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# ILB-CP20-HE-R

**HIGH EFFICIENCY  
EMERGENCY LIGHTING EQUIPMENT  
FOR LED**

**Patented.** See [iotaengineering.com/patents](http://iotaengineering.com/patents) for more details

## 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, only mate unit connector after installation is complete and prior to supplying A.C. power 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. The **ILB-CP20-HE-R** is for use with grounded LED luminaires listed to UL standards. Not for use in heated air outlets or hazardous locations.
6. The **ILB-CP20-HE-R** requires an unswitched A.C. power source of 120 to 277 volts, 50/60 Hz.
7. The **ILB-CP20-HE-R** and A.C. driver **must** be on the same branch circuit.
8. Do not mount near gas or electric heaters.
9. The **ILB-CP20-HE-R** should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
10. The **ILB-CP20-HE-R** will supply 20-60 VDC output at the individual rated specification for 90 minutes. See individual units for output specifications.
11. The **ILB-CP20-HE-R** meets CEC requirements for a small battery charger per CEC-400-2014-009-CMF.
12. Suitable for use in damp locations and plenum spaces.
13. Suitable for Luminaires, recessed Type IC (intended for insulation contact).
14. For use in 0° C minimum, 55° C maximum ambient temperatures.
15. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, will void warranty, and result in non-compliance with UL specifications.
16. Do not use this equipment for other than intended use.
17. Install in accordance with the National Electrical Code and local regulations.
18. 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  
E473237

CLASS 2 OUTPUT



MEETS CEC  
ENERGY EFFICIENCY  
STANDARDS



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

# INSTALLATION INSTRUCTIONS

**CAUTION:** Before installing, make certain the A.C. power is off and the ILB-CP20-R unit connector is disconnected.

## 1. FIXTURE

The **ILB-CP20-HE-R** can be used with most LED loads that operate at 20-60 VDC.

1. The ILB-CP 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. Refer to Addendum 11042014 for detailed specifications and methods to calculate emergency light levels.

## 2. MOUNTING THE ILB

Mount the **ILB-CP20-HE-R** on or adjacent to the fixture in a position that does not interfere with the existing A.C. driver or any other hardware. Extend the flex conduit marked "A" to the junction box or wireway channel and punch a  $\frac{7}{8}$ " hole. Feed the wires and flex connector down through the hole in the fixture and secure in place with the flex connector nut. An optional T-bar mounting kit is available to mount the **ILB-CP20-HE-R** above the ceiling tile adjacent to the fixture. To order the optional T-bar mounting kit (part number TBMK-160) contact Customer Service.

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

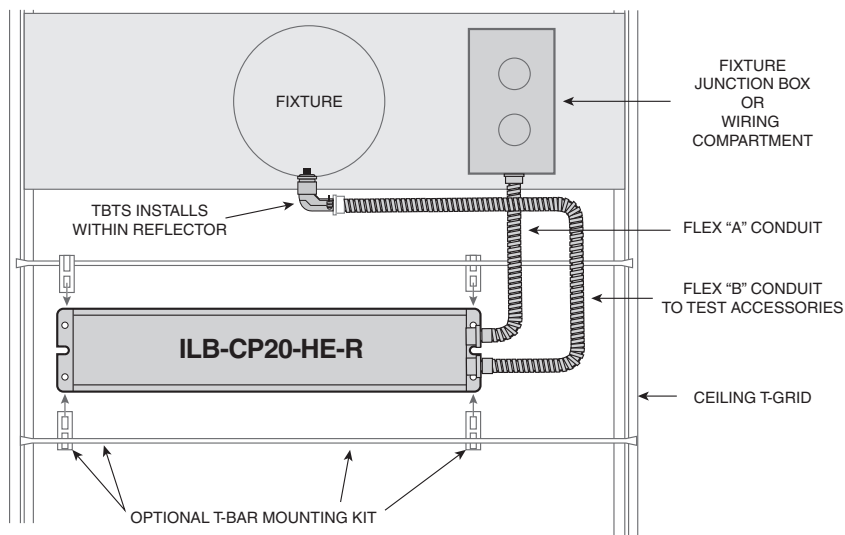
## 3. WIRING

Refer to the wiring diagram on the back page 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.

## 4. MOUNTING THE TBTS TEST SWITCH / CHARGE INDICATOR

Select a convenient location on the side of the reflector so that the **TBTS** (on flex conduit marked "B") can be seen after installation. Allow for proper clearance and drill or punch a  $\frac{7}{8}$ " hole ( $\frac{1}{2}$ " knockout). Remove the knurled nut (provided) and push the **TBTS** housing into the  $\frac{7}{8}$ " hole. Secure the **TBTS** with the knurled nut. Refer to *Illustration 1* for typical mounting. For proper operation, use only the accessory components provided with the unit. See *Page 1 of the Instruction Manual*.

**Illustration 1: Typical Installation (top view)**



## 5. LABELS

Attach the appropriate labels adjacent to the **TBTS**. 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 **ILB-CP20-HE-R** and A.C. driver **MUST** be on the same branch circuit.
- B. The **ILB-CP20-HE-R** requires an **unswitched** A.C. power source of 120 to 277 volts, 50/60Hz; therefore when used with switched fixtures, the ILB input must be wired ahead of the switch.
- C. Refer to the wiring diagrams on the back page for the proper wiring. For wiring diagrams not shown, consult our customer service.

## 7. COMPLETING INSTALLATION

When the installation is complete, join the **ILB-CP20-HE-R** 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 **ILB-CP20-HE-R** is in the standby charging mode. The **TBTS** will be lit providing a visual indication that the battery is being charged.

**Emergency Mode** – The A.C. power fails. The **ILB-CP20-HE-R** senses the A.C. power failure and automatically switches to the *Emergency Mode*. One or multiple LEDs are illuminated, for a minimum of 90 minutes. When the A.C. power is restored, the **ILB-CP20-HE-R** switches the system back to the *Normal Mode* and resumes battery charging. See page 1 of the Instruction Manual.

# TESTING & MAINTENANCE

Pressing the **TBTS** turns off the light on the **TBTS** and forces the unit into emergency mode, interrupting power to the designated A.C. driver. The LED load is now being lit by the **ILB-CP20-HE-R** unit. After releasing the **TBTS**, 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 **ILB-CP20-HE-R** is a maintenance free unit, however, periodic inspection and testing is required. NFPA 101, Life Safety Code, outlines the following schedule:

**Monthly** – Insure that the **TBTS** light is illuminated. Conduct a 30 second discharge test by depressing the **TBTS**. At least one LED should operate at reduced output.

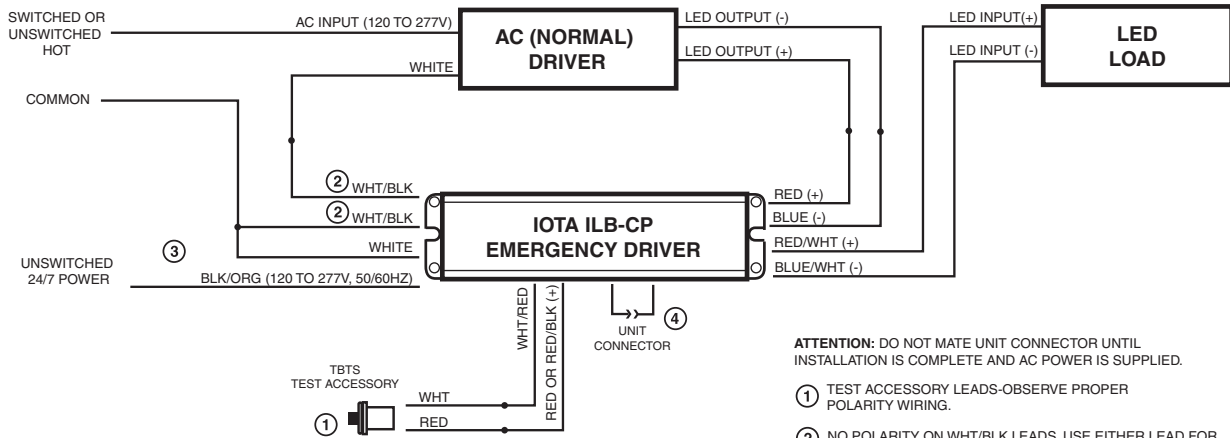
**Annually** – Insure that the **TBTS** is illuminated. Conduct a full 90 minute discharge test. The unit should operate as intended for the duration of the test.

“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 or visit [www.iotaengineering.com](http://www.iotaengineering.com) for current warranty information.

# TYPICAL WIRING DIAGRAM

For other diagrams, consult our Customer Service.



**ATTENTION:** DO NOT MATE UNIT CONNECTOR UNTIL INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED.

- ① TEST ACCESSORY LEADS-OBSERVE PROPER POLARITY WIRING.
- ② NO POLARITY ON WHT/BLK LEADS. USE EITHER LEAD FOR CONNECTION TO BUILDING COMMON (SWITCHED OR UNSWITCHED) AND OTHER FOR CONNECTION TO AC DRIVER.
- ③ CONNECT UNSWITCHED POWER. IF A SINGLE BUILDING COMMON IS PRESENT, CONNECT THE WHITE WIRE TO THE COMMON. IF A SEPARATE UNSWITCHED CONDUCTOR FEED IS PRESENT, CONNECT THE WHITE LEAD TO THE COMMON FROM THE UNSWITCHED FEED.
- ④ MATE UNIT CONNECTOR AFTER INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED

## CP Series Compatibility and Suitability of Use Guidelines Addendum (Rev.11042014)

The purpose of this addendum is to sufficiently identify electrical compatibility and predictable emergency light output of the LED luminaire when used with the IOTA ILB-CP Series LED emergency drivers. Verification of these operating traits does not constitute a code-compliant, as-installed emergency egress system. It is still the responsibility of the Designer/Specifier to assure appropriate light levels are achieved during emergency operation of the luminaire in accordance with Federal, state and local municipal codes regarding path of egress illumination.

### 1. Determining Electrical Compatibility

- 1.1 Verify Class 2 compliant driver per driver manufacture specifications.
- 1.2 Verify that the Emergency Driver (ILB-CP Series) selected does not exceed the power delivered to the LED array (voltage and current) of the normal driver.

### 2. Calculating Lumen Output During Emergency Operation

#### 2.1 Assess luminaire/fixture data.

##### 2.1.1 DESIGNLIGHTS CONSORTIUM

- Log onto the DesignLights Consortium website ([www.designlights.org](http://www.designlights.org)).
- Click on “search the DLC Qualified Product List” button on the DLC homepage.
- In the “search by keyword” text window enter: luminaire manufacturer name and part number.
- Click on “Search” tab to open the “Qualified Products List.”
- Determine per “RATED DATA” efficacy shown in lumens per watt - (lm/w).
- Multiply lumens per watt by ILB-CP rated output (example: lm/w x 5 watts). Refer to table “ILB MODEL SPECIFICATION CHART” below for the wattage of the specific ILB-CP model to be used in the luminaire. (lm/w) x (ILB-CP Watts) = Minimum emergency lumens of fixture.
- Determine per “RATED DATA” the “wattage of the luminaire.”

ILB MODEL SPECIFICATION CHART

MODEL #	OUTPUT POWER (CONSTANT)
ILB-CP05	5 WATTS
ILB-CP07	7 WATTS
ILB-CP10	10 WATTS
ILB-CP12	12 WATTS
ILB-CP20	20 WATTS
ILB-SL-CP05	5 WATTS
ILB-SL-CP07	7 WATTS
ILB-SL-CP10	10 WATTS
ILB-SL-CP12	12 WATTS

### 3. Determining Adequacy of Means-of-Egress Lighting Levels

- 3.1 Follow industry standards by utilizing available .ies files and lighting design software for your dedicated emergency luminaires, with the above calculated emergency lumens, and validate your as-installed plans in accordance with the applicable life safety codes governing your project.

While the ILB-CP 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.