184700/1/2/3-1/2/3 (18470X-X)

INSTRUCTION MANUAL

PHENIX Lighting

29J24

LED EMERGENCY LIGHTING EQUIPMENT
UNIVERSAL INPUT
CLASS 2 OUTPUT

c UL us LISTED E308866

c UL us E308866

BC

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 mains power supply until installation is complete and AC 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 or Canadian Electrical code and any local regulations.
4. To reduce the risk of electrical shock, disconnect both normal and emergency power supplies and connector of this product before servicing.
5. This product is for use with an emergency LED lighting load with a maximum rated voltage of 60 VDC. It can provide minimum 90 minutes illumination under the emergency mode.
6. The 184700/1/2/3-1 are UL Component Recognized for factory installation. The 184700/1/2/3-2/3 are UL Listed for field installation, and use with grounded, UL Listed, damp location rated fixtures.
7. This product is suitable for use in dry or damp locations. Do not mount it near gas, heaters, air outlets or other hazardous locations.
8. Use this product in 0°C minimum, 50°C maximum ambient temperatures.
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 for 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 readily be subjected to tampering by unauthorized personnel.
14. The Driver is intended for ordinary locations and for permanent installation into one or more Listed emergency luminaires.

Ni-MH

THIS PRODUCT CONTAINS A RECHARGEABLE NICKEL-METAL HYDRIDE BATTERY. THE BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.

SAVE THIS INSTRUCTIONS

INSTALLATION

CAUTION: MAKE CERTAIN THE AC POWER IS OFF UNTIL THE INSTALLATION IS COMPLETE.

1. SPECIFICATION OF 18470X-X SERIES MODEL

See the 18470X-X MODEL SPECIFICATION below for the model selected.

18470X-X MODEL SPECIFICATION

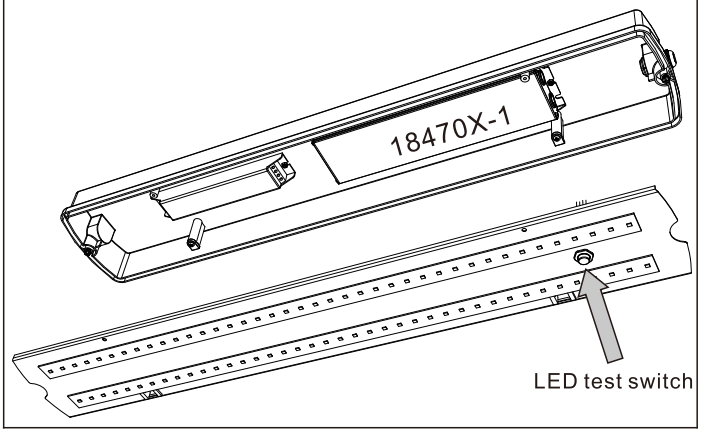
MODEL	VOLTAGE OUTPUT *	EMERGENCY OUTPUT (CONSTANT)
184700-1/2/3	10-60 VDC	5 WATTS
184701-1/2/3	11-60 VDC	9 WATTS
184702-1/2/3	15-60 VDC	15 WATTS
184703-1/2/3	25-60 VDC	25 WATTS

* Max. output voltage in emergency mode is 58.5 with +tolerance of 1.5 volts.

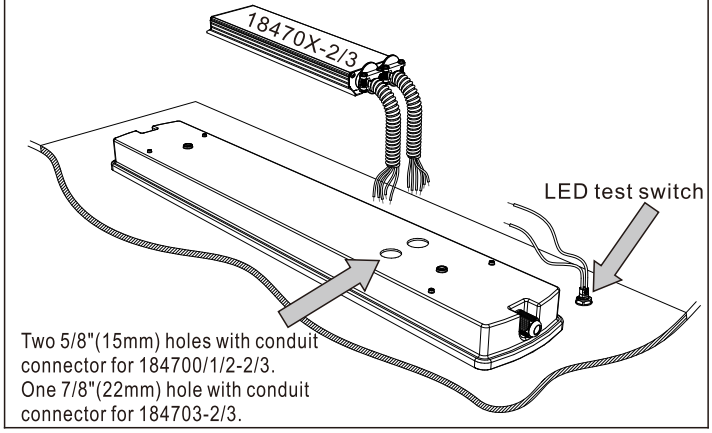
2. INSTALLING THE 18470X-X

The 184700/1/2/3-1 should be mounted inside the luminaire by the luminaire manufactory.
The 184700/1/2/3-2/3 can be mounted inside or outside (nearby or on top of) the luminaire.
The Max. mounting height of the emergency luminaire with 184703-2/3 is 38.93 ft (11.86 m) or the equivalent.

INSIDE THE LUMINAIRE

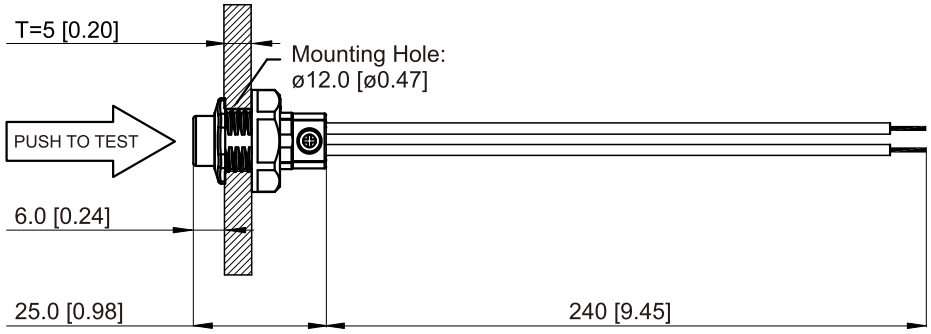


OUTSIDE THE LUMINAIRE



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" (12 mm) hole for mounting the LTS. Connect the wires from LTS to the 18470X-X model according to the wiring diagram on page 3.

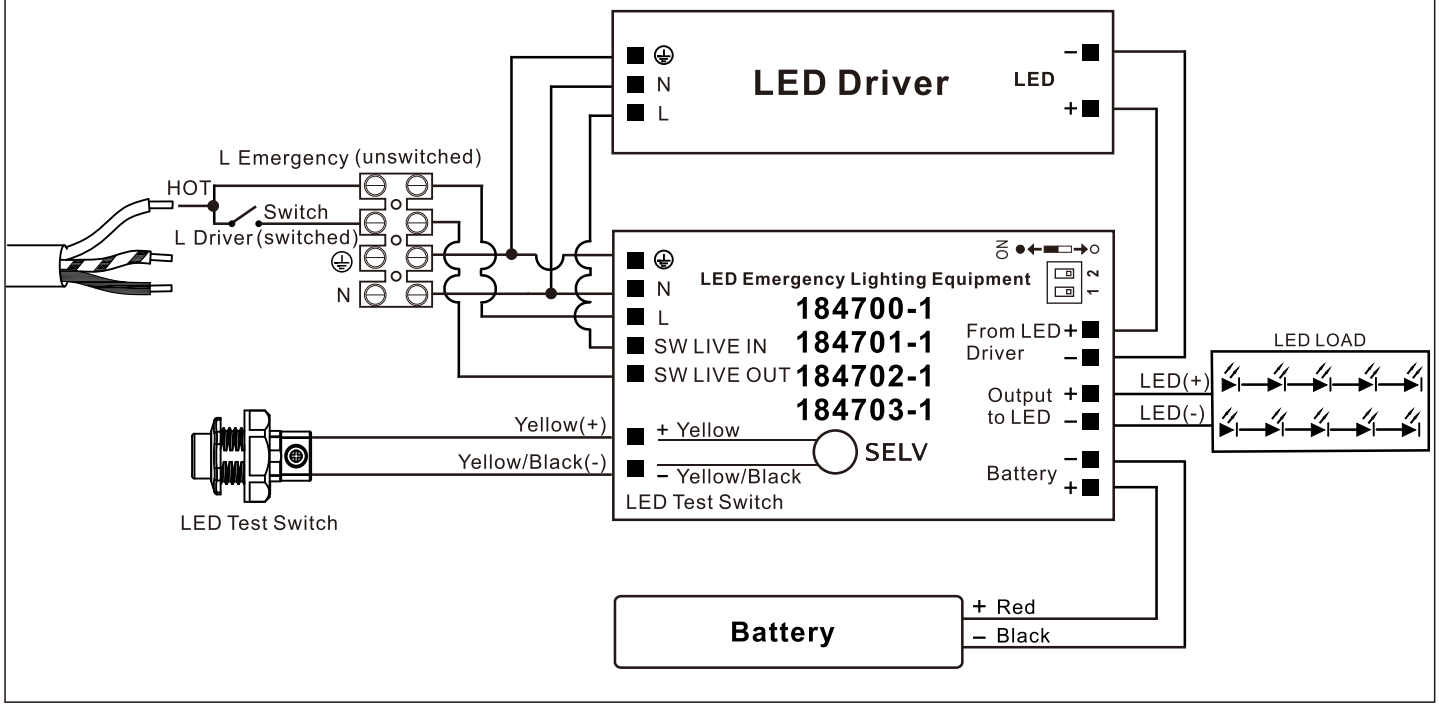


Dimension unit: mm [inch]
Tolerance: ±1 [0.04]

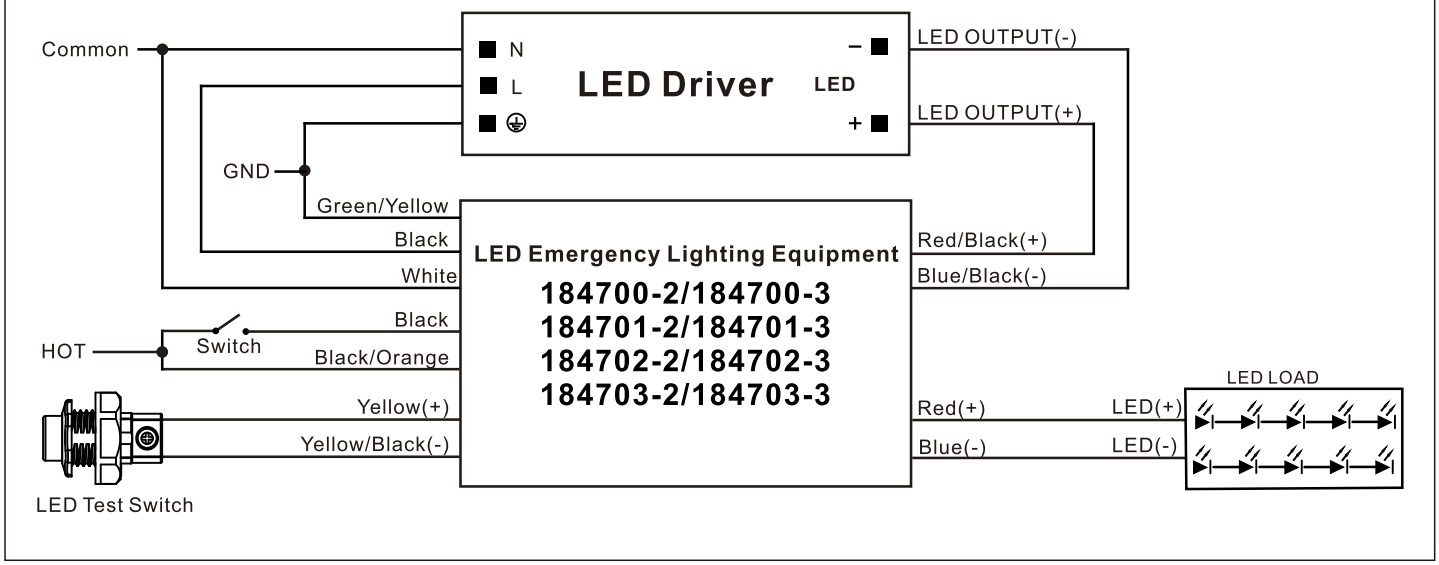
WIRING

1. The 18470X-X requires an unswitched AC power supply of 120-277 volt, 50/60Hz.
2. The 18470X-X and AC driver must be on the same branch circult. Ensure the output current of the AC driver does not exceed 5A.
3. Refer the wiring diagrams below for wiring. Consult the factory for other wiring diagram.

WIRING DIAGRAM FOR EM converterLED/PACK ST-X UNV



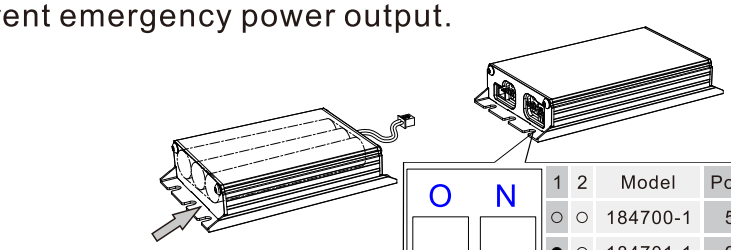
WIRING DIAGRAM FOR EM converterLED/PACK ST-X UNV/WIRE/COND



WIRING CONFIGURATION

The 18470X-X series have different wiring configurations as below.

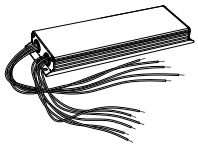
184700/1/2/3-1
Terminal block with external battery pack, choosing the different combination of the DIP switches and the corresponding battery pack to have different 18470X-X model with different emergency power output.



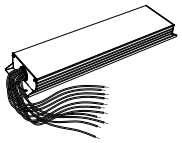
Battery mounting box(optional)

1	2	Model	Power	Battery
○	○	184700-1	5W	9.6V 1.5AH
●	○	184701-1	9W	10.8V 2.1AH
○	●	184702-1	15W	10.8V 3.8AH
●	●	184703-1	25W	14.4V 4.5AH

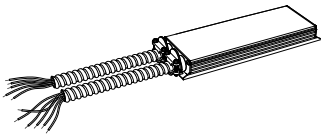
184700/1/2-2
Two group lead wires
Built-in battery



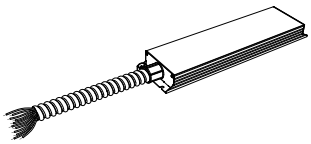
184703-2
One group lead wires
Built-in battery



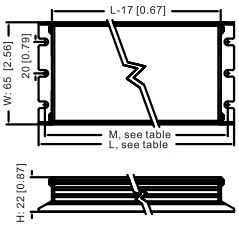
184700/1/2-3
Dual 3/8" flexible conduit
Built-in battery



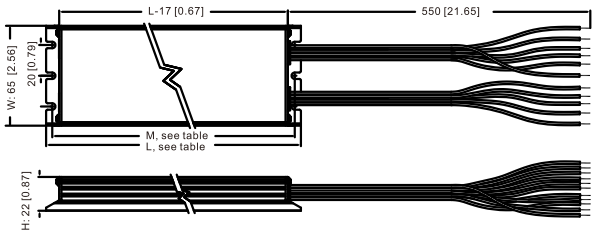
184703-3
Single 1/2" flexible conduit
Built-in battery



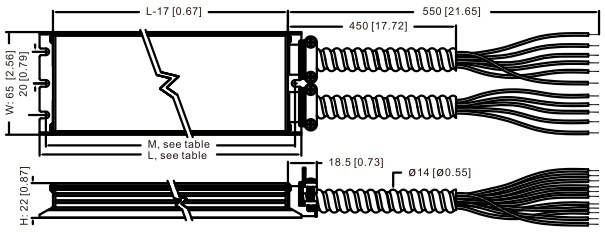
18470X-1



18470X-2



18470X-3



Dimension unit: mm[inch]

Item No.	L mm [inch]	M (Mounting) mm [inch]	W mm [inch]	H mm [inch]
184700-1	125 [4.92]	117 [4.61]	65 [2.56]	22 [0.87]
184701-1	125 [4.92]	117 [4.61]	65 [2.56]	22 [0.87]
184702-1	125 [4.92]	117 [4.61]	65 [2.56]	22 [0.87]
184703-1	125 [4.92]	117 [4.61]	65 [2.56]	22 [0.87]
184700-2/3	260 [10.24]	252 [9.92]	65 [2.56]	22 [0.87]
184701-2/3	307 [12.09]	299 [11.77]	65 [2.56]	22 [0.87]
184702-2/3	372 [14.65]	364 [14.33]	65 [2.56]	22 [0.87]
184703-2/3 *	358 [14.09]	351 [13.82]	82 [3.23]	30 [1.18]

* Only one entry for wires

OPERATION / 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 18470X-X automatically switches to emergency power, operating the lighting load at rated emergency power. During power failure, the LED test switch will be off. When the AC power is restored, the emergency 18470X-X switches the system back to normal mode of operation and resumes battery charging. The minimum emergency operation time is 90 minutes. The charging time for a full discharge is 24 hours. A short term discharge test may be conducted after the 18470X-X has been charging for 1 hour. Charge for 24 hours before conducting a long term discharge test.

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 test.

AUTO TEST

The 18470X-X has an Auto Test feature which saves cost by reducing the need for manual testing.
1. Initial Auto Test
When the system is connected properly and powered on, the 18470X-X 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.
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 will occur every 52 weeks after initial power on.
- Monthly Auto Test
The Monthly Auto Test shall be executed every 30 days, and will test;
Shifting between normal and emergency mode, charging and discharging conditions.
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 LTS one time to simulate emergency mode.
2. Press the LTS 2 times continuously within 3 seconds to force a 30-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 3 seconds to force a 90-minute annual test. After the test is completed, the next (52-week) annual test will count from this date.
4. 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 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

GUIDELINE FOR FIELD INSTALLATION

The 18470X-2/3 series model is suitable for field installation with suitable LED loads including LED luminaires, LED lamps and others. Follow below 3 steps to determine if your luminaire is eligible for field installation.

1) Determine Electrical Compatibility

A) Verify that the LED Driver for normal operation is Class 2 compliant.

B) Verify that the emergency driver (18470X-2/3 series) selected does not exceed the power delivered to the LED loads (both voltage and current) of the normal LED driver.

2) Calculate Lumen Output in Emergency Mode

A) Access luminaire data from Designlights Consortium website (www.designlights.org).

B) Select “Search the DLC Qualified Product List’ on the DLC homepage.

C) Enter luminaire manufacturer name and part number in the “search by keyword” text window.

D) Select ”Search” tab to open the “Qualified Products List”.

E) Determine luminaire Lumens per Watt efficacy in “Rated Data” specifications.

F) Multiply luminaire Lumens per Watt by Emergency rated output of the 18470X-2/3 series model (Refer to below “18470X-2/3 MODEL SPECIFICATION”).

18470X-2/3 MODEL SPECIFICATION

MODEL	EMERGENCY OUTPUT (CONSTANT)
184700-2/3	5 WATTS
184701-2/3	9 WATTS
184702-2/3	15 WATTS
184703-2/3	25 WATTS

3) Determine Suitability of Means of Egress Lighting Levels

Using industry standard lighting design software with the IES files for the emergency luminaires, verify that the above calculated emergency lumens are sufficient to meet Code-compliant path of egress illumination levels.

While the 18470X-2/3 series has been found compliant with the requirements of UL Standard 924, it is ultimately the responsibility of the Designer/Specifier to assure the as-installed system delivers code-compliant path of egress illumination in accordance with national, state and local code requirements.