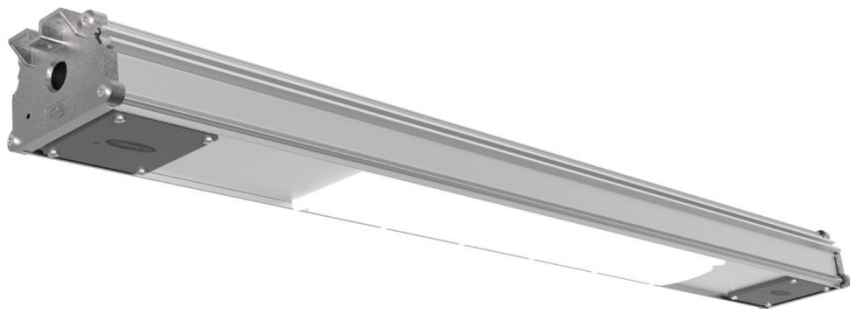




**KILLARK®**

## INSTALLATION, OPERATION & MAINTENANCE DATA SHEET

LAL SERIES LED LUMINAIRE



## LAL SERIES LED LUMINAIRE

### **CAUTION:**

Before installing, make sure you are compliant with area classifications, failure to do so may result in bodily injury, death and property damage. Do not attempt installation until you are familiar with the following procedures. All installation must comply with the applicable Electrical Code.

Make sure that the circuit is de-energized before starting installation or maintenance.

Verify that the installation is grounded. Failure to ground will create electrical shock hazards, which can cause serious injury and or death.

### **IMPORTANT:**

Technical information, advice and recommendations contained in these documents are based on information that Killark believes to be reliable. All the information and advice contained in these documents is intended only for use by persons having been trained and possessing the requisite skill and know-how and to be used by such persons only at their own discretion and risk.

The nature of these instructions is informative only and do not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, check out, safe operation, and maintenance. Since conditions of use of the product are outside of the care, custody and control of Killark, the purchaser should determine the suitability of the product for its intended use, and assumes all risk and liability whatsoever in connection therewith.

### **ATTENTION:**

Avant d'installer le luminaire, s'assurer que le luminaire est conforme à la classification des zones, le non-respect de cette règle risque d'entraîner des dommages corporels et / ou matériels. Ne pas tenter d'entreprendre l'installation avant d'être familiarisé avec les procédures suivantes. Toute installation doit être conforme au code électrique local et / ou national et être effectuée par un électricien qualifié.

Veiller à ce que le circuit soit mis hors tension avant de commencer l'installation ou la maintenance.

Vérifier si le luminaire est mis à la terre. S'il n'est pas mis à la terre il pourrait causer des risques de choc électrique susceptibles d'entraîner des blessures graves ou la mort.

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HUBBELL INCORPORATED (Delaware)

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Fenton, Missouri 63026 USA

P/N KIL00921449 FORM NO. K1449 ECO6-089-20 R10/20

## Conditions for Safe Use

The Luminaire shall only be installed where there is a low risk of mechanical damage. Potential electrostatic charging hazard, clean with damp cloth.

Luminaires are designed to be installed in Hazardous Locations: Class I, Division 2, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III; T4A, T5 or T6 (Class I, Div. 2), T4A (Class II, Div. 1), T4A (Class I, Div 2 / Class

II, Div. 1 Simultaneous Exposure); Type 4X; Type 6P; Marine Rated (US only); IP66; IPX7.

IEC Zone 2. IEC 60079-0:2012 IEC 60079-15:2010 EN 60079-28:2015 and IEC 60079-31:2014 Zone 2 type of protection

Ex nA (non-sparking), Zone 21 type of protection Ex tb (dust) op is (optical radiation).

STANDARD VERSION	EMERGENCY VERSION
II 3G Ex nA IIC T4/T5/T6* Gc	II 3G Ex nA IIC T5/T6* Gc
II 2D Ex tb op is IIIC T95°C/T120°C Db	II 2D Ex tb op is IIIC T95°C Db
-40°C<Tamb<+65°C < 45W	-20°C<Tamb<+50°C
-40°C<Tamb<+40°C/+55°C > 45W	

\*Depending on wattage and ambient temperature  
IECEX certificate IECEx QPS 15.0010X.  
ATEX certificate CML15ATEX4081X (nA)  
CML15ATEX3082X (tb op is).

**NOTE:** Due to the surge protection provided in the fixture to protect the internal electronics and LEDs, a branch circuit with the LED fixture may false fail a megohmmeter test (sometimes referred to as a megger test). If a megohmmeter test is required, the LED fixture should be removed from the branch circuit.

**NOTE:** Multiple fluorescent or LED fixtures attached to a single Ground Fault Circuit Interrupter (GFCI) may cause nuisance tripping of the GFCI. Regulatory agencies allow a small amount of leakage current because of the circuitry required to mitigate possible issues with electromagnetic compatibility (reference UL8750 and EN61347). The summation of these leakage currents from multiple fixtures may be enough to trip a GFCI.

**NOTE:** For Class I, Division 2 / Class II, Division 1 / Class I, Zone 2 Hazardous Locations, use rigid conduit or appropriate cable connectors/ glands rated for Class I, Division 2 Groups BCD (or IEC Zone 2 IIC, IEC Zone 21 IIIC) hazardous areas.

**NOTE:** Pour les endroits dangereux Classe I, Division 2 / Classe II, Division 1 / Classe I, Zone 2 utiliser des Conduits rigides.



LAL



LALFP

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## LAL INSTALLATION NSTRUCTIONS



Figure 1

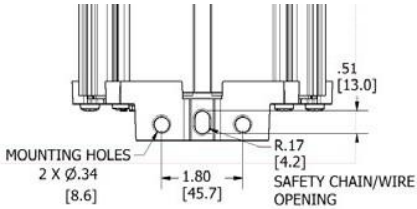


Figure 2  
(Top View)

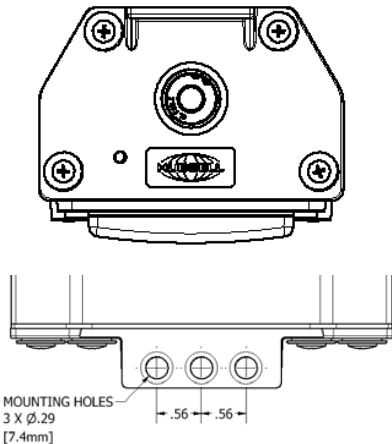


Figure 3

- A. Channels are incorporated in the housing for 5/16" or M8 hex bolts or nuts. (See Figure 1)
1. 5/16" or M8 hex bolts can be slid into channels for direct mounting; or used to attach brackets which include L- brackets, Wall Brackets, Ceiling Brackets, Beam Clamps, and Suspension Chains etc...
  2. 5/16" hex nuts or M8 hex nuts can be slid into channels and used with eyebolts, threaded rod etc...
- B. The End Caps also have provisions for surface or suspension mounting. (See Figure 2)
- C. The "Earthquake Safety Chain Tab" is incorporated into the endcap.

## LAL INSTALLATION NSTRUCTIONS

- A. The LALFP end caps have provisions for surface or suspension mounting. (See Figure 3)
- B. The "Earthquake Safety Chain Tab" is incorporated into the endcap.

## IMPORTANT NOTE

Turn **OFF** electricity to circuit at main fuse or at circuit breaker.

1. For NEC installation connection to the black (Line), white (Neutral) and green (Ground/Earth) can be made with appropriate wire connectors outside of the fixture, the connectors can be placed in the fixture through the hub. If the terminal blocks are going to be used, loosen and remove the four (4) access plate screws. Remove access plate assembly to allow for entry into fixture.
2. If terminal blocks are used, discard the wires on the entry side of the terminal block. Run supply wire to fixture through applicable hub. Make watertight joint using sealing fittings at appropriate hole. The hub in the endcap is for 3/4"-14NPT (or 2 x M20 may be ordered).
3. Pull the supply wires into housing through the conduit hub and connect the appropriate leads using insulated wire nuts or use the terminal blocks present. Fixtures with looping feature may have terminal blocks at both ends of the fixture. See below for wiring battery backup fixtures.
4. Replace access plate screws if necessary.
5. Turn on electricity to verify fixture is operating properly.

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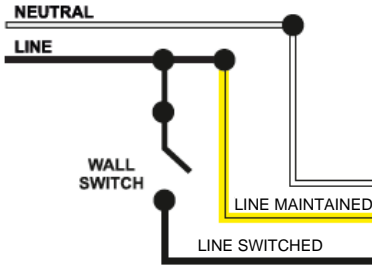
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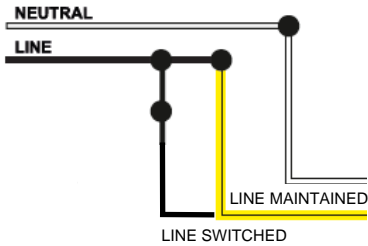
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## BATTERY BACKUP FIXTURES



WIRING REQUIRED TO TURN  
FIXTURE COMPLETELY OFF



FIXTURE WILL GO INTO BATTERY BACKUP  
MODE WHEN POWER IS INTERRUPTED

**IMPORTANT:** To turn the fixture completely off, an un-switched AC power source of 120VAC to 277VAC is required for the Line Maintained (yellow) and neutral (white) leads. A locally switched line must be attached to the Line Switched (black) terminal. If the Line Switched terminal is attached to continuous power, the fixture will go into battery backup mode if the power is turned off.

**IMPORTANT:** Fixtures are shipped with a jumper between the Line Maintained and Line Switched terminals. Remove the wire link (jumper) and attach the Line Switched terminal to a local switched source when local switching is required.

The battery must be charged for at least 12 hours prior to testing. **The battery switch must be turned to the "ON" position for the fixture to operate correctly. The fixture will not light up in battery backup mode until AC power is supplied once while the battery switch is in the "ON" position. Thereafter, the fixture will operate in battery backup mode when the AC power is off.**

### **SELF DIAGNOSTIC INSTRUCTIONS/OPERATION:**

The self diagnostic feature is set from the factory. The emergency LED driver will conduct a self check for thirty (30) minutes every thirty (30) days; and ninety (90) minutes or one hundred eighty (180) minutes self check every 12 months. After every self check the LED indicator light will indicate a status signal.

<b>TABLE 1 – Self Diagnostic Indications</b>	
LED Indicators Status	EM Driver Status/Mode
• Solid Green	System OK/AC OK(Self-diagnostic Enabled or Disabled).
• Slow Flashing Red, 4s on/1s off	Battery not Detected, Check Battery Switch Connection.
• Flasing Red, 1s on/1s off	Battery Failure, Replace Battery.
• Flashing Green, 1s on/1s off	Self-Diagnostic Test Underway.
• Fast Flashing Red, 0.1s on/ 0.1s off	Abnormal Driver Performance, Replace Driver.
• Very Slow Flashing Red, 4s on/4s off	Over Temperature.
• None, Both LED's OFF	Normal Working EM Mode.
• Green/Red Alternative Flashing, 1s Green/1s Red.	No Load or Output over Voltage Protection Triggered.

## BATTERY CHANGING PROCEDURE

1. Remove one endcap from the main housing by removing the four screws that hold the endcap to the housing.
2. Slide the gear tray out of the housing until the emergency driver is exposed. Remove wires from lever nuts as necessary. To remove a wire from a lever nut, fully push up the lever and remove the conductor.

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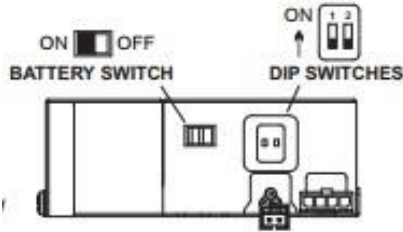
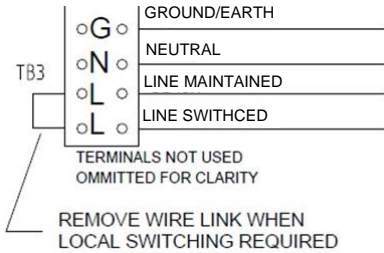
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## Battery Back-Up Connection with Terminal Block



3. Remove the two screws that hold the driver to the gear tray.
4. Remove the two screws that hold the battery compartment cover to the driver.
5. Disconnect the connector and replace the new battery.
6. Reassemble

**New fixtures with batteries can be stored for 2 years in a -20°C to 30°C ambient without a need of recharge. A fully discharged unit should not be stored more than 6 months without being recharged. There is low voltage disconnect of the battery to the emergency drivers, however as the batteries still have self-discharge they should be recharged within 6 months to prevent the cells from permanent capacity loss. For long term storage, turn the battery switch to the “off” position to prevent the cells from permanent capacity loss.**

## **MAINTENANCE INSTRUCTIONS**

### **CAUTION:**

Disconnect the supplying circuit before opening fixture or removing optics. To maintain maximum light output, this fixture should be cleaned periodically. Maintenance procedures sometimes require fixtures to be hosed down for good housekeeping. The supply circuit must be turned OFF and the fixture lens must be allowed to cool to the ambient room temperature before cleaning. Only mild, non-abrasive cleaning agents should be used. The force of water applied by a hose must not exceed 65 gallons per minute coming from a 1” diameter hose applied at a distance of 10 feet. Caution: Clean polycarbonate lenses with damp cloth only to reduce chances of static charge build up. These periodic cleaning procedures are important to prevent the accumulation of dust and dirt which will impair the light output of the fixture. The polycarbonate lens should be regularly inspected for scratches and chips and, if damaged, must be replaced.

The presence of certain chemicals in the explosive atmosphere may cause a chemical reaction with non-metallic materials such as the polycarbonate diffuser and silicone gaskets that could have detrimental effect on their performance. Chemical compatibility is highly dependent on environmental conditions. The end user will assume responsibility for evaluation of gaseous or direct contact compatibility at their site prior to product installation. If in doubt please contact Killark.

### **HIGH VIBRATION AREAS:**

Periodic inspection of fastener tightness is required; recommended every six (6) months.

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