



# Installation & User Manual

## Nano Wave

Single Phase, 27W, 36W and 200W

UL924 Remote Emergency Inverters (REI)

225-MAN Rev C

Due to continuous product improvement this document is subject to change without prior notice.

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FAX No: (323) 721-3929

E-mail: [sales@onlinepower.com](mailto:sales@onlinepower.com)

Office Hours are 7:00 AM to 5:00 PM PST

## **WARRANTY REGISTRATION AND WARRANTY CERTIFICATE REQUEST**

[www.800pwrsrv.com](http://www.800pwrsrv.com)

### **SERVICE**

If you require assistance, please call our 24-hour toll free hot line 800-PWR-SRVC (800-797-7782) or email to [info@800pwrsrv.com](mailto:info@800pwrsrv.com). Please have the following information from your unit's nameplate available to speed assistance:

<b>SERIAL NUMBER:</b>	
<b>KVA/POWER RATING:</b>	
<b>INPUT VOLTAGE:</b>	
<b>OUTPUT VOLTAGE:</b>	
<b>MANUFACTURER DATE:</b>	

# 27REI Nano Inverter

## INSTRUCTION MANUAL



- Emergency Power Equipment
- Universal Mini Inverter
- Pure Sinusoidal AC Output
- Output Voltage Auto Setting Equal to Input Voltage
- Emergency Dimming for High Wattage Connected Loads

### IMPORTANT SAFEGUARDS

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

#### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To prevent electric shock, switch off the main power supply until installation is complete and AC input power is supplied to this product.
2. This product requires an unswitched AC power supply of 120-277V, 50/60Hz.
3. Make sure all connections are in accordance with the National Electrical code and any local regulations.
4. To reduce the risk of electrical shock, disconnect both normal power, emergency power supplies and unit connector of this product before servicing.
5. For emergency operation of LED, incandescent, fluorescent fixtures and screw-base lamps.
6. The product is UL Listed for field installation, and use with grounded, listed, damp location rated fixtures.
7. Use this product in 0°C minimum 50°C maximum ambient temperatures (Ta). To ensure the emergency operating time over 90 minutes, the output emergency power of 27REI should be maximum of 27W.
8. This product is suitable for use in dry or damp locations. Do not use outdoors. Do not mount it near gas, heaters, air outlets or other hazardous locations.
9. Do not attempt to service the batteries. A sealed, non-maintenance battery is used that is not field replaceable. Contact the manufacturer for information or service.
10. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
11. Do not use this product other than intended use.
12. Installation and service should be performed by qualified service personnel.
13. This product should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.



This product contains a rechargeable li-ion battery.  
The battery must be properly recycled or disposed.

# 27REI INSTALLATION GUIDE



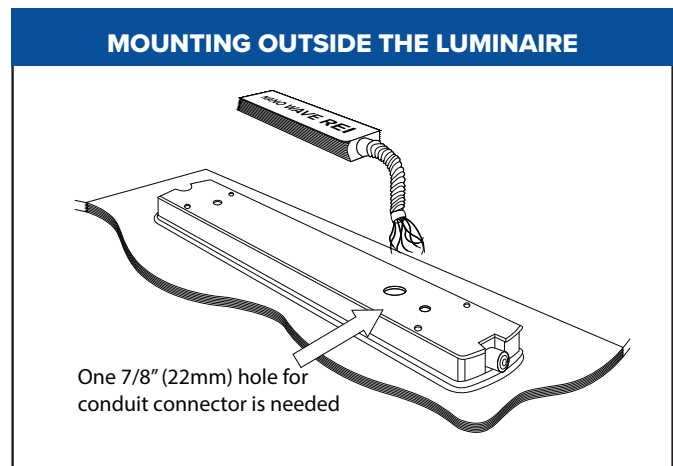
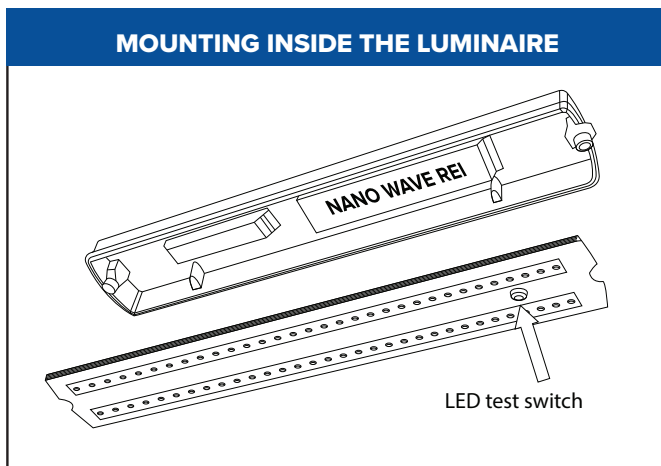
**CAUTION:** Make certain the AC power is off and the inverter connector is disconnected until the installation is complete.

## 1. OPERATING SPECIFICATIONS

MODELS	VOLTAGE		OUTPUT POWER
	INPUT	OUTPUT	
27REI	120V/60HZ	120V/60HZ	MAX. 27W
	230V/50HZ	230V/50HZ	
	277V/60HZ	277V/60HZ	

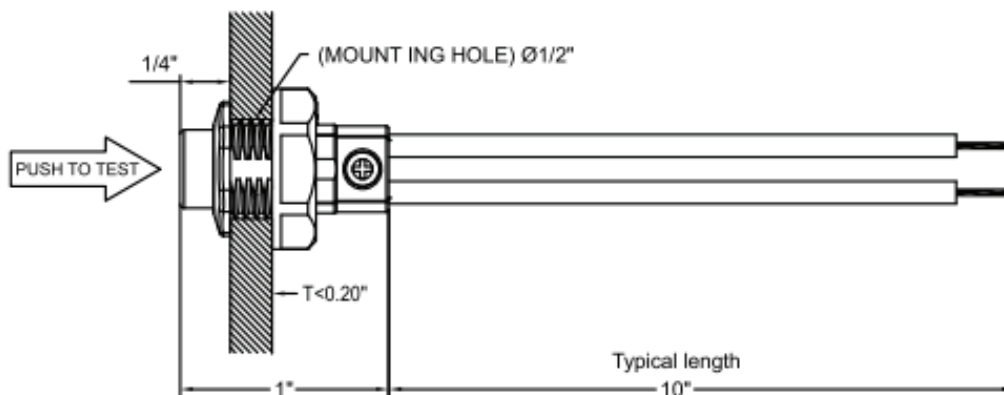
## 2. INSTALLING THE 27REI NANO INVERTER

The 27REI can be mounted inside or outside (nearby or on top of) the luminaire.



## 3. INSTALLING THE LED TEST SWITCH (LTS)

Select a convenient location for the LTS so that it can be seen after installation. Drill a 1/2" (12mm) hole for mounting LTS. Connect the wires from the LTS to the inverter model according to the wiring diagram on page 3.



All dimensions are typical

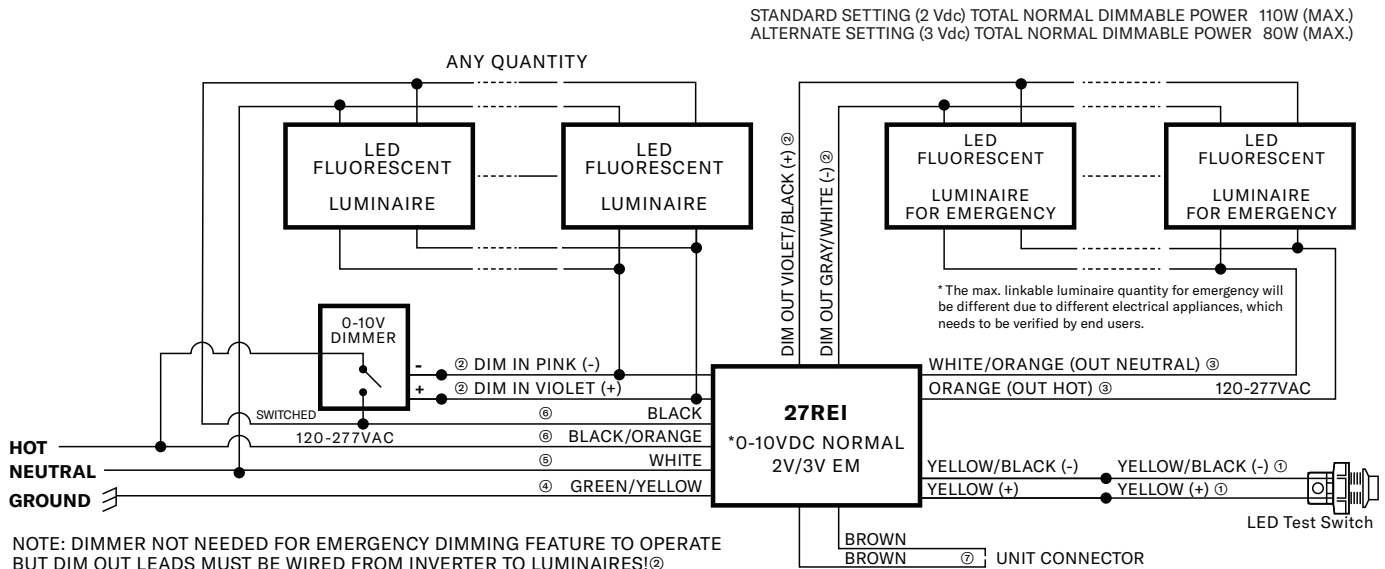
# 27REI WIRING DIAGRAMS (1)



**CAUTION: Do not mate unit connector until installation is complete and AC power is supplied**

1. The 27REI requires an unswitched AC power supply of 120-277 volt, 50/60 Hz.
2. Refer to the wiring diagrams below. Make connections in the following order: ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

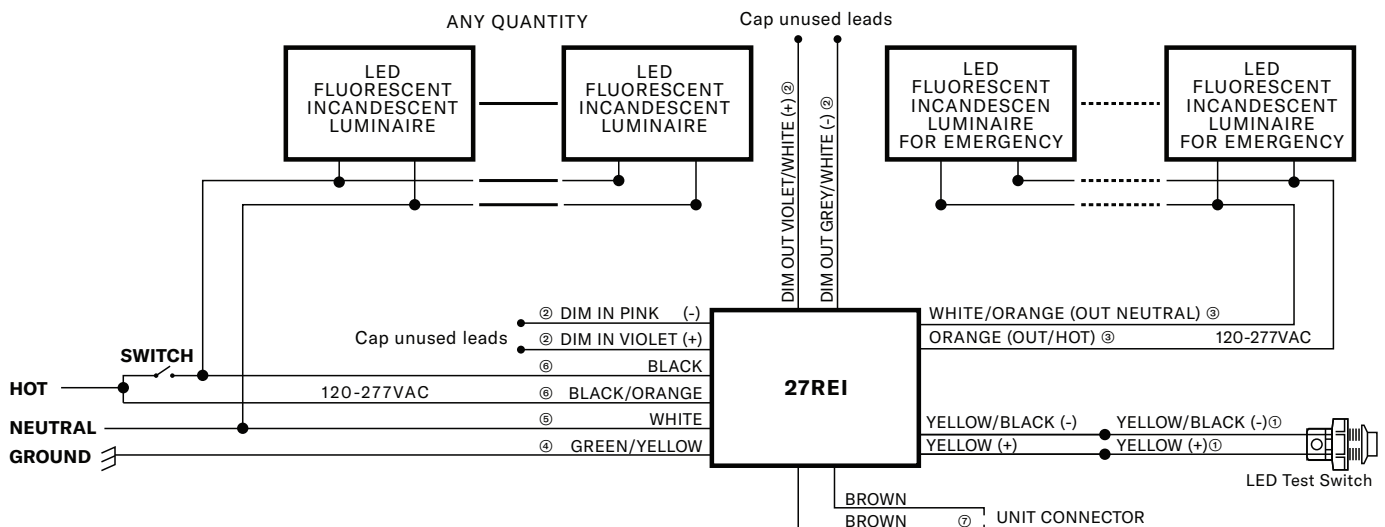
## (27REI) WIRING DIAGRAM FOR 0-10V DIMMABLE EMERGENCY LIGHTING SYSTEM



## (27REI) WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY APPLICATION, FULL LIGHT OUTPUT

**Lighting Load CANNOT exceed inverter capacity**

MAX. LOAD = 27W



## 27REI WIRING DIAGRAMS (2)



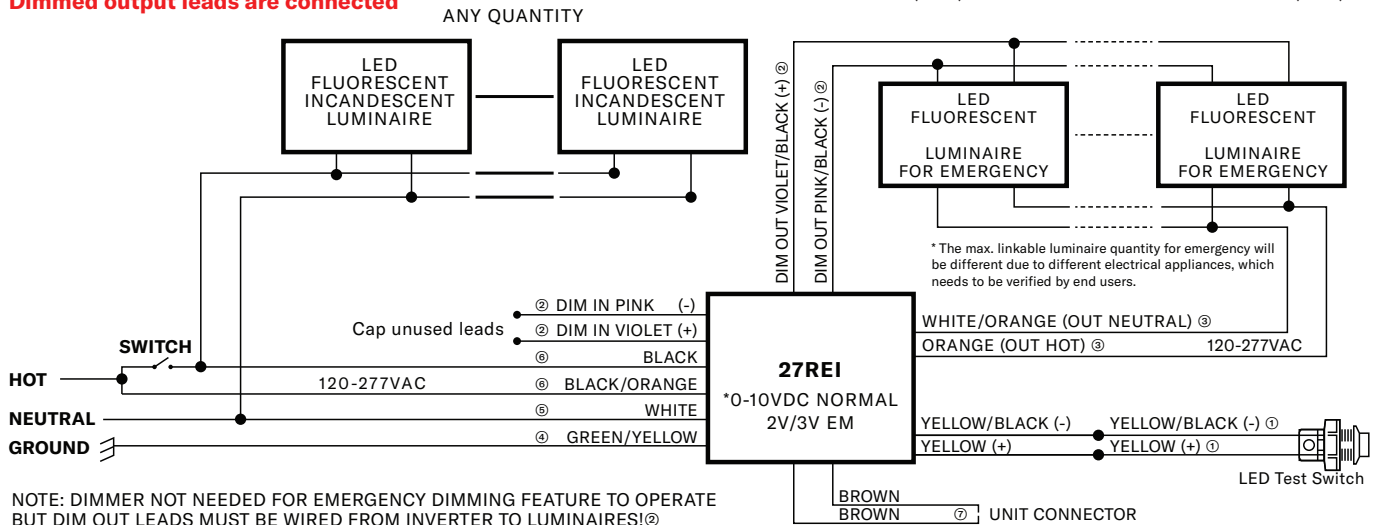
**CAUTION: Do not mate unit connector until installation is complete and AC power is supplied**

1. The 27REI requires an unswitched AC power supply of 120-277 volt, 50/60 Hz.
2. Refer to the wiring diagrams below. Make connections in the following order: ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

### (27REI) WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY LIGHTING SYSTEM, WITH DIMMED LUMINAIRES

**Lighting Load CAN exceed inverter capacity if Dimmed output leads are connected**

STANDARD SETTING (2 Vdc) TOTAL NORMAL DIMMABLE POWER 110W (MAX.)  
ALTERNATE SETTING (3 Vdc) TOTAL NORMAL DIMMABLE POWER 80W (MAX.)



### Alternate Wiring for High Power Loads

Wiring Diagram for Non Dimmable applications where the Luminaire(s) are rated higher than the inverter power. MUST connect inverter Dim out leads to AC driver(s) Dim input leads. This allows a high power luminaire to operate with less Emergency Power.

# 27REI OPERATING / TESTING / MAINTENANCE

## OPERATION

When AC power is applied, the LED test switch is illuminated, indicating that the batteries are being charged. When AC power fails, the 27REI automatically switches to emergency power, operating the lighting load at approximately 20% (Reprogrammed to 30%) of rated luminaire power (max. 110W (dimnable @ 2 Vdc) or 80W (dimnable @ 3 Vdc) using Emergency Dimming. The 27REI can also be used as a standalone 27W inverter when used with lighting loads less than or equal to 27 watts. During power failure, the LED test switch indicator will be off. When power is restored, the 27REI switches back to normal mode of operation and resumes battery charging. The minimum emergency operating time is 90 minutes. The charging time for a full discharge is 24 hours.

## TESTING AND MAINTENANCE

The following Periodic testing is recommended to ensure the system is working correctly.

1. Visually inspect the LED test switch (LTS) monthly. It should be illuminated when AC power is applied.
2. Conduct a 30-second discharge test by switching off the emergency breaker every month. The LTS will be off.
3. Conduct a 90-minute discharge test once per year. The LTS will be off during the test.

## AUTO TEST

**1. Initial Auto Test:** When the system is connected properly and powered on, the 27REI will perform an initial Auto Test. If any abnormal conditions exist, the LTS will flash rapidly\*. Once the abnormal condition is corrected, the LTS will function correctly.

**2. Monthly Auto Test:** The 27REI will conduct the first Monthly Auto Test after 24 hours and up to 7 days after initial power on. Then monthly tests will be performed every 30 days, and will test transfer function from normal to emergency, emergency function, charging and discharging conditions. Monthly test time is approximately 30 seconds.

**3. Annual Auto Test:** It will occur every 52 weeks after the initial 24 hours full charge, and will test proper initial battery voltage, 90-minute emergency operation, and acceptable battery voltage at the end of the full 90-minute test.

\*If the Auto Test is interrupted by a power failure, a full 90-minute Auto Test will occur again 24 hours after the power is restored. If the power failure causes the battery to fully discharge, the product will restart the Initial Auto Test, Monthly and Annual Auto Test.

## MANUAL TEST

1. Press the LTS 2 times continuously within 5 seconds to force a 30-second monthly test. After the test is completed, the next (30-day) monthly test will count from this date.
2. Press the LTS 3 times continuously within 5 seconds to force a 90-minute annual test. After the test is completed, the next (52-week) annual test will count from this date.
3. During any manual test, press and hold the LTS for greater than 3 seconds to terminate a manual test. The Preprogrammed Scheduled Auto Test time will not change.

## LED TEST SWITCH (LTS) CONDITIONS

LTS Conditions	Default 2 VDC	Selectable 3 VDC
Slow Blinking	-	Normal Charging
On	-	Battery Fully Charged
Long ON, Short OFF, Long ON	Normal Charging and Battery Fully Charged	-
Off	Power Failure	
Gradual Change	Testing Mode	
Quick Blinking	Abnormal Condition - Corrective Action Required	

## EMERGENCY DIMMING

The 27REI utilizes Emergency Dimming which allows single or multiple 0-10 Vdc controlled luminaires (up to 110W combined normal luminaire power) to automatically adjust and share up to 27W of emergency AC power. During normal operation, the emergency inverter will pass through normal dimming voltage (0-10 Vdc) on the dim output leads, but then supply a default 2 VDC (or selectable \*\*3VDC) during emergency operation to achieve approximately 20% (or selectable \*\*30%) of rated luminaire power during a power failure.

**\*\* Reduced output mode 3 VDC (~30%) can be selected and easily programmed via the LED test switch (LTS) by pressing the illuminated button for 5 seconds, releasing, then repeating the 5-second button push (i.e. two 5-second extended button pushes within a 13 second timespan). LTS flash conditions confirming 3 VDC mode: Slow Blinking or ON. (Return to the default 2 VDC mode by repeating the extended button press sequence above).**

Example (default 2 VDC setting): Two 50W x 20% dim=10W \* 2 luminaires = 20W, Example (3 Vdc setting): Two 40W LED luminaires (80W) will share 12W each. 40W x 30% = 12W, \*2 luminaires = 24W total for the 27REI.

See 27REI application details at [www.onlinepower.com](http://www.onlinepower.com) or contact tech support at: 800-797-7782

When non-dimmable loads are used, the normal and emergency output will be 27W (max.) at temperatures of (0-50°C).



# 36REI Nano Inverter

## INSTRUCTION MANUAL



- Emergency Power Equipment
- Universal Mini Inverter
- Pure Sinusoidal AC Output
- Output Voltage Auto Setting Equal to Input Voltage
- Emergency Dimming for High Wattage Connected Loads

### IMPORTANT SAFEGUARDS

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

#### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To prevent electric shock, switch off the main power supply until installation is complete and AC input power is supplied to this product.
2. This product requires an unswitched AC power supply of 120-277V, 50/60Hz.
3. Make sure all connections are in accordance with the National Electrical code and any local regulations.
4. To reduce the risk of electrical shock, disconnect both normal power, emergency power supplies and unit connector of this product before servicing.
5. For emergency operation of LED, incandescent, fluorescent fixtures and screw-base lamps.
6. Use this product in 0°C minimum 50°C maximum ambient temperatures (Ta). To ensure the emergency operating time over 90 minutes, the output emergency power of 27REI should be maximum of 36W with auto adjust for 0-10V dimming installations and operating temperatures between 10°C ≤ 55°C. The Max. load for non dimmed loads must be limited to 36W at operating temperatures range of 10°C ≤ 55°C and 27W between 0°C ≤ Ta ≤ 55°C. Contact Factory for details regarding 2 hour run time applications.
7. This product is suitable for use in dry or damp locations. Do not use outdoors. Do not mount it near gas, heaters, air outlets or other hazardous locations.
8. Do not attempt to service the batteries. A sealed, non-maintenance battery is used that is not field replaceable. Contact the manufacturer for information or service.
9. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
10. Do not use this product other than intended use.
11. Installation and service should be performed by qualified service personnel.
12. This product should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.



This product contains a rechargeable li-ion battery.  
The battery must be properly recycled or disposed.

# 36REI INSTALLATION GUIDE



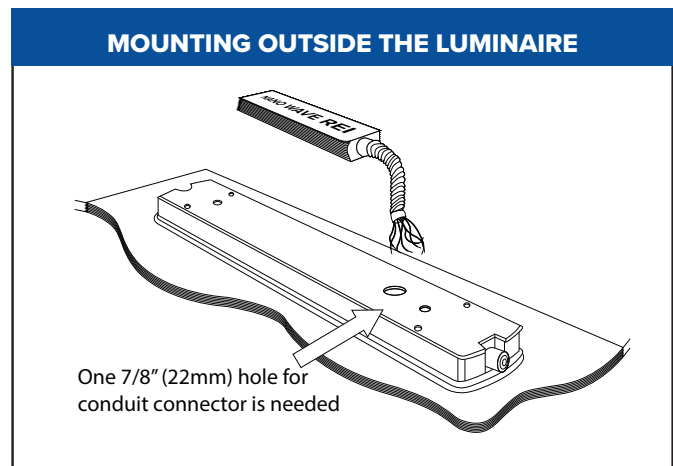
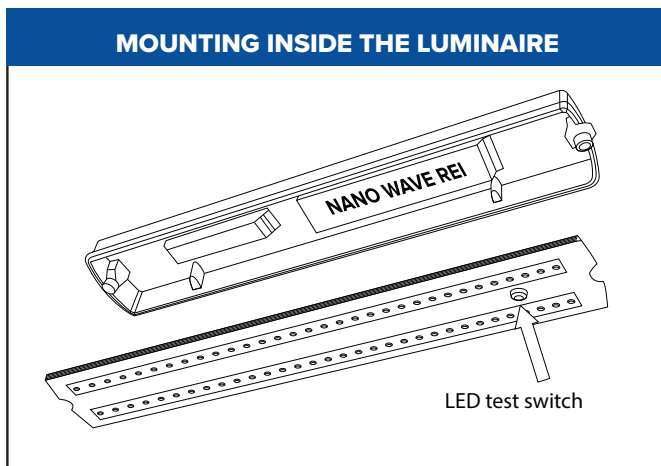
**CAUTION:** Make certain the AC power is off and the inverter connector is disconnected until the installation is complete.

## 1. OPERATING SPECIFICATIONS

MODELS	VOLTAGE		OUTPUT POWER	
	INPUT	OUTPUT	$10^{\circ}\text{C} \leq \text{TA} \leq 55^{\circ}\text{C}$	$0^{\circ}\text{C} \leq \text{TA} \leq 55^{\circ}\text{C}$
36REI	120V/60HZ	120V/60HZ	MAX. 36W With dimmable or non-dimmable load	MAX. 27W Max. non-dimmable load
	230V/50HZ	230V/50HZ		
	277V/60HZ	277V/60HZ		

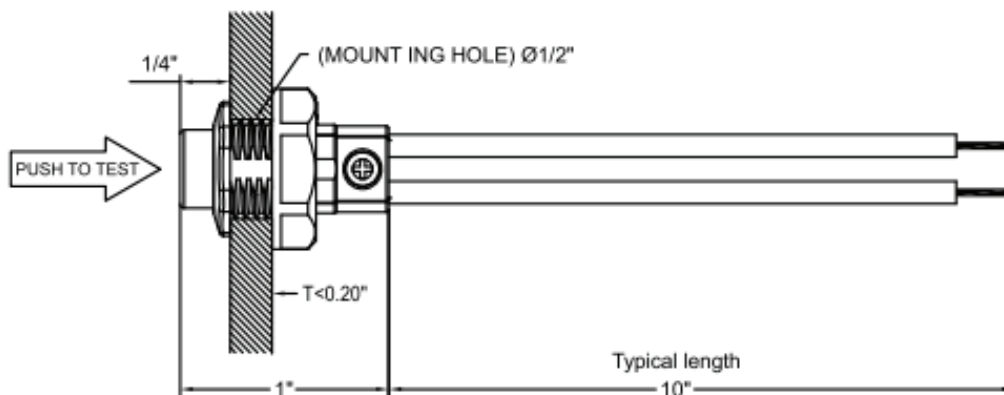
## 2. INSTALLING THE 36REI NANO INVERTER

The 36REI can be mounted inside or outside (nearby or on top of) the luminaire.



## 3. INSTALLING THE LED TEST SWITCH (LTS)

Select a convenient location for the LTS so that it can be seen after installation. Drill a 1/2" (12mm) hole for mounting LTS. Connect the wires from the LTS to the inverter model according to the wiring diagram on page 3.



All dimensions are typical

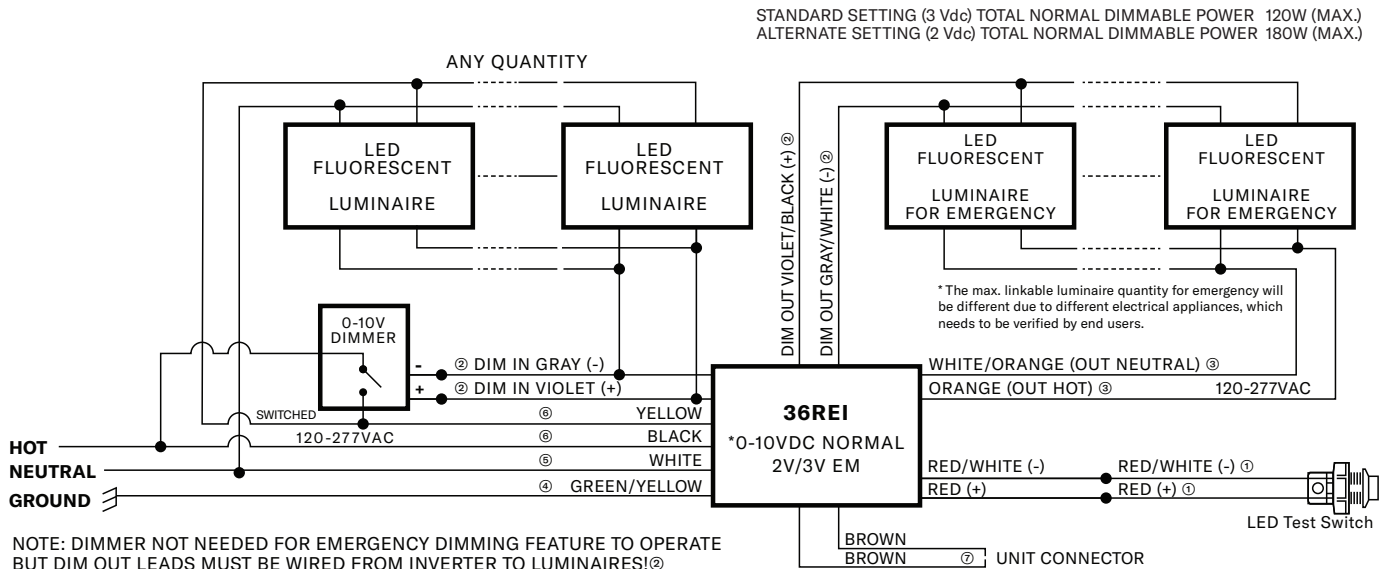
# 36REI WIRING DIAGRAMS (1)



**CAUTION: Do not mate unit connector until installation is complete and AC power is supplied**

1. The 36REI requires an unswitched AC power supply of 120-277 volt, 50/60 Hz.
2. Refer to the wiring diagrams below. Make connections in the following order: ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

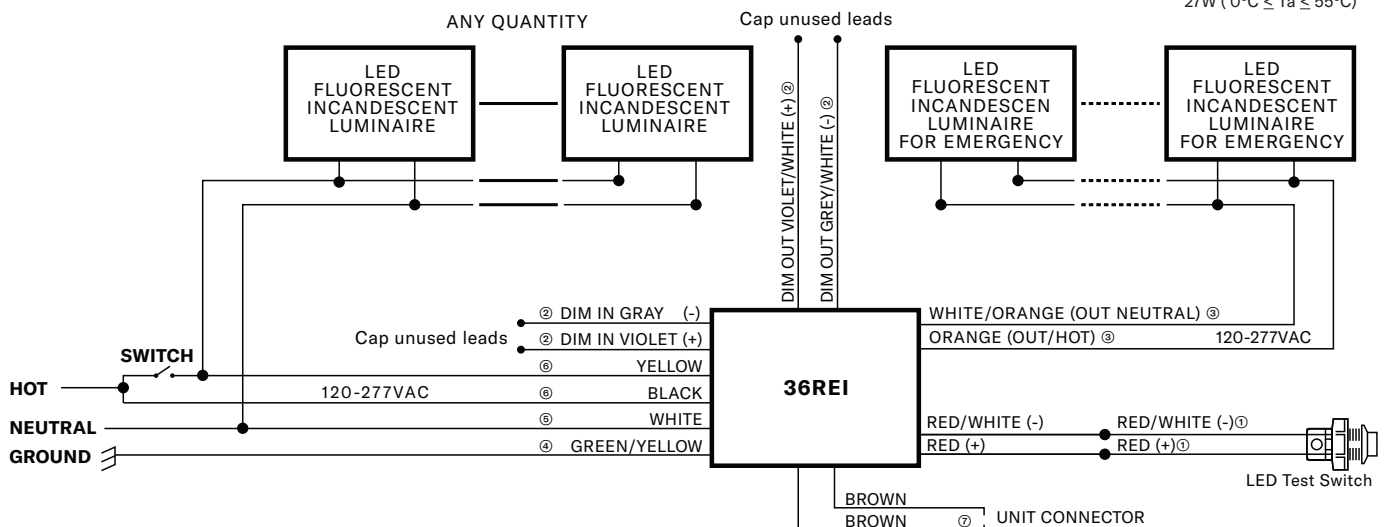
## (36REI) WIRING DIAGRAM FOR 0-10V DIMMABLE EMERGENCY LIGHTING SYSTEM



## (36REI) WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY APPLICATION, FULL LIGHT OUTPUT

**Lighting Load CANNOT exceed inverter capacity**

MAX. LOAD = 36W (10°C ≤ Ta ≤ 55°C)  
27W (0°C ≤ Ta ≤ 55°C)



## 36REI WIRING DIAGRAMS (2)



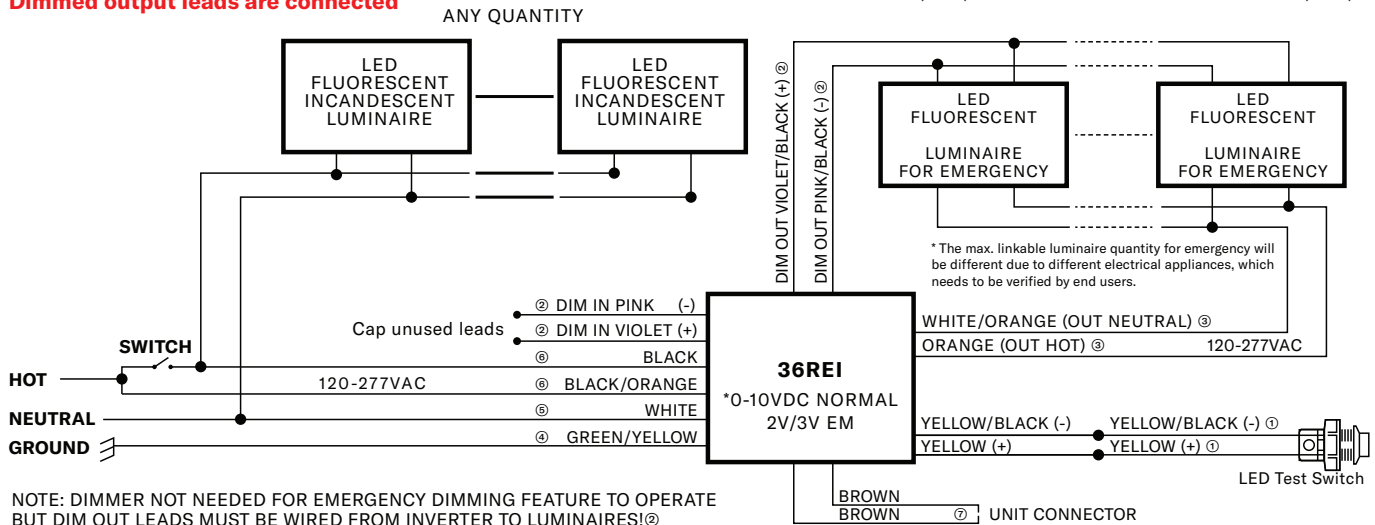
**CAUTION: Do not mate unit connector until installation is complete and AC power is supplied**

1. The 36REI requires an unswitched AC power supply of 120-277 volt, 50/60 Hz.
2. Refer to the wiring diagrams below. Make connections in the following order: ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

### (36REI) WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY LIGHTING SYSTEM, WITH DIMMED LUMINAIRES

**Lighting Load CAN exceed inverter capacity if Dimmed output leads are connected**

STANDARD SETTING (3 Vdc) TOTAL NORMAL DIMMABLE POWER 120W (MAX.)  
ALTERNATE SETTING (2 Vdc) TOTAL NORMAL DIMMABLE POWER 180W (MAX.)



### Alternate Wiring for High Power Loads

Wiring Diagram for Non Dimmable applications where the Luminaire(s) are rated higher than the inverter power. MUST connect inverter Dim out leads to AC driver(s) Dim input leads. This allows a high power luminaire to operate with less Emergency Power.

# 36REI OPERATING / TESTING / MAINTENANCE

## OPERATION

When AC power is applied, the LED test switch is illuminated, indicating that the batteries are being charged. When AC power fails, the 36REI automatically switches to emergency power, operating the lighting load at approximately 30% (Reprogrammed to 20%) of rated luminaire power (max. 120W (dimnable @ 3 Vdc) or 180W (dimnable @ 2 Vdc) using Emergency Dimming. The 36REI can also be used as a stand alone 36W inverter when used with lighting loads less than or equal to 36 watts. During power failure, the LED test switch indicator will be off. When power is restored, the 36REI switches back to normal mode of operation and resumes battery charging. The minimum emergency operating time is 90 minutes. The charging time for a full discharge is 24 hours.

## TESTING AND MAINTENANCE

The following Periodic testing is recommended to ensure the system is working correctly.

1. Visually inspect the LED test switch (LTS) monthly. It should be illuminated when AC power is applied.
2. Conduct a 30-second discharge test by switching off the emergency breaker every month. The LTS will be off.
3. Conduct a 90-minute discharge test once per year. The LTS will be off during the test.

## AUTO TEST

- 1. Initial Auto Test:** When the system is connected properly and powered on, the 36REI will perform an initial Auto Test. If any abnormal conditions exist, the LTS will flash rapidly\*. Once the abnormal condition is corrected, the LTS will function correctly.
- 2. Monthly Auto Test:** The 36REI will conduct the first Monthly Auto Test after 24 hours and up to 7 days after initial power on. Then monthly tests will be performed every 30 days, and will test transfer function from normal to emergency, emergency function, charging and discharging conditions. Monthly test time is approximately 30 seconds.
- 3. Annual Auto Test:** It will occur every 52 weeks after the initial 24 hours full charge, and will test proper initial battery voltage, 90-minute emergency operation, and acceptable battery voltage at the end of the full 90-minute test.

\*If the Auto Test is interrupted by a power failure, a full 90-minute Auto Test will occur again 24 hours after the power is restored. If the power failure causes the battery to fully discharge, the product will restart the Initial Auto Test, Monthly and Annual Auto Test.

## MANUAL TEST

1. Press the LTS 2 times continuously within 5 seconds to force a 30-second monthly test. After the test is completed, the next (30-day) monthly test will count from this date.
2. Press the LTS 3 times continuously within 5 seconds to force a 90-minute annual test. After the test is completed, the next (52-week) annual test will count from this date.
3. During any manual test, press and hold the LTS for greater than 3 seconds to terminate a manual test. The Preprogrammed Scheduled Auto Test time will not change.

## LED TEST SWITCH (LTS) CONDITIONS

LTS Slow Blinking: Normal Charging

LTS On: Battery Fully Charged - Normal Condition

LTS Off: Battery Failure

LTS Gradual Change: In Testing Mode

LTS Quickly Blinking: Abnormal Condition - Corrective Action Required

\*\*LTS (selectable 2 VDC): Long ON, Short OFF, Long ON

## EMERGENCY DIMMING

The 36REI utilizes Emergency Dimming which allows single or multiple 0-10 Vdc controlled luminaires (up to 120W combined normal luminaire power) to automatically adjust and share up to 36W of emergency AC power. During normal operation, the emergency inverter will pass through normal dimming voltage (0-10 Vdc) on the dim output leads, but then supply a default 3 VDC (or selectable \*\*2VDC) during emergency operation to achieve approximately 30% (or selectable \*\*20%) of rated luminaire power during a power failure.

**\*\* Reduced output mode 2 VDC (~20%) can be selected and easily programmed via the LED test switch (LTS) by pressing the illuminated button for 5 seconds, releasing, then repeating the 5-second button push (i.e. two 5-second extended button pushes within a 13 second timespan). LTS flash conditions confirming 2 VDC mode: Long ON, Short OFF, Long ON. (Return to the default 3 VDC mode by repeating the extended button press sequence above).**

Example (default 3 VDC setting): Three 40W x 30% dim=12W. Similarly, if each luminaire is 30W, then 4 units can 9W each; whereas if the luminaire power is over 40W, then 2 or less luminaires can be operated.

Example (2 VDC setting): Four 45W LED luminaires (180W) would share 9W each of the total 36W emergency power per 36REI.

See 36REI application details at [www.onlinepower.com](http://www.onlinepower.com) or contact tech support at: 800-797-7782

When non-dimmable loads are used, the normal and emergency output will be 36W (max.) at temperatures of (10-55°C), 27W for (0-55°C) and 27W for 2 hours (10-55°C).

# 200REI Nano Inverter

## INSTRUCTION MANUAL



- Emergency Power Equipment
- Universal Input/Output Pure Sine Wave Self-Testing Mini Inverter
- Output Voltage Auto Setting Equal to Input Voltage
- Emergency Dimming Auto Dimming (0-10V) of Connected Load up to 900W@120V, 2000W@277V

### IMPORTANT SAFEGUARDS

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

#### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To prevent electric shock, switch off the main power supply until installation is complete and AC input power is supplied to this product.
2. This product requires an unswitched AC power supply of 120-277V, 50/60Hz.
3. Make sure all connections are in accordance with the National Electrical code and any local regulations.
4. To reduce the risk of electrical shock, disconnect both normal power, emergency power supplies and unit connector of this product before servicing.
5. For emergency operation of LED, incandescent, fluorescent fixtures and screw-base lamps.
6. The product is UL Listed for field installation, and use with grounded, listed, wet location rated fixtures and the case should be grounded.
7. Use this product in 0°C minimum 50°C maximum ambient temperatures (Ta).
8. This product is suitable for use in dry or damp locations. Do not use outdoors. Do not mount it near gas, heaters, air outlets or other hazardous locations.
9. Do not attempt to service the batteries. A sealed, non-maintenance battery is used that is not field replaceable. Contact the manufacturer for information or service.
10. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
11. Do not use this product other than intended use.
12. Installation and service should be performed by qualified service personnel.
13. This product should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.



This product contains a rechargeable li-ion battery.  
The battery must be properly recycled or disposed.

# 200REI INSTALLATION GUIDE



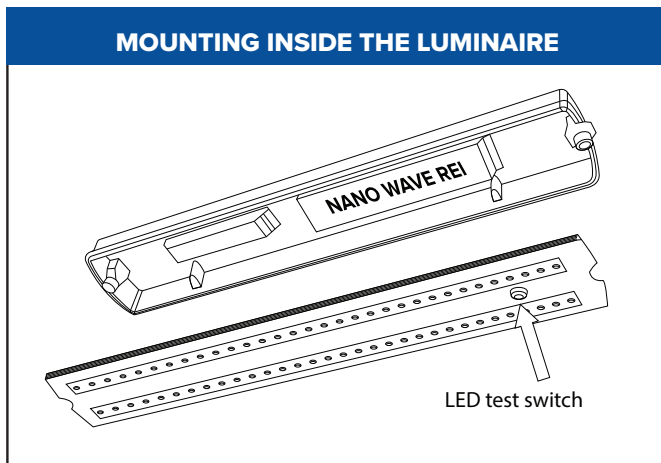
**CAUTION:** Make certain the AC power is off and the inverter connector is disconnected until the installation is complete.

## 1. OPERATING SPECIFICATIONS

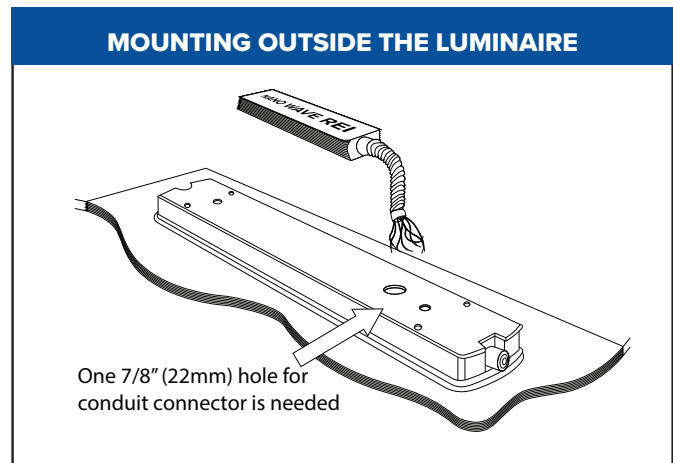
VOLTAGE		OUTPUT POWER
INPUT	OUTPUT	200REI
120V/60HZ	120V/60HZ	200W
230V/50HZ	230V/50HZ	
277V/60HZ	277V/60HZ	

## 2. INSTALLING 200REI NANO INVERTER

The 200REI can be mounted inside or outside (nearby or on top of) the luminaire.

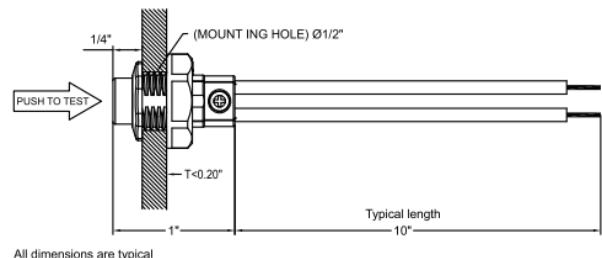


Note: When installing inside a luminaire, the flex conduit will need to be removed. Remove conduit connector screw and slide flex conduit off the unit.



## 3. INSTALLING THE LED TEST SWITCH (LTS)

Select a convenient location for the LTS so that it can be seen after installation. Drill a 1/2" (12mm) hole for mounting LTS. Connect the wires from the LTS to the inverter model according to the wiring diagram on page 3.



### EMERGENCY DIMMING

The 200REI Nano Inverter utilizes Emergency Dimming which allows single or multiple, 0-10 Vdc controlled luminaires of greater than the inverter power to be connected for emergency applications. The emergency lighting inverter will auto adjust the 0-10 Vdc to the AC drivers to ensure the emergency power level of 200 Watts.

Example 1 - The 200REI Nano Inverter can be connected to (20) 45W, 0-10 Vdc dimmable LED luminaires which total 900W (900W max.) of normal power load (@120 Vac). In emergency operation, the 20 luminaires will operate at a total of 200W or 10 watts each. At a typical 140 lumens per watt, the luminaire will provide about 1400 lumens in emergency operation. If higher emergency lighting is needed when using this inverter, reduce the number of normal connected luminaires. Reducing to 10 luminaires, the 200REI will provide approximately 2800 lumens per luminaire. (140 lumens per watt x 200W / 10 = 2800 lumens).

Example 2 - Using the 200REI with (2) 175 Watt 0-10 Vdc dimmable high bay luminaires, the emergency inverter will auto adjust to 200W or about 57% of normal power for each luminaire in emergency.  $(200W / (2 \times 175)) = 0.57$  or 100W for each luminaire. A simpler calculation would be that the 200W is divided by number of luminaires (max AC load is 900W @ 120 Vac).

# 200REI WIRING DIAGRAMS (1)

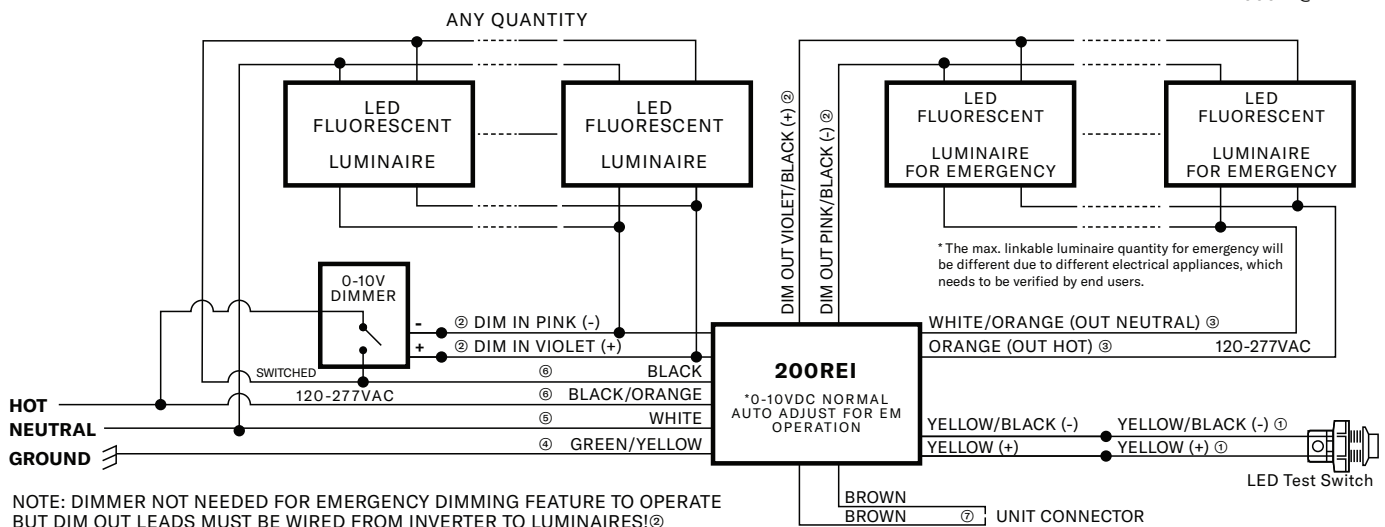


**CAUTION: Do not mate unit connector until installation is complete and AC power is supplied**

1. The 200REI requires an unswitched AC power supply of 120-277 volt, 50/60 Hz.
2. Refer to the wiring diagrams below. Make connections in the following order: ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

## (200REI) WIRING DIAGRAM FOR 0-10V DIMMABLE EMERGENCY LIGHTING SYSTEM

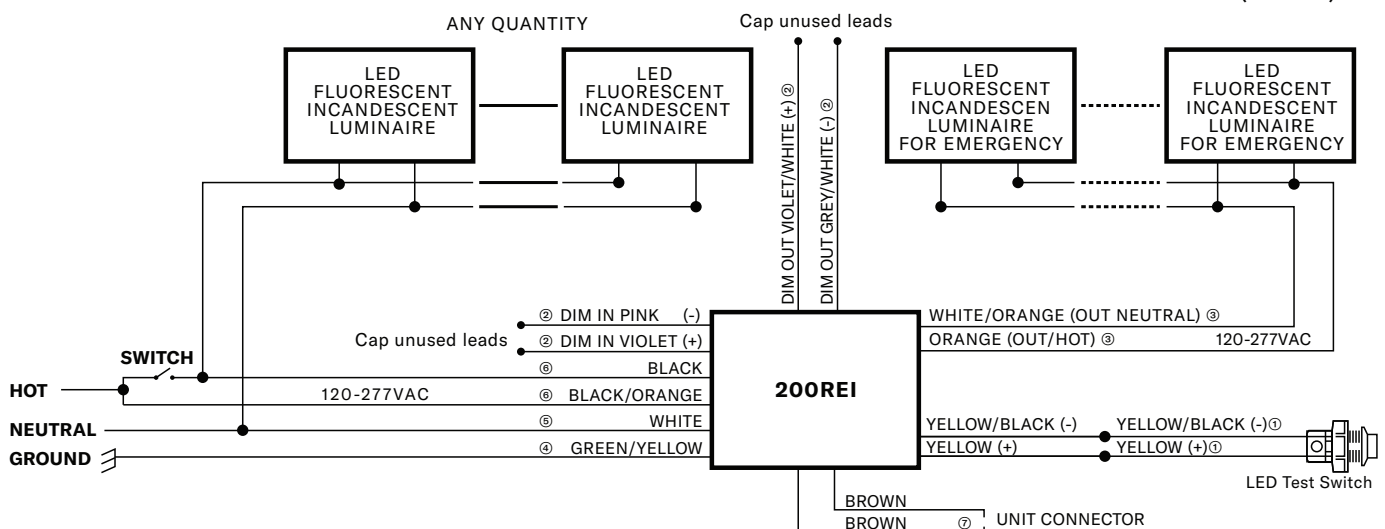
MAX. DIMMABLE LOAD = 900W @ 120V  
= 2000W @ 277V



## (200REI) WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY APPLICATION, FULL LIGHT OUTPUT

**Lighting Load CANNOT exceed inverter capacity**

MAX. LOAD = 200W (200REI)





## 200REI WIRING DIAGRAMS (2)



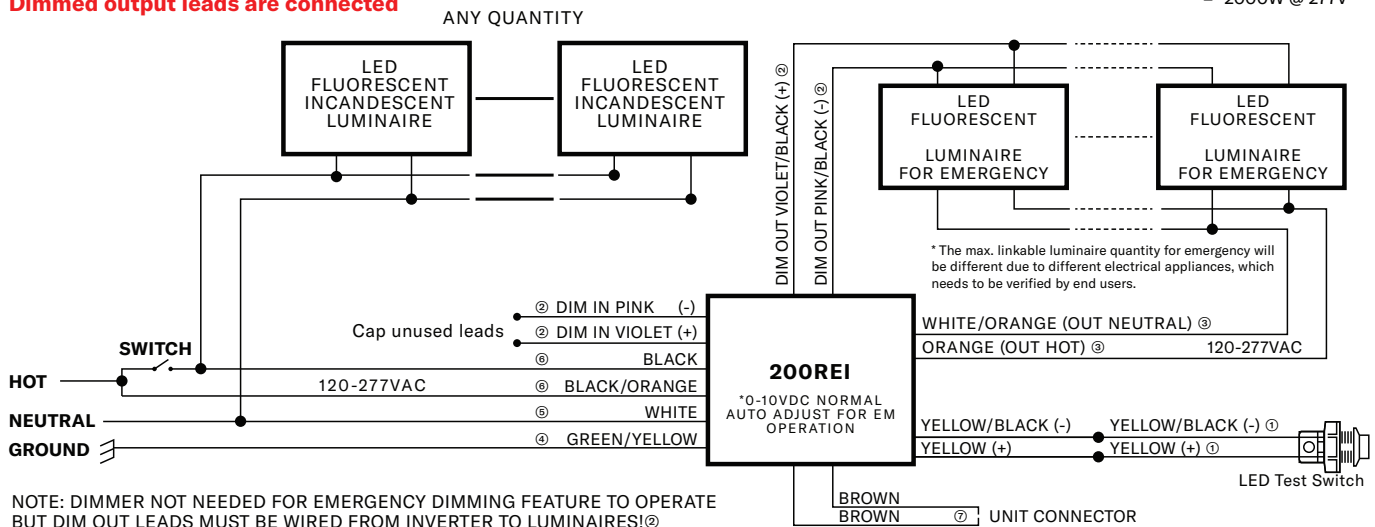
**CAUTION: Do not mate unit connector until installation is complete and AC power is supplied**

1. The 200REI requires an unswitched AC power supply of 120-277 volt, 50/60 Hz.
2. Refer to the wiring diagrams below. Make connections in the following order: ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

### (200REI) WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY LIGHTING SYSTEM, WITH DIMMED LUMINAIRES

**Lighting Load CAN exceed inverter capacity if Dimmed output leads are connected**

MAX. DIMMABLE LOAD = 900W @ 120V  
= 2000W @ 277V



### Alternate Wiring for High Power Loads

Wiring Diagram for Non Dimmable applications where the Luminaire(s) are rated higher than the inverter power. MUST connect inverter Dim out leads to AC driver(s) Dim input leads. This allows a high power luminaire to operate with less Emergency Power.

## OPERATION

When AC power is applied, the LED test switch is illuminated, indicating that the batteries are being charged. When AC power fails, the 200REI automatically switches to emergency power, operating the lighting load at rated emergency power. During power failure, the LED test switch indicator will be off. When the AC power is restored, the 200REI switches the system back to normal mode of operation and resumes battery charging. The minimum emergency operation time is 90 minutes. A short term discharge test may be conducted after unit has been charging for 1 hour. Charge for 24 hours before conducting a long term discharge test. Refer to page 2 for Emergency Dimming applications.

## TESTING AND MAINTENANCE

The following Periodic testing is recommended to ensure the system is working correctly.

1. Visually inspect the LED test switch (LTS) monthly. It should be illuminated when AC power is applied.
2. Conduct a 30-second discharge test by switching off the emergency breaker every month. The LTS will be off.
3. Conduct a 90-minute discharge test once per year. The LTS will be off during the test.

## AUTO TEST

The 200REI Nano Inverter has an Auto Test feature which saves costs by reducing the need for manual testing.

### 1. Initial Auto Test

When the system is connected properly and powered on (make sure the load is switched on), the 200REI will perform an initial Auto Test. If any abnormal conditions exist, the LTS will blink quickly. Once the abnormal condition is corrected, the LTS will function correctly. The initial Auto Test will be restarted automatically when the connected dimmable loads maximum power increases.

### 2. Preprogrammed Scheduled Auto Test

- a) The unit will conduct the first Monthly Auto Test after 24 hours and up to 7 days after initial power on. Then monthly tests will be performed every 30 days.
- b) Annual Auto Test It will occur every 52 weeks after the initial power on.

Monthly Auto Test:

The Monthly Auto Test shall be executed every 30 days, and will test:

Normal to emergency transfer function, emergency, charging and discharging conditions are normal.

Monthly test time is approximately 60 seconds.

Annual Auto Test:

Annual Auto Test will occur every 52 weeks after the initial 24 hours full charge, and will test:

Proper initial battery voltage, 90-minute emergency operation and acceptable battery voltage at the end of the full 90-minute test.

If the Auto Test is interrupted by a power failure, a full 90-minute Auto Test will occur again 24 hours after the power is restored. If the power failure causes the battery to fully discharge, the product will restart the Initial Auto Test and Preprogrammed Scheduled Auto Test.

## MANUAL TEST

1. Press the LTS one time to simulate emergency mode for 10 seconds.
2. Press the LTS 2 times continuously within 5 seconds to force a 60-second monthly test. After the test is completed, the next (30-day) monthly test will count from this date.
3. Press the LTS 3 times continuously within 5 seconds to force a 90-minute annual test. After the test is completed, the next (52-week) annual test will count from this date. Note - unit must be 24-hour fully charged.
4. In Normal mode, press and hold the LTS for greater than 3 seconds to restart initial Auto Test.
5. During any manual test, press and hold the LTS for greater than 3 seconds to terminate a manual test. The Preprogrammed Scheduled Auto Test will not change.

## LED TEST SWITCH CONDITIONS

LTS Slow Blinking: Normal Charging

LTS On: Battery Fully Charged - Normal Condition

LTS Off: Power Failure

LTS Gradual Change: In Testing Mode

LTS Quickly Blinking: Abnormal Condition - Corrective Action Required