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ILBDW FBS

"S" OR "SLTEST" MOUNTING STYLE

FOOD AND BEVERAGE SAFE
WET LOCATION EMERGENCY
LIGHTING EQUIPMENT FOR LED

For Models:

ILBDW CP[#] HE SD S FBS
ILBDW CP[#] HE SD HV S FBS
ILBDW CP[#] HE SD SLTEST FBS
ILBDW CP[#] HE SD HV SLTEST FBS

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** – The IPS Test Button Component serves as the unit connector. The **ILBDW FBS** will initiate once the IPS installation is complete ("S" models only) 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 decommissioning the IPS Test Button Component before servicing (see Page 4 - Maintenance).
3. **CAUTION** – This equipment provides reduced current levels when higher voltage loads are connected. Load calibration is required to ensure proper operation (see page 4).
4. **CAUTION** – This is a sealed unit. Components are not replaceable. Replace the entire unit when necessary.
5. **CAUTION** – Installation and servicing should be performed by **qualified personnel only**.
6. The **ILBDW** is for use with grounded LED luminaires listed to UL standards. Not for use in heated air outlets or hazardous locations.
7. The **ILBDW FBS** and A.C. driver ***must*** be on the same branch circuit.
8. Do not mount near gas or electric heaters.
9. The **ILBDW FBS** should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
10. Product output voltage varies according to wattage. Refer to *Illustration 1* for output voltage per model.
11. The **ILBDW FBS** is certified in the CA Title 20 Modernized Appliance Efficiency Database System (MAEDBS) as a small battery charger.
12. Suitable for use in wet locations.
13. For use in 0° C minimum, 48° C maximum ambient temperatures.
14. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, prevent proper performance, void warranty, and result in non-compliance with UL specifications.
15. Do not use this equipment for other than intended use.
16. Install in accordance with the National Electrical Code and local regulations.
17. Lighting fixture manufacturers, electricians, and end-users need to ensure product system compatibility before final installation. See addendum for compatibility and covered luminaire requirements.

SAVE THESE INSTRUCTIONS

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

NSF
COMPONENT

BC
HIGH EFFICIENCY PERFORMANCE MEETS CA T20 BATTERY CHARGER EFFICIENCY STANDARDS

THIS UNIT CONTAINS A RECHARGEABLE LITHIUM-ION BATTERY

PLEASE RECYCLE OR DISPOSE OF PROPERLY.

LiFePO4

SPECIFICATIONS - *Illustration 1*

Model	Input Voltage (Min - Max)	Output Voltage (Min - Max)	Minimum Operation
ILBDW CP10	120-277 VAC	15-55 VDC	90 Minutes
ILBDW CP15	120-277 VAC	20-55 VDC	90 Minutes
ILBDW CP20	120-277 VAC	40-200 VDC	90 Minutes

INSTALLATION INSTRUCTIONS

CAUTION: Before installing, make certain the IP67 Rated Test Switch (IPS) is disconnected ("S" models only) and A.C. power is off.

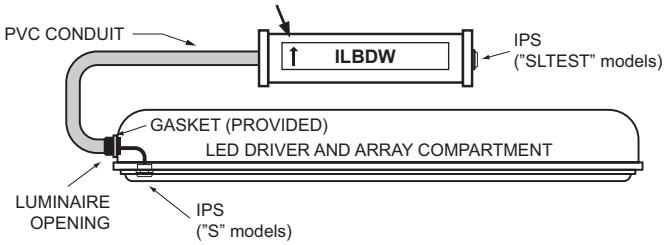
STEP 1 - MOUNTING THE ILBDW

The ILBDW should be mounted nearby the fixture within suitable reach of the PVC conduit.

IOTA provides several mounting accessories to enable suspended or surface mounting of the **ILBDW** that can be acquired by contacting Customer Service or your local Sales Representative.

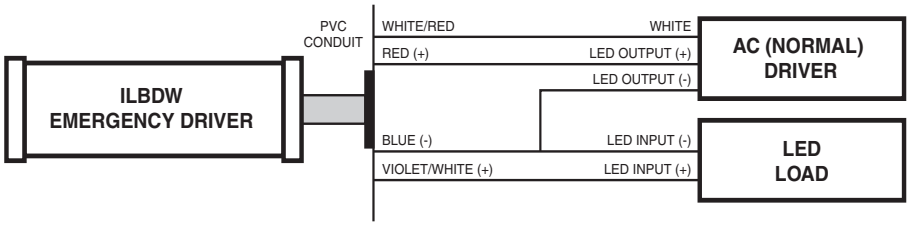
The flex conduit should be wired into an available opening on the luminaire. The gasket (provided) should be installed between the PVC conduit and the luminaire opening.

⚠ The ILBDW must be oriented such that the arrow on the unit label faces up.



STEP 2 - WIRING TO THE LED LOAD AND NORMAL DRIVER

Refer to the appropriate wiring diagram to the right. Make sure all connections are in accordance with NEC and any other local requirements. **The ILBDW is designed to interface with compatible loads only.** See *Illustration 1* for output voltage ratings per ILBDW model.



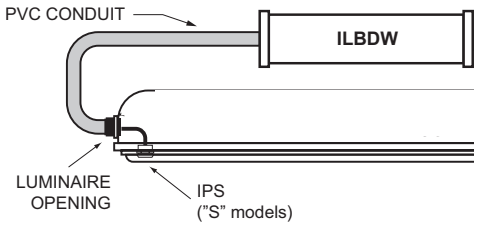
STEP 3 - INSTALLING THE IP67-RATED TEST SWITCH (IPS)

For "SLTEST" Models

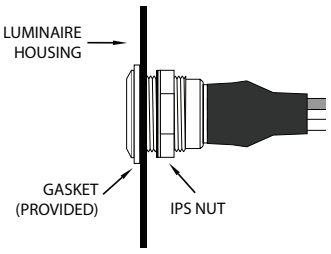
(IPS test switch is secured to the ILBDW housing)**:** The IPS test switch is pre-installed by the factory. No additional connections are needed.

For "S" Models

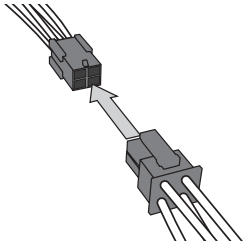
(IPS test switch is included in the PVC conduit): refer to the steps below for installing the IPS test switch in the luminaire.



A. The IPS must be installed in a suitable hole in the luminaire wall or wireway cover. Insert the IPS into the hole so that the LED test button/pilot light is located outside of the fixture or behind the lens and the gasket (provided) is located between the LED test button and fixture housing or lens.



B. Secure the IPS using the IPS nut.

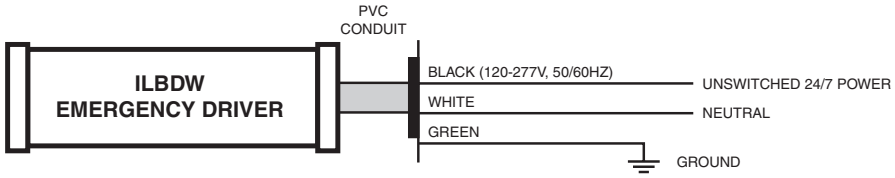


C. Connect and fully engage the IPS Connector to the IPS Socket. Ensure the IPS Connector is properly seated in the IPS Socket, then mark the IPS location on the switch box plate with the IPS Label and apply the Status Indicator Sticker.

COMPLETING INSTALLATION

STEP 4 - WIRING THE AC INPUT

The **ILBDW** requires an **unswitched AC input** of 120-277 volts. Connect the **BLACK** wire to the **120-277 Line**, the **WHITE** wire to the **Neutral**, and the **GREEN** wire to **Ground**.



STEP 5 - APPLY AC POWER

A. **Apply continuous AC power to the unit, and allow the unit to charge for at least 1 hour before performing a functional test**.

B. Verify that the IPS light is on. The lamp will show Red for low battery and Green for sufficient battery charge.

C. Press and hold the IPS button for two seconds. The pilot light will blink. Within five seconds, the LED Module should be operating at a reduced light output. The test mode runs for 60 seconds. To exit the test mode earlier, press and hold the IPS button for two seconds. If the LED Module in the fixture returns to normal operation, the unit is ready for normal and emergency service. If not, see the Troubleshooting section.

This unit features **AC Activate** technology which detects the presence of AC power and automatically engages the battery charging circuit. **No manual unit (or "go") connector needs to be joined**. Instead, connecting the IPS (the IPS is automatically connected on "SLTEST" models) and applying continuous AC power to the unit will enable charging and emergency operation.

OPERATION

Normal Mode

A.C. power is present. The A.C. Driver operates the LED Module as intended. The **ILBDW** is in the standby charging mode. The **IPS** will be lit providing a visual indication that the battery is being charged.

Emergency Mode

The A.C. power fails. The **ILBDW** senses the A.C. power failure and automatically switches to the *Emergency Mode*. The LED Module is illuminated, at reduced output, for a minimum of 90 minutes. When the A.C. power is restored, the **ILBDW** switches the system back to the *Normal Mode* and resumes battery charging.

TROUBLESHOOTING

Problem	Possible Cause
Emergency LED Module does not operate when the IPS Button is pressed.	1. Incorrect wiring of the Emergency Driver and/or AC Driver. 2. The LED Module is not compatible with the Emergency Driver. 3. Battery has not charged for at least one hour. 4. IPS is not inserted properly into the Emergency Driver socket ("S" models only) 5. The wrong test accessory is being used.
IPS Charging LED not on	1. AC Power is Off 2. IPS is not inserted properly into the Emergency Driver socket. 3. The wrong test accessory is being used.
Fixture does not operate in the Normal Mode	1. Incorrect wiring of the Emergency Driver and/or AC Driver. 2. AC power is off to the AC Driver.
Emergency Driver does not operate lamps in the emergency mode for at least 90 minutes.	1. Battery is not fully charged. 2. The LED Module is not within the Emergency Driver specifications. 3. Battery is at end of life.

TESTING & MAINTENANCE

Automatic Testing

The **ILBDW** is designed to automatically test the emergency function for 60 seconds each month, and 90 minutes every 12 months.

Self-testing works in conjunction with the IPS assembly. Any detected failures will be indicated by flashing of the three-color LED. See Table A for diagnosis.

Manual Testing

Manual testing of the **ILBDW** can be performed by pressing and releasing the IPS test button. Only initiate a manual test when the IPS status indicator light is GREEN (see **Table A**). Manual testing lasts 60 seconds and may be cancelled at any time during the test duration by pressing and holding the IPS.

Table A: IPS Diagnostic Codes

STATUS INDICATION	CONDITION
RED	BATTERY IS CHARGING
GREEN	BATTERY IS FULLY CHARGED
OFF	EMERGENCY MODE
FLASHING GREEN	UNIT IS PERFORMING A TEST
FLASHING RED/GREEN	INSUFFICIENT CHARGE
FLASHING RED (ONCE PER 0.5 SEC.)	BATTERY MAY BE MISSING
FLASHING RED (ONCE PER 6 SEC.)	BATTERY FAILURE
TWO RED FLASHES	LOAD FAILURE
THREE RED FLASHES	ELECTRONICS FAILURE
FOUR RED FLASHES	TEMPERATURE OUT OF RANGE

Load Calibration

To ensure proper operation, Load Calibration is required whenever the LED load connected to the ILBDW is changed. **Note:** Load Calibration happens automatically 48 hours after the ILBDW is first installed. **If after installation, the connected LED load is changed**, **Load Calibration will need to be performed**. This will happen **automatically** 48 hours after the ILBDW is re-initialized (see Maintenance section below). To **manually** initiate Load Calibration earlier, press and hold the IPS button for 20 seconds. After 20 seconds, the LED load will turn off. Release the IPS button. The LED load should turn back on and the IPS will begin FLASHING GREEN to indicate that the 60-second Load Calibration is commencing. Any failures detected during Load Calibration will be indicated on the IPS (see **Table A**).

Maintenance

When performing maintenance on the **ILBDW or the emergency luminaire**, the **ILBDW** battery circuit must be completely powered down by performing the following steps:

1) Disconnect AC power. The ILBDW will enter EMERGENCY MODE.

2) Disconnect the battery circuit through one of the following methods:

Method 1: This can only be performed within the first 30 seconds of EMERGENCY Mode - Press and hold the IPS button for approximately five seconds until the LED Module shuts off.
Method 2 ("S" Models Only): Unplug the IPS

Once all power sources are disconnected from the **ILBDW** and **emergency luminaire**, proceed with required maintenance.

When **maintenance is complete**, reconnect the IPS (if unplugged from Method 2 above) and restore AC power to the emergency luminaire. The AC Activate circuitry will detect the presence of AC power and automatically re-activate the **ILBDW** battery charging circuit.

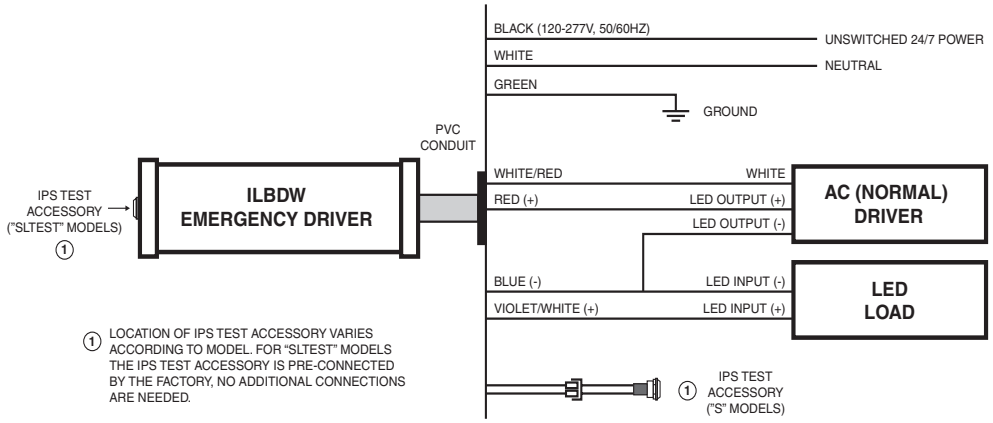
"Written records of testing shall be kept by the owner for inspection by the authority having jurisdiction."

SERVICING SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.

Consult Customer Service or visit www.iotaengineering.com for current warranty information.

WIRING DIAGRAM

Refer to the 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.



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 ILBDW 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 that the Emergency Driver (ILBDW CP Series) selected does not exceed the power delivered to the LED array (voltage and current) of the normal driver.
   - 1.2 Verify that the normal operating point of the LED driver does not exceed 55 Vdc (for CP10/CP15 models) or 200 Vdc (for CP20 models).

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).
       - 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 ILBDW CP rated output (example: lm/w x 10 watts). Refer to table “ILBDW MODEL SPECIFICATION CHART” below for the wattage of the specific ILBDW CP model to be used in the luminaire. (lm/w) x (ILBDW CP Watts) = Minimum emergency lumens of fixture.
       - Determine per “RATED DATA” the “wattage of the luminaire.”

ILBDW MODEL SPECIFICATION CHART

MODEL #	OUTPUT POWER (CONSTANT)
ILBDW CP10	10 WATTS
ILBDW CP15	15 WATTS
ILBDW CP20	20 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, typically 1fc on the ground along the full means of egress.

   While the ILBDW 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.