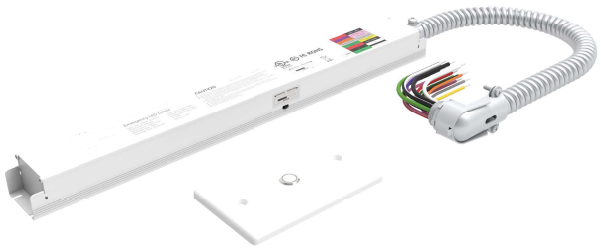
ELD Series

Installation Instructions



IMPORTANT SAFEGUARDS
READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

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

- **DISCONNECT AC POWER SUPPLY BEFORE SERVICING.**
- **DO NOT CONNECT BATTERY UNTIL FIXTURE IS INSTALLED.**
- **THE OUTPUT EM POWER WILL BE THE MAXIMUM OF CONNECTED BATTERY UNLESS PROGRAMMED TO A LESSER VALUE. EM OUTPUT POWER WILL NOT EXCEED THE BATTERY RATING.**
- **IN ORDER TO MAINTAIN PROPER OPERATION AND WARRANTY COVERAGE, THE BATTERY MUST BE RECHARGED ONCE PER YEAR PRIOR TO INSTALLATION.**
- Installation and servicing of this equipment should be performed by qualified service personnel only.
- Ensure that the electrical wiring conforms to the National Electrical Code NEC® and local regulations if applicable.
- Do not let power supply cords touch hot surfaces.
- Do not mount near gas or electrical heaters.
- Do not use outdoors.
- Battery is a rechargeable Li-ion type and must be recycled or disposed of properly. Do not use this emergency driver with accessory equipment other than recommended by manufacturer.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Equipment should be mounted in locations and at heights where it will not be readily subjected to tampering by unauthorized personnel.
- Any modification or use of non-original components will void the warranty and product liability.
- Do not use this equipment for other than intended use.
- For use with a metal enclosed wiring system.
- Allow battery to charge for a minimum of one (1) hour before testing the circuit. A full charge requires twenty-four (24) hours.

SAVE THESE INSTRUCTIONS!

Technical Support ■ (623) 580-8943 ■ technicalsupport@barronltg.com

Installation Instructions

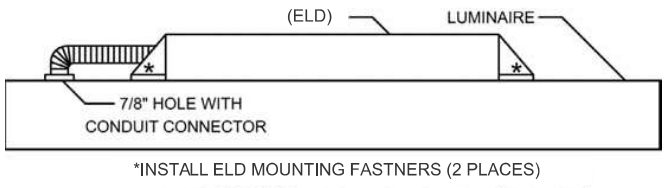
CAUTION: Before installing, make certain the AC power is off. Do not connect battery until fixture is installed.

1. Mount ELD to the top of the luminaire with suitable fasteners (not provided). Drill or punch a 7/8" hole (1/2" knockout) on top of luminaire for flexible conduit. Attach flexible conduit to luminaire. (Fig. 1)

   Note: Do not install on top of back-lit flat panels

2. Make the proper wire connections. Cap any unused leads. Refer to the **Wiring Diagram** section. (Fig. 2)

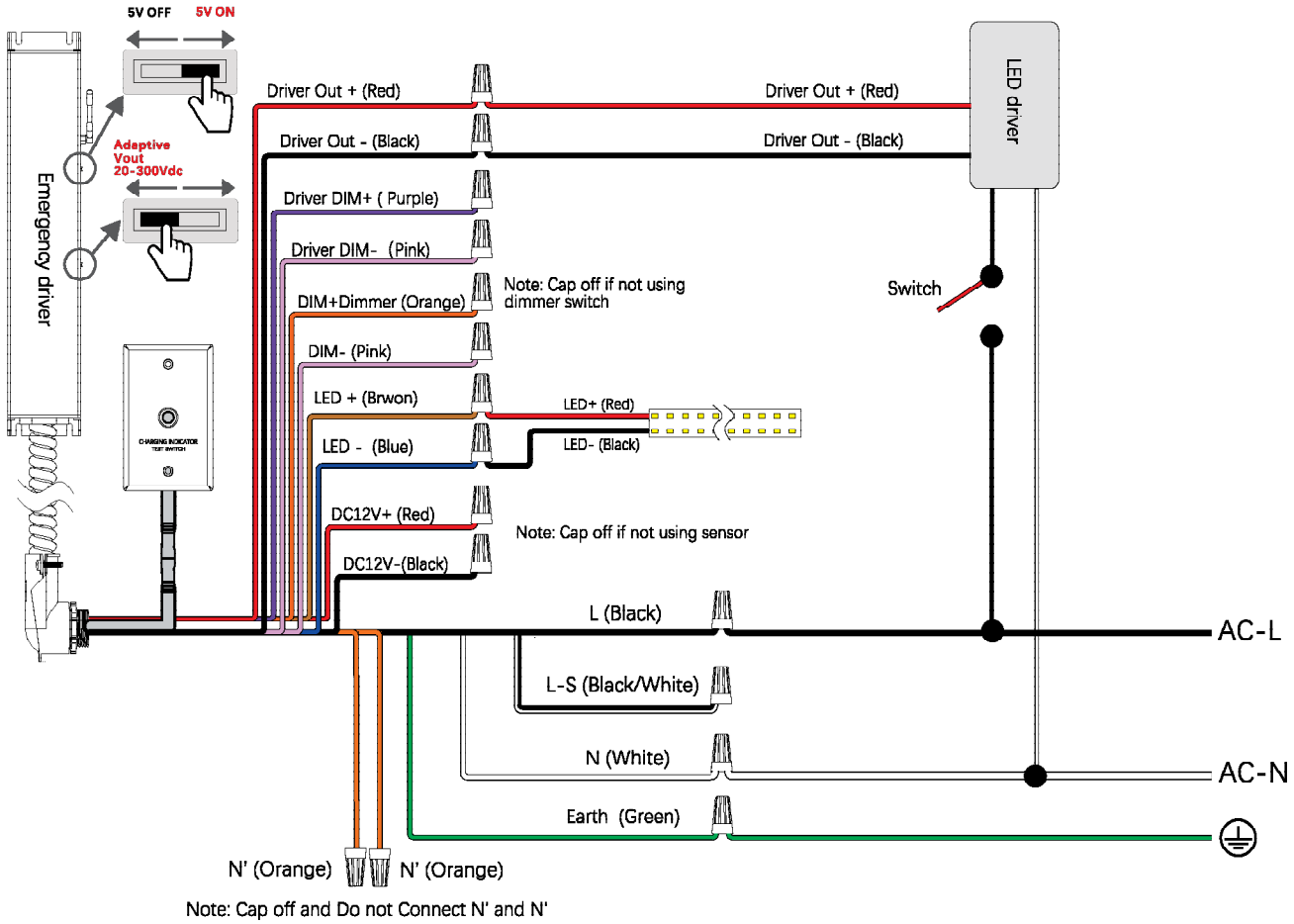
Fig. 1



Wiring Diagrams

Note: Cap unused leads to prevent shorting.

Fig. 2 ***For LED Driver with an output voltage between 20-300VDC***



Guideline on Calculating Emergency Illumination Level

The purpose of this guideline is to identify the illumination level of the LED luminaire when used with the ELD Series LED emergency driver. The path of egress illumination level during emergency operation is determined by types of luminaires, Luminaire Efficacy, Luminaire Mounting Height, Emergency Power and some other effects in real application.

Step 1: Select an LED Luminaire, and make sure the LED light source is electrically compatible with ELD Series LED emergency driver. Get the Light Distribution data (usually an .ies file) and Rated Efficacy data (lumen per watt) from luminaire supplier.

If the luminaire is DesignLights ConsortiumTM (DLC) compliant, you can also get the efficacy information from the DLC website.

- Open DLC Qualified Product List (QPL) database search page: https://www.designlights.org/search/
- Searching keywords by model, brand name or manufacturer for the luminaire used.
- Find the “Efficacy” data listed on website or calculate by dividing “Light output” by “Wattage”, the efficacy value should be shown in lumen per watt (lm/W).

If the luminaire is ENERGY STAR compliant, you can also get the luminaire efficacy information from the ENERGY STAR website.

- Open ENERGY STAR certified Light Fixtures database search page: https://www.energystar.gov/productfinder/product/certified-light-fixtures/results.
- Searching keywords by model, brand name or manufacturer for the luminaire used.
- Find the “Energy Efficiency” data listed on website. If it is showed as “Measured at the Source”, please contact the luminaire supplier for additional light loss for this light source inside the fixture. The value should be shown in lumen per watt (lm/W).

Step 2: Determine the Emergency Power and calculate the Emergency Light Output. The ELD Series is available in a 8W and 16W; selecting a proper Emergency Power is vital to achieve desired illumination. Emergency Light Output is equal to the Emergency Power multiplied by the luminaire efficacy. For example, if the luminaire is 120lm/W and in 8W emergency operation, the total Emergency Light Output is 120lm/W x 8W = 960lm.

Step 3: Use industry lighting design software to calculate the illumination level according to the luminaire layout in room, luminaire mounting height, the original .ies file and Emergency Light Output calculated above. If the illumination level cannot meet life safety codes, go back to Step2 to use a higher Emergency Power or go back to Step1 to select a higher efficacy luminaire or use more luminaires in the room.

Operation (Battery Backup)

The battery in this unit may not be fully charged. After electricity is connected to the unit for at least 1 hour, system can be tested. Please wait at least 24 hours, then normal operation of this unit should take effect.

In accordance with NFPA 101, your emergency lighting system must be tested monthly for a minimum of 30 seconds and annually for 90 minutes. Refer to your local codes for any additional requirements that may apply.

Test Switch Indicator Status:

	Steady On (Green)		Battery fully charged/ Device connected to network
	Slow Flash (Green)	(2s on /1s off)	Battery charging mode/ Device connected to network
	Steady On (Red)		Battery discharging mode
	Breathing (Green)		Self-diagnostic test underway
	Flash (Red, Green)	(Red 0.2s on /Green 0.2s on)	System test mode
	Flash (Red)	(1s on /2s off)	LED module failure
	Flash (Red)	(0.2s on /0.2s off)	Battery failure
	Flash (Red)	(0.5s on /0.5s off)	Low battery voltage
	Flash (Green) Flash (Red, Green)	(Green 2s on /1s off) twice then (Red 0.2s on /Green 0.2s on) five times	Battery charging / Device not connected to network
	Steady On (Green) Flash (Red, Green)	Steady on then (Red 0.2s on /Green 0.2s on) five times	Battery fully charged / Device not connected to network
	Flash (Green, Red)	(Green 2 times /Red 1 time)	Abnormal network connection
	Flash (Green) Flash (Red)	(0.5s on /0.5s off) twice then (0.5s on /0.5s off)	

Testing and Reporting Instructions (-G2 and -G3/G3PRO models)

1. EM Test:
   - Press the test button twice within two seconds to enter EM mode (1 minute test) with normal AC mode.
   - To quit the EM test after the cycle has started, press the test button twice within two seconds.
2. Manual Self-Diagnostics: (When battery is fully charged)
   - Press the test button three times within two seconds to enter a Self-Diagnostic cycle (90 minute test) with normal AC mode.
   - To quit the self-diagnostic cycle after cycle has started, press and hold the test button for two seconds.
3. Clear fault:
   - In case of a fault, press and hold the test button for two seconds to clear the fault.
4. Reset network connection (-G3/G3PRO models only):
   - Press and holder the test button for 8 seconds to reset network connection. Note: The driver will need to be recomissioned in order to commincate with a network.

Self-Testing Operation (-G2 and -G3/G3PRO models)

This unit automatically performs a 60 second discharge test every month, and a full 90 minute discharge test once a year. During routine testing, the selftesting emergency driver simulates an AC power failure causing the unit to automatically switch to emergency mode. The unit will monitor the operation of the lighting fixture, internal battery voltage, discharging current, and emergency duration. If the emergency system functions properly, then the unit will return to normal mode. Should the unit detect any problems, the indicator light will flash continually until the condition has been corrected and the unit passes the next test. Please refer to **Test Switch Indicator Status**.

Networking Operations (-G3/G3PRO Models)

NOTE: Wireless connectivity provides optional remote monitoring and testing capabilities. The emergency unit remains fully operational and will continue to function normally even when not connected to a wireless network.

When used with the Guardian G3 monitoring software and wireless controller, battery and emergency driver status can be monitored remotely. The system provides real-time visibility into fixture operation (ON/OFF status), battery voltage, and remaining battery capacity.

The following operating modes can also be monitored through the Guardian G3 software:

- Charging Mode = Battery is actively charging.
- Idle Mode = Battery is fully charged and in standby.
- Testing Mode = Unit is operating in emergency mode as part of a scheduled or manual test.
- Working Mode = Unit is operating from battery power during a power outage or emergency condition.

Models with the -G3 or -G3PRO suffix are equipped with wireless testing and reporting capabilities and are compatible with the Guardian G3 Emergency Lighting Management System. These units can be integrated into a centralized testing network, allowing test results and system status to be reported wirelessly.

Once powered and commissioned, the unit will automatically join the Guardian G3 network and be provisioned. After commissioning is complete, the unit will perform scheduled testing and automatically report results in accordance with the configured test schedule.

For more information about commissioning, configurations and testing, please visit website, https://barronltg.com/guardian-g3-products.php for details.