

## IMPORTANT SAFEGUARDS

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

### READ AND FOLLOW ALL SAFETY INSTRUCTIONS:

- 1) The LBDX is designed for factory installation and for field installation only if determined to meet the as installed egress requirements as outlined on page 4 of these instructions.
- 2) Installation should be performed by qualified personnel only.
- 3) Install in accordance with the National Electric Code and applicable local codes.
- 4) The LBDX requires an unswitched AC power source of 120 to 277 Volts, 50/60 HZ.
- 5) The LBDX is suitable for use in dry and damp location where ambient temperature is 10 to 50°C.
- 6) The LBDX should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- 7) The LBDX is suitable for use only with LED lamps having an operating voltage of 20VDC minimum, 50VDC maximum and will provide 90 minutes of emergency operation.
- 8) To reduce the risk of electrical shock, do not connect LBDX converter connector until installation is complete and AC power is applied to the luminaire.
- 9) The LBDX has more than one power source. To reduce the risk of electrical shock, remove the normal AC power source(s) to the luminaire and disconnect the LBDX converter connector before servicing.
- 10) The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and will void warranty.
- 11) Do not use this equipment for other than intended use.
- 12) Do not mount near gas or electric heaters.
- 13) Servicing of this equipment should be performed by qualified personnel only.
- 14) The LBDX is a sealed unit. Components are not replaceable. Replace the entire unit when necessary.
- 15) The LBDX contains a non-replaceable NiCad battery that must be recycled properly.

### SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

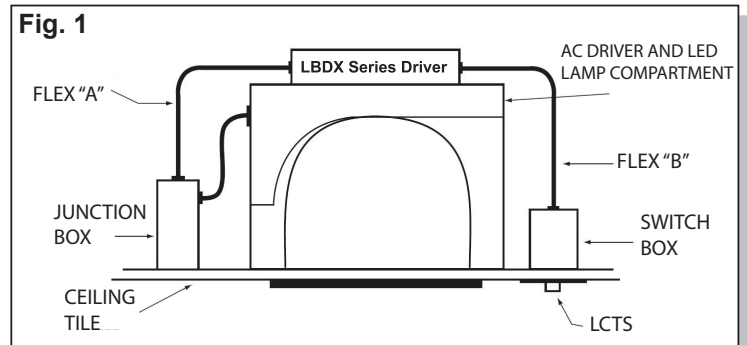
The installation and use of this product must comply with all national, federal, state, municipal, or local codes that apply. Please read this manual thoroughly before installing or operating LBDX Emergency LED Drivers.

## INSTALLATION INSTRUCTIONS

**CAUTION:** Before installing, make certain the AC power is off and the LBDX converter connector is disconnected.

### 1. MOUNTING THE EMERGENCY LED DRIVER

When used with ceiling-mounted downlight fixtures, the LBDX series driver should be mounted on the fixture above the ceiling. The flex conduit marked "A" should be wired into AC driver compartment or to an electrical junction box on the fixture, which allows access to the driver/LED lead connection. (Fig. 1)

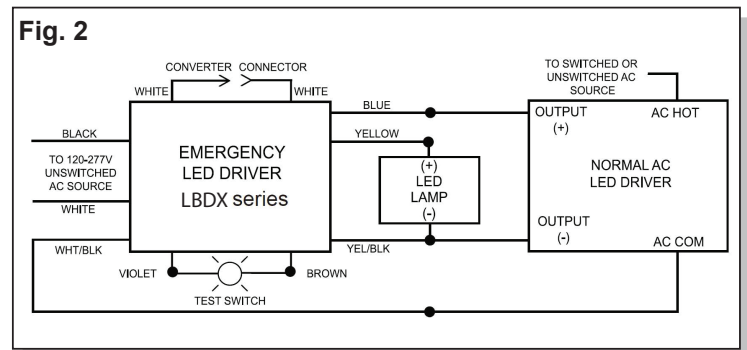


### 2. WIRING

Perform all wiring with the exception of the Violet and Brown wires.

**Note:** Wiring must be performed in accordance with the National Electric Code and applicable local codes. Consult customer service for additional wiring diagrams. (Fig. 2)

**Caution:** Use only with LED driver with output current less than 2.5A.



### 3. INSTALLING THE LED COMBO TEST SWITCH (LCTS)

Cut the single gang switch box (not provided) into the ceiling adjacent to the fixture within reach of the LBDX series driver's flex marked "B". After mounting the switch box, connect flex "B" to the box and route all leads inside the box. Refer to figure 1 for typical mounting. Mount the LCTS on the test switch plate and secure using the plastic nut. Connect the wires from the LBDX series driver to the LCTS (Violet to Violet, Brown to Brown). Attach the test switch plate to the switch box using the screws provided.

### 4. WIRING THE AC INPUT (Fig. 2)

- The LBDX and AC LED Driver must be on the same branch circuit.
- The LBDX requires an unswitched AC power source of 120 to 277 Volts.
- When the LBDX is used in a switched luminaire, the AC input to the LBDX must be connected to ahead of the luminaire switch (line side of luminaire switch).

### 5. COMPLETING INSTALLATION

When the installation is complete, switch the AC power ON and join the LBDX converter connector.

**OPERATION**

Normal Mode – AC power is present. The AC LED Driver operates the LED lamp(s) as intended. The LCTS will be illuminated indicating that the LBDX is in the standby charging mode.

Emergency Mode – AC power fails. The LBDX senses the AC power failure and automatically switches to Emergency Mode. One or multiple LED lamps will be illuminated for a minimum of 90 minutes. When AC power is restored, the LBDX switches the system back to the Normal Mode and resumes battery charging.

**TESTING AND MAINTENANCE**

Pressing the LCTS simulates an AC power failure and forces the system into the Emergency Mode. Only the emergency LED lamp(s) will be illuminated. Testing may also be performed by opening circuit breaker powering the system.

Initial Testing – a short test. Allow a 24 hour charge before conducting a 1 ½ hour test.

Monthly – Ensure that the LCTS is illuminated. Conduct a 30 second test by depressing the LCTS

Annually – Ensure that the LCTS is illuminated. Conduct a 1 ½ hour test by opening circuit breaker controlling the LBDX unit(s) to be tested.

**“Written records of testing shall be kept on file for inspection by the authority having jurisdiction.”**

**Series System Coordination Guidelines**

These guidelines were developed to allow the lighting system Designer/Specifier to predict the operating performance levels of LED luminaires when powered by an electrically compatible LBDX Series model. It is ultimately the responsibility of the Designer/Specifier to ensure that the installed system delivers a code-compliant path of egress illumination.

**1) Determine Electrical Compatibility**

- A) Verify that the Luminaire LED Driver, where applicable, is Class 2 compliant.
- B) Verify that the Luminaire LED Lamp(s) have an operating voltage between 20VDC and 50VDC.
- C) Verify that the Luminaire LED Lamp(s) have a power rating equal to, or greater than, the emergency power rating of the LBD model under consideration. Refer to Table 1 below.

**TABLE 1**

LBDX MODEL	EMERGENCY OUTPUT (CONSTANT)
LBDX-5-CP-C	5.0 WATTS
LBDX-10-CP-C	10.0 WATTS
LBDX-13-CP-C	13.0 WATTS

**2) Calculate Lumen Output During Emergency Operation**

- A) Access luminaire data by logging onto DesignLights Consortium ([www.designlights.org](http://www.designlights.org)).
- B) Select “Search the DLC Qualified Product List” on the DLC homepage.
- C) Enter manufacturer name and P/N of luminaire under consideration 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 Output of the LBDX model under consideration.

**Refer to Table 1 above.**

This figure is the Lumens available for the luminaire during emergency operation.

**3) Determine Suitability of Means of Egress Lighting Levels**

- A) Using industry standard lighting design software, along with IES files for the luminaire under consideration, verify that the as installed available Lumens (as calculated in 2F above) are sufficient to meet Code-compliant path of egress illumination levels.

**While the LBDX 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 Federal, State or local municipal requirements.**