# FDBAES LED Series Self–Contained Emergency Lighting Units

## Flameproof

*Zone 1 and 2 - 21 and 22*
*Gas (G) and Dust (D)*

## Applications

- Provides adequate lighting and/or visual indication of access on exit routes during an evacuation in a hazardous environment.
- Can be installed in hazardous areas designated as Zone 1 and 2 – 21 and 22.
- Typical applications include oil refineries, petrochemical plants, pulp and paper mills.

## Features

All versions:
- Power supply 230 Vac, 50/60 Hz.
- 1 hour duration (emergency).
- Threaded access cover with O-ring seal.
- Can be maintained in hazardous areas as an internal switch cuts off battery supply automatically once the cover is unscrewed and opened.
- Battery pack.
- Escape route lighting: 2.4 V - 1.5 Ah (2 cells - Nicd)
  Space lighting: 7.2 V - 2.2 Ah (6 cells - NiMh) - Flameproof
- Padlockable switch is available on switched models which individually cuts off power supply and remote control.
- Charge indicator by 1 green LED (life time over 10 years).
- Operates in any position.
- Connection to plug-in terminal block via 2 x 5 x 2.5 mm$^2$ terminals.
- Supplied with two fixing lugs.
- Automatic built-in self-test system (SATI) with memorization of tests indicated by LEDs.
- Using a microprocessor and an internal clock, the unit will carry out automatic tests.
- Weekly test: Lamp check during 6 seconds.
- Quarterly test: Emergency operation and lamp check for 1 hour.
- Can be remotely controlled and checked without switching the mains off with remote control unit from Legrand (Catalog Number 03901) or URA (Catalog Number 095448 and 095450) manufacturers.
- The remote control unit installed in a safe area or inside a flameproof box allows manual ignition of all the units (maximum 300 units) for visual inspection of their operation.
- Escape route lighting: 55 lumens, 0.50 wattage.
  Space lighting: 540 lumens, 0.95 wattage.

Addressable versions:
- Operates without additional control lines. Communication between units and the control system is realized via mains borne signals that utilize the existing electrical wiring.
- Standard control system capacity: one control system for up to 200 emergency lighting units.
- Optional increased control system capacity: booster (repeater unit) is used to increase the length of the network allowing up to 1000 emergency lighting units to be on one control system. This allows for the use of a single computer to centralize the management of the facilities emergency lighting system. For more information, please contact your local sales representative.

## Standard Materials

- End caps and cover: aluminum
- O-ring seal: Nitrile
- Lens: tempered borosilicate glass
- Fixing brackets: zinc plated steel or 316 stainless steel
- Accessories: white painted galvanized steel
- Guard: zinc plated steel



**FDBAESLEDEM**

## Options

- Addressable monitoring software, please consult your local sales representative.
- Low temperature application, please consult your local sales representative.

## Certifications and Compliances

### ♦ATEX/IECEx Certification

- **Certification Type: FLd**
  — Gas: Zone 1 - 2
    – Conforming to ATEX 94/9/CE: ⟨Ex⟩ II 2 G
    – Type of Protection: Ex d IIC
    – Temperature class: T6
  — Dust: Zone 21 - 22
    – Conforming to ATEX 94/9/CE: ⟨Ex⟩ II 2 D
    – Type of Protection: Ex tD A21
    – Surface Temperature: T80 °C
  — Ambient Temperature: -40 °C to +55 °C ①
  — CE Declaration of Conformity: 50203
  — ATEX Certificate: LCIE 97 ATEX 6012
  — IECEx Certificate: IECEx LCI 04.0018
  — Index of Protection according EN/IEC 60529: IP66/68
  — Impact Resistance (shock): IK08
  — Internal Volume: > 2 dm$^3$ (2 liters)
  — Conforming to NF AEAS

### ♦EURASEC Certification

  — EURASEC N° TC RU C-FR.ГБ05.B.00912

### ♦Others Certification

  — INMETRO Certificate: BVC 11.0492 ②

## Related Products

- For labels see *Labels for Emergency Lighting Units, ATX Self-Adhesive Signaling Labels for Emergency Lighting Units*.

① *Optimum operating temperature for battery is -5 °C to +30 °C*
② *Inmetro certification available on special request only. Contact your local sales for more information*

⟨Ⓐ⟩ **Appleton**®
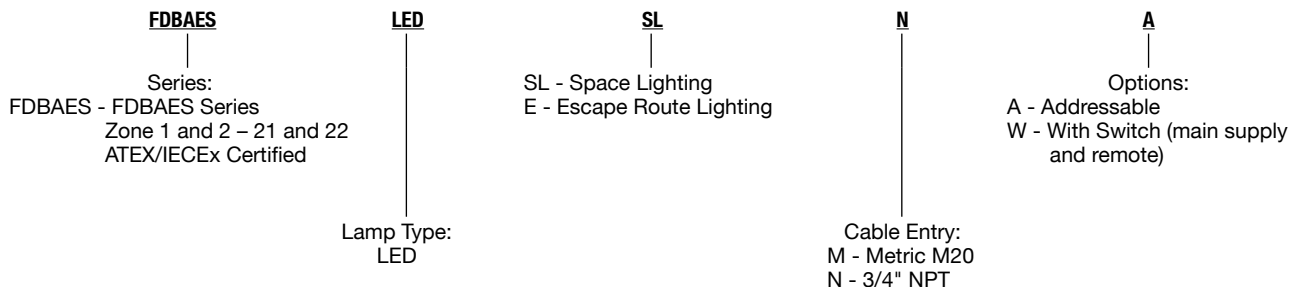
# FDBAES LED Series Self–Contained Emergency Lighting Units
## Flameproof

*Zone 1 and 2 - 21 and 22*
*Gas (G) and Dust (D)*

**Catalog Numbering Guide**

| FDBAES | LED | SL | N | A |
|--------|-----|----|----|---|

Series:
FDBAES - FDBAES Series
Zone 1 and 2 – 21 and 22
ATEX/IECEx Certified

SL - Space Lighting
E - Escape Route Lighting

Options:
A - Addressable
W - With Switch (main supply and remote)

Lamp Type:
LED

Cable Entry:
M - Metric M20
N - 3/4" NPT

| Type | Lamp | Lumen Output | Cable Entries | Weight kg | Volume dm³ | Catalog Number |
|------|------|--------------|---------------|-----------|------------|----------------|
| **Unswitched Version — 1 hour duration — Non-maintained — Two threaded cable entries with one blanking plug** | | | | | | |
| Space Lighting | LED Array | 540 lm ① | M20 | 8.1 | 37.1 | **FDBAESLEDSLM** |
| | | | 3/4" NPT | 8.1 | 37.1 | **FDBAESLEDSLN** |
| Escape Route Lighting | LED Array | 55 lm ② | M20 | 8.1 | 37.1 | **FDBAESLEDEM** |
| | | | 3/4" NPT | 8.1 | 37.1 | **FDBAESLEDEN** |
| **Switched Version — 1 hour duration — Non-maintained — One threaded cable entry** | | | | | | |
| Space Lighting | LED Array | 540 lm | M20 | 10 | 40.4 | **FDBAESLEDSLMW** |
| | | | 3/4" NPT | 10 | 40.4 | **FDBAESLEDSLNW** |
| Escape Route Lighting | LED Array | 55 lm | M20 | 10 | 40.4 | **FDBAESLEDEMW** |
| | | | 3/4" NPT | 10 | 40.4 | **FDBAESLEDENW** |
| **Addressable and Unswitched Version — 1 hour duration — Non-maintained — Two threaded cable entries with one blanking plug** | | | | | | |
| Space Lighting | LED Array | 540 lm | M20 | 8.1 | 37.1 | **FDBAESLEDSLMA** |
| | | | 3/4" NPT | 8.1 | 37.1 | **FDBAESLEDSLNA** |
| Escape Route Lighting | LED Array | 55 lm | M20 | 8.1 | 37.1 | **FDBAESLEDEMA** |
| | | | 3/4" NPT | 8.1 | 37.1 | **FDBAESLEDENA** |
| **Addressable and Switched Version — 1 hour duration — Non-maintained — One threaded cable entry** | | | | | | |
| Space Lighting | LED Array | 540 lm | M20 | 10 | 40.4 | **FDBAESLEDSLMAW** |
| Escape Route Lighting | LED Array | 55 lm | M20 | 10 | 40.4 | **FDBAESLEDEMAW** |

① *Value measured after 1 hour duration - required value by standard is 400 lm.*
② *Value measured after 1 hour duration - required value by standard is 45 lm.*
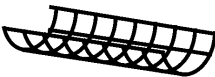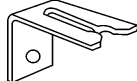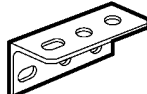
*Shaded catalog numbers are normally stocked items. All other items are made to order.*

# FDBAES LED Series Self–Contained Emergency Lighting Units
## Flameproof

*Zone 1 and 2 - 21 and 22*
*Gas (G) and Dust (D)*

**Accessories**

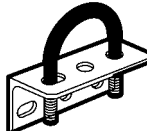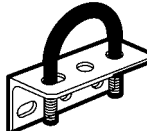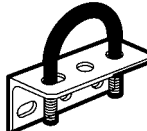| Description | Catalog Number |
|---|---|
| **Reflector** | |
| White painted galvanized steel | **FDER5G** |
| **Protective Guard** | |
| Zinc plated steel | **FDPG5Z** |
| **Fixing Brackets – set of two brackets for ease of surface installation** | |
| Zinc plated steel | **FDFBZ** |
| 316 stainless steel | **FDFBS** |
| **Surface Mounting Brackets – set of two brackets for ease of installation** | |
| Zinc plated steel | **FDSBZ** |
| 316 stainless steel | **FDSBS** |
| **Half Clamps – set of two** | |
| Zinc plated steel versions: | |
| For 42 mm to 49 mm pole (1-1/4 to 1-1/2" tube) | **FDHC49Z** |
| For 60 mm pole (2" tube) | **FDHC60Z** |
| 316 stainless steel versions: | |
| For 42 mm to 49 mm pole (1-1/4 to 1-1/2" tube) | **FDHC49S** |
| For 60 mm pole (2" tube) | **FDHC60S** |
| **Fall Prevention Kit** | |
| 1.20 m stainless steel chain | **FDSCS** |

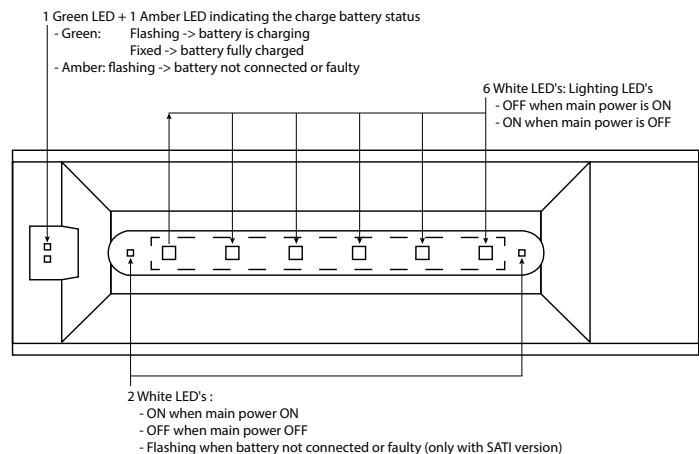*Shaded catalog numbers are normally stocked items. All other items are made to order.*

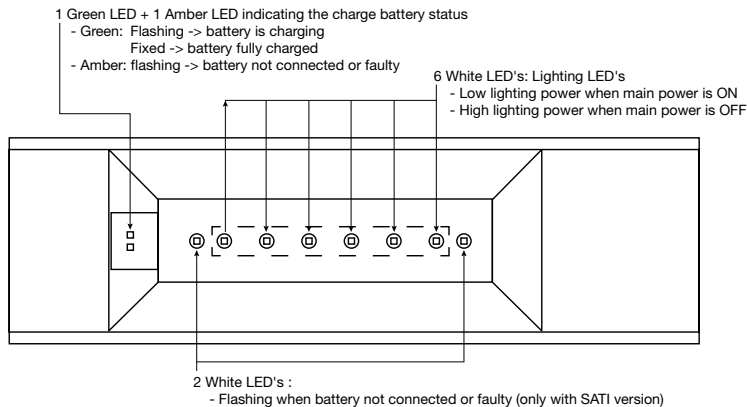# FDBAES LED Series Self–Contained Emergency Lighting Units
## Flameproof

*Zone 1 and 2 - 21 and 22*
*Gas (G) and Dust (D)*

---

### LED Indicator

#### Space Lighting — Replaces Fluorescent Version

1 Green LED + 1 Amber LED indicating the charge battery status
- Green:      Flashing -> battery is charging
              Fixed -> battery fully charged
- Amber: flashing -> battery not connected or faulty

6 White LED's: Lighting LED's
- OFF when main power is ON
- ON when main power is OFF

2 White LED's :
- ON when main power ON
- OFF when main power OFF
- Flashing when battery not connected or faulty (only with SATI version)

#### Escape Lighting — Replaces Incandescent Version

1 Green LED + 1 Amber LED indicating the charge battery status
- Green:  Flashing -> battery is charging
          Fixed -> battery fully charged
- Amber: flashing -> battery not connected or faulty

6 White LED's: Lighting LED's
- Low lighting power when main power is ON
- High lighting power when main power is OFF

2 White LED's :
- Flashing when battery not connected or faulty (only with SATI version)

---

| Main Status | Non Maintained | |
|---|---|---|
| | **Space Lighting** | **Escape Route Lighting** |
| Switched On | ☼ ● ● ● ● ● ● ☼ | ● ✺ ✺ ✺ ✺ ✺ ✺ ● |
| Switched Off | ● ☼ ☼ ☼ ☼ ☼ ☼ ● | ● ☼ ☼ ☼ ☼ ☼ ☼ ● |

- ● OFF
- ☼ ON (high lighting power)
- ✺ ON (low lighting power)

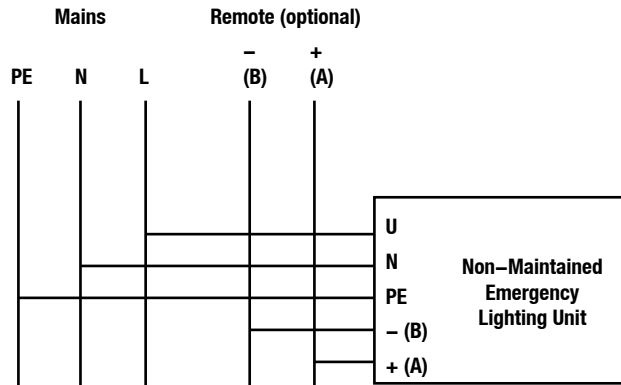| Battery not Connected or Faulty | Main Power ON | |
|---|---|---|
| | **Space or Escape Route Lighting** | |
| SATI | ⚲ ⚲ ● ● ● ● ● ⚲ | |
| Addressable | ⚲ ● ● ● ● ● ● ● | |

- ● OFF
- ⚲ ON — Flashing — White LED
- ⚲ ON — Flashing — Amber LED

---

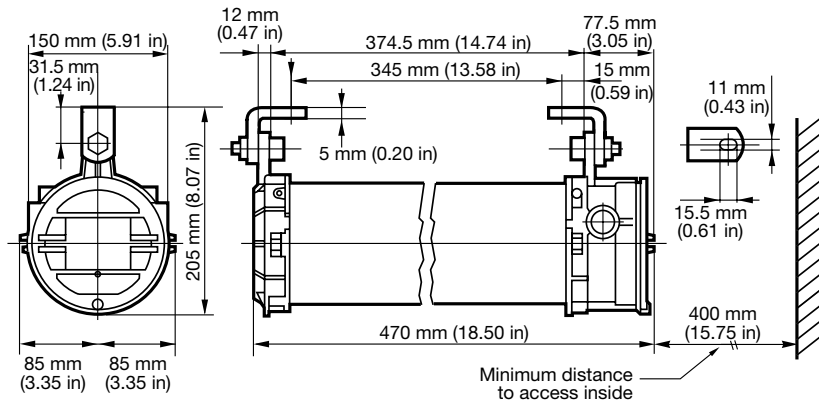# FDBAES LED Series Self–Contained Emergency Lighting Units

## Flameproof

*Zone 1 and 2 - 21 and 22*
*Gas (G) and Dust (D)*

---

**Electrical Wiring Diagram**

| Mains | Remote (optional) |
| --- | --- |

PE    N    L    −    +
                (B)  (A)

U
N
PE
− (B)
+ (A)

**Non–Maintained Emergency Lighting Unit**

---

**Dimensions in Millimeters (Inches)**

**Unswitched Versions**

150 mm (5.91 in)
31.5 mm (1.24 in)
205 mm (8.07 in)
85 mm (3.35 in)   85 mm (3.35 in)

12 mm (0.47 in)
374.5 mm (14.74 in)
345 mm (13.58 in)
5 mm (0.20 in)
77.5 mm (3.05 in)
15 mm (0.59 in)
470 mm (18.50 in)

11 mm (0.43 in)
15.5 mm (0.61 in)
400 mm (15.75 in)
Minimum distance to access inside

**Switched Versions**

150 mm (5.91 in)
31.5 mm (1.24 in)
205 mm (8.07 in)
85 mm (3.35 in)   85 mm (3.35 in)
200 mm (7.87 in)

12 mm (0.47 in)
374.5 mm (14.74 in)
345 mm (13.58 in)
5 mm (0.20 in)
77.5 mm (3.05 in)
15 mm (0.59 in)
529.5 mm (20.85 in)

11 mm (0.43 in)
15.5 mm (0.61 in)
400 mm (15.75 in)
Minimum distance to access inside

---

Appleton®