fixture operates at maximum output from the emergency power circuit. If the RRU-X is not installed, the emergency fixture will dim to minimum because the WA100-PM 0-10V output shorts when the adapter loses power.

Ceiling sensors can be used in place of wall mount sensors.

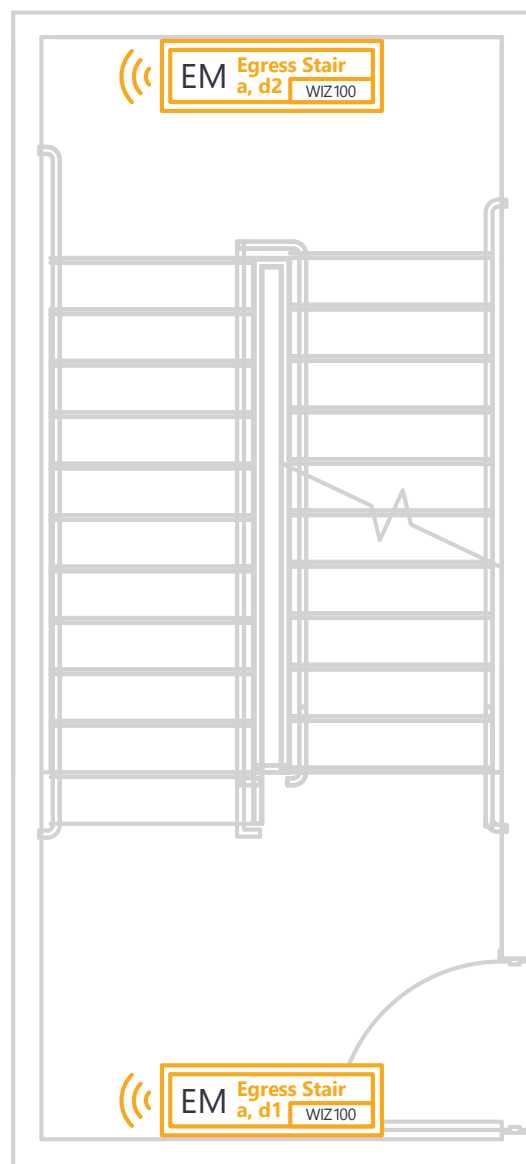
Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

# Egress Stairwell

Individual Fixture Control



On Dedicated Emergency Circuit(s)



## Egress Stairwell Daintree One

2-WIZ100-Integrated fixture control with daylight and occupancy

## CONTROL STRATEGIES



### OCCUPANCY/VACANCY CONTROL

130.1(c)1A, 130.1(c)1B, 130.1(c)5, and exception



### TOP TRIMMING\*



### EMERGENCY LIGHTING



### MULTI-LEVEL CONTROL <130.1(b)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters.
- Lights dim to 50% when the area is vacant.
- Lights connected to emergency circuits default to 100% output during a power loss.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
	WIZ100	WIZ100	Integrated fixture control with daylight and occupancy	2

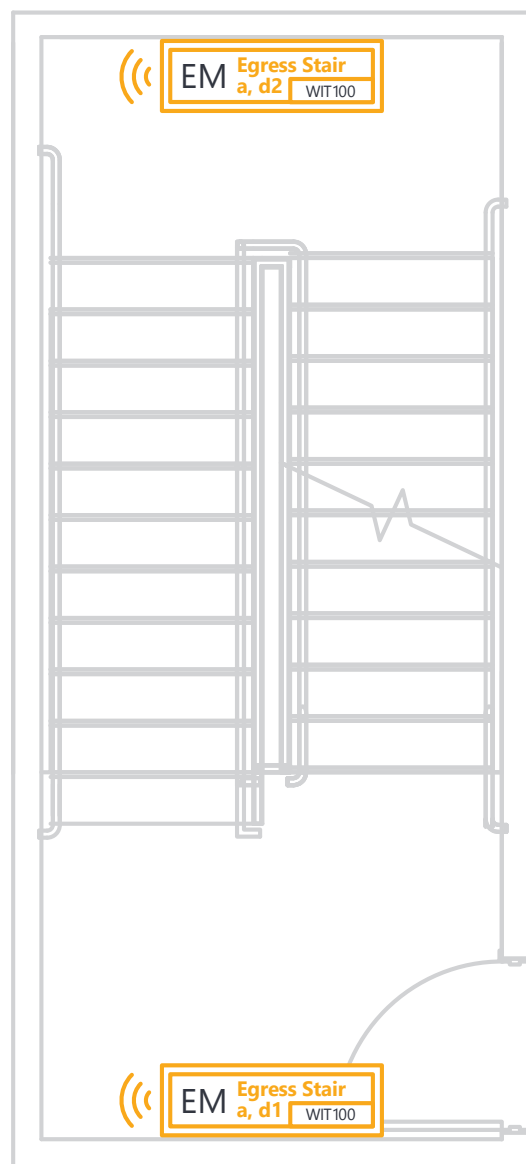
\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

# Egress Stairwell

Individual Fixture Control



On Dedicated Emergency Circuit(s)



## Egress Stairwell Daintree One

2-WIT100-EZ Connect multisensor adapter

## CONTROL STRATEGIES



### OCCUPANCY/VACANCY CONTROL

130.1(c)1A, 130.1(c)1B, 130.1(c)5, and exception



### TOP TRIMMING\*



### EMERGENCY LIGHTING



### MULTI-LEVEL CONTROL <130.1(b)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters.
- Lights dim to 50% when the area is vacant.
- Lights connected to emergency circuits default to 100% output during a power loss.

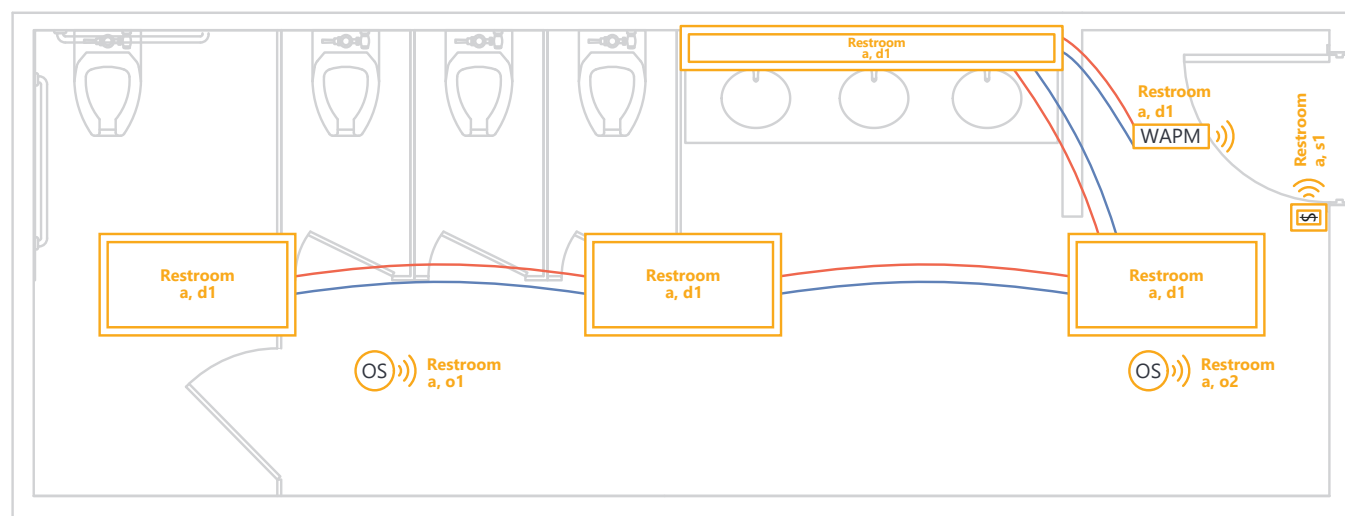
## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
	WIT100	WIT100	Integrated fixture control with daylight and occupancy*	2

\* Order Lumination fixtures with "TT" catalog logic for sensors preinstalled in fixtures.

# Multistall Restroom

Zonal Control Option



— Line-Voltage Wiring — Low-Voltage Wiring

## Multistall Restroom Daintree Networked

- 1-WA100-PM-Wireless lighting control adapter
- 1-WOS2-CM-E-Wireless PIR occupancy sensor
- 1-WWD2-Wireless wall dimmer

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to the lighting drivers used.
- Emergency fixtures may require an automatic load control relay (per WA100-PM), which would bypass normal controls and cause the light level to change to 100% after a loss of normal power.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)5A, 130.1(c)5B

**TOP TRIMMING\***



**EMERGENCY LIGHTING**



**MANUAL-ON**  
130.1(a)



**MULTI-LEVEL CONTROL**  
130.1(b) and exception

## LIGHTING BEHAVIOR

- Lights turn on automatically to 100% when an occupant enters the space.
- All lights automatically turn off after all occupants exit.
- Lights connected to emergency circuits default to 100% output during a power loss.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WWD2	Wireless wall dimmer	1
		WOS2-CM-E	Wireless PIR occupancy sensor	2
		WAC60	Wireless access controller	1**

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

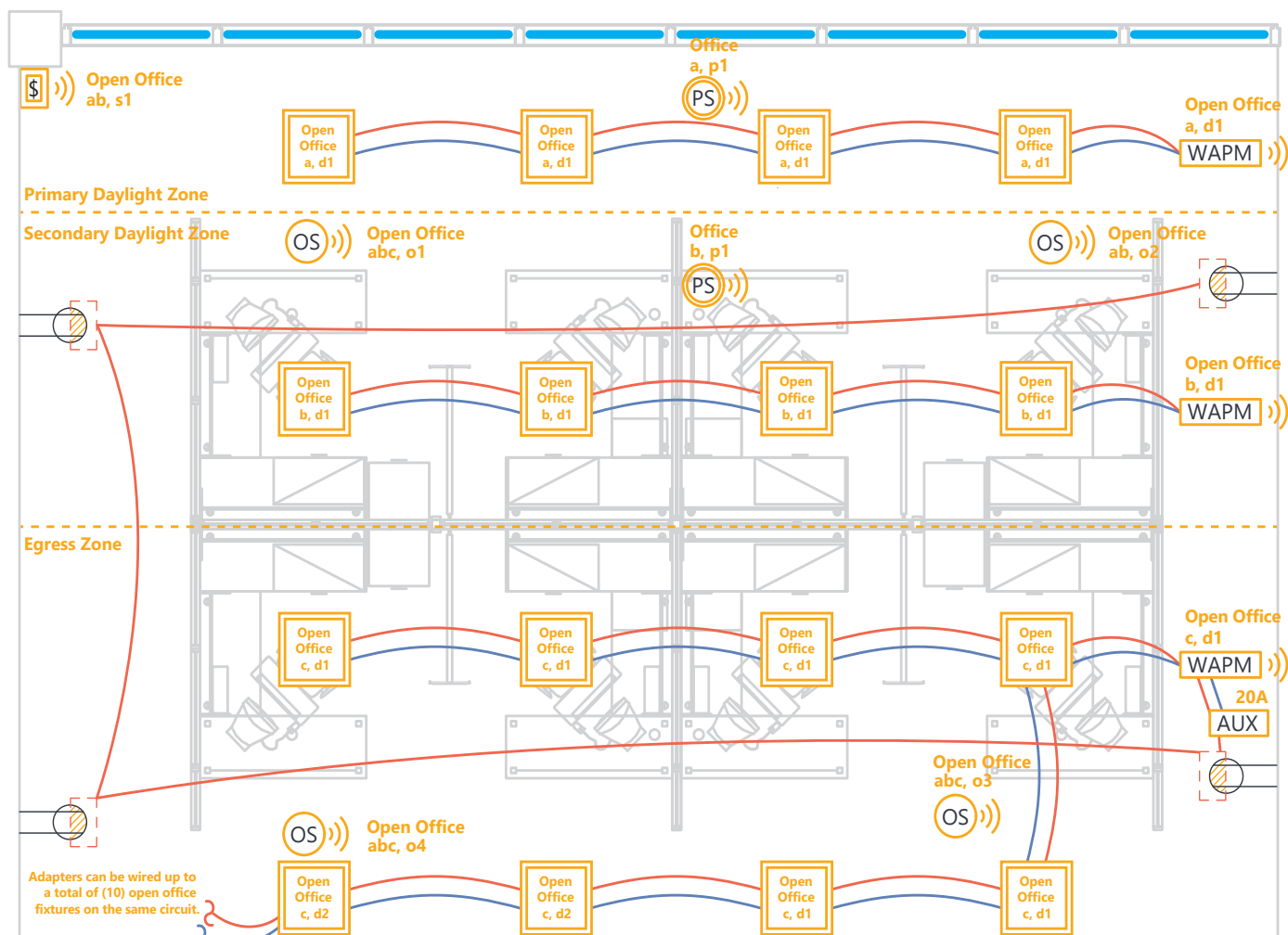
\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

# Open Office

## Zonal Control Option



— Line-Voltage Wiring    — Low-Voltage Wiring    — Window

### Open Office Daintree Networked

- 3–WA100-PM-Wireless lighting control adapter
- 1–WWD2-Wireless wall dimmer
- 4–WOS2-CM-E-Wireless PIR occupancy sensor
- 2–WPS1-Wireless photocell
- 1–BZ200-20 Amp Auxillary Relay

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
- Each control zone must be no larger than 5,000 sq. ft.
- All control zones in the open office area must be turned off if no activity is detected.
- Emergency fixtures may require an automatic load control relay (per WA100-PM), which would bypass normal controls and cause the light level to change to 100% after a loss of normal power.
- BZ200 is capable of supporting 20 amp plug load receptacles.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)1C and exception



**TOP TRIMMING\***



**MANUAL-ON**  
130.1(a) and exception



**DAYLIGHT HARVESTING**  
130.1(d)



**EMERGENCY LIGHTING**



**MULTI-LEVEL CONTROL**  
130.1(b)



**PLUG LOAD CONTROL**

## LIGHTING BEHAVIOR

- Lights turn on automatically when an occupant enters the zone.
- Lights adjust brightness based on daylight availability while the room is occupied. At the perimeter is a primary zone, as well as a secondary daylighting zone.

- Occupants may use wall dimmers to set desired light levels.
- Lights turn off when a zone is vacant for at most 20 minutes.
- Lights connected to emergency circuits default to 100% output during a power loss.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
	WAPM	WA100-PM	Wireless lighting control adapter	3
	\$	WWD2	Wireless wall dimmer	1
	\$ 4	WWD2-4xx**	Wireless scene switch	1
	OS	WOS2-CM-E	Wireless PIR occupancy sensor	4
	PS	WPS1	Wireless photocell	2
	NET WAC	WAC60	Wireless access controller	1**
	20A AUX	BZ200	Power pack	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

\*\*\* WWD2-4xx can be used in place of wireless wall dimmer to preset 4 light levels, or can be used as a 2 zone dimmer.

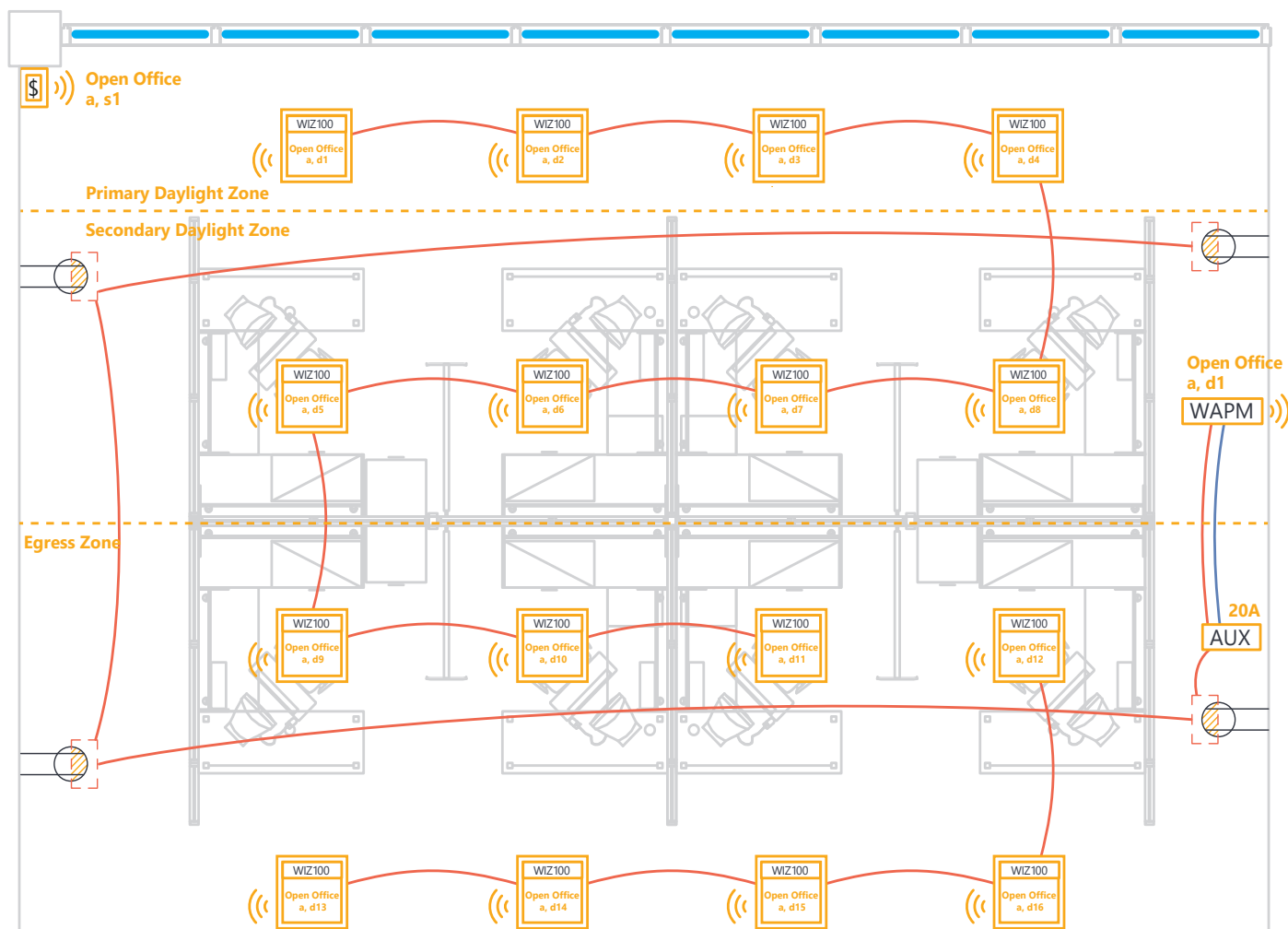
**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

Adapters can be wired to additional fixtures on same circuit. Ensure fixtures wattage and mA loads stay below adapter electrical ratings.

Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

# Open Office

Sensor Integrated Fixture Option



— Line-Voltage Wiring    — Low-Voltage Wiring    — Window

## Open Office Daintree Networked

16–WIZ100-Integrated fixture control with daylight and occupancy

1–WA100-PM-Wireless lighting control adapter

1–WWD2-Wireless wall dimmer

1–BZ200-20 Amp Auxillary Relay

- Each control zone must be no larger than 600 sq. ft.
- All control zones in the open office area must be turned off if no activity is detected in any zone for 20 minutes.
- Many Lumination® LED luminaires come preinstalled with WIZ100 sensors and can be ordered with Daintree Networked "TZ" Controls Catalog logic. For a complete list of Daintree Integrated Fixtures, visit [LED.com](http://LED.com).
- BZ200 is capable of supporting 20 amp plug load receptacles.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)1B, 130.1(c)1C and exception



**TOP TRIMMING\***



**MANUAL-ON**  
130.1(a) and exception



**DAYLIGHT HARVESTING**



**EMERGENCY LIGHTING**



**MULTI-LEVEL CONTROL**  
130.1(b)



**PLUG LOAD CONTROL**

## LIGHTING BEHAVIOR

- Lights turn on automatically when an occupant enters the zone.
- Lights adjust brightness based on daylight availability while the room is occupied. At the perimeter is a primary zone, as well as a secondary daylighting zone.
- Occupants may use wall dimmers to set desired light levels.

- Lights turn off when a zone is vacant for at most 20 minutes.
- Lights connected to emergency circuits default to 100% output during a power loss.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	1
		WIZ100	Integrated fixture control with daylight and occupancy**	16
		WWD2	Wireless wall dimmer	1
		WWD2-4xx***	Wireless scene switch	1
		BZ200	Power pack	1

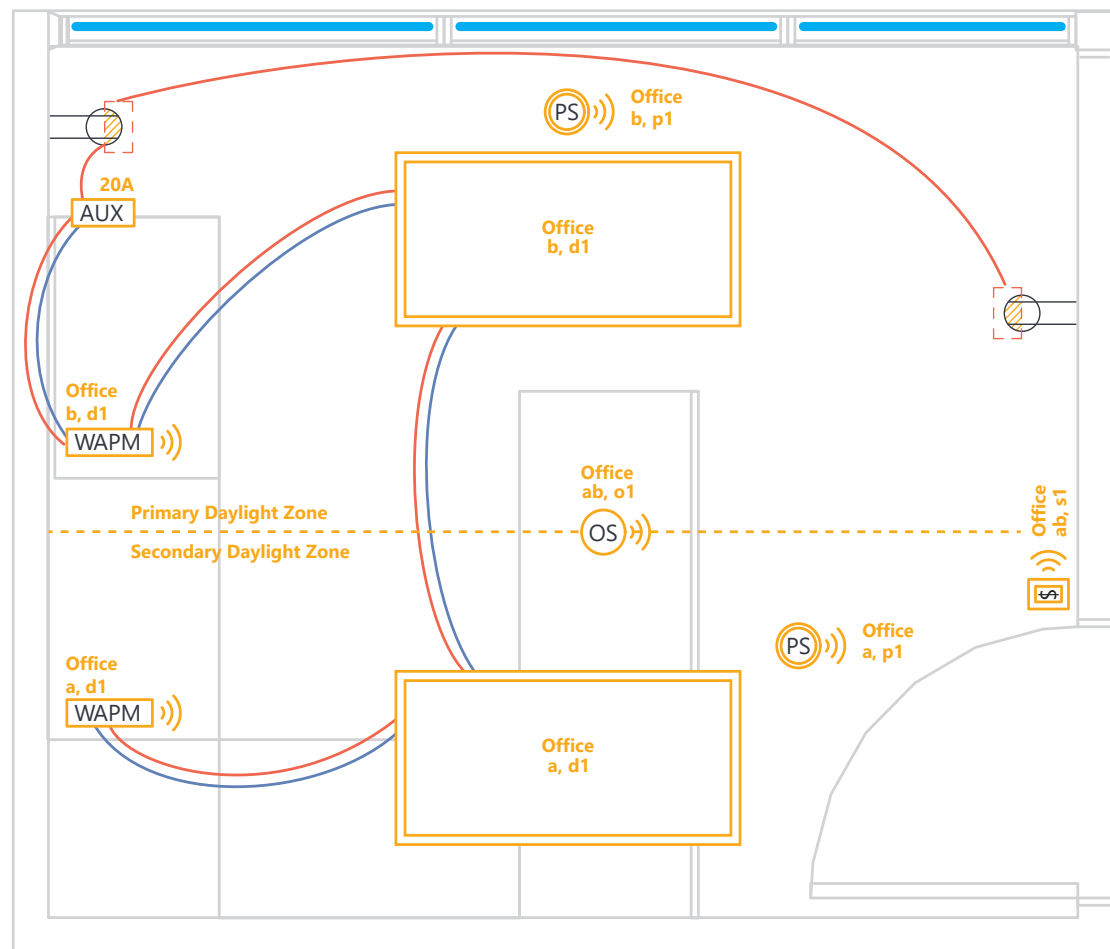
\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Order Lumination fixtures with "TZ" catalog logic for sensors preinstalled in fixtures.

\*\*\* WWD2-4xx can be used in place of wireless wall dimmer to preset 4 light levels, or can be used as a 2 zone dimmer.

# Private Office

Zonal Control Option



— Line-Voltage Wiring    — Low-Voltage Wiring    — Window

### Private Office Daintree Networked

- 2-WA100-PM-Wireless lighting control adapter
- 1-WWD2-Wireless wall dimmer
- 1-WOS2-CM-E-Wireless PIR occupancy sensor
- 2-WPS1-Wireless photocell
- 1-BZ200-20 Amp Auxillary Relay

- Each WA100-PM is capable of supporting 5mA sink or source on its 0–10V dimming circuit and can provide on/off via its line-voltage relay. Ensure zones are designed with respect to maximum sinking current supported by WA100-PM.
- Due to the size of the room, daylighting controls need to be installed individually. This can be done by field installing an adapter or ordering an integrated granular fixture.
- BZ200 is capable of supporting 20 amp plug load receptacles.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)1C, 130.1(c)5, 130.1(c)5A or 130.1(c)5B



**TOP TRIMMING\***



**PLUG LOAD CONTROL**



**MANUAL-ON**  
130.1(a)



**DAYLIGHT HARVESTING**  
130.1(d) and exception



**MULTI-LEVEL CONTROL**  
130.1(b)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 50% when an occupant enters the space or full brightness with manual-on.
- Lights adjust brightness based on daylight availability while the room is occupied. There is two daylighting zones.
- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off within 20 minutes after all occupants exit.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WA100-PM	Wireless lighting control adapter	2
		WWD2	Wireless wall dimmer	1
		WOS2-CM-E	Wireless PIR occupancy sensor	1
		WPS1	Wireless photocell	2
		WAC60	Wireless access controller	1**
		BZ200	Power pack	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

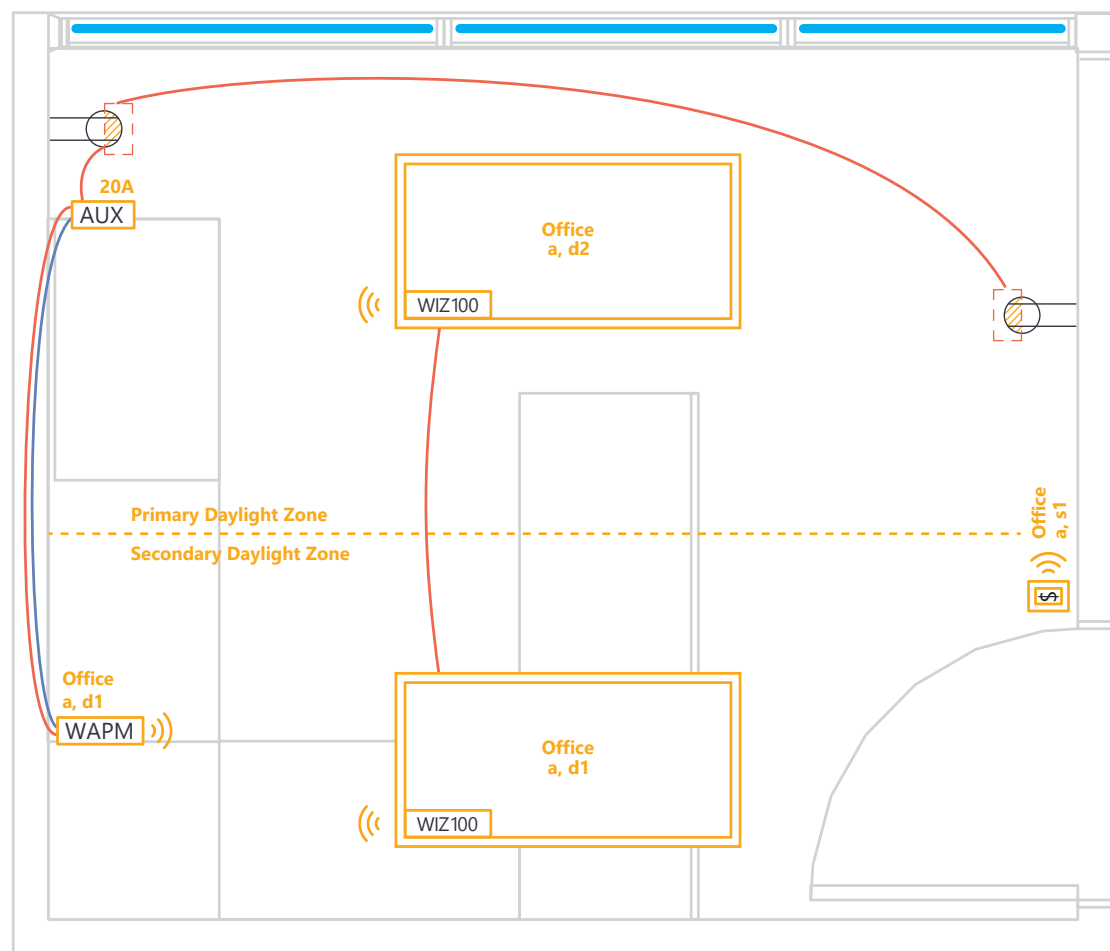
\*\* Daintree Networked leverages a wireless access controller (WAC60) and can support 175 nodes per WAC60. Multiple rooms can connect to the Daintree Networked platform using a WAC60.

**Notes:** A node is any Daintree wireless device that connects and communicates to the system.

Many Current indoor fixtures can be ordered with TQ or TS controls catalog logic. These controls catalog logic support Daintree Networked zonal control.

# Private Office

Sensor Integrated Fixture Option



— Line-Voltage Wiring    — Low-Voltage Wiring    — Window

## Private Office Daintree Networked

- 2–WIZ100-Integrated fixture control with daylight and occupancy
- 1–WA100-PM-Wireless lighting control adapter

- 1–WWD2-Wireless wall dimmer
- 1–BZ200-20 Amp Auxillary Relay

- Many Lumination® LED luminaires come preinstalled with WIZ100 sensors and can be ordered with Daintree Networked "TZ" Controls Catalog logic. For a complete list of Daintree Integrated Fixtures, visit [LED.com](http://LED.com).
- BZ200 is capable of supporting 20 amp plug load receptacles.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**  
130.1(c)1A, 130.1(c)1C, 130.1(c)5, 130.1(c)5A or 130.1(c)5B



**TOP TRIMMING\***



**PLUG LOAD CONTROL**



**MANUAL-ON**  
130.1(a)



**DAYLIGHT HARVESTING**



**MULTI-LEVEL CONTROL**  
130.1(b)

## LIGHTING BEHAVIOR

- Lights turn on automatically to 50% when an occupant enters the space or full brightness with manual-on.
- Lights adjust brightness based on daylight availability while the room is occupied. There is one perimeter daylighting zone.
- Occupants may use wall dimmers to set desired light levels.
- All lights automatically turn off within 20 minutes after all occupants exit.
- Plug load control will operate based on occupancy and scheduling of the room.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
	WAPM )))	WA100-PM	Wireless lighting control adapter	1
	WIZ100	WIZ100	Integrated fixture control with daylight and occupancy**	2
	\$\$\$ )))	WWD2	Wireless wall dimmer	1
	AUX <sup>20A</sup>	BZ200	Power pack	1

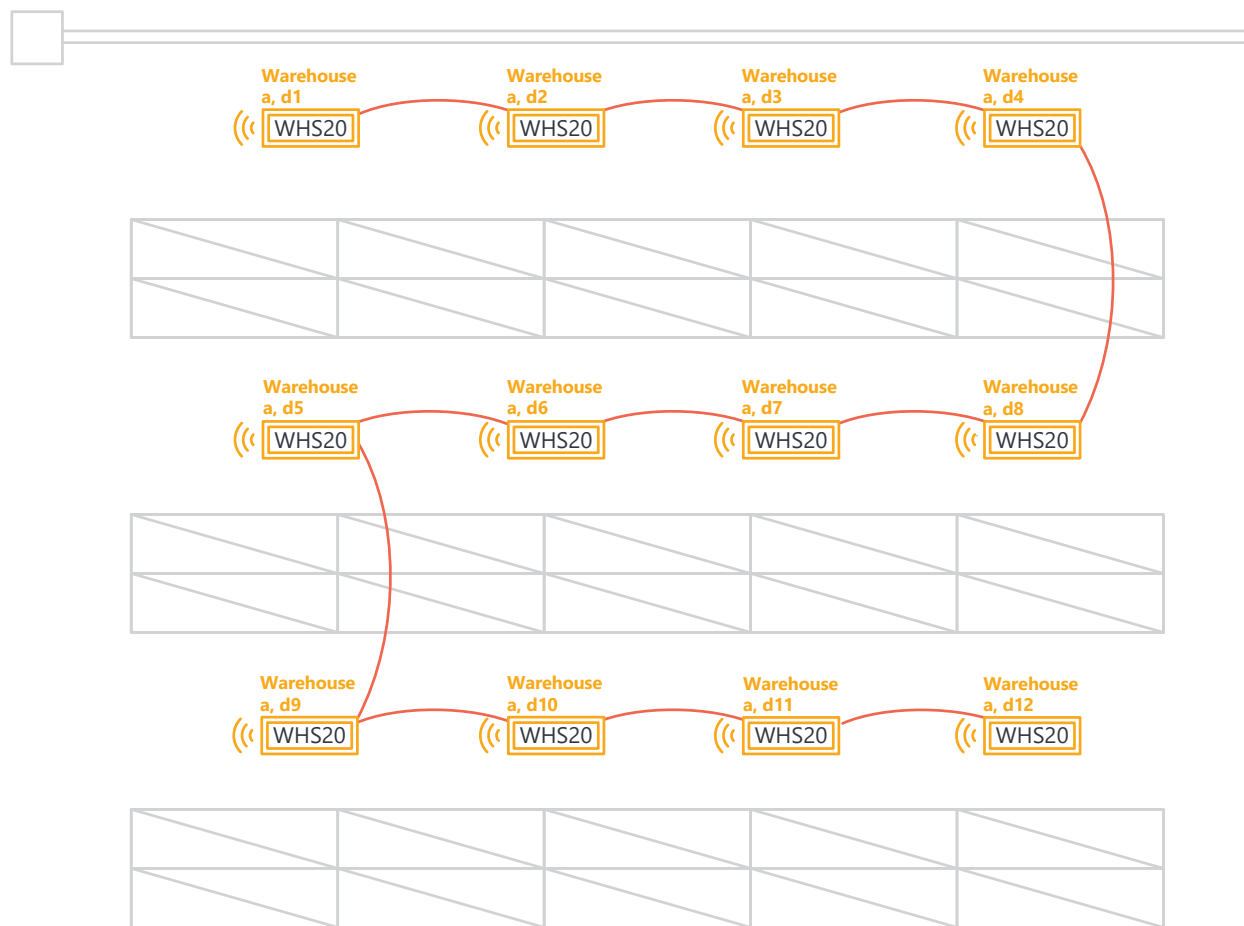
\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Order Lumination fixtures with "TZ" catalog logic for sensors preinstalled in fixtures.



# Warehouse

Standalone Fixture Control



— Line-Voltage Wiring

## Warehouse Daintree One

12-WHS20-High bay fixture control with daylight and occupancy

- Order Albeo® High Bay Fixtures with "FB" catalog logic for sensors preinstalled in fixtures.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**



**DAYLIGHT HARVESTING**



**TOP TRIMMING\***

## LIGHTING BEHAVIOR

- Automatically reduce lighting  $\geq 50\%$  when unoccupied.
- Each aisle can be independently controlled.
- Lights adjust brightness based on daylight availability while the room is occupied.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WHS20	High bay fixture control with daylight and occupancy	12
		WHR1	Daintree One remote for WHS20 sensors	1

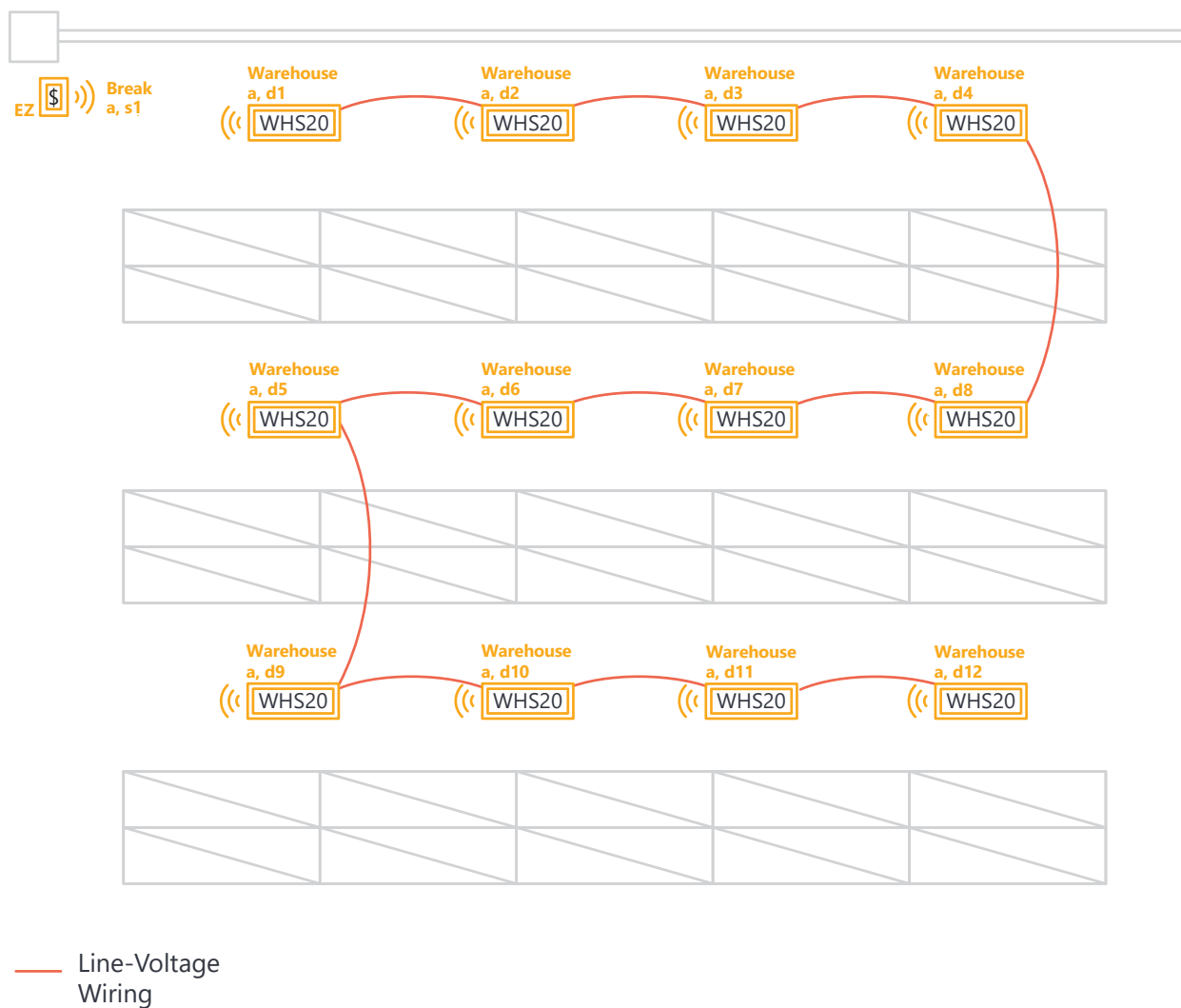
\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Order Albeo fixtures with "FB" catalog logic for sensors preinstalled in fixtures.

**Note:** Daintree WHS20 can be custom-programmed with the WHR1 remote.

# Warehouse

## Zonal Fixture Control



### Warehouse Daintree EZ Connect

12-WHS20-High bay fixture control with daylight and occupancy

- Order Albeo® High Bay Fixtures with "DF" catalog logic for sensors preinstalled in fixtures.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**



**TOP TRIMMING\***



**DAYLIGHT HARVESTING**

## LIGHTING BEHAVIOR

- Automatically reduce lighting  $\geq 50\%$  when unoccupied.
- Each aisle can be independently controlled.
- Lights adjust brightness based on daylight availability while the room is occupied.
- Lights must turn off after aisle is vacated after 20 minutes.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WHS20	High bay fixture control with daylight and occupancy	12
		NA	Daintree EZ Connect App	1
		ZBT-S1AWH	Wireless dimmer switch	1

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

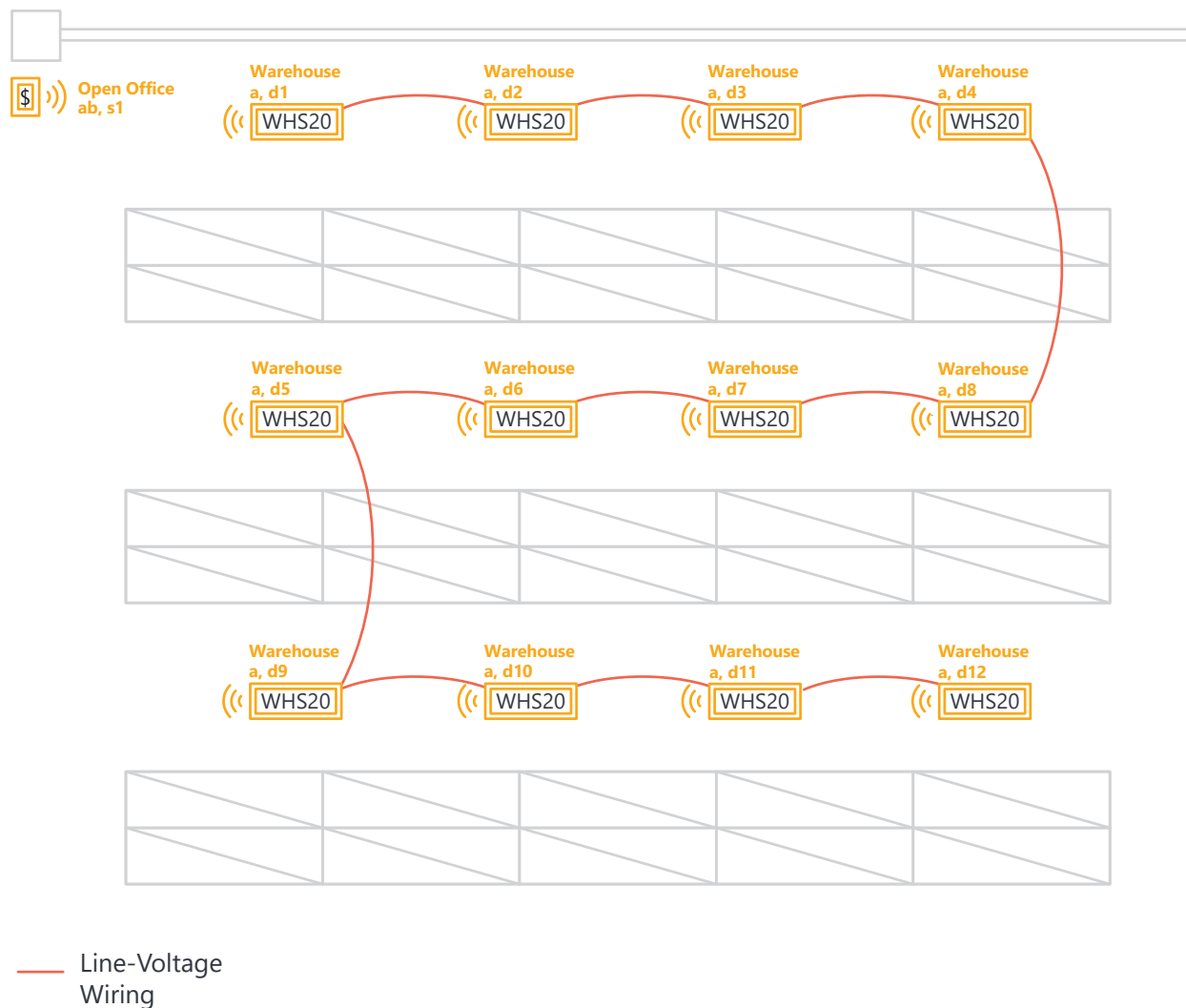
\*\* Order Albeo fixtures with "DF" catalog logic for sensors preinstalled in fixtures.

**Note:** Daintree WHS20 can be custom programmed with the Daintree EZ Connect App available on the Apple® App Store.



# Warehouse

Sensor Integrated Fixture Control



## Warehouse Daintree One

12–WHS20-High bay fixture control with daylight and occupancy

- Order Albeo® High Bay Fixtures with "NA" catalog logic for sensors preinstalled in fixtures.
- All general area lighting in rooms >100 sq. ft. and < 0.5W/sq. ft. shall meet control step requirements of Table 130.1-A Multi-Level Lighting Controls & Uniformity.

## CONTROL STRATEGIES



**OCCUPANCY/VACANCY CONTROL**



**TOP TRIMMING\***



**DAYLIGHT HARVESTING**

## LIGHTING BEHAVIOR

- Automatically reduce lighting  $\geq 50\%$  when unoccupied.
- Each aisle can be independently controlled.
- Lights adjust brightness based on daylight availability while the room is occupied.
- Lights must turn off after aisle is vacated after 20 minutes.

## SOLUTION COMPONENTS

Picture	Symbol	Model Number	Description	Quantity
		WHS20	High bay fixture control with daylight and occupancy	12
		WWD2	Wireless wall dimmer	1
		WWD2-4x***	Wireless scene switch	1
		WAC60	Wireless access controller	1**

\* Top trimming maximum light output is not required by code but is a recommended practice for energy savings.

\*\* Order Albeo fixtures with "NA" catalog logic for sensors preinstalled in fixtures.

\*\*\* WWD2-4xx can be used in place of wireless wall dimmer to preset 4 light levels, or can be used as a 2 zone dimmer.

**Note:** Daintree WHS20 can be custom programmed with Daintree Controls Software web application in Daintree Networked.



# Current

## Current - GLI Brands

25825 Science Park  
Beachwood, OH 44122

## LED.com

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