



INSTALLATION AND MAINTENANCE MANUAL SAFESITE® LED LINEAR FIXTURE

Document No: 9100-127-2586-99 Rev G
December, 2016

MODEL

SafeSite LED Linear, Battery Backup - Class I, Div. 1

Suitable for WET LOCATIONS and in the following classified or unclassified locations:

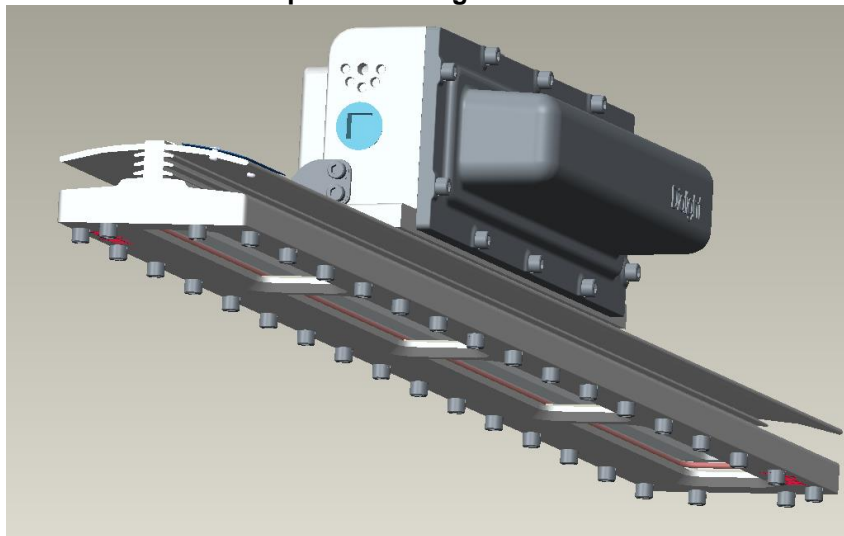
Class I, Division 1, Groups C,D and Class I Division 2 Groups A,B,C,D Hazardous Locations

UL 1598, CSA C22.2 #250.0

UL844, CSA C22.2 #137

Temperature Code: T4A

Ambient Temperature Range: -20°C to +65°C



These instructions contain important safety information, read and follow them carefully. Dialight will not accept any responsibility for injury, damage or loss which may occur due to incorrect installation, operation or maintenance



1: Introduction

This Linear LED light is designed for illumination of industrial locations. It uses the latest in solid state lighting technology for long life, low maintenance, and high efficiency.

This fixture is a sustained battery backup light. All LEDs are illuminated when the fixture is operating under normal A/C power. The internal 3.6V 10Ah battery pack provides a minimum 3 hour emergency duration with reduced light output.

An internal, universal input, power-factor-corrected switch-mode supply allows it to be used from any nominal 120V-277V, 50/60Hz AC supply without any variation in light output. The Linear fixture design incorporates an over-temperature control circuit that reduces input power should internal temperatures reach a maximum level. In this event, light output may be reduced.

Note: Save these instructions for future reference.

2: Installation

⚠ Warning:

To avoid the risk of fire, explosion, or electric shock, this product should be installed, inspected, and maintained by a qualified electrician only, in accordance with all applicable electrical codes.

⚠ Warning:

To avoid electric shock:

- Be certain electrical power is OFF before and during installation and maintenance.
- Luminaire must be connected to a wiring system with an equipment-grounding conductor.

⚠ Warning:

To avoid explosion:

- Make sure the supply voltage is within the luminaries' voltage rating.
- Ensure the marked T Rating is less than the ignition temperature of the Hazardous Atmosphere.
- Do not operate in ambient temperatures above those indicated on the Luminaire nameplate.
- Do not operate if the lens is cracked or damaged. All fasteners should be properly seated.
- WARNING - EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2, CLASS II DIVISION 1.
- AVERTISSEMENT - RISQUE D'EXPLOSION - LA SUBSTITUTION D'E COMPOSANTS PEUT ENDRE CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 1, CLASSE II, DIVISION 1.
- EXPLOSION HAZARD- DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS
- AVERTISSEMENT - RISQUE D'EXPLOSION - AVANT DE DECONNECTER L'EQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DESIGNÉ NON DANGEREUX

⚠ Warning:

- DO NOT let power cord touch hot surfaces
- DO NOT mount near gas or electric heaters
- Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition
- DO NOT use this equipment for other than intended use

⚠ Warning:

The technical data indicated on the Luminaire are to be observed.

- Changes to the design and modifications of the Luminaire are not permitted
- Only genuine Dialight replacement parts are to be used when unforeseen maintenance is required. Consult factory at www.Dialight.com or authorized representative as required.



⚠ Warning:

- WARNING: TO PREVENT IGNITION OF GROUP C AND D ATMOSPHERES CONDUIT RUNS MUST HAVE A SEALING FITTING CONNECTED WITHIN 6.00 INCHES OF THE LUMINAIRE
- AVERTISSEMENT: POUR ÉVITER TOUTE INFLAMMATION DANS DES ATMOSPHÈRES DES GROUPES C ET D, LES CONDUITS D'ALIMENTATION DOIVENT ÊTRE ÉTANCHÉIFIÉS PAR UN JOINT SITUÉ À MOINS DE 152 MM (6,00 POUCES) DU LUMINAIRE

⚠ Warning:

- WARNING: FOR SUPPLY CONNECTION, USE WIRES RATED FOR AT LEAST 90°C (194°F). IF COVER IS REMOVED FOR WIRING IT MUST BE REATTACHED PROPERLY. ENSURE THAT THE O-RING GASKET IS SEATED IN THE O-RING GROOVE. REPLACE ALL LOCK WASHERS AND SCREWS, TORQUE SCREWS TO 40 LB-IN.
- AVERTISSEMENT: POUR LE RACCORDEMENT ÉLECTRIQUE, UTILISER DES FILS GARANTIS EN FONCTIONNEMENT JUSQUE 90°C (194°F). SI LE BOÎTIER A ÉTÉ OUVERT POUR LE RACCORDEMENT DES CÂBLES ÉLECTRIQUES, CELUI-CI DOIT ÊTRE RÉINSTALLÉ CORRECTEMENT. VÉRIFIEZ QUE LE JOINT TORIQUE EST CONVENABLEMENT PLACÉ DANS SA RAINURE. PLACER LES VIS DE FIXATION, AINSI QUE LEUR RONDELLES DE BLOCAGE DANS LEUR LOGEMENT, SERRER LES VIS AU COUPLE DE 4.519 NM (40 LB-POUCES).

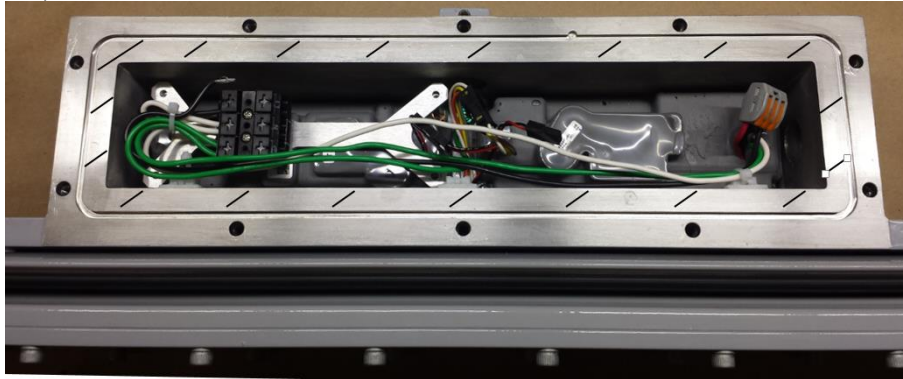
- CAUTION: DO NOT OPEN IN A HAZARDOUS AREA (BATTERY POWERED)
- ATTENTION: NE PAS OUVRIR DANS UNE ZONE DANGEREUSE (PILES)

- CAUTION: TO PREVENT IGNITION OF HAZARDOUS ATMOSPHERES, DISCONNECT THIS FIXTURE FROM SUPPLYING CIRCUIT BEFORE OPENING. KEEP ASSEMBLY TIGHTLY CLOSED WHILE CIRCUITS ARE ALIVE.
- ATTENTION: AFIN D'ÉVITER TOUT RISQUE D'INFLAMMATION DANS DES ATMOSPHÈRES EXPLOSIVES, IL EST NÉCESSAIRE DE COUPER L'ALIMENTATION ÉLECTRIQUE DE L'APPAREIL AVANT D'EN OUVRIR LE BOÎTIER. VÉRIFIER QUE LE BOÎTIER EST COMPLÈTEMENT FERMÉ AVANT TOUTE REMISE SOUS TENSION.

- SUITABLE FOR WET LOCATIONS.
- CONVIENT AUX EMPLACEMENTS MOUILLES.



⚠ FLAME PATH WARNINGS – The flame path is the mating surface inside of the O-ring where the Power Supply Housing and the Battery Housing meet. (indicated by the hatched surface in image below)



All units have been factory tested to ensure a proper flame path gap that does not exceed .0015" measured consistently across the entire flame path. If the Battery Housing is removed, it is the responsibility of the customer to inspect the flame path and to determine if the flame path has been compromised. The flame path surfaces must remain smooth, machine finished, free of debris and free of corrosion.

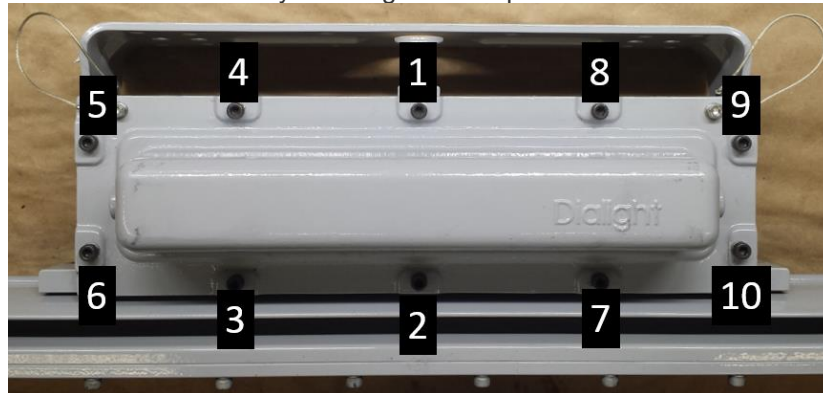
Customer must ensure that mating surfaces are coated with corrosion-inhibiting grease. Ensure that debris does not contaminate these surfaces. If surfaces become contaminated, remove grease by thoroughly wiping with a cloth and apply new grease. Corrosion-inhibiting grease such as soap-thickened mineral oil may be used. The grease shall be of a type that does not harden because of aging, does not contain an evaporating solvent, and does not cause corrosion of the metal surfaces.

If required, remove and reapply anti-corrosion grease to the flange of the Battery Housing, from the outer edges inward 5/8" (indicated by the hatched surface in image below)



After reassembly, visually inspect the mating surfaces to ensure that no gaps exist. It is recommended that the gap be checked so that a 0.0015 inch-thick feeler gauge will not enter the gap more than 1/8 inch (3.2 mm) at any point.

Battery Housing Bolt Torque Pattern



Installation Steps:

⚠ WARNING: SEE FLAME PATH WARNINGS

- For maximum long term reliability and light output, the light must be installed in free air.
- The Linear fixture is threaded for 3/4" NPT at the center and each end of the Power Supply Housing in order to be assembled to conduit.
 - **Warning:** If there is moisture present, or chance of it, in the conduit system then necessary precautions should be taken by the installer to prevent the moisture from entering thru the cable or conduit and entering the fixture. Failure to comply with the above could void factory warranties.
 - Attach conduit as required, pendant mount or through mount. Use conductive pipe sealant for all fittings and conduit. If fixture is pendant mounted, tighten anti-rotation screw (see Figure 2).
 - Fixture is factory wired for both pendant and through wiring. Remove (10) captive bolts to remove the Battery Housing (see Figure 2). Take care not to damage battery cable.
 - Connect source wires (and through wires if applicable) to terminal block (see Figure 1) as described:
 - Strip wires back .39"-.43" [10-11 mm] (12-20 AWG [4.0-0.5 mm²])
 - Connect **GROUND** wires to terminal block position marked with **GROUND SYMBOL**
 - Connect **NEUTRAL** wires to terminal block position marked with "**N**"
 - Connect **LIVE** wires to terminal block position marked with "**L1**"
 - To connect wires
 - Press down on the tabs on top of the terminal block with screw driver and hold
 - Insert stripped wire and release tab. The terminal should now have engaged the inserted wire
 - Lightly tug on the inserted wire to ensure engagement has occurred

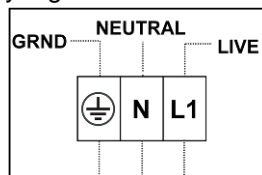


Figure 1



- Inspect flame path according to FLAME PATH WARNINGS.
- If required, remove and reapply anti-corrosion grease according to FLAME PATH WARNINGS.
- After inspection of the flame path, reinstall Battery Housing. Ensure that seals are not damaged and cables or straps are not trapped.
- Torque bolts to 40 in/lbs according to the “Battery Housing Bolt Torque Pattern”
- Visually inspect the mating surfaces to ensure that no gaps exist. It is recommended that the gap be checked so that a 0.0015 inch-thick feeler gauge will not enter the gap more than 1/8 inch (3.2 mm) at any point.
- Restore power and verify operation.

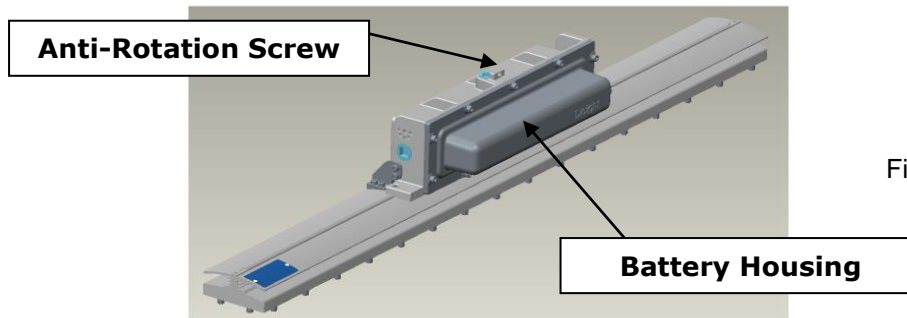


Figure 2

3: Maintenance

- To avoid personal injury, disconnect power to the light and allow the unit to cool down before performing maintenance.

⚠ Warning: Risk of electric shock. Removal of the lens will void the warranty.

- We suggest performing visual, mechanical and electrical inspections on a regular basis. We suggest routine checks to be made on a yearly basis. Frequency of use and environment should determine this. It is recommended to follow an Electrical Preventive Maintenance Program as described in NFPA 70B: Recommended Practice for Electrical Equipment.
- The lens (Figure 3) requires periodical cleaning to ensure continued photometric performance. Clean the lens with a damp, non-abrasive, lint-free cloth. If not sufficient, use mild soap and water.
- Inspect the outside of the Luminaire housing to ensure that they are free of any obstructions or contamination (i.e. excessive dust build-up). Clean with a non-abrasive cloth if needed.
- Do not operate if the lens is cracked or damaged. All fasteners should be properly seated.
- **NOTE:** Screws other than Battery Housing are factory torqued and should not be tampered with during installation or maintenance.

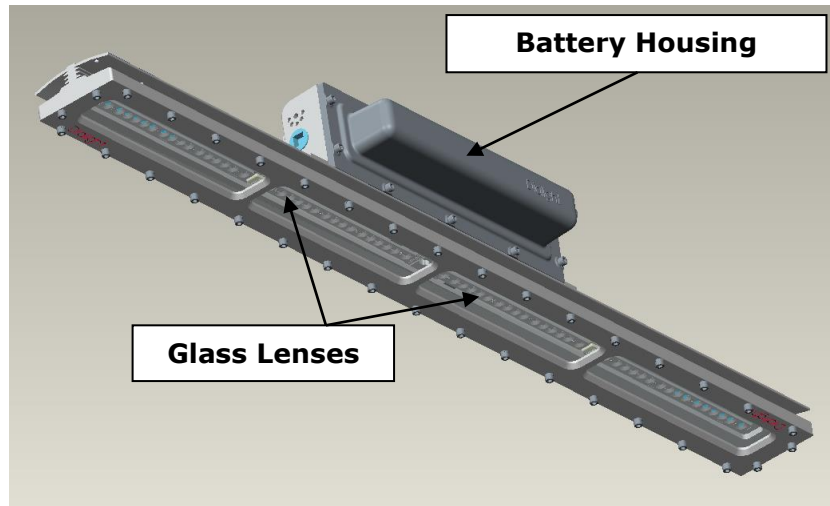


Figure 3

NOTE: Screws and Glass are NOT field replaceable

4: In Service, Battery Charging and Condition Monitoring

- Under normal operating conditions, the green status LED should be illuminated and not flashing.
- When power is applied (initially or after an outage), the battery should be charged for 30 hours. Thereafter, in order to maximize battery life while maintaining emergency capacity, the battery charging operates for 1 minute in every hour.
- The battery is continually monitored for voltage limits and charge current acceptance (during charge pulses).
- If the mains power supply is interrupted, the fixture will switch to battery Backup mode operation at reduced light output. Expected battery backup mode duration exceeds 3 hours.
- If, during a battery backup mode cycle, the battery capacity has deteriorated to the point that 3 hours is not achieved, then when power is restored this battery “failure” will be signaled by flashing the green status LED once every 8 seconds. The fault indication will be automatically reset when the battery pack is replaced.

5: Battery Replacement

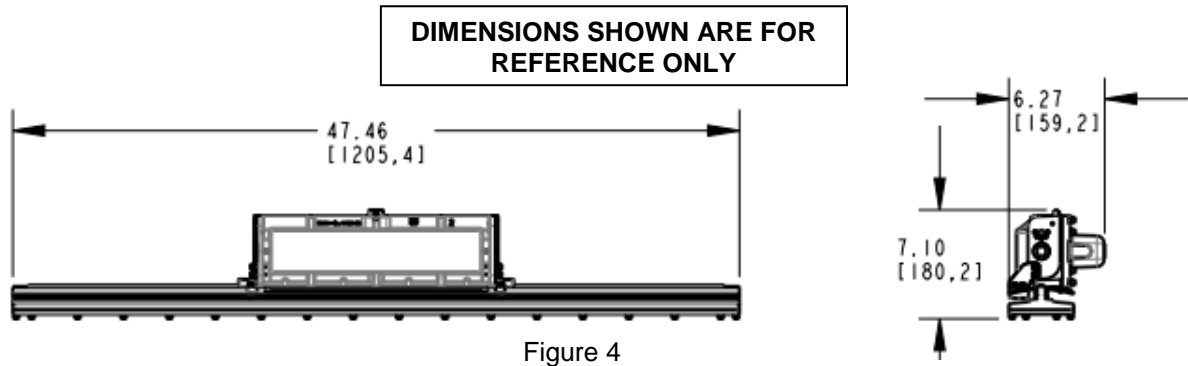
- ⚠ **WARNING** - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
AVERTISSEMENT - RISQUE D'EXPLOSION - AVANT DE DECONNECTER L'EQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DESIGNE NON DANGEREUX.
- ⚠ **CAUTION:** DO NOT OPEN IN A HAZARDOUS AREA (BATTERY POWERED)
ATTENTION: NE PAS OUVRIR DANS UNE ZONE DANGEREUSE (PILES)
- ⚠ **WARNING:** SEE FLAME PATH WARNINGS

- Disconnect the power supply to the luminaire before maintenance or repair.
- Wait at least 10 minutes before opening the LED luminaire after de-energizing.
- The battery pack should be replaced every 3 years for continued reliable operation. The battery is located in the Battery Housing. To replace the battery:
 - Disconnect the mains power – Battery Backup mode will operate.
 - Unscrew the (10) captive Battery Housing bolts, take care not to damage battery cable.
 - Disconnect the two pole battery connector.
 - Remove (6) screws to remove the battery pack from the Battery Housing.
 - Inspect the new battery pack for damage, then install and secure in place.
 - Reconnect the battery connector.
 - Inspect flame path according to FLAME PATH WARNINGS.
 - If required, remove and reapply anti-corrosion grease according to FLAME PATH WARNINGS.
 - After inspection of the flame path, reinstall Battery Housing. Ensure that seals are not damaged and cables or straps are not trapped.
 - Torque bolts to 40 in/lbs according to the “Battery Housing Bolt Torque Pattern”
 - Visually inspect the mating surfaces to ensure that no gaps exist. It is recommended that the gap be checked so that a 0.0015 inch-thick feeler gauge will not enter the gap more than 1/8 inch (3.2 mm) at any point.
 - Re-energize the circuits and check that the green status LED illuminates. Allow 24 hours charging before expecting full emergency duration.
- Dispose of old batteries in accordance with local regulations.
- If any unforeseen repairs are required then always observe explosion protection regulations and requirements.
- Do not drop batteries or use batteries that appear to have been damaged.
- Do not use batteries that have been dropped or that appear to have been damaged.
- Connections supplied on the battery must be used and should not be replaced.
- NOTE: Shorting of the battery will result in an unsafe condition and may cause the battery to explode.

6: Specifications

Nominal AC Supply Voltage:	120-277VAC, 50-60Hz
Power consumption:	85W Nominal
Operating temperature range:	-4°F to +149°F [-20°C to +65°C]
Recommended charging temp range*:	-4°F to +122°F [-20°C to +50°C]
T-Code:	T4A
Power factor:	>0.9
ATHD:	<20%
Dimensions (L x W x H):	See Figure 4.
Weight:	32 lbs [14.5 kg]

*Charging that occurs outside of this temperature range may result in depreciation of the battery life. If a replacement battery kit is needed, please visit www.dialight.com and refer to the datasheet for the battery replacement kit part number and specifications.



7: Chemical Compatibility Guide

Footnote on Chemical Compatibility Guide:

The chemical compatibility data referenced in this manual was supplied by the raw material manufacturers and is intended as a general guide. The data represents the basic material properties and does not necessarily represent the performance of the final product due to manufacturing process and design variations for each final product. Chemical compatibility is highly dependent on concentration, temperature, humidity, and other environmental conditions and therefore the customer assumes responsibility for evaluation of gaseous or direct contact chemical compatibility at their site prior to product installation.

For general guidelines describing chemical compatibility, visit us at:
www.dialight.com/pubs/MDTFCHEMRFLX001.pdf

All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof is not guaranteed. In accordance with Dialight Corporation "Terms and Conditions of Sale", and since conditions of use are outside our control, the purchaser should determine the suitability of the product for his intended use and assumes all risk and liability whatsoever in connection therewith

