

# 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<sup>2</sup> 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

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



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: Ⓢ II 2 G
    - Type of Protection: Ex d IIC
    - Temperature class: T6
  - Dust: Zone 21 - 22
    - Conforming to ATEX 94/9/CE: Ⓢ 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<sup>3</sup> (2 liters)
  - Conforming to NF AEAS

#### ◆ EURASEC Certification

- EURASEC N° TC RU C-FR.Г505.B.00912

#### ◆ Others Certification

- INMETRO Certificate: BVC 11.0492 ②

### Related Products

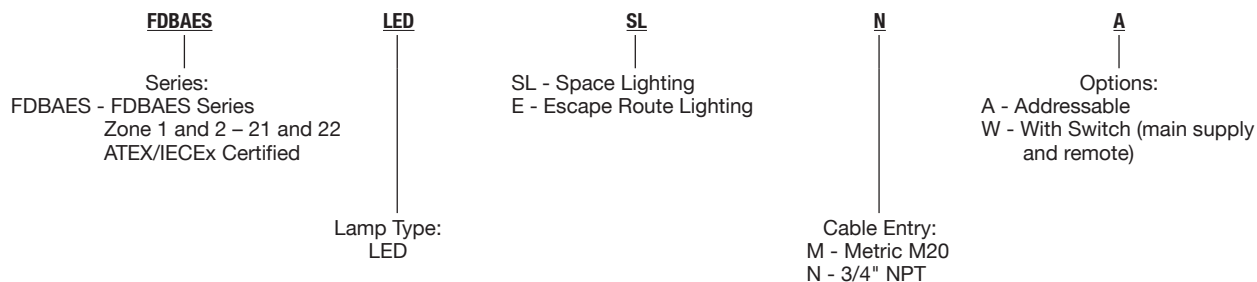
- For labels see *Labels for Emergency Lighting Units, ATX Self-Adhesive Signaling Labels for Emergency Lighting Units.*

# FDBAES LED Series Self-Contained Emergency Lighting Units

## Flameproof

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

### Catalog Numbering Guide



Type	Lamp	Lumen Output	Cable Entries	Weight kg	Volume dm <sup>3</sup>	Catalog Number
<b>Unswitched Version – 1 hour duration – Non-maintained – Two threaded cable entries with one blanking plug</b>						
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
<b>Switched Version – 1 hour duration – Non-maintained – One threaded cable entry</b>						
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
<b>Addressable and Unswitched Version – 1 hour duration – Non-maintained – Two threaded cable entries with one blanking plug</b>						
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
<b>Addressable and Switched Version – 1 hour duration – Non-maintained – One threaded cable entry</b>						
Space Lighting	LED Array	540 lm	M20	10	40.4	FDBAESLEDSLMAW
Escape Route Lighting	LED Array	55 lm	M20	10	40.4	FDBAESLEDEMAW



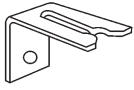
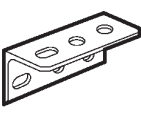
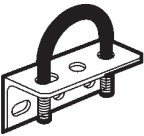
① Value measured after 1 hour duration - required value by standard is 400 lm.  
② Value measured after 1 hour duration - required value by standard is 45 lm.

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

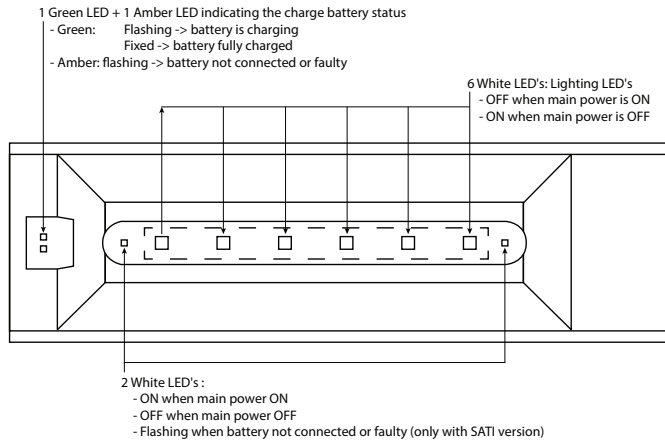
# FDBAES LED Series Self-Contained Emergency Lighting Units

## Flameproof

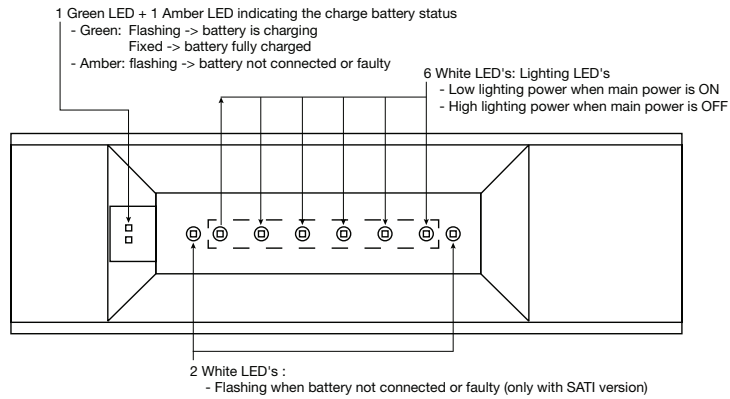
Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

### LED Indicator

#### Space Lighting — Replaces Fluorescent Version



#### Escape Lighting — Replaces Incandescent 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

EMERGENCY Lighting

# FDBAES LED Series Self-Contained Emergency Lighting Units

## Flameproof

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

### Electrical Wiring Diagram

The diagram shows the electrical connections for a Non-Maintained Emergency Lighting Unit. It is divided into two sections: Mains and Remote (optional).  
**Mains:** PE, N, L  
**Remote (optional):** - (B), + (A)  
**Unit Terminals:** U, N, PE, - (B), + (A)  
 The connections are as follows:  
 - Mains PE connects to Unit PE.  
 - Mains N connects to Unit N.  
 - Mains L connects to Unit U.  
 - Remote - (B) connects to Unit - (B).  
 - Remote + (A) connects to Unit + (A).

### Dimensions in Millimeters (Inches)

#### Unswitched Versions

Technical drawing of an unswitched emergency lighting unit. Dimensions are provided in millimeters (mm) and inches (in).  
**Front View:**  
 - Total width: 150 mm (5.91 in)  
 - Mounting hole diameter: 31.5 mm (1.24 in)  
 - Mounting hole offset from center: 85 mm (3.35 in)  
 - Total height: 205 mm (8.07 in)  
**Side View:**  
 - Total length: 470 mm (18.50 in)  
 - Mounting hole offset from front: 12 mm (0.47 in)  
 - Distance from mounting hole to center: 374.5 mm (14.74 in)  
 - Distance from center to mounting hole: 345 mm (13.58 in)  
 - Mounting hole diameter: 15 mm (0.59 in)  
 - Mounting hole offset from center: 5 mm (0.20 in)  
**Detail View:**  
 - Mounting hole diameter: 11 mm (0.43 in)  
 - Mounting hole offset from center: 15.5 mm (0.61 in)  
 - Minimum distance to access inside: 400 mm (15.75 in)

#### Switched Versions

Technical drawing of a switched emergency lighting unit. Dimensions are provided in millimeters (mm) and inches (in).  
**Front View:**  
 - Total width: 150 mm (5.91 in)  
 - Mounting hole diameter: 31.5 mm (1.24 in)  
 - Mounting hole offset from center: 85 mm (3.35 in)  
 - Total height: 205 mm (8.07 in)  
 - Total width including switch: 200 mm (7.87 in)  
**Side View:**  
 - Total length: 529.5 mm (20.85 in)  
 - Mounting hole offset from front: 12 mm (0.47 in)  
 - Distance from mounting hole to center: 374.5 mm (14.74 in)  
 - Distance from center to mounting hole: 345 mm (13.58 in)  
 - Mounting hole diameter: 15 mm (0.59 in)  
 - Mounting hole offset from center: 5 mm (0.20 in)  
**Detail View:**  
 - Mounting hole diameter: 11 mm (0.43 in)  
 - Mounting hole offset from center: 15.5 mm (0.61 in)  
 - Minimum distance to access inside: 400 mm (15.75 in)

148

Visit our website at [www.appletonelec.com](http://www.appletonelec.com) or contact us at +33.3.22.54.27.54.

© February 2016