design and application guide
volume 3

WaveLinx

Emergency Lighting Control Solutions

Flexible. Connected. Secure.

WaveLinx PRO | WaveLinx LITE | WaveLinx CAT

COOPER Lighting Solutions

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WaveLinx EM

Emergency Lighting Control Solutions

Delivering peace of mind with simplicity

Imagine a building coming alive with activity. People are working, shopping, or enjoying themselves.

But what happens if the lights go out?

Egress and emergency lighting come in as silent guardians, ensuring a safe path out in case of an emergency or power outage. By keeping these critical pathways illuminated, everyone inside can find their way out calmly and quickly.

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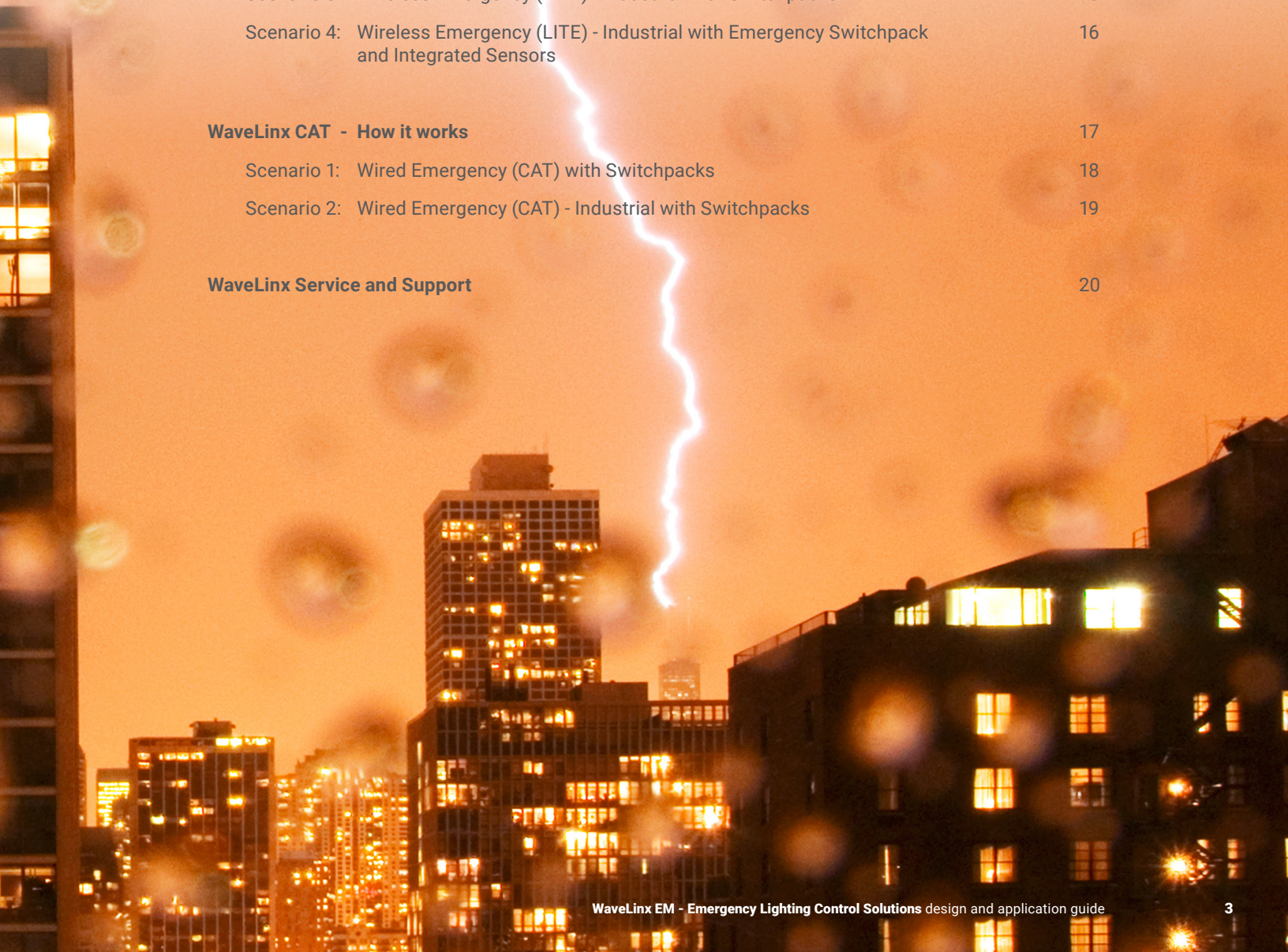


WaveLinx Wireless Emergency Solution

Overview

Centralized Emergency Power Solutions (generators and inverters) are excellent sources for backup power. However, the drawback for them has always been additional wiring requirements and complex (internal) fixture wiring, with an emergency transfer relay device (ETRD), for lighting solutions with integrated controls.

The WaveLinx Emergency (WEM) solution offered by WaveLinx wireless (PRO and LITE) and wired (CAT) makes it easy to design your emergency lighting solution without the need for additional cable runs or an additional ETRD device within the luminaire.

All scenarios presented in this design guide are UL 924 compliant.

Figure 1: 0-10V Fixture with a PRO or LITE ETRD versus one with the PRO or LITE WEM solution.

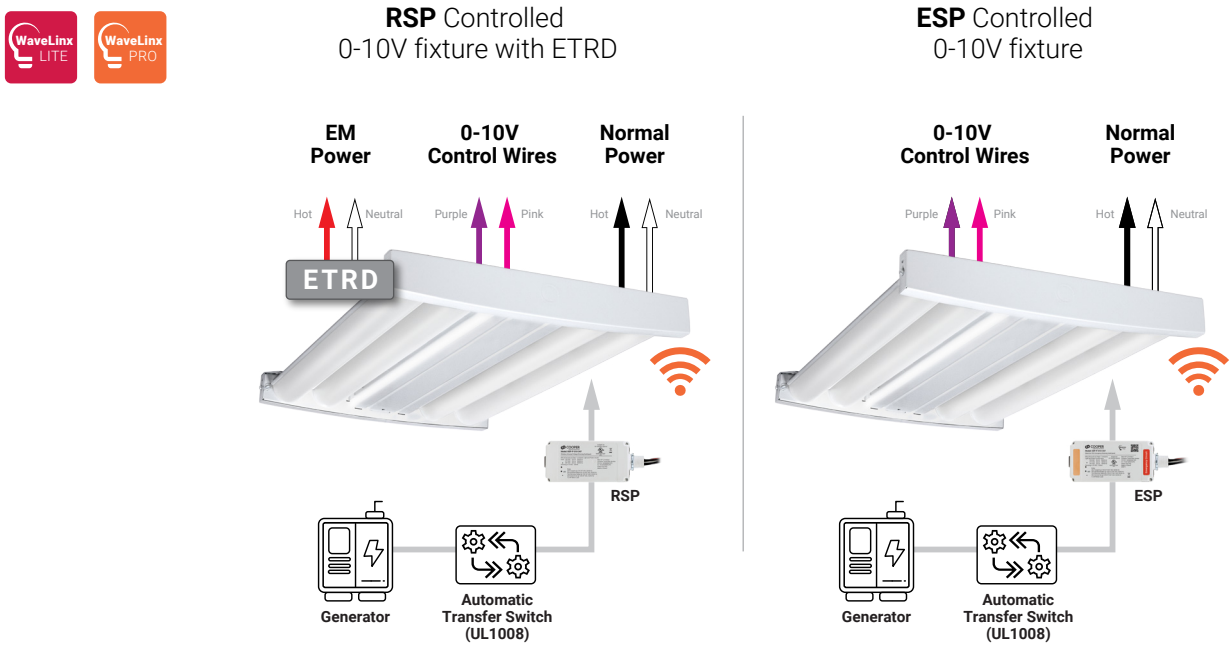
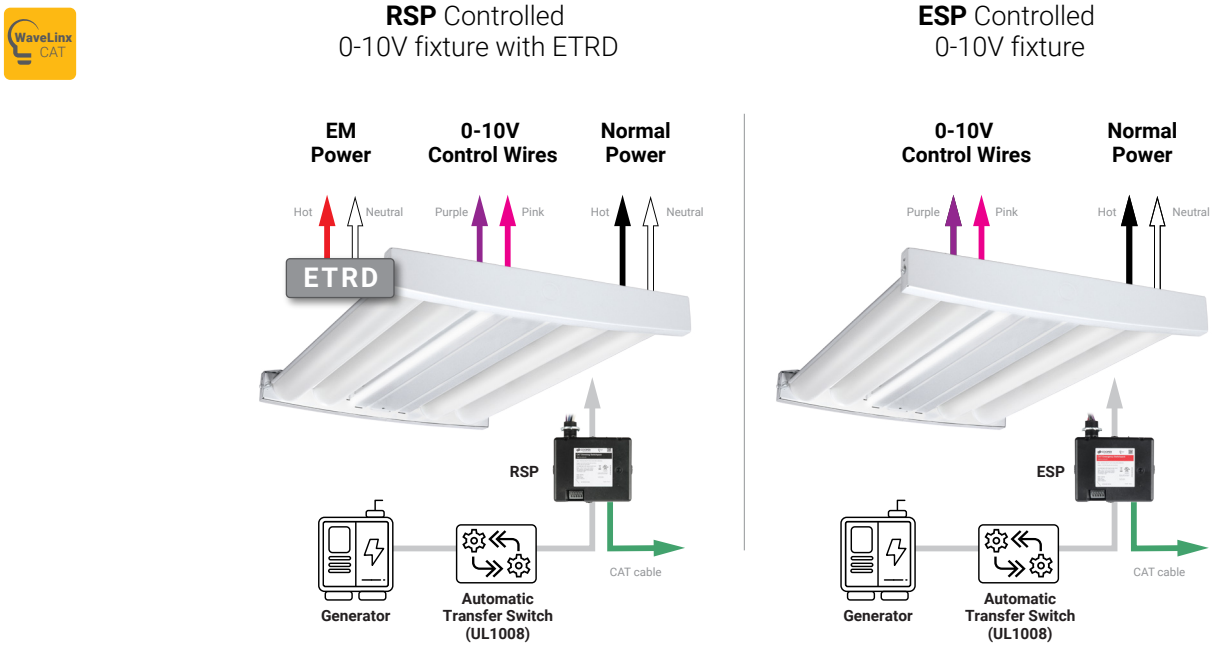


Figure 2: 0-10V Fixture with CAT ETRD versus one with the CAT WEM solution.



How it works

Essentially, WaveLinx emergency systems are designed to meet UL 924 standards, so they activate lighting within 10 seconds of a power loss and maintain lighting while emergency power is present and normal power is not.

If Normal Power Sensing (NPS) devices detect power loss, it triggers associated WaveLinx Emergency Modules (WEM) by way of wireless or wired signals via PRO/LITE and CAT respectively. The WEMs then override lighting controls until power is restored, at which point the system is returned to normal operation.

A UL1008 transfer switch ensures continuous power to WEMs – which also simplifies installation by eliminating separate feeds.

Extensive testing by Cooper Lighting Solutions confirms the reliability and compliance of both wireless and wired solutions.

UL924 LISTED

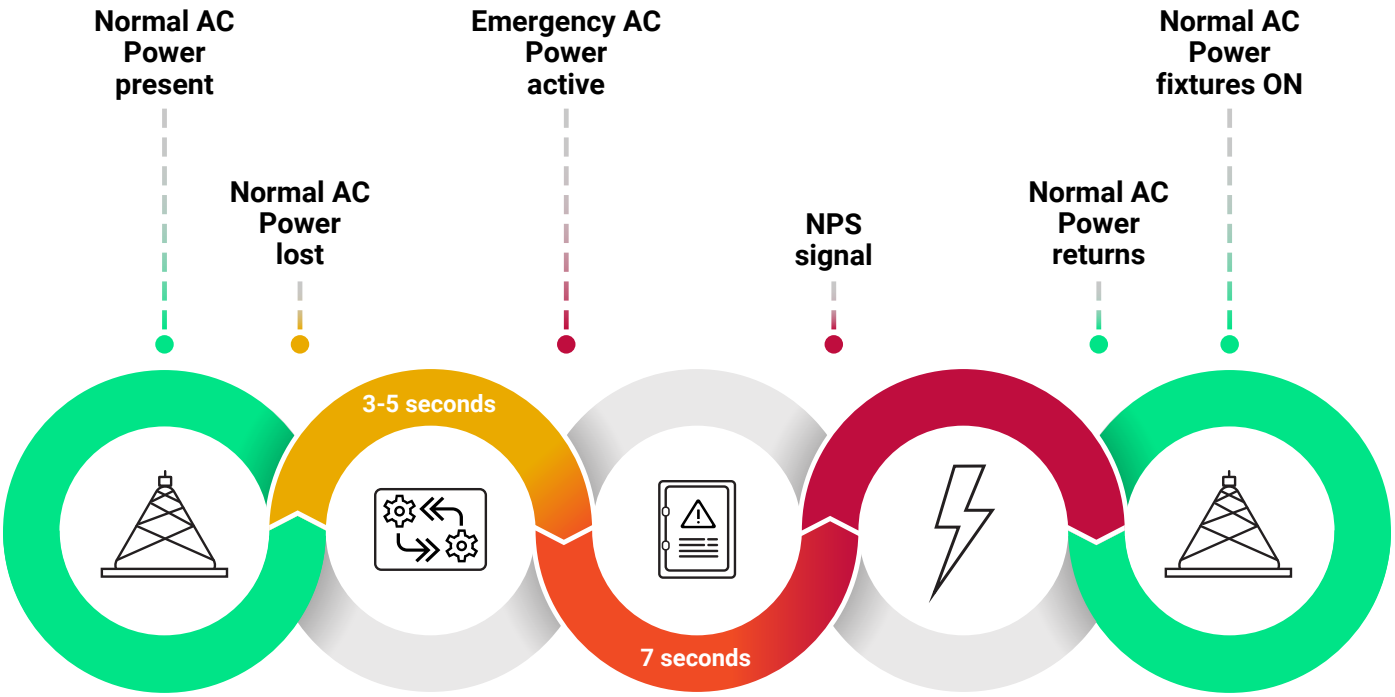
Normal Operation

Normal Power Sensing (NPS) devices are used to detect the presence of normal power for an emergency set. Through wired or wireless communication, the NPS devices communicates the presence of normal power to the emergency device allowing the lighting controls to function seamlessly for a reliable user experience. By leveraging the NPS devices to sense normal power, an additional (normal power) electrical feed is not required to the emergency device.

Emergency Operation

During an emergency event, the NPS will lose power and while the EM devices will receive power from the emergency circuit that has transferred power (through an upstream UL1008 transfer switch) to the central backup power. When an NPS device loses power, the EM device will force the fixtures associated with that device to 100% output and ignore all manual actions. Once power is returned the EM devices will return to their last state.

WaveLinx Wireless Emergency Sequence of Operations



NPS devices advertise that normal power is sensed

Automatic transfer switch (ATS) connects to the emergency power source

Emergency lights connected to the ESP illuminate to full brightness (since AC power has been lost for ≥ 2 sec)

Note: For ESPs connected to a UPS or that lose power for less than 2 seconds, it will come up to the last controlled state, but it will be looking for the NPS signal.

No NPS signal/beacon received for more than 7 seconds, the ESP maintains the emergency fixtures at full light output

Automatic transfer switch (ATS) connects to the normal grid power source

Emergency fixtures (connected to the ESPs) are controllable within seconds and return to its previous state before the loss of power

Emergency Provisioning

To ensure proper Emergency Mode operation:

- The Emergency Switchpack must be powered from an emergency lighting circuit and be connected to emergency lighting fixture(s). Fixtures may be ON/OFF or dimmable via 0-10V connection.
- The Emergency Switchpack must be provisioned to a zone within a Networked Area.
- At least one normal power sensing (NPS) device must be provisioned to a zone belonging to the same Networked Area. The NPS device must be connected to a normal power circuit. Up to three NPS devices may be assigned to trigger EM Mode if desired (allows for three phase monitoring if one NPS device is connected to a normal circuit from each electrical phase).
- In the case of WaveLinx CAT, the NPS beacon is provided by provisioned RSP via the category cable. In this case, when the RSP loses AC power, the NPS beacon will stop triggering the emergency mode. In multiple phase situations, where more than one RSP could be AC powered by one of the phases, loss of an NPS beacon from one of the RSPs would trigger the EM mode (even though the category cable bus may be active).
- In the case of WaveLinx CAT, only RSPs that are AC powered can be NPS devices.

WaveLinx PRO

Emergency Lighting Control Solutions

The **WaveLinx PRO Emergency Switchpack** (ESP-P-010-347) is a lighting control device designed to control (on/off/dim) commercial and industrial lights while providing Emergency capabilities without additional hardware.

- Consists of a 120-347VAC 20A relay and a continuous 0-10V dimming control
- Integrates and communicates with other PRO devices and the WaveLinx Area Controller using the PRO protocol, a 2.4GHz wireless mesh network based on the IEEE 802.15.4 standard
- The device works in tandem with the normal power sense devices in an emergency set to provide an emergency solution

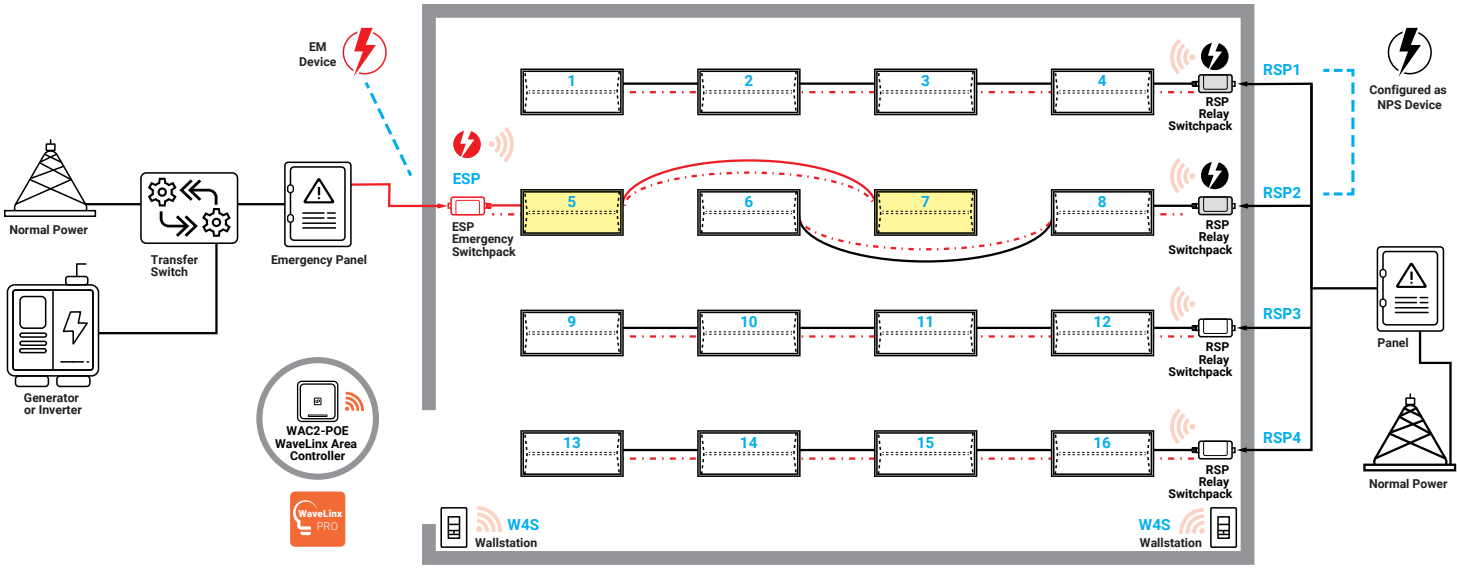
		NPS Compatible Devices			
		RSP-P-010-347	WPS (-WNPS)	WPS2 (-WNPS)	WPS4 (-WNPS)
Emergency Compatible Device	**ESP-P-010-347**	Y	Y	Y	Y

Other important guidelines

- Wireless EM devices cannot communicate with Wired NPS devices and, wired EM devices cannot communicate with Wireless NPS devices in one emergency set.
- During heavy network traffic (DSP , OTA upgrade) we may observe false triggers

Design/System Limitations per WAC	
Guideline	Value
Max number of NPS devices a WAC can support	6
Max number of NPS devices that can be assigned to an emergency set	3
Max number of emergency sets	6

PRO Scenario 1:
Wireless Emergency with Switchpacks

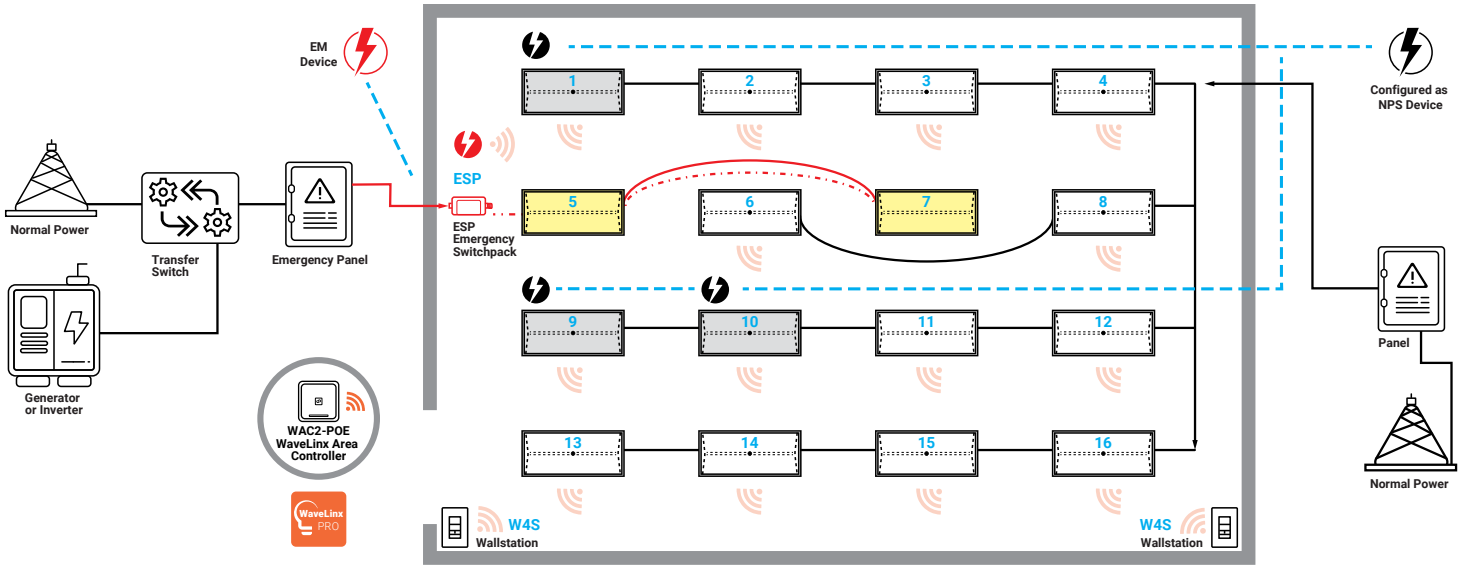


This scenario has the following bill of materials of WaveLinx PRO devices:

Bill of Material		
Quantity	Catalog #	Description
1	WAC2-POE	WaveLinx Area Controller
1	ESP-P-010-347	WaveLinx PRO emergency switchpack
4	RSP-P-010-347	WaveLinx PRO switchpack
2	W4S-RL-W	WaveLinx PRO wallstation
16	24EN-LD2-34-UNV-L835-CD-1-U	Encounter 2x4 with 0-10V dimming

- In this scenario, we have 16 Cooper Lighting Solutions Encounter fixtures equipped with a 0-10V dimming driver.
- Fixtures 5 and 7 are connected to the emergency panel via the PRO ESP.
- Fixtures 1~4 are controlled by RSP1, fixtures 6 and 8 are controlled by RSP2, fixtures 9~12 are controlled by RSP3, and fixtures 13~16 are controlled by RSP4.
- There are two W4S wallstations to enable local control.
- Since this is a PRO system, a WaveLinx Area Controller (WAC) has also been installed.
- RSP1 and RSP2 are configured as Normal Power Sensing (NPS) devices in the PRO app.
- These devices emit a wireless beacon to indicate that normal AC power is present. These wireless beacons are detected by the ESP1.
- In the event of an electrical power loss, RSP1 and RSP2 will go offline and will consequently stop transmitting the NPS beacon. In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the ESP1. ESP1 will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level and override any manual commands from the wallstation.

PRO Scenario 2:
Wireless Emergency with Emergency Switchpack and Integrated Sensors

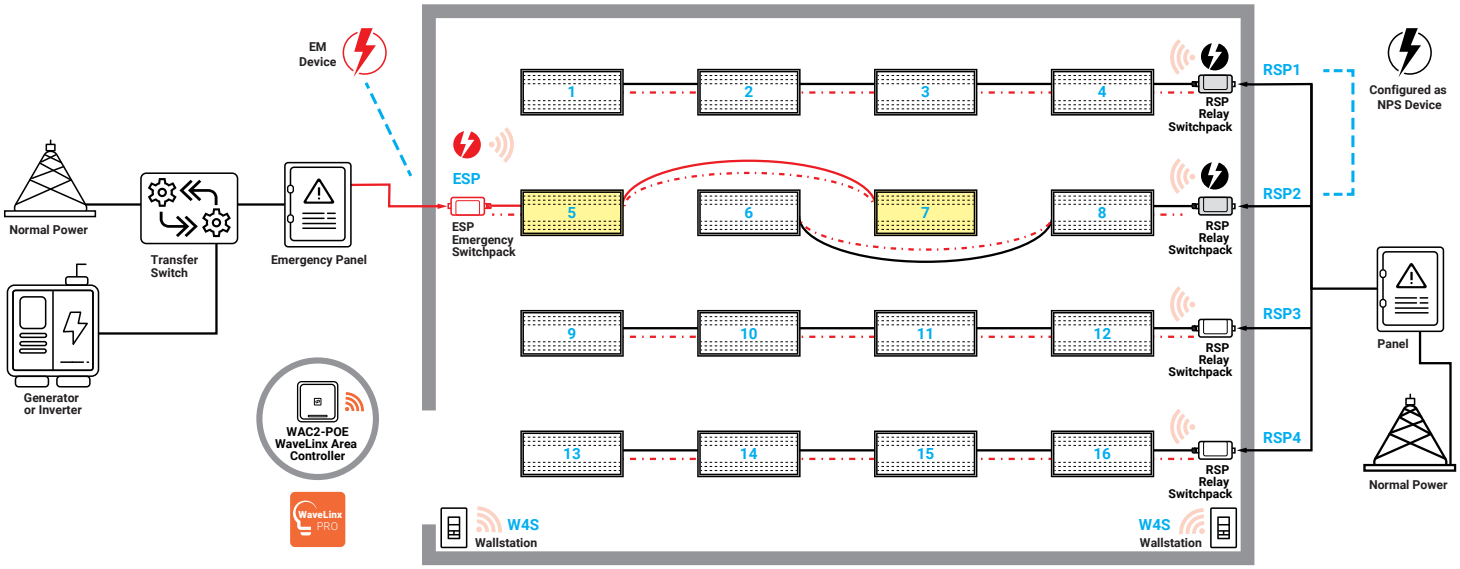


This scenario has the following bill of materials of WaveLinx PRO devices:

Bill of Material		
Quantity	Catalog #	Description
1	WAC2-POE	WaveLinx Area Controller
2	W4S-RL-W	WaveLinx PRO wallstation
1	ESP-P-010-347	WaveLinx PRO emergency switchpack
2	24EN-LD2-34-UNV-L835-CD-1-U	Encounter 2x4 with 0-10V dimming
14	24EN-LD2-34-UNV-WNPS-L835-CD-1-WPS-U	Encounter 2x4 with WaveLinx PRO NPS sensor

- In this scenario, we have 14 Cooper Lighting Solutions Encounter fixtures equipped with WaveLinx PRO sensors.
- Two fixtures are equipped with 0-10V dimming drivers.
- Fixtures 5 and 7 are connected to the emergency panel via the PRO ESP.
- All remaining fixtures are equipped with PRO NPS capable sensors.
- There are two W4S wallstations to enable local control.
- Since this is a PRO system, a WaveLinx Area Controller (WAC) has also been installed.
- The WPS sensors in fixtures 1, 9, and 10 are configured as NPS devices in the PRO app. All other fixtures are NPS capable and are equipped with PRO NPS sensors.
- These fixtures emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the PRO ESP connected to fixtures 5 and 7.
- In the event of an electrical power loss, the WPS sensors in fixtures 1, 9, and 10 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the PRO ESP.
- The PRO ESP will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level ignoring any occupancy and daylight harvesting control strategies.
- It will also override any manual commands from the wallstations.

PRO Scenario 3:
Wireless Emergency Industrial with Switchpacks

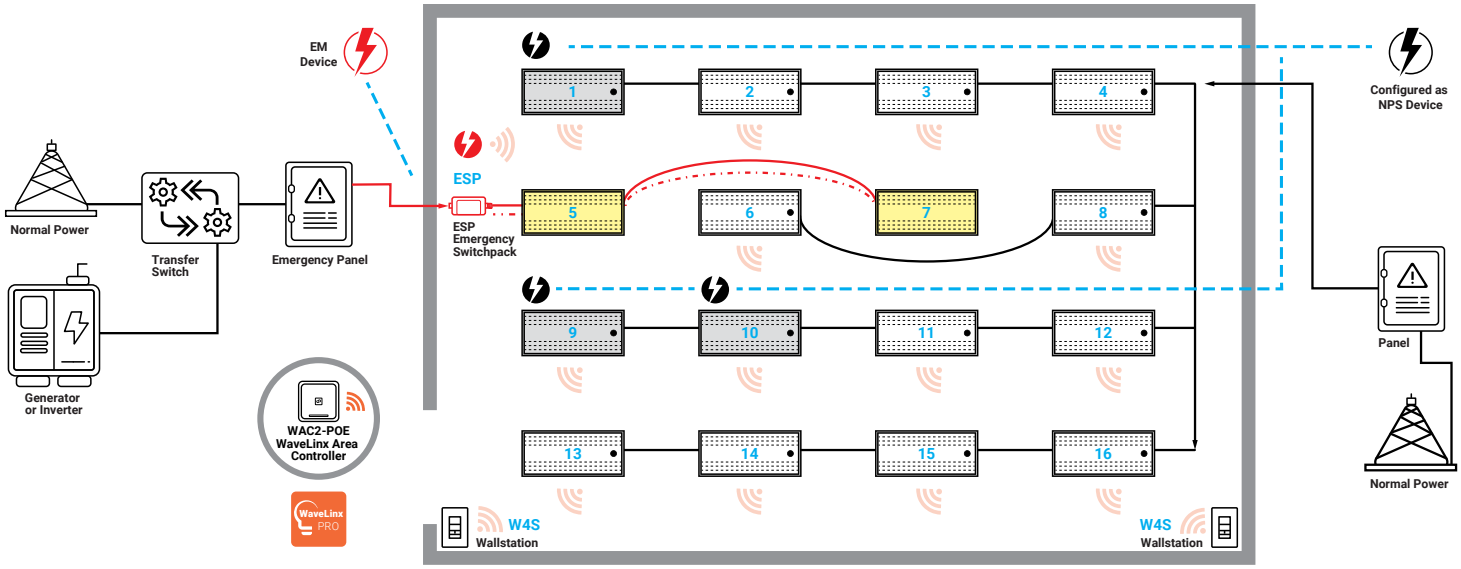


This scenario has the following bill of materials of WaveLinx PRO devices:

Bill of Material		
Quantity	Catalog #	Description
1	WAC2-POE	WaveLinx Area Controller
1	ESP-P-010-347	WaveLinx PRO emergency switchpack
4	RSP-P-010-347	WaveLinx PRO switchpack
2	W4S-RL-W	WaveLinx PRO wallstation
16	OHB-24SE-MFL-UNV-L840-CD-U	OHB 2ft with 0-10V dimming

- In this scenario, we have 16 Cooper Lighting Solutions Metalux OHB fixtures equipped with a 0-10V dimming driver.
- Fixtures 5 and 7 are connected to the emergency panel via the PRO ESP.
- Fixtures 1~4 are controlled by RSP1, fixtures 6 and 8 are controlled by RSP2, fixtures 9~12 are controlled by RSP3, and fixtures 13~16 are controlled by RSP4.
- There are two W4S wallstations to enable local control.
- Since this is a PRO system, a WaveLinx Area Controller (WAC) has also been installed.
- RSP1 and RSP2 are configured as Normal Power Sensing (NPS) devices in the PRO app.
- These devices emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the ESP1.
- In the event of an electrical power loss, RSP1 and RSP2 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the ESP1.
- ESP1 will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level and override any manual commands from the wallstation.

PRO Scenario 4:
Wireless Emergency Industrial with Emergency Switchpack and Integrated Sensors



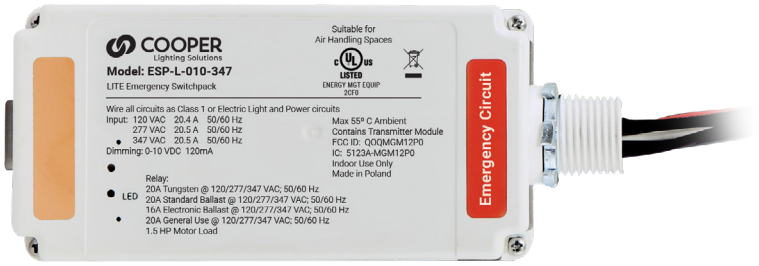
This scenario has the following bill of materials of WaveLinx PRO devices:

Bill of Material		
Quantity	Catalog #	Description
1	WAC2-POE	WaveLinx Area Controller
2	W4S-RL-W	WaveLinx PRO wallstation
1	ESP-P-010-347	WaveLinx PRO emergency switchpack
2	OHB-24SE-MFL-UNV-L840-CD-U	OHB 2ft with 0-10V dimming
14	OHB-24SE-MFL-UNV-L835-WNPS-CD-WPS4-U	OHB 2ft with WaveLinx PRO NPS sensor

- In this scenario, we have 14 Cooper Lighting Solutions Metalux OHB fixtures equipped with WaveLinx PRO sensors.
- Two fixtures are equipped with 0-10V dimming drivers.
- Fixtures 5 and 7 are connected to the emergency panel via the PRO ESP.
- All remaining fixtures are equipped with PRO NPS capable sensors.
- There are two W4S wallstations to enable local control.
- Since this is a PRO system, a WaveLinx Area Controller (WAC) has also been installed.
- The WPS sensors in fixtures 1, 9, and 10 are configured as NPS devices in the PRO app.
- These fixtures emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the PRO ESP connected to fixtures 5 and 7.
- In the event of an electrical power loss, the WPS sensors in fixtures 1, 9, and 10 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the PRO ESP.
- The PRO ESP will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level ignoring any occupancy and daylight harvesting control strategies.
- It will also override any manual commands from the wallstations.

WaveLinx LITE

Emergency Lighting Control Solutions



The **WaveLinx LITE Emergency Switchpack** (ESP-L-010-347) detects and responds to an emergency condition even during loss of power to normal devices – without the need for additional feeds. Once normal devices are provisioned, they'll communicate with the emergency device confirming the presence of normal power. The WaveLinx LITE mobile app test mode lets you simulate an emergency event without having to transfer power. This functionality allows for regular testing of installed devices without accessing upstream breakers.

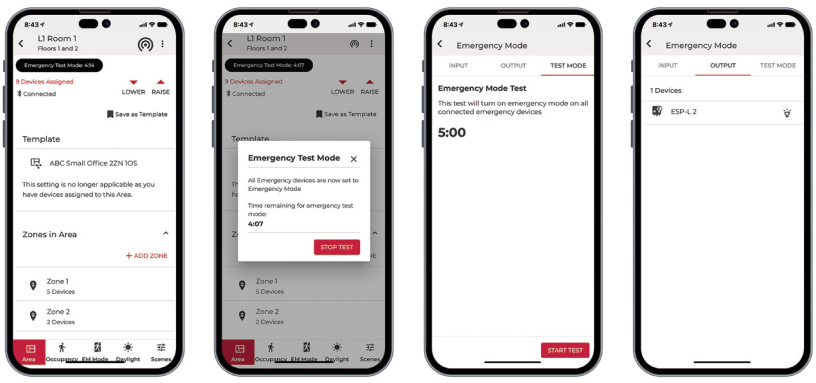
- Consists of a 120-347VAC 20A relay with continuous 0-10V dimming control
- Integrates and communicates with other LITE devices using the LITE protocol
- The device works in tandem with normal power sense devices in an emergency set to provide an emergency solution

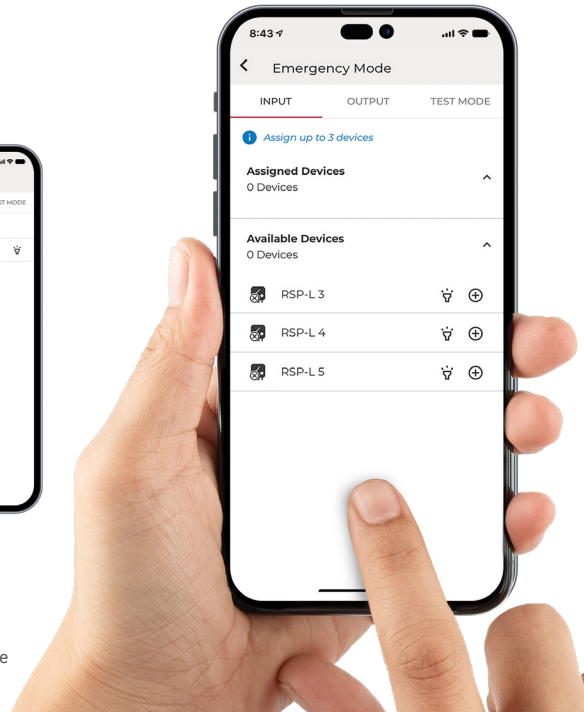
		NPS Compatible Devices			
		RSP-L-010-347	WLS (-WNPS)	WLS2 (-WNPS)	WLS4 (-WNPS)
Emergency Compatible Device	**ESP-L-010-347**	Y	Y	Y	Y

Other important guidelines

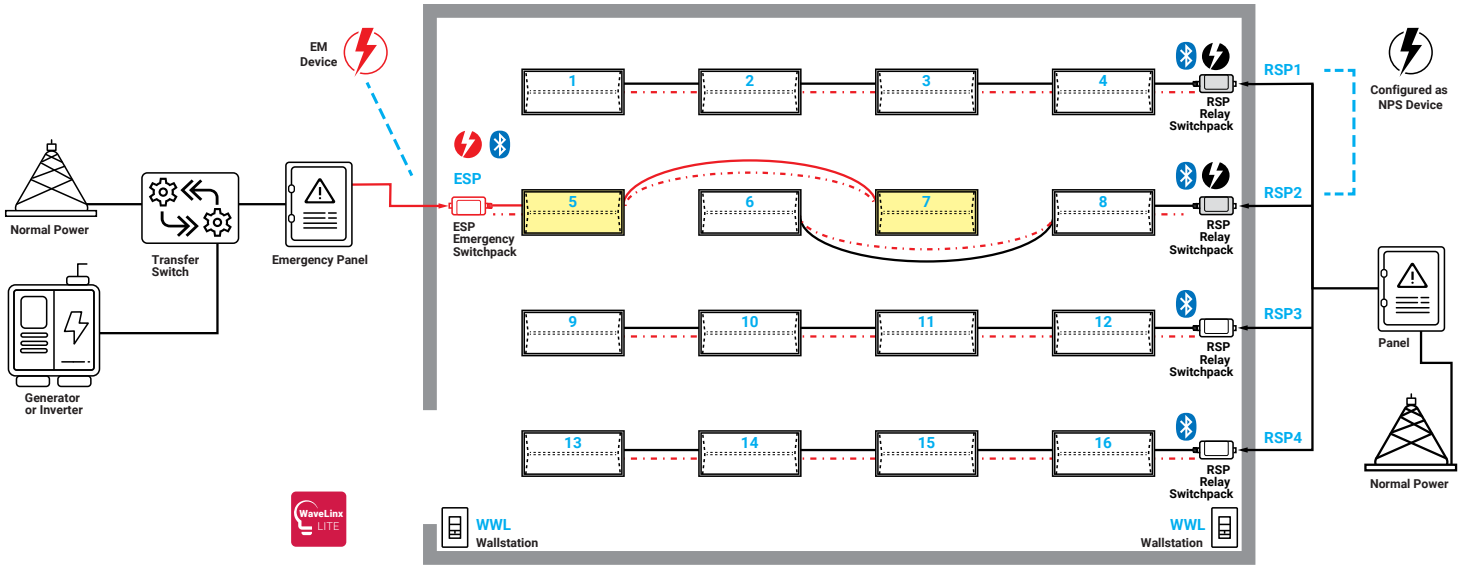
- Wireless EM devices cannot communicate with Wired NPS devices and, wired EM devices cannot communicate with Wireless NPS devices in one emergency set.
- During heavy network traffic (DSP , OTA upgrade) we may observe false triggers

Design/System Limitations	
Guideline	Value
Max number of NPS devices that can be assigned to an emergency set	3
Max number of emergency sets	1





LITE Scenario 1:
Wireless Emergency with Switchpacks

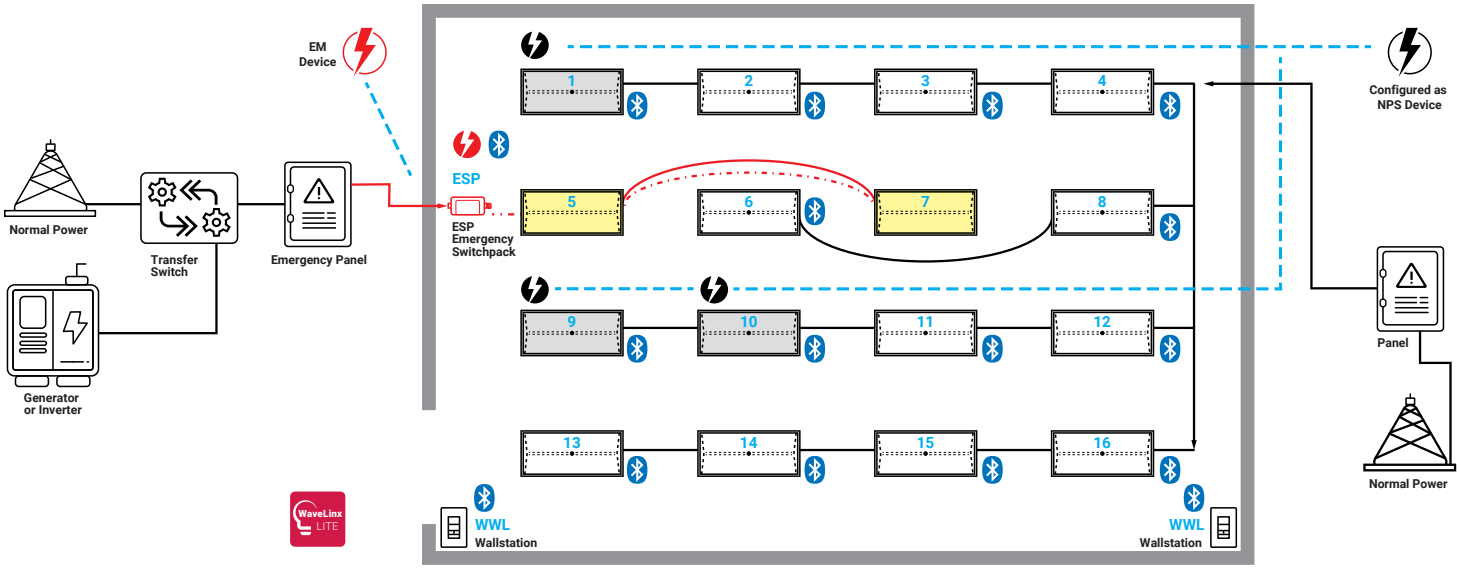


This scenario has the following bill of materials of WaveLinx LITE devices:

Bill of Material		
Quantity	Catalog #	Description
1	ESP-L-010-347	WaveLinx LITE emergency switchpack
4	RSP-L-010-347	WaveLinx LITE switchpack
2	WWL5-RL-W	WaveLinx LITE wallstation
16	24EN-LD2-34-UNV-L835-CD-1-U	Encounter 2x4 with 0-10V dimming

- In this scenario, we have 16 Cooper Lighting Solutions Encounter fixtures equipped with a 0-10V dimming driver.
- Fixtures 5 and 7 are connected to the emergency panel via the LITE ESP.
- Fixtures 1~4 are controlled by RSP1, fixtures 6 and 8 are controlled by RSP2, fixtures 9~12 are controlled by RSP3, and fixtures 13~16 are controlled by RSP4.
- There are two WWL5 wallstations to enable local control.
- RSP1 and RSP2 are configured as Normal Power Sensing (NPS) devices in the LITE app.
- These devices emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the ESP1.
- In the event of an electrical power loss, RSP1 and RSP2 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the ESP1.
- ESP1 will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level and override any manual commands from the wallstation.

LITE Scenario 2:
Wireless Emergency with Emergency Switchpack and Integrated Sensors

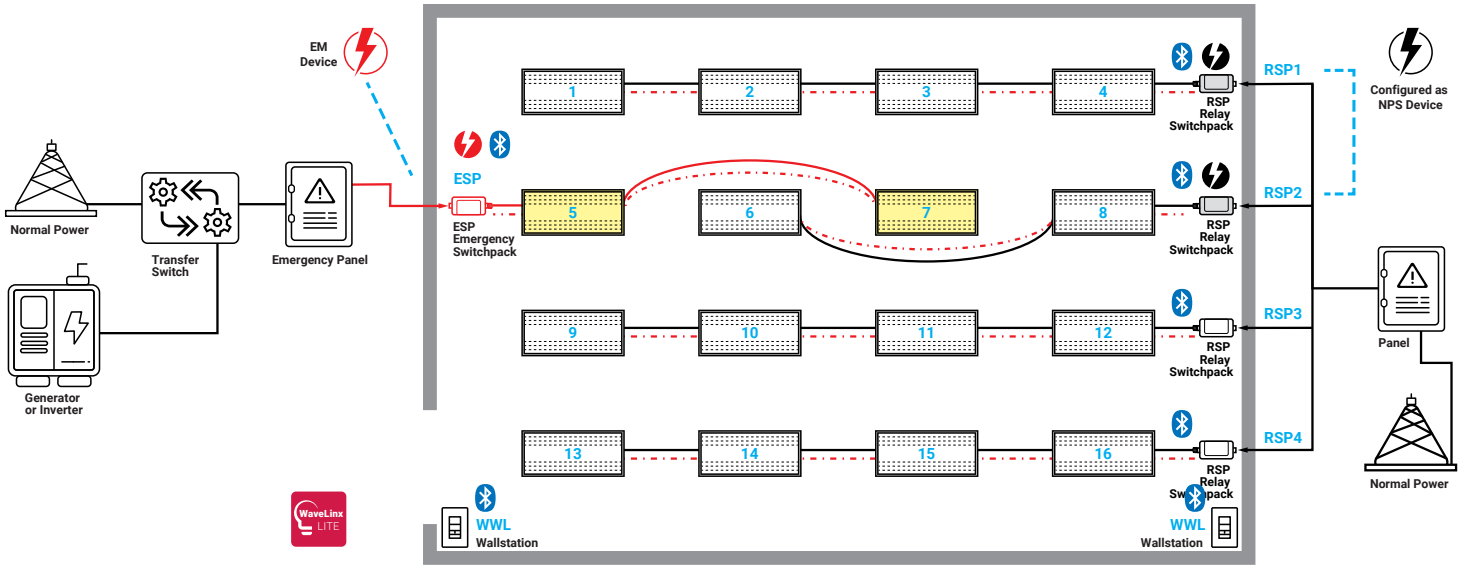


This scenario has the following bill of materials of WaveLinx LITE devices:

Bill of Material		
Quantity	Catalog #	Description
2	WWL5-RL-W	WaveLinx LITE wallstation
1	ESP-L-010-347	WaveLinx LITE switchpack
2	24EN-LD2-34-UNV-L835-CD-1-U	Encounter 2x4 with 0-10V dimming
14	24EN-LD2-34-UNV-WNPS-L835-CD-1-WLS-U	Encounter 2x4 with WaveLinx LITE NPS sensor

- In this scenario, we have 14 Cooper Lighting Solutions Encounter fixtures equipped with WaveLinx LITE sensors.
- Two fixtures are equipped with 0-10V dimming drivers.
- Fixtures 5 and 7 are connected to the emergency panel via the LITE ESP.
- All remaining fixtures are equipped with LITE NPS capable sensors.
- The remaining fixtures are equipped with a standard WaveLinx LITE integrated sensor.
- There are two WWL5 wallstations to enable local control.
- Since this is a LITE system, the system is provisioned using the WaveLinx LITE app.
- The WLS sensors in fixtures 1, 9, and 10 are configured as NPS devices in the LITE app.
- These fixtures emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the LITE ESP connected to fixtures 5 and 7.
- In the event of an electrical power loss, the WLS sensors in fixtures 1, 9, and 10 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the LITE ESP.
- The LITE ESP will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level ignoring any occupancy and daylight harvesting control strategies.
- It will also override any manual commands from the wallstations.

LITE Scenario 3:
Wireless Emergency Industrial with Switchpacks

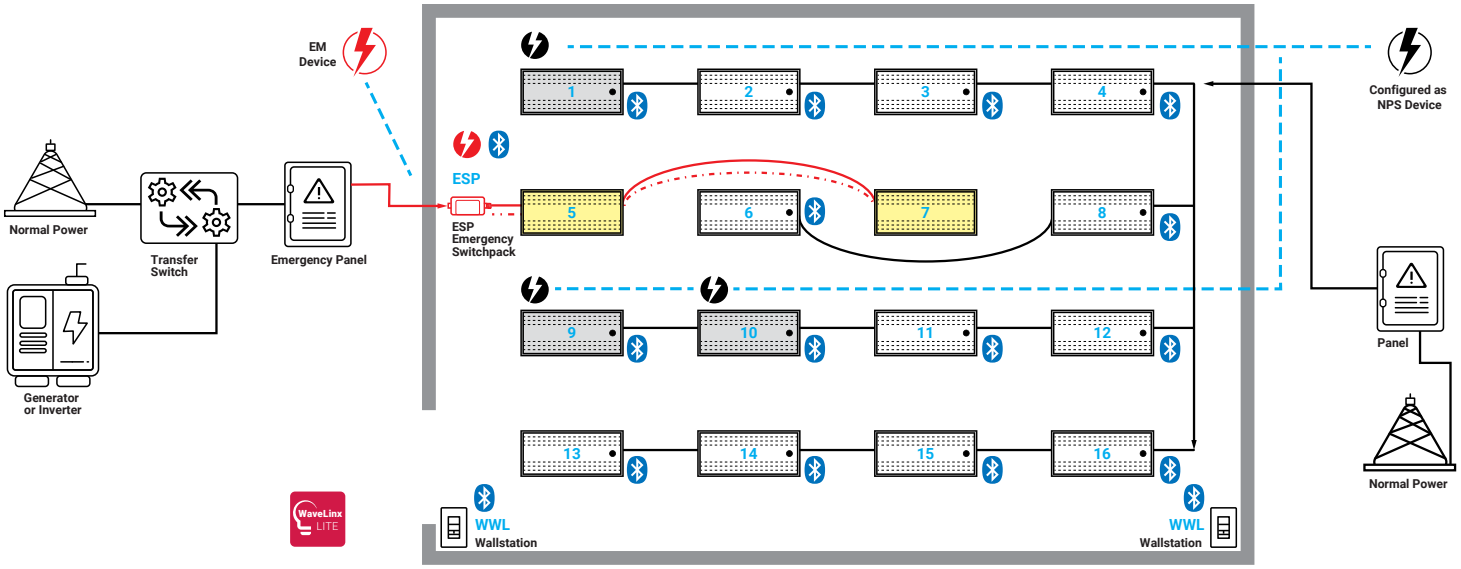


This scenario has the following bill of materials of WaveLinx LITE devices:

Bill of Material		
Quantity	Catalog #	Description
1	ESP-L-010-347	WaveLinx LITE emergency switchpack
4	RSP-L-010-347	WaveLinx LITE switchpack
2	WWL5-RL-W	WaveLinx LITE wallstation
16	OHB-24SE-MFL-UNV-L840-CD-U	OHB 2ft with 0-10V dimming

- In this scenario, we have 16 Cooper Lighting Solutions Metalux OHB fixtures equipped with a 0-10V dimming driver.
- Fixtures 5 and 7 are connected to the emergency panel via the LITE ESP (Emergency Switch Pack).
- Fixtures 1~4 are controlled by RSP1, fixtures 6 and 8 are controlled by RSP2, fixtures 9~12 are controlled by RSP3, and fixtures 13~16 are controlled by RSP4.
- There are two WWL5 wallstations to enable local control.
- Since this is a LITE system, the system is provisioned using the WaveLinx LITE app.
- These devices emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the ESP1.
- In the event of an electrical power loss, RSP1 and RSP2 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the ESP1.
- ESP1 will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level and override any manual commands from the wallstation.

LITE Scenario 4:
Wireless Emergency Industrial with Emergency Switchpack and Integrated Sensors



This scenario has the following bill of materials of WaveLinx LITE devices:

Bill of Material		
Quantity	Catalog #	Description
2	WWL5-RL-W	WaveLinx LITE wallstation
1	ESP-L-010-347	WaveLinx LITE emergency switchpack
2	OHB-24SE-MFL-UNV-L840-CD-U	OHB 2ft with 0-10V dimming
14	OHB-24SE-MFL-UNV-L835-WNPS-CD-WLS4-U	OHB 2ft with WaveLinx LITE sensor

- In this scenario, we have 14 Cooper Lighting Solutions Metalux OHB fixtures equipped with WaveLinx LITE sensors.
- Two fixtures are equipped with 0-10V dimming drivers.
- Fixtures 5 and 7 are connected to the emergency panel via the LITE ESP.
- All remaining fixtures are equipped with LITE NPS capable sensors.
- The remaining fixtures are equipped with a standard WaveLinx LITE integrated sensor.
- There are two WWL5 wallstations to enable local control.
- Since this is a LITE system, the system is provisioned using the WaveLinx LITE app.
- The WLS sensors in fixtures 1, 9, and 10 are configured as NPS devices in the LITE app.
- These fixtures emit a wireless beacon to indicate that normal AC power is present.
- These wireless beacons are detected by the LITE ESP connected to fixtures 5 and 7.
- In the event of an electrical power loss, the WLS sensors in fixtures 1, 9, and 10 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the LITE ESP.
- The LITE ESP will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level ignoring any occupancy and daylight harvesting control strategies.
- It will also override any manual commands from the wallstations.

WaveLinx CAT

Emergency Lighting Control Solutions

The **WaveLinx CAT Emergency Switchpack** (ESP-C-010-Z1) detects and responds to an emergency condition even during loss of power to normal devices – without the need for additional feeds. Once normal devices are provisioned, they'll communicate with the emergency device confirming the presence of normal power. The WaveLinx CAT mobile app test mode lets you simulate an emergency event without having to transfer power. This functionality allows for regular testing of installed devices without accessing upstream breakers.

- Consists of a 120-277VAC 20A relay with continuous 0-10V dimming control
- Integrates and communicates with other CAT devices via a category cable connection
- The device works in tandem with normal power sense devices in an emergency set to provide an emergency solution

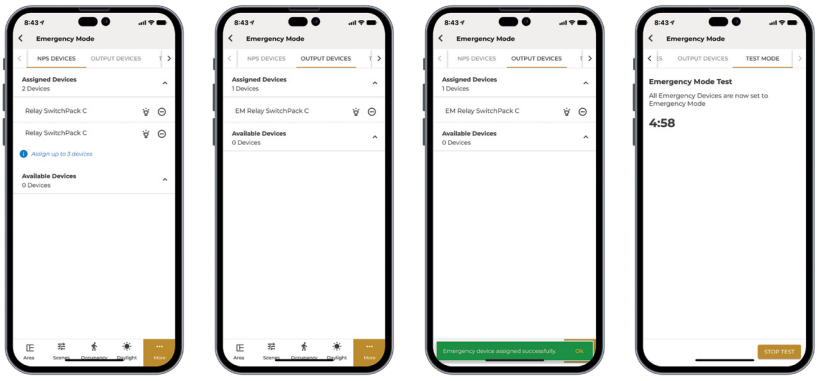
Other important guidelines

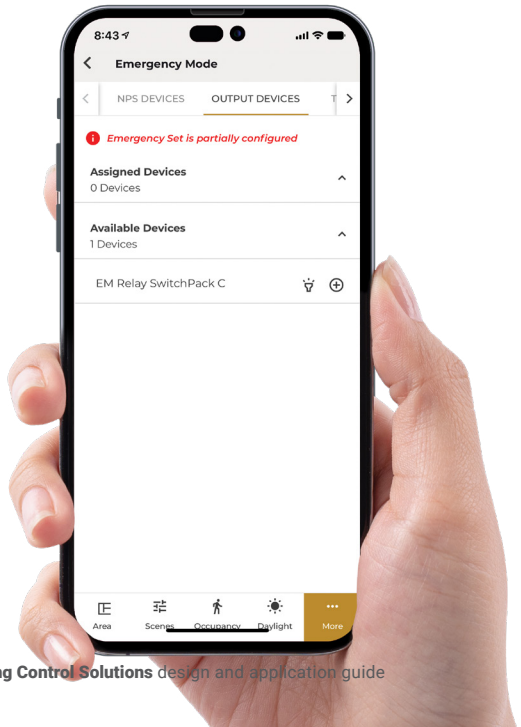
- Wireless EM devices cannot communicate with Wired NPS devices and, wired EM devices cannot communicate with Wireless NPS devices in one emergency set.
- During heavy network traffic (DSP , OTA upgrade) we may observe false triggers
- The NPS beacon is provided by provisioned RSP via the category cable. In this case, when the RSP loses AC power, the NPS beacon will stop triggering the emergency mode. In multiple phase situations, where more than one RSP could be AC powered by one of the phases, loss of an NPS beacon from one of the RSPs would trigger the EM mode (even though the category cable bus may be active).
- Only RSPs that are AC powered can be NPS devices.

		NPS Compatible Devices
		RSP-C-010-Z1
Emergency Compatible Device	**ESP-C-010-Z1**	Y

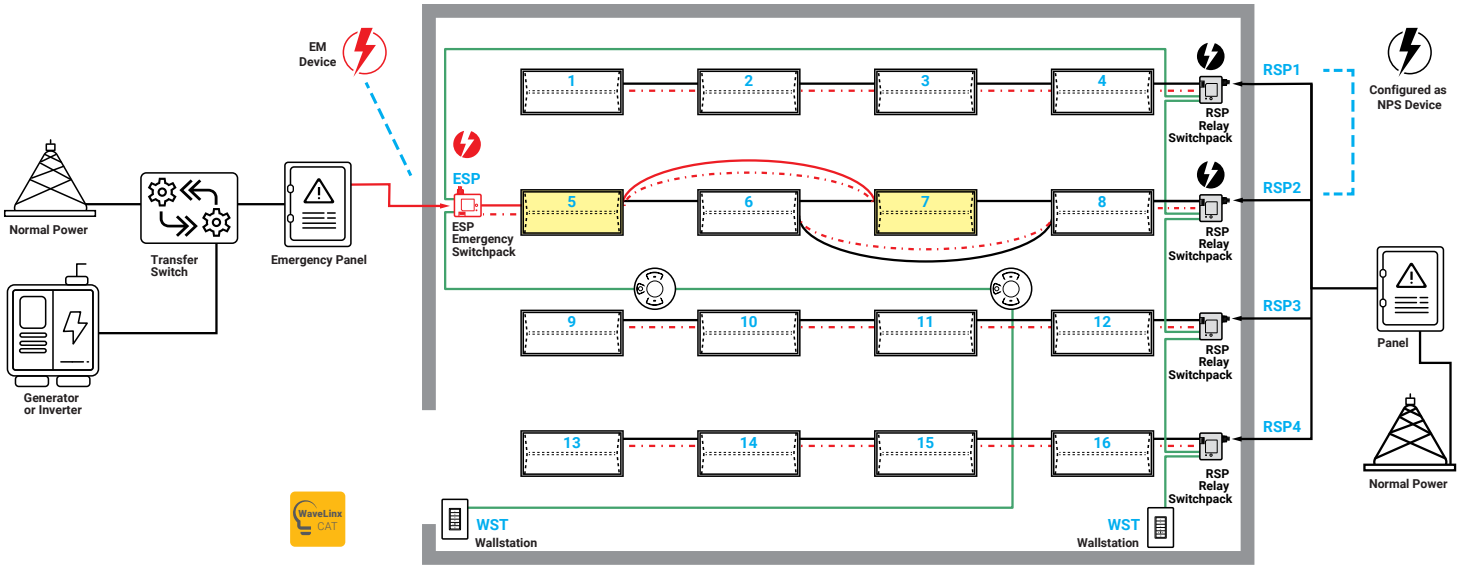
Design/System Limitations	
Guideline	Value
Max number of NPS devices that can be assigned to an emergency set	3
Max number of emergency sets (distributed mode)	1
Max number of emergency sets (networked mode)*	8

*Depends on the number of ports available on the Area Hub for wired EM sets.





CAT Scenario 1:
Wired Emergency (CAT) with Switchpacks

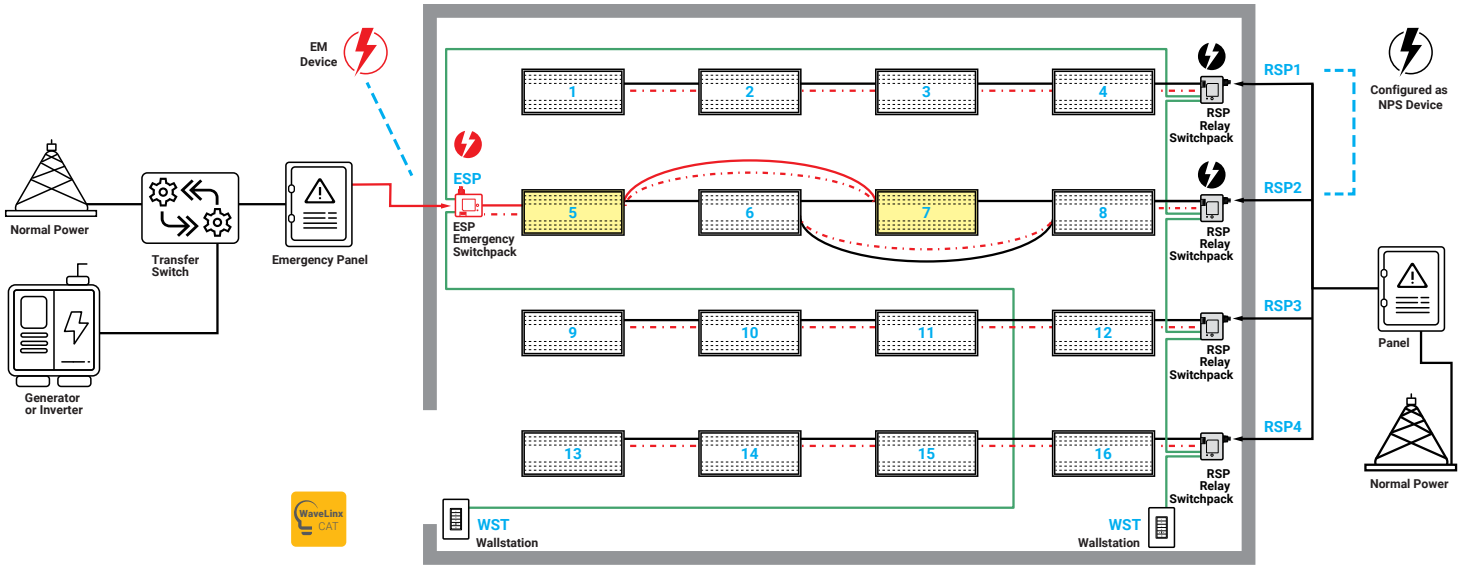


This scenario has the following bill of materials of WaveLinx CAT devices:

Bill of Material		
Quantity	**Catalog #**	**Description**
1	ESP-C-010-Z1	WaveLinx CAT emergency switchpack
4	RSP-C-010-Z1	WaveLinx CAT switchpack
2	WST-C-3D	WaveLinx CAT wallstation
2	OCS-C-P12	WaveLinx CAT ceiling sensor
16	24EN-LD2-34-UNV-L835-CD-1-U	Encounter 2x4 with 0-10V dimming

- In this scenario, we have 16 Cooper Lighting Solutions Encounter fixtures equipped with a 0-10V dimming driver.
- Fixtures 5 and 7 are connected to the emergency panel via the CAT ESP.
- Fixtures 1~4 are controlled by RSP1, fixtures 6 and 8 are controlled by RSP2, fixtures 9~12 are controlled by RSP3, and fixtures 13~16 are controlled by RSP4.
- There are two WST wallstations to enable local control.
- There are also 2 ceiling sensors installed for automatic control of the space based on occupancy or vacancy.
- In terms of emergency lighting, ESP1, RSP1, and RSP2 constitute an emergency set.
- RSP1 and RSP2 are configured as Normal Power Sensing (NPS) devices in the CAT app.
- These devices transmit a NPS beacon over the category cable to indicate that normal AC power is present.
- These wireless beacons are detected by the ESP1.
- In the event of an electrical power loss, RSP1 and RSP2 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the ESP1.
- ESP1 will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level and override any manual commands from the wallstation.

CAT Scenario 2:
Wired Emergency (CAT) Industrial with Switchpacks



This scenario has the following bill of materials of WaveLinx CAT devices:

Bill of Material		
Quantity	**Catalog #**	**Description**
1	ESP-C-010-Z1	WaveLinx CAT emergency switchpack
4	RSP-C-010-Z1	WaveLinx CAT switchpack
2	WST-C-3D	WaveLinx CAT wallstation
16	OHB-24SE-MFL-UNV-L840-CD-U	OHB 2ft with 0-10V dimming

- In this scenario, we have 16 Cooper Lighting Solutions Metalux OHB fixtures equipped with a 0-10V dimming driver.
- Fixtures 5 and 7 are connected to the emergency panel via the CAT ESP.
- Fixtures 1~4 are controlled by RSP1, fixtures 6 and 8 are controlled by RSP2, fixtures 9~12 are controlled by RSP3, and fixtures 13~16 are controlled by RSP4.
- There are two WST wall stations to enable local control.
- In terms of emergency lighting, ESP1, RSP1, and RSP2 constitute an emergency set.
- RSP1 and RSP2 are configured as Normal Power Sensing (NPS) devices in the CAT app.
- These devices transmit a NPS beacon over the category cable to indicate that normal AC power is present.
- These wireless beacons are detected by the ESP1.
- In the event of an electrical power loss, RSP1 and RSP2 will go offline and will consequently stop transmitting the NPS beacon.
- In parallel, the generator or inverter will come online and will consequently provide back-up AC power to fixtures 5 and 7 via the transfer switch and the ESP1.
- ESP1 will not detect any NPS beacons and will consequently raise the light level of fixtures 5 and 7 to its maximum level and override any manual commands from the wallstation.

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Why Cooper Lighting Solutions?

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