

Emergency LED Drivers Models LEM04 and LEM08

INSTRUCTION MANUAL

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. **CAUTION-** To prevent electrical shock, do not mate unit connector until installation is complete and A.C. power is supplied to the unit.
2. **CAUTION-**This fixture provides more than one power supply output source. To reduce the risk of electrical shock, disconnect both normal and emergency sources by turning off the A.C. branch circuit and by disconnecting the unit connector.
3. **CAUTION-**This is a sealed unit. Components are not replaceable. Replace the entire unit when necessary.
4. **CAUTION-**Installation and servicing should be performed by qualified personnel only. De-energize before opening.
5. An unswitched A.C. power source of 120 to 277volts AC, 50/60Hz is required.
6. The **LEM** emergency driver and A.C. driver must be on the same branch circuit.
7. Do not mount near gas or electric heaters.
8. The **LEM** emergency driver should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
9. The **LEM** emergency driver will supply **20-50VDC** output at the individual rated specification for 90 minutes.
10. This product is suitable for use in damp locations where the ambient temperature is 0°C minimum, +50°C maximum. Product is also suitable for installation in sealed and gasketed fixtures. Product is not suitable for heated air outlets and wet or hazardous locations.
11. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, void warranty, and result in non-compliance with UL specifications.
12. The **LEM** is certified in the CA Title 20 Modernized Appliance Efficiency Database System (MAEDBS) as a small battery charger.
13. Do not use this equipment for other than intended use.
14. Install in accordance with the National Electrical Code and local regulations.
15. The emergency LED driver is for use with grounded, UL listed LED luminaire, shall be enclosed by the LED luminaire and bonded to the grounding of LED luminaire.
16. Lighting fixture manufacturers, electricians, and end-users need to ensure product system compatibility before final installation.

SAVE THESE INSTRUCTIONS



EMERGENCY LED DRIVER FOR USE WITH
LED LUMINAIRES IDENTIFIED IN THE
MANUFACTURER'S
INSTALLATION INSTRUCTIONS
E484840



HIGH EFFICIENCY PERFORMANCE
MEETS CA T20 BATTERY CHARGER
EFFICIENCY STANDARDS



THIS UNIT CONTAINS A
RECHARGEABLE NICKEL-CADMIUM BATTERY.
PLEASE RECYCLE OR DISPOSE OF PROPERLY.



ONE LITHONIA WAY, CONYERS, GEORGIA 30012, TELEPHONE 800-866-4682

INSTALLATION INSTRUCTIONS

WARNING: To prevent high voltage from being present on the YELLOW and YELLOW/BLACK output leads prior to installation, the unit connectors must be open (disconnected.) Do not join the unit connector until installation is complete and AC power is supplied to the emergency driver.

CAUTION: Before installing, make certain the A.C. power is off and the LEM Emergency Driver unit connector is disconnected.

1. System Compatibility

The **LEM Emergency Driver** can be used with most LED loads that operate at 20-50 VDC.

1. The **LEM Emergency Driver** series has been evaluated to and found compliant to UL standard 924. The as-installed performance of system must meet or exceed all Federal, State, and Local code requirements.
2. Approximate output power of the LEM Emergency Driver is based on the model (See *Table A*) and of the forward voltage required to operate the LED array.
3. See *Page 4* for methods to calculate emergency light levels.

TABLE A: Model Wattage

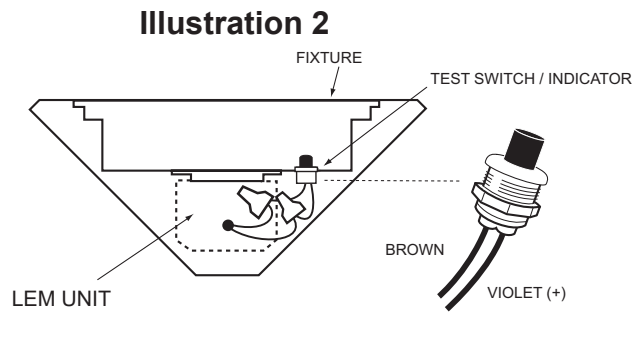
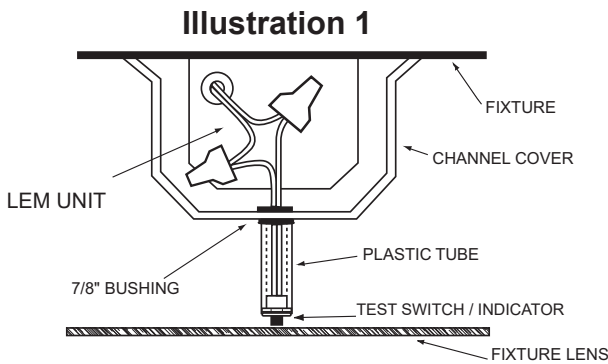
Model	Output Wattage
LEM04 A, LEM04 B	4 watts (approx.)
LEM08 A, LEM08 B	8 watts (approx.)

2. Mounting the LEM Emergency Driver

For LEM04 A and LEM08 A: The **LEM Emergency Driver** should be mounted on or nearby the fixture above the ceiling. Route the flexible conduit to the fixture or junction box to make the necessary connections.

For LEM04 B and LEM08 B: Mount the **LEM Emergency Driver** in the driver/lamp compartment or enclosed wireway so the wire leads are not exposed at least 1/2" away from the normal driver. Refer to Illustrations 1 and 2.

When battery packs are remote mounted, consult Customer Service for the maximum allowable distance between the battery pack and the load.

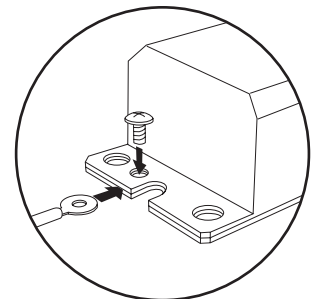
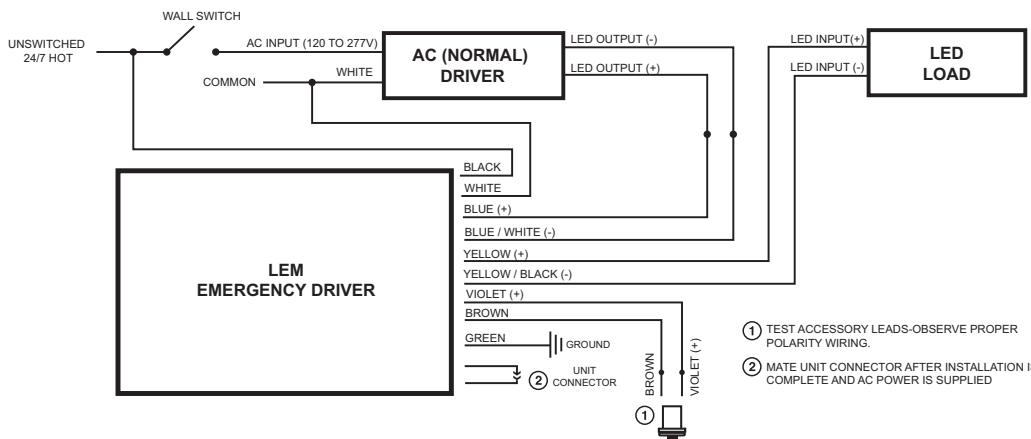


NOTE: Position the **Test Switch/Indicator** so that it can be seen after installation.

OBSERVE PROPER POLARITY

3. Wiring

Refer to the wiring diagram below for the appropriate wiring of the LED load and driver. Install in accordance with the National Electrical Code and local regulations. For additional wiring diagrams consult Customer Service.



Note: If/when using the GREEN ground wire, insert the ring terminal into the provided screw hole between the LEM enclosure and lid for proper grounding.

4. MOUNTING THE TEST SWITCH / CHARGE INDICATOR

For installation of the **Test Switch / Charge Indicator**, select a convenient location on the fixture so the **Test Switch / Charge Indicator** can be seen after installation. Allow for proper clearance inside the fixture and drill or punch a 1/2" hole. Remove the nut from the **Test Switch / Charge Indicator**. Push the **Test Switch / Charge Indicator** housing into the 1/2" hole and secure with the nut. Connect the LED wires from the unit to the **Test Switch / Charge Indicator** as indicated in the wiring instructions. If needed, a plastic tube is provided to run the **Test Switch / Charge Indicator** close to the fixture lens for extra visibility. Refer to *Illustrations 1 and 2*.

5. LABELS

Attach the appropriate labels adjacent to the **Test Switch / Charge Indicator**. Annotate Replacement Label with identical manufacturer part number(s). The Caution and the Replacement labels must be on the fixture in a readily visible location to anyone attempting to service the fixture.

6. WIRING THE A.C. INPUT

- A. The **LEM Emergency Driver** and A.C. driver **MUST** be on the same branch circuit.
- B. The **LEM Emergency Driver** requires an **unswitched** A.C. power source of 120 to 277 volts, 50/60Hz; therefore when used with switched fixtures, the **LEM Emergency Driver** input must be wired ahead of the switch.
- C. Refer to the wiring diagram for proper wiring. For wiring diagrams not shown, consult our customer service.

7. COMPLETING INSTALLATION

When the installation is complete, join the **LEM Emergency Driver** unit connector and then supply AC power.

OPERATION

Normal Mode – A.C. power is present. The A.C. driver operates the LED load as intended. The **LEM Emergency Driver** is in the standby charging mode. The **Test Switch / Charge Indicator** will be lit providing a visual indication that the battery is being charged.

Emergency Mode – The A.C. power fails. The **LEM Emergency Driver** senses the A.C. power failure and automatically switches to the *Emergency Mode*. The designated LED array will illuminate for a minimum of 90 minutes. When the A.C. power is restored, the **LEM Emergency Driver** switches the system back to the *Normal Mode* and resumes battery charging. See page 1 of the Instruction Manual.

TESTING & MAINTENANCE

Pressing the **Test Switch / Charge Indicator** turns off the light on the **Test Switch / Charge Indicator** and forces the unit into emergency mode, interrupting power to the designated A.C. driver. The LED load is now being lit by the **LEM Emergency Driver** unit. After releasing the **Test Switch / Charge Indicator**, the fixture returns to normal operation after a momentary delay. To simulate a "BLACK OUT" use the circuit breaker to turn off A.C. power.

Initial Testing – Allow the unit to charge approximately 1 hour, then conduct a short discharge test. Allow a 24 hour charge before conducting a one hour test.

The **LEM Emergency Driver** is a maintenance free unit, however, periodic inspection and testing is required. NFPA 101, Life Safety Code, outlines the following schedule:

Monthly – Ensure that the **Test Switch / Charge Indicator** light is illuminated. Conduct a 30 second discharge test by depressing the **Test Switch / Charge Indicator**. At least one LED should operate at reduced output.

Annually – Ensure that the **Test Switch / Charge Indicator** is illuminated. Conduct a full 90 minute discharge test. The unit should operate as intended for the duration of the test.

"Written records of testing shall be kept by the owner for inspection by the authority having jurisdiction."

SERVICING SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.

Consult Customer Service for current warranty information.

LEM Series Compatibility and Suitability of Use Guidelines Addendum (Rev. A)

This product is suitable for field installation with suitable LED loads including LED luminaires, DC voltage driven LED replacements for fluorescent lamps and others. There are 4 checks to determine if your luminaire is eligible for field installation.

1. Ensure the LED load's rated power is greater than or equal to the power output of this emergency LED driver. This is to ensure that this emergency product will not produce more power than the LED load can handle, thus ensuring that the LED load will not be damaged when the system is in the emergency mode.
2. Verify that the forward voltage of the luminaire's LED array is within the limits of this emergency LED driver. The forward voltage of the LED array is commonly designated as V_f and should be found on the luminaire markings, in the luminaire specifications, or imprinted directly on the LED arrays. If multiple LED arrays are to be driven, verify that the total forward voltage is within the limits of this product. Using a voltage meter, it may be possible to directly measure the voltage across the LED arrays when operating from the AC driver.
3. UL Classified Emergency products can be paired with LED luminaires or retrofit kits if found in the Design Lights Consortium database. Go to the Design Lights Consortium website (<http://www.designlights.org>) and search for your LED system by model name or model number. If found in the database, these products are preapproved by UL to be installed together in the field or at a luminaire manufacturer, provided steps are taken to ensure there will be sufficient light output in the end application.
4. You can *estimate* the egress lighting illumination levels by doing the following:
 - a. Find the efficacy of the LED load, which will be found in the Design Lights Consortium database. This number will be given in lumens per watt (lm/w).
 - b. Determine the approximate power output of the emergency LED driver. See TABLE A on page 2.
 - c. Approximate lumens can be calculated by multiplying the output power of the emergency LED driver by the efficacy of the LED load. This number is only an approximation however it will provide a good estimate for beginning the lighting design of the system.
5. Determining Adequacy of Means-of-Egress Lighting Levels
6. While this model 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 Federal, State or local municipal requirements.