LED Emergency Lighting Devices

EMERGENCY LIGHTING DEVICES FOR LED APPLICATIONS





ELECTRONIC EMERGENCY LIGHTING DEVICES WITH IRON PHOSPHATE BATTERIES

For nominal operating periods of 1 hour or 3 hours

Emergency lighting systems spring to life any time normal mains lighting systems fail. Emergency lighting is designed to ensure that staff can safely leave any rooms and that there is sufficient lighting to illuminate rescue paths/routes as well as to avoid panic situations.

VS emergency lighting devices are designed for use with LED applications and can be operated as part of a combined system with electronic LED drivers.

LIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH · Hohe Steinert 8 · 58509 Lüdenscheid · Germany · Phone +49 23 51/10 10 · Fax +49 23 51/10 12 17 · www.vossloh-schwabe.com

Emergency Basic

Product features

- Designed for installation in LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- Ambient temperature: 5 to 50 °C

Electrical features

- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V, 105 V or 220 V
- Output power in emergency operation: 2.5-3 W

Rechargeable batteries

- Material: Iron phosphate (LiFePO4)
- Choice of the rechargeable battery depends on desired operating time and installation position.
- Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity

Safety features

- For luminaires of protection class I
- Degree of protection: IP20
- SELV* (186804, 186805, 186806, 186807)
- Surge protection (186804, 186805, 186806, 186807): 3.75 kV
- Metal casing must be earthed using two fixing screws

Status LED

- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged
- Off: defective battery charge, battery not connected, battery totally flat, defective emergency lighting unit or in emergency operation

Packaging units

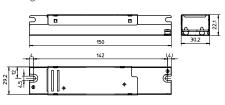
Ref. No.	Packaging unit							
	Pieces Boxes		Weight					
	per box	per pallet	g					
186804	50	56	109					
186805	50	56	109					
186806	50	56	109					
186807	50	56	109					
186808	50	56	109					
186809	50	56	109					





Dimensions

- Casing: M66
- Length:150 mm
- Width: 30.2 mm
- Height: 22.1 mm

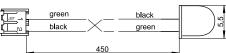


Used standards

- EN 60598-2-22
- EN 61347-2-7
- EN 62384



LED



Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).
 We will be happy to send you these conditions upon request.

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Electrical characteristics

Туре	Ref. No.	Ref. No.	Battery		Nominal emergency	Output power in	Min. lumen in	Output volta	ge
	EM gear	Battery				emergency	emergency		
			Туре	Shape	hrs.	operation (W)	operation* (lm)	V	V max.
M66 – Dimensi	ions (LxWx	H): 150x30	2x22.1 mm						
EMCc 180.007 186805	183204	3,2 V/4,5 Ah C	Compact	3	2.5-3	250	12-55	60	
	183205 3,2V/4,5 Ah L Linear 3								
EMCc 180.009 186807	183204	3,2 V/4,5 Ah C	Compact	3	2.5-3	250	20-105	120	
	183205	3,2 V/4,5 Ah L	Linear	3	1				
MCc 180.011 186809	183204	3,2 V/4,5 Ah C	Compact	3	2.5-3	250	100-220	300	
		183205	3,2 V/4,5 Ah L	Linear	3]			
MCc 60.006	186804	183202	3,2V/3 Ah C	Compact	1	2.5-3	250	12-55	60
		183203	3,2V/3 Ah L	Linear	1]			
MCc 60.008	186806	183202	3,2V/3 Ah C	Compact	1	2.5-3	250	20-105	120
		183203	3,2V/3 Ah L	Linear	1]			
MCc 60.010	186808	183202	3,2V/3 Ah C	Compact	1	2.5-3	250	100-220	300
		183203	3,2V/3 Ah L	Linear	1	1			

* at 100 lm/W per LED unit

Product lables

<u>v</u>	LIGHTING SOLUTIONS wabe Deutschland G	SELV tc= 65°C ta= 5+50°C]
	ert 8, D-58509 Lüden		22 + N Lout	
N —	Emergency Unit for LED module	U _N (V) 220240 f _N (Hz) 5060		
L —	Type EMCc 60.006 RefNo. 186804	Batt LiFePO ₄ (V/Ah) 3,2 / 3	_ +∎¥ ┘ ┘	
Lout 🗸 🗖	Made in Switzerland	Operating time (h) 1 LED voltage (V) U=12 - 5:		
Lin -	EN 60598-2-22 EN 61347-2-7	No load voltage (V) Umax.=6 Power supply (W) 2,53		
	LIGHTING	SELV	88 ° EAE (6 🗉]
	SOLUTIONS	tc= 65°C ta= 5+50°C		
	wabe Deutschland G ert 8. D-58509 Lüden		¯■ ┌──╁ ╂ (♥	
Hohe Steine	Emergency Unit	scheid 2'381'9		
N —	for IFD module	f _N (Hz) 5060		
	Type EMCc 180.007			
	Ref. No. 186805	Operating time (h) 3	tr LED	
Lout 🖛 🗖	Made in Switzerland	LED voltage (V) U=12 - 5.		
Lin ∽≞J	EN 60598-2-22 EN 61347-2-7	No load voltage (V) Umax.=6 Power supply (W) 2,53	be BAIT BAIT Passen Baite Passen Baite Passen Baite B	
		6511/		1
	LIGHTING SOLUTIONS	SELV tc= 65°C ta= 5+50°C	🎛 [H] 🕻 🗧 🗉	
	wabe Deutschland G	ta= 5+50°C		
	ert 8, D-58509 Lüden		23 + N Lout	
	Emergency Unit	U _N (V) 220240		
N —	for LED module	f _N (Hz) 5060	Driver	
L —	Type EMCc 60.008	BattLiFePO ₄ (V/Ah) 3,2 / 3	│ +∎───∳ ── ┘ ┘	
L _{out}	RefNo. 186806 Made in Switzerland	Operating time (h) 1 LED voltage (V) U=20 - 10		
Lin ∕-∎J	EN 60598-2-22 EN 61347-2-7	No load voltage (V) Umax.=12 Power supply (W) 2,53	black 03 57	

Vossloh-Sch	LIGHTING SOLUTIONS wabe Deutschland G; H 8, D-58509 Lüden: Emergency Unit for LED madule Type EMCc 180.009 RefNo. 186807 Made in Switzerland EN 60598-2-22 EN 61347-2-7	
Vossloh-Sch	LIGHTING SOLUTIONS wabe Deutschland G HT 8, D-58509 Lüden. Emergency Unit for IED module Type EMCC 60.010 Ref. No. 186808 Made in Switzerland EN 60598-222 EN 61347-2-7	
Vossloh-Sch	LIGHTING SOLUTIONS wabe Deutschland Gr trit 8, D-58509 Lüden: Emergency Unit Type EMCc 180.011 Type EMCc 180.011 Ref-No. 186809 Made in Switzerland EN 60598-2:27	

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Emergency Smart

With self-diagnosis function

Product features

- Designed for installation in LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- With self-diagnosis function acc. to EN 62034
- Ambient temperature: 5 to 50 °C

Electrical features

- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V, 105 V or 220 V
- Output power in emergency operation: 2.5-3 W

Rechargeable batteries

- Material: Iron phosphate (LiFePO4)
- Choice of the rechargeable battery depends on desired operating time and installation position.
- Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity

Safety features

- For luminaires of protection classes I and IIa
- Degree of protection: IP20
- SELV* (186810, 186811, 186812, 186813)
- Surge protection (186810, 186811, 186812, 186813): 3.75 kV

Status LED

- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged or self-test operation
- Flashing red: defective battery charge, battery not connected or battery capacity too low
- Flashing intermittent red: defective or unconnected LED luminaire unit
- Off: battery totally flat, defective emergency lighting unit or in emergency operation

Packaging units

Ref. No.	Packaging unit							
	Pieces	Boxes	Weight					
	per box	per pallet	g					
186810	50	56	83					
186811	50	56	83					
186812	50	56	83					
186813	50	56	83					
186814	50	56	83					
186815	50	56	83					

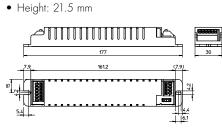
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Dimensions

- Casing: K67
- Length:177 mm
- Width: 30 mm



Used standards

- EN 60598-2-22
- EN 61347-2-7
- EN 62034
- EN 62384





LED



Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).

We will be happy to send you these conditions upon request.

Electrical characteristics

Type Ref. No.	Ref. No.	Ref. No.	Battery		Nominal emergency	Output power in	Min. lumen in	Output volto	age		
	EM gear	Battery		operati		emergency	emergency				
			Туре	Shape	hrs.	operation (W)	operation* (lm)	V	V max		
K67 – Dimensions (LxWxH): 177x30x21.5 mm											
	183204	3,2 V/4,5 Ah C	Compact	pact 3 2.5-3 250		250	12-55	60			
	183205	3,2V/4,5 Ah L	3,2V/4,5 Ah L Linear 3								
EMCc 180.015	MCc 180.015 186813 1	183204	3,2 V/4,5 Ah C	Compact	3	2.5-3	250	20-105	120		
	183205	3,2 V/4,5 Ah L	Linear	3							
EMCc 180.016 186815	183204	3,2 V/4,5 Ah C	Compact	3	2.5-3	250	100-220	300			
		183205	3,2 V/4,5 Ah L	Linear	3						
EMCc 60.012	186810	183202	3,2V/3 Ah C	Compact	1	2.5-3	250	12-55	60		
		183203	3,2V/3 Ah L	Linear	1						
EMCc 60.014	186812	183202	3,2V/3 Ah C	Compact	1	2.5-3	250	20-105	120		
		183203	3,2V/3 Ah L	Linear	1	7					
EMCc 60.016	186814	183202	3,2V/3 Ah C	Compact	1	2.5-3	250	100-220	300		
		183203	3,2V/3 Ah L	Linear	1	7					

* at 100 lm/W per LED unit

Product lables

Lout ← → Vossloh-Schwabe Deutschland GmbH Lout ← → Vossloh-Schwabe Deutschland GmbH H _L → ↓ (Hohe Steinert 8, D-58509 Lüdenscheid BattiffePO.	
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RefNo. 186810	EN 61347-2-7 Oblack
Made in Switzerland Power sup	IV (VV) 2,53 EN 62034 BATT LED
	2'381'911 SELV
Lout ← Vossloh-Schwabe Deutschland GmbH f _№ (Hz)	
Lin - Hohe Steinert 8, D-58509 Lüdenscheid Batt LifePO	M/Ah) 3,2 / 4,5 Automatic self-testing mode
N — Emergency Unit Operating Deroting	
Type EMCc180.013	
Ref-No 186811 Noload vo	
Made in Switzerland Power sup	bly (M) 2,53 EN 62034 BATT LED
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N — for LED module Depression	me (n) 1 tc ∀ 50 Driver
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Made in Switzerland Power sup	30 (VV) 2,53 EN 62034 BATT LED
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Linear Batterys for **Emergency Basic and Smart**

LiFePO4 rechargeable batteries

Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity With connection leads (length: 250 mm) and plug; max. lead length: 750 mm

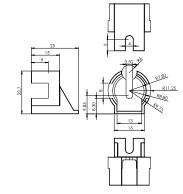
Choice of the rechargeable battery depends on desired operating time and installation position.

Туре	Ref. No.	ELUBAT	Dimensions		Nominal	Weight	Packaging	j unit		
		No.	Ø	Length	operating period		Pieces	Boxes		
			mm	mm	hrs.	g	per box	per pallet		
Linear recharg	Linear rechargeable batteries									
3,2 V/4,5 Ah L	183205	275809	19	196	3	130	40	32		
3,2 V/3 Ah L	183203	275802	19	131	1	89	60	32		

Storage time rechargeable batteries: max. 1 year; storage temperature: 0–50 °C

Holders for linear rechargeable batteries for emergency LED lighting modules

Sold separately Two holders per battery required. Material: PBT For linear batteries 183203, 183205 Weight: 4 g, packaging unit: 175 pcs. Type: Batteryholder LiFePO4 Ref. No.: 183206



Product guarantee

- 3 years in combination with Emergency Smart
- 1 year in combination with Emergency Basic
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage

(www.vossloh-schwabe.com).

We will be happy to send you these conditions upon request.

Compact Batteries for **Emergency Basic and Smart**

LiFePO4 rechargeable batteries

Compact rechargeable batteries

3,2 V/4,5 Ah C **183204** 275813

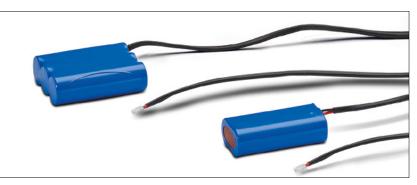
3,2 V/3 Ah C **183202** 275810

Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity With connection leads (length: 250 mm) and plug; max. lead length: 750 mm

Choice of the rechargeable battery depends on desired operating time and installation position.

Ref. No. ELUBAT

No.



Product guarantee

- 3 years in combination with Emergency Smart
- 1 year in combination with Emergency Basic
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).

We will be happy to send you these conditions upon request.

36 Storage time rechargeable batteries: max. 1 year; storage temperature: 0–50 °C

55

mm

Dimensions

Length Width Height

mm

65

65

mm

19

18

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Type

Weight

130

89

Packaging unit

Boxes

32

32

per pallet

Pieces

36

60

per box

Nominal

operating

period (hrs.

Emergency Complete

With self-diagnosis function and integrated battery

Product features

- Designed for independent operation of LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- With self-diagnosis function acc. to EN 62034
- Ambient temperature: 5 to 50 °C
- Iron phosphate (LiFePO4) rechargeable battery is built-in into the casing
- Charging time of rechargeable battery: up to 24 hrs. depending on the capacity

Electrical features

- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V
- Output power in emergency operation: 2.5–3 W

Safety features

- For luminaires of protection classes I and II
- Degree of protection: IP20
- SELV
- Surge protection: 3.75 kV
- Earthing: complete emergency module does not have to be earthed.
 The emergency lighting module features three earth terminals for an LED driver and LED unit, if required.

Status LED

- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged or self-test operation
- Flashing red: defective battery charge, battery not connected or battery capacity too low
- Flashing intermittent red: defective or unconnected LED luminaire unit
- Off: battery totally flat, defective emergency lighting unit or in emergency operation

Packaging units

Ref. No.	Packaging unit						
	Pieces	Boxes	Weight				
	per box	per pallet	g				
186816	20	24	348				
186817	20	24	389				





Dimensions

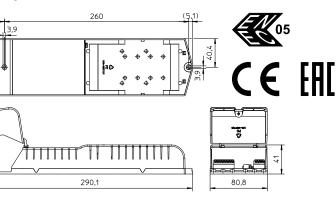
- Casing: K68
- Length: 290.1 mm
- Width: 80.8 mm
- Height: 41 mm

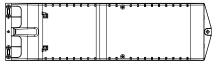
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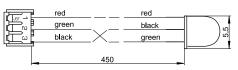
Used standards

- EN 60598-2-22
- EN 61347-2-7
- EN 62034
- EN 62384









Product guarantee

- 3 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).
 We will be happy to send you these conditions upon request.

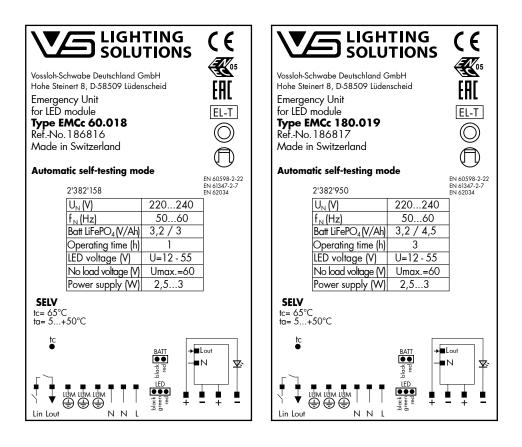
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Electrical characteristics

Туре	Ref. No.	· · · · · · · · · · · · · · · · · · ·		Nominal emergency operation period		Min. lumen in emergency	Output vo	ltage	
		Туре	Shape	hrs.	operation (W)	operation* (lm)	V	V max.	
K68 – Dimensions	K68 – Dimensions (LxWxH): 290.1x80.8x41 mm								
EMCc 180.019	186817	3,2 V/4,5 Ah C	Compact	3	2.5-3	250	12-55	60	
EMCc 60.018	186816	3,2V/3 Ah C	Compact	1	2.5-3	250	12-55	60	

* at 100 lm/W per LED unit

Product lables



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Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advices must be observed; non-observance can result in the destruction of the LED emergency lighting devices, fire and/or other hazards.

Mandatory regulations

- DIN VDE 0100
- EN 60598-1

Emergency Basic

Mechanical mounting

- Mounting position: On an earthed metal surface
 - Installation in an LED luminaire of protection class I. Installation in a separate casing of protection class I or II.I
- Fastening/Earthing: Fix and/or earth using two suitable metal screws
- Installation of the battery and LED driver for constant switching: Installation is possible within the same casing as the emergency lighting unit.
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

Electrical installation

- Connection terminals:Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = -),
 - max. extension to 750 mm
- Battery discharge current:

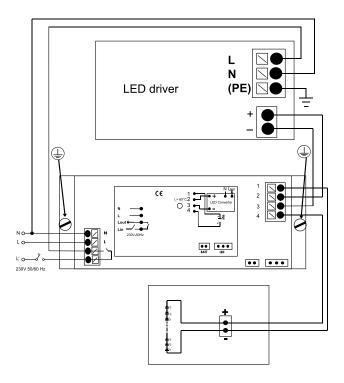
The deep discharge protection of all lithium ion batteries is lower than 10 μ A. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.

- Polarity:
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED):

The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet. • Wiring:

During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver.

During emergency lighting operation, the LED unit will be supplied by the battery. The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Basic emergency lighting unit.



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Emergency Smart

Mechanical mounting

- Mounting position: In an LED luminaire or in a separate casing
- Fastening: Using two suitable screws
- Installation of the battery and LED driver for constant switching: Installation is possible within the same casing as the emergency lighting unit.
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

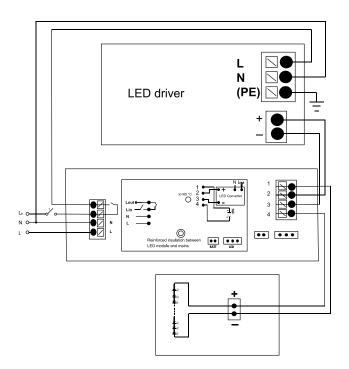
Electrical installation

- Connection terminals:Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = -), max. extension to 750 mm
- Battery discharge current:
 - The deep discharge protection of all lithium ion batteries is lower than 10 μ A. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED):

The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.

 Wiring: During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver.

> During emergency lighting operation, the LED unit will be supplied by the battery. The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Smart emergency lighting unit.



Self-testing function

• Self-test:

Self-testing function in acc. with EN 62034 included.

Every 8 days (random period between 8 and 8.25 days) an automatic self-test will be carried out. During this time, the LED unit will be supplied by the battery for 2 minutes via the emergency smart emergency lighting module.

This ensures the LED unit and the correct functioning of the emergency lighting can be checked.

• Fatigue test: In addition, a quarterly fatigue test is carried out to check battery capacity. The first fatigue test is carried out 8 days after commissioning.

• Battery recovery: Within the space of about four days following commissioning and/or after a change of battery, three short charging and discharging cycles will be automatically carried out to regenerate the battery.

LED-Notstromgeräte_EN – 10/11 – 09/2020

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Emergency Complete

Mechanical mounting – Emergency Complete

- Mounting position: Outside of an LED luminaire; suitable for independent operation
- Fastening: Using two suitable screws
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = -), max. extension to 750 mm
- Battery discharge current:
 - The deep discharge protection of all lithium ion batteries is lower than 10 µA. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED):

The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.

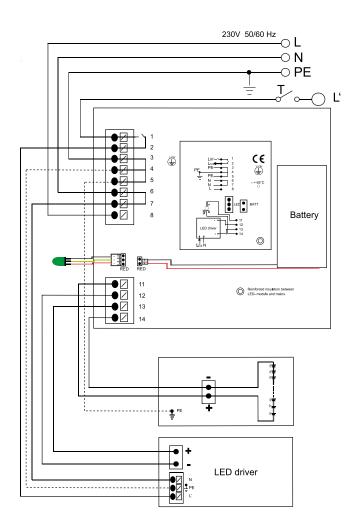
• Wiring:

The Emergency Complete casing is fitted with a lid for a cord grip. As shown in the circuit diagram, the following three leads must be connected to the mains terminal of the Emergency Complete unit:

- mains cable (switched phase, direct phase, neutral and earth, if required for the driver and/or the LED unit)
- LED driver cable (switched phase, neutral and earth, if required)
- bus line (DALI)

During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver.

During emergency lighting operation, the LED unit will be supplied by the battery. The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Complete emergency lighting unit.



Self-testing function

• Self-test: Self-testing function in acc. with EN 62034 included.

Every 8 days (random period between 8 and 8.25 days) an automatic self-test will be carried out. During this time, the LED unit will be supplied by the battery for 2 minutes via the emergency smart emergency lighting module.

This ensures the LED unit and the correct functioning of the emergency lighting can be checked.

Fatigue test:

In addition, a quarterly fatigue test is carried out to check battery capacity. The first fatigue test is carried out 8 days after commissioning.

• Battery recovery: Within the space of about four days following commissioning and/or after a change of battery, three short charging and discharging cycles will be automatically carried out to regenerate the battery.

The values contained

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