Operating instructions

EN



Emergency Luminaire for Fluorescent Lamps

Series ATEX-HALP-EMG

LARSON ELECTRONICS

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1 General Information

1.1 Manufacturer

Larson Electronics, LLC.
9419 US-HWY 175
Kemp, Texas 75143 USA

Phone: 800.369.6671
Fax: 903.498.3364
Internet: www.larsonelectronics.com
E-mail: sales@larsonelectronics.com

The original instructions are the English edition.
They are legally binding in all legal affairs.

1.3 Conformity with standards and regulations

See certificates and EC Declaration of Conformity.
The device has IECEx approval. See IECEx homepage: http://iecex.iec.ch/

2 Explanation of the symbols

2.1 Symbols in these operating instructions

Symbol	Meaning
	Tips and recommendations on the use of the device
	General danger
	Danger due to explosive atmosphere
	Danger due to energised parts

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2.2 Warning notes

Warning notes must be observed under all circumstances, in order to minimize the risk due to construction and operation. The warning notes have the following structure:

- Signalling word: DANGER, WARNING, CAUTION, NOTICE
- Type and source of danger/damage
- Consequences of danger
- Taking countermeasures to avoid the danger/damage

	**DANGER** Danger to persons Non-compliance with the instruction results in severe or fatal injuries to persons.
	**WARNING** Danger to persons Non-compliance with the instruction can result in severe or fatal injuries to persons.
	**CAUTION** Danger to persons Non-compliance with the instruction can result in light injuries to persons.

NOTICE
Avoiding material damage Non-compliance with the instruction can result in material damage to the device and / or its environment.

2.3 Symbols on the device

Symbol	Meaning
CE 0158 05594E00	CE marking according to the currently applicable directive.
 02198E00	According to marking, device approved for hazardous areas.

3 Safety notes

3.1 Operating instructions storage

- Read the operating instructions carefully and store them at the mounting location of the device.
- Observe applicable documents and operating instructions of the devices to be connected.

3.2 Safe use

- Read and observe the safety notes in these operating instructions!
- Observe characteristic values and rated operating conditions on the rating and data plates!
- Observe additional information plates on the device!
- Use the device in accordance with its intended and approved purpose only!
- We cannot be held liable for damage caused by incorrect or unauthorized use or by non-compliance with these operating instructions.
- Before installation and commissioning, make sure that the device is not damaged!
- Work on the device (installation, maintenance, overhaul, repair) may only be carried out by appropriately authorized and trained personnel.

3.3 Intended Use

The light fitting 6009 is equipment

- for lighting areas, work spaces and objects
- for emergency lighting in case of power failure.
- can be used indoors and outdoors
- for stationary mounting
- for use in Zones 1, 21, 2, 22 and in the safe area

3.4 Modifications and alterations

	**DANGER**
	Explosion hazard due to modifications and alterations to the device! Non-compliance results in severe or fatal injuries. • Do not modify or alter the device. No liability or warranty for damage resulting from modifications and alterations.

4 Function and device design

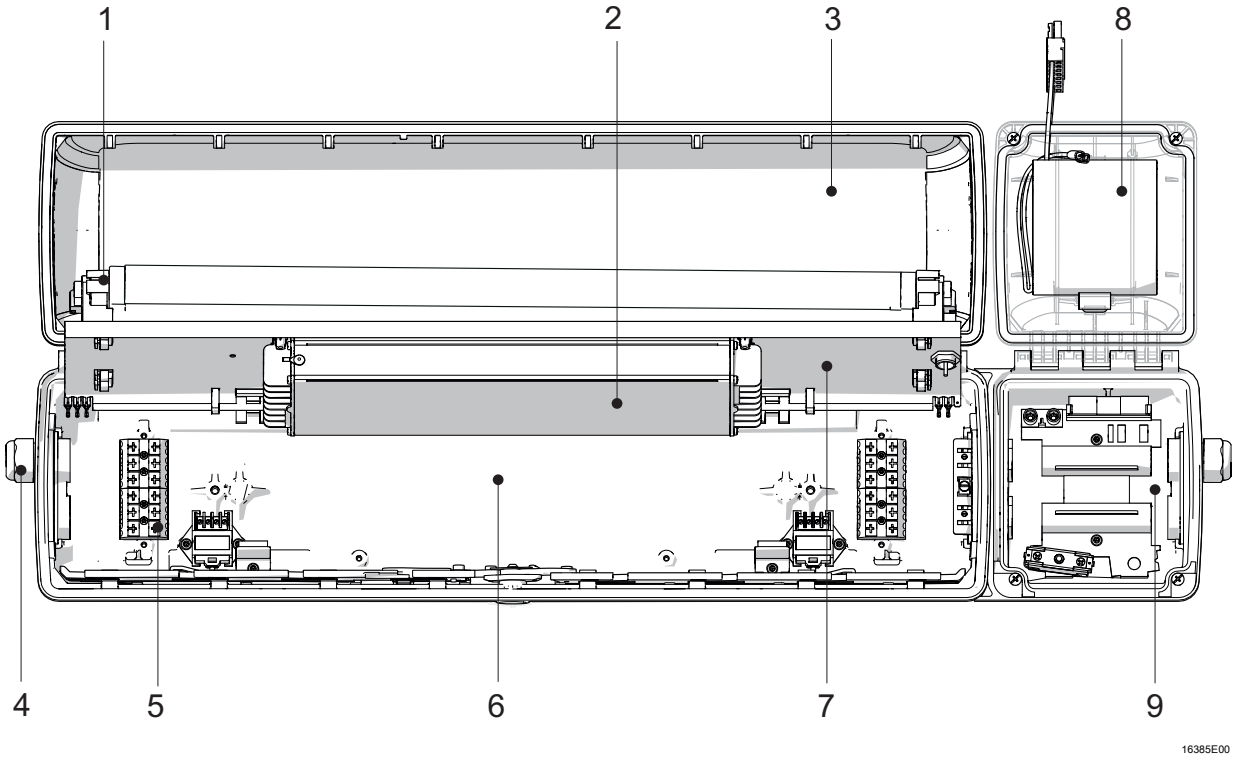
4.1 Function

	**DANGER**
	Explosion hazard due to improper use! Non-compliance results in severe or fatal injuries. • Use the device only according to the operating conditions described in these operating instructions.

- for lighting areas, work spaces and objects
- for emergency lighting in case of power failure.
- switching off the equipment by means of a central lock (standard version) when the luminaire is opened
- Weekly functional test, permanently integrated
- Yearly continuous operation test, can be deactivated and activated

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4.2 Device design



1 - Lamp holder
2 - Ballast
3 - Luminaire trough
4 - Cable gland
5 - Connection terminal
6 - Luminaire enclosure
7 - Reflector plate
8 - Battery
9 - Battery enclosure

5 Technical data

Explosion Protection	
Global (IECEx)	
Gas and dust	Ex d e mb IIC T4 Gb or Ex db eb mb IIC T4 Ex tb IIIC T80 °C Db or Ex tb IIIC T80 °C
Europe (ATEX)	
Gas and dust	⟨Ex⟩ II 2 G Ex d e mb IIC T4 Gb or Ex db eb mb IIC T4 ⟨Ex⟩ II 2 D Ex tb IIIC T80°C Db or Ex tb IIIC T80 °C
Certifications and certificates	
Certificates	IECEx, ATEX

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Technical Data

Electrical data

Rated voltage	Standard: • 220 ... 240 V ± 10%, 50 / 60 Hz (Lamps acc. IEC60081) Optional: • 110 ... 127 V ± 10%, 50 / 60 Hz (Lamps acc. IEC60081) • 120V ± 10%, 50 / 60 Hz (Lamps acc. ANSI IEC C78.81)
Rated insulation voltage	320 V
Disconnection of the light	**When opening the light** Switch with safety lock; when opening the central lock, all poles of the voltage supply to the ballast are disconnected; contacts of the switching element are NC contacts, they can only switched on again when the lamp cover and the central locking system are closed. **In case of a lamp fault**, the electronic ballast disconnects the defective lamp from the power supply.

Luminous characteristics

Lamps	2x 18 W; 2x 36 W (acc. to IEC60081) 2x 17W; 2x 32W (acc. to ANSI IEC C78.81)
Measures for light guidance	**Standard:** wide beam, internal reflector of the light fittings is painted in white colour. Colour: signal white RAL 9003; lateral glare reduction in the luminaire trough.

Ambient conditions

Ambient temperature	-30 ... +50 °C	
	-20 ... +50 °C	with Breathing Glands 8162
	-5 ... +40 °C	operationable

Mechanical data

Degree of protection	IP66 / IP67 (IP64 when using the breather 8162) IEC 60598
Protection class	I (with internal PE connection)
Material	
Enclosure	
Enclosure	Polyester resin, glass fibre-reinforced
Colour	colour grey, similar to RAL 7035
Translucent cover	Polycarbonate
Gasket	Silicone foam gasket in the lamp cover
Luminaire locking	Central locking which can be opened/closed using a socket key M8 / wrench size 13, hinged lamp cover

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Technical Data

Mounting / Installation

Cable glands

Standard luminaire

Plastic: 2 x M25 x 1.5 cable entries 8161 and
2 x M25 x 1.5 stopping plugs 8290 (enclosed)

Metal: 2 x metal plates M20 x 1.5 connected by means of PE for metal cable entries
Attention: cable entries must be ordered separately

Special: max. 4 drilled holes for M20, M25, NPSM ½''
max. 2 drilled holes for NPT ¾''

Metal cable glands: M20 x 1.5, M25 x 1.5; earthing of the metal cable entries by means of metal plates

Connection

Standard: Spring clamp terminals
6-pole: L1, L2, L3, L', N, PE
Clamping range: 1 x 0.75 ... 4 mm^2 (solid / finely stranded)
(2 free clamping units per pole available)

Special: Terminal block with covering
6-pole: L1, L2, L3, L', N, PE
Clamping range:
2 x 1.5 ... 6 mm^2 (solid);
2 x 1.5 ... 4 mm^2 (finely and extra finely stranded)

Through wiring

Through wiring **Standard luminaire** Luminaires are equipped with internal through wiring. Ingoing and outgoing leads can be connected to the opposite sides.
Terminals: see techn. data
Wiring cross section: 2.5 mm^2 for max. 16 A.

without **Optional**
On the connection side, there are 2 bores M25 x 1.5 for cable entries for ingoing and outgoing wiring of the connection line (ingoing and outgoing leads on one side).

Assembly

For outdoor mounting a breather is recommended

Standard luminaire

Standard: 2 x M8 insert nuts in the enclosure

Special: Mounting grooves in the enclosure for use of fastening and ceiling rails for variable luminaire mounting (variable mounting distances for luminaires 17 W, 18 W: 320 ... 480 mm,
32 W, 36 W: 670 ... 930 mm)

Emergency light electronics

Emergency light mode

In the emergency light mode, only one lamp is used, which results in reduced light output

Emergency light service time

Battery capacity	Emergency light service time	Emergency lighting power	
		17 W; 18 W	32 W; 36 W
7 Ah	1.5 h	100 %	60 %
	3.0 h	60 %	30 %

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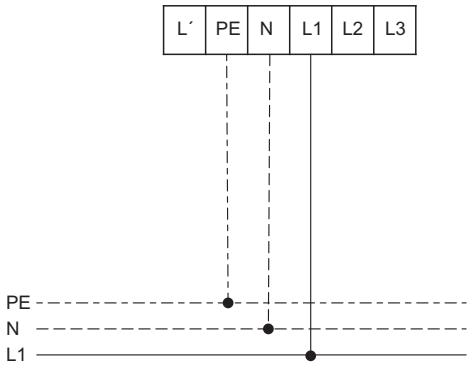
Technical Data	
Switchover voltage	from mains to battery operation for U < 0.74 x U_N from battery to mains operation for U > 0.80 x U_N
Battery set	
Version	Gas-tight NiCd battery
Operating voltage	6 V
Capacity	7 Ah
Replacing the battery set	When opening the battery enclosure, the connection between the battery set and the emergency light electronics is disconnected. The battery set can be replaced after disconnecting the plug-in contacts.

6 Engineering

6.1 Mains operation

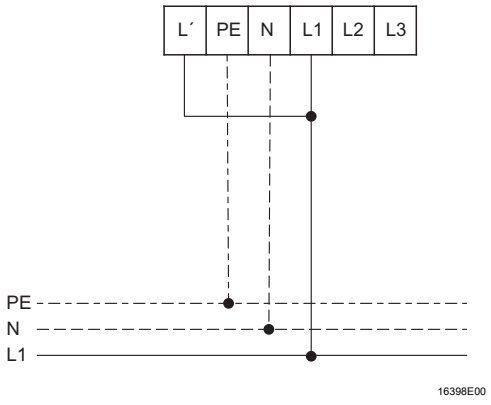
6.1.1 Stand-by operation

- The light fitting is switched off



6.1.2 Continuous operation

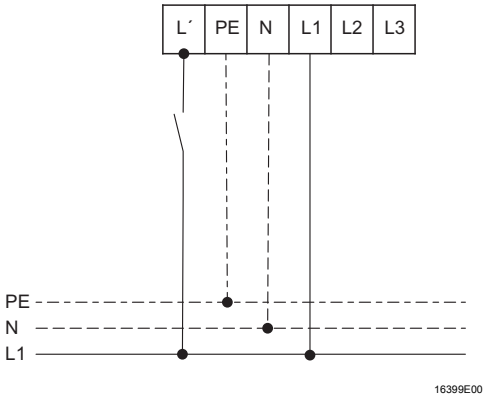
- The light fitting is switched on



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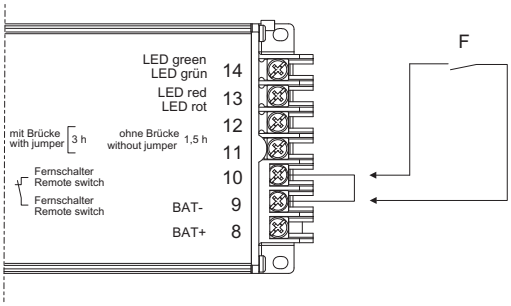
6.1.3 Normal lighting operation

- The light fitting is operated by normal lighting



6.2 Emergency light blocking

A remote switch for emergency light blocking can be connected to terminals 9 and 10 of the emergency light electronics.



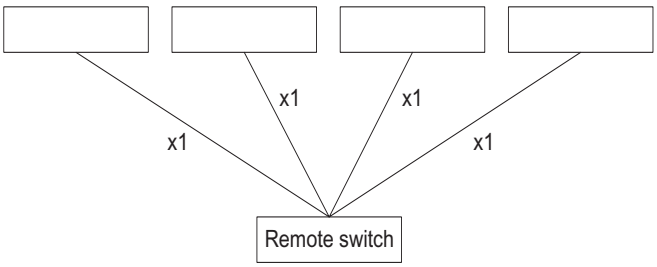
	Remote switch is closed	Remote switch is opened
Power supply operation	Switching on the lamps depending on operation mode	Switching on the lamps depending on operation mode
Power failure	Emergency light function	No emergency light function

6.2.1 Connection version remote switch

The remote switch is directly connected to the emergency light electronics.

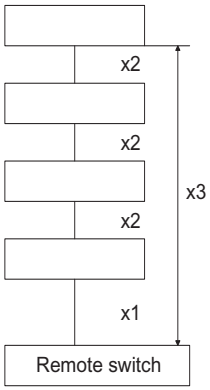
The following connection versions are possible:

Point-to-point connection



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Linear connection



NOTICE
The following conductor specifications must be observed during connection.

	Point-to-point connection	Linear connection
maximum conductor length x 1 x 2 x 3	 500 m	 100 m 50 m 500 m
maximum number of light fittings	50	30
minimum cable cross-section	1.5 mm^2	1.5 mm^2

7 Transport and storage

7.1 General

- Transport and store the device only in the original packaging.
- Store the device in a dry place (no condensation) and vibration-free.
- Do not drop the device.

7.2 Batteries

- Do not transport together with other materials!
- Handle with care!
- Store protected from fire, sources of dust, harmful gases and liquids!
- Store in a dry and cool location!

NOTE
Risk of deep battery discharge due to exceeded storage! Non-compliance can result in material damage! • The battery should be charged within 26 weeks from date of production by means of operating the luminaire.

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Recommendation:

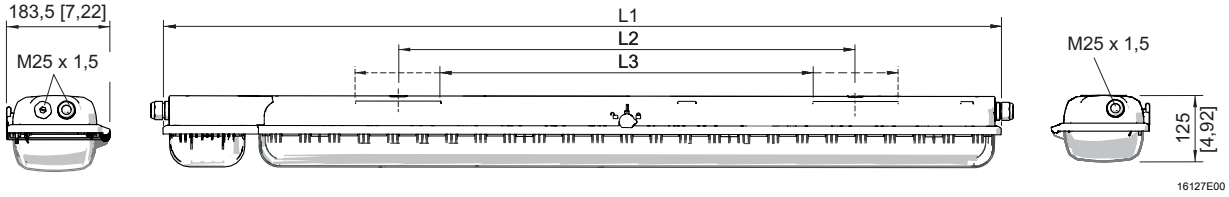
- Store battery at an ambient temperature of + 5 °C to + 25 °C and a relative humidity of 65 ± 5 %. The storage period is reduced of up to one month if stored outside this temperature range..

8 Mounting and installation

	DANGER
	Explosion hazard due to incorrect installation of the device! Non-compliance results in severe or fatal injuries. • Carry out installation strictly according to the instructions and national safety and accident prevention regulations to maintain the explosion protection. • Select and install the electrical device so that explosion protection is not affected due to external influences, i.e. pressure conditions, chemical, mechanical, thermal and electric impact such as vibration, humidity and corrosion (see IEC/EN 60079-14). • The device must only be installed by trained qualified personnel who is familiar with the relevant standards.

8.1 Dimensions / fastening dimensions

Dimensional Drawings (All Dimensions in mm [inches]) - Subject to Alterations



Dimensions	Luminaire	
	17/18 W	32/36 W
L1	857 [33.74]	1467 [57.76]
L2 [1)]	400 [15.75]	800 [31.50]
L3 [2)]	320 ... 480 [12.60 ... 18.90]	670 ... 930 [26.38 ... 36.61]

[1)] fixed mounting distance

[2)] variable mounting distance

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8.2 Mounting / dismounting, operating position

WARNING

Danger due to electrostatic discharge!
Explosion protection is impaired!

Do not install within arm's reach!
Ensure that no electrostatic charging may occur.
For example:
- due to accidental friction,
- by cleaning with a dry cloth,
- with particle streams.

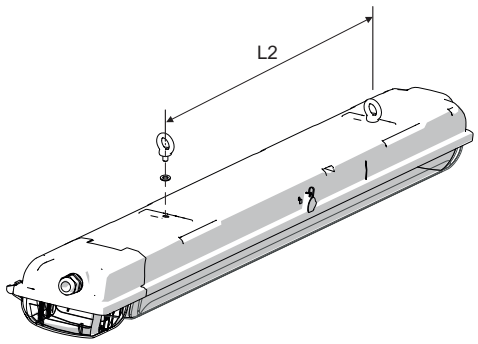
The luminaire is suitable for wall and ceiling mounting.
Wall mounting must be performed with the central lock directed downwards.
Outdoors, the mounting position with light emission upwards is not allowed.

For outdoor use, we recommend to install a breather from the manufacturer.
The breather guarantees compliance with degree of protection IP64 in all mounting positions.

WARNING

Danger due to inadmissible heating.
Explosion protection is impaired!
External heat sources and/or direct sunlight may effect the temperature class and the maximum permissible surface temperature.
Early failure of equipment.
- The maximum ambient temperature must not be exceeded by external heat sources.

Suspension at fixed mounting points

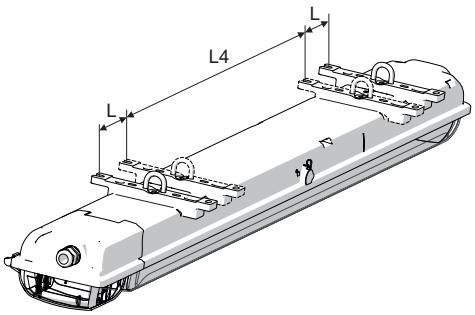


Version	L2 [mm]
17/18 W	400
32/36 W	800

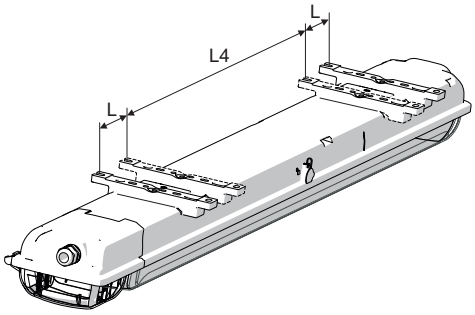
max. screw-in depth 10 mm

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Suspension at movable mounting parts



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16326E00

Mounting bracket

Top rail

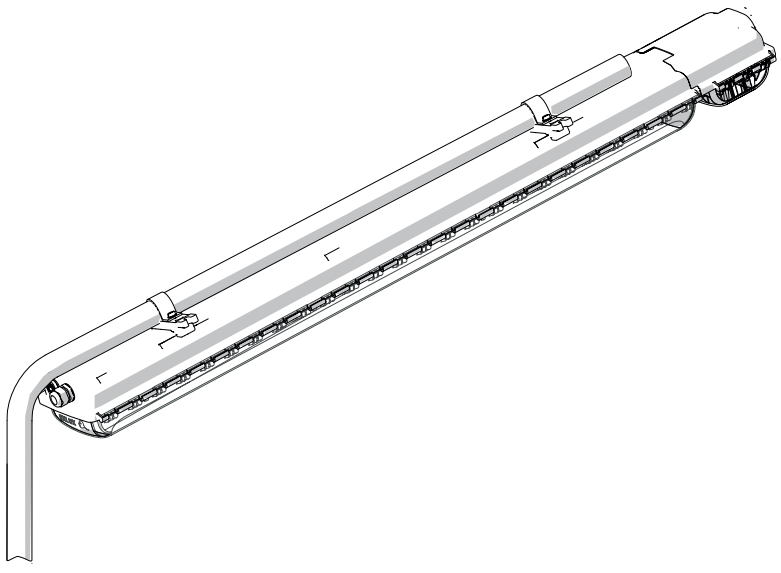
Version	L4 [mm]	L [mm]
17/18 W	320	80
32/36 W	670	130

Lateral mounting pockets for variable points of suspension.

i	When mounting the luminaire using top rails, ensure that the mounting surface is flat. Otherwise, the enclosure might be mounted in a warped/twisted way. The result is leakage of the luminaire and difficulties in replacing the translucent cover.

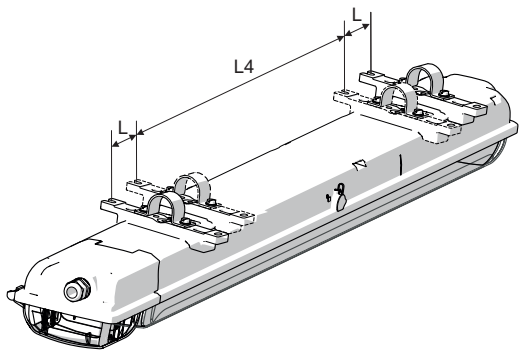
Pole mounting

Pole mounting using pipe clamps



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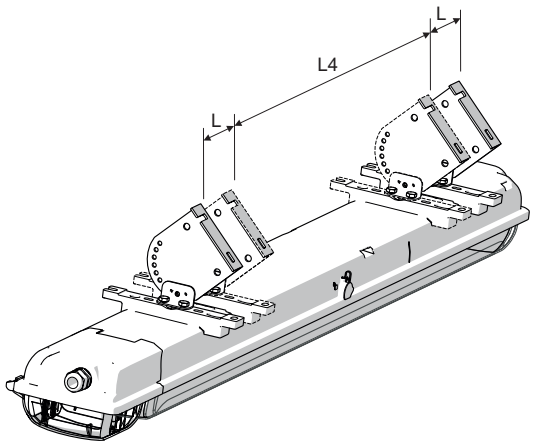


16328E00

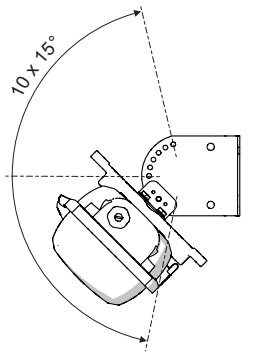
Version	L4 [mm]	L [mm]
17/18 W	320	80
32/36 W	670	130

For pipe clamp mounting, use the solution of the manufacturer with integrated mounting rail providing reliable and stable four-point fixing!In case of point suspension using pipe clamps,
Larson Electronics does not guarantee the strength and tightness of the luminaire!

Wall bracket mounting



15515E00

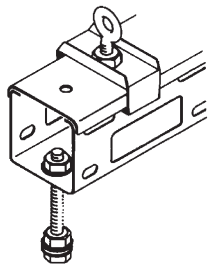


15517E00

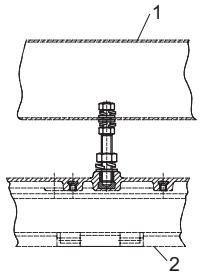
Version	L4 [mm]	L [mm]
17/18 W	320	80
32/36 W	670	130

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Continuous row mounting

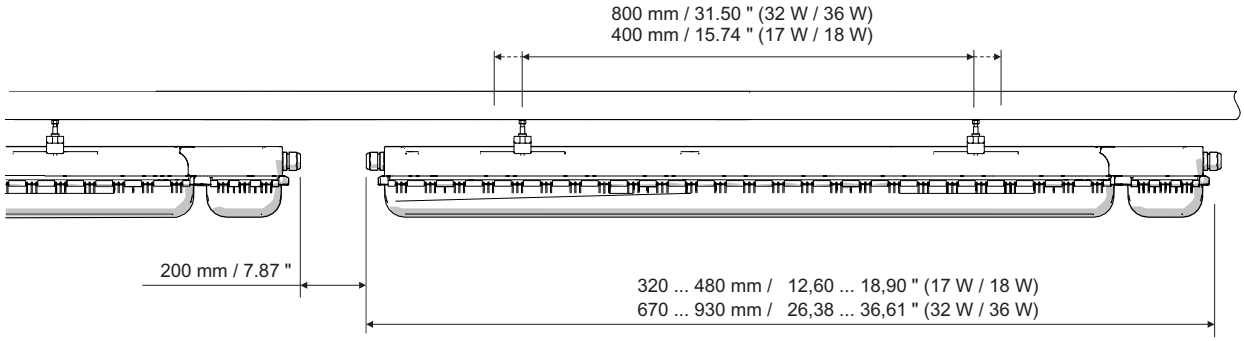


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06033E00

1: Rail profile
2: Luminaire



16334E00

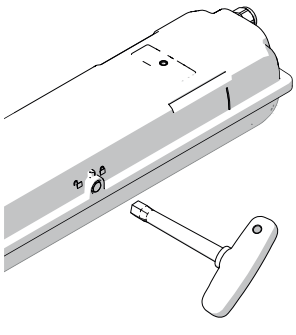
Rail profile for continuous row mounting of linear fluorescent luminaires EXLUX
It facilitates row mounting and installation of the luminaires.
The rail profile can also be used as cable duct.
Always use mounting rails to adjust the luminaires to the hole pattern of the rail profile.

8.3 Installation

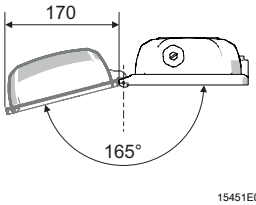
8.3.1 Opening and Closing of the Enclosure

	DANGER
	Risk of electric shock! Risk of fatal injuries! • Luminaires without switch must not be opened when they are supplied with power (see information plate on the lock)!

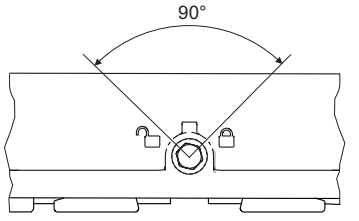
	**Recommendation** Opening and closing of the luminaire by using a socket wrench.



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15451E00



15436E00

- Remove the closing cap of the central lock.
- Turn the central lock using a socket wrench M8, wrench size 13, by 90° to the left as far as it will go.
- Swivel down the translucent cover.
- Proceed in reverse order to close.
- The seal of the translucent cover must lie correctly on the sealing edge.
- Push the closing cap onto the central lock opening (dust protection).

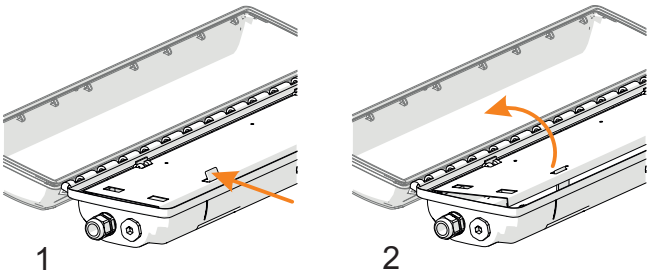
Note:

- Version without switch: Disconnect the luminaire from the power supply and secure it against being switched on again.
- Version with switch: The luminaire is positively disconnected from the power supply by actuating the central lock.
- In open end position and with translucent cover swivelled down, a restart lock-out device prevents the central lock from being actuated.

Please do not use force!

When the translucent cover is closed, the central lock is released.

Opening and closing the reflector plate

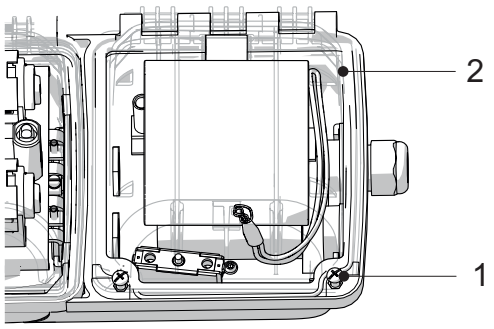


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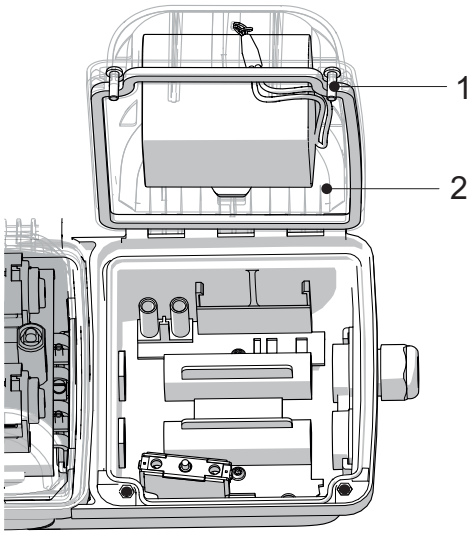
1 Open the reflector plate by pressing the safety latch.
2 Swivel down the reflector plate.

- When closing, flip up the reflector plate and snap it into place.

Opening and closing the battery enclosure



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16405E00

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Opening

- Loosen the screws (1) (cross head H2).
- Open the battery cover (2).

Closing

- Close the battery cover (2).
- Tighten the screws (1) (cross head H2) firmly (2 Nm).

8.3.2 Electrical connections

Electrical connection

Observe the maximum clamping possibility of the connecting terminals (see chapter "Technical data").
For optional screw-type terminals, two conductors per clamping unit can be clamped (ingoing and outgoing wiring).

Note:

- Clamping must be carried out precisely!
- Do not clamp any part of the conductor insulation!
- Do not interchange the conductors!
- Observe the technical regulations when connecting the conductor!
- Clamp the conductor firmly.
- The terminal cover of optional screw-type terminals does not have to be removed to clamp the conductor!
- The phase L1 must be directly connected to the grid which functions as charging phase for the battery!

NOTICE
Danger due to wrong connection. Malfunction • Phases L and L1 must be connected in phase.

- Optional screw-type terminals: Firmly tighten screws (tightening torque 2 Nm, for unused clamping units 0.7 Nm)!

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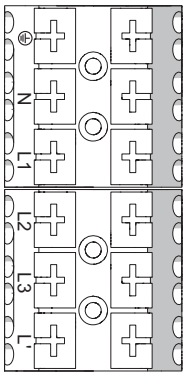
Connection terminals

Standard: Spring clamp terminals up to 4 mm^2

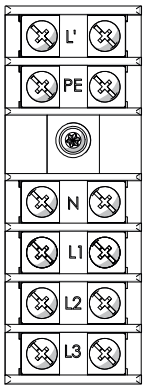
Optional:
Screw-type terminals up to 4 mm^2 finely and extra finely stranded, and 6 mm^2 solid

Stripping length:
10 ... 11 mm

Stripping length:
10 ... 11 mm



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L‘	= switched phase
L1	= charging phase
L2, L3	= phase
N	= neutral conductor
PE	= protective conductor

Through wiring

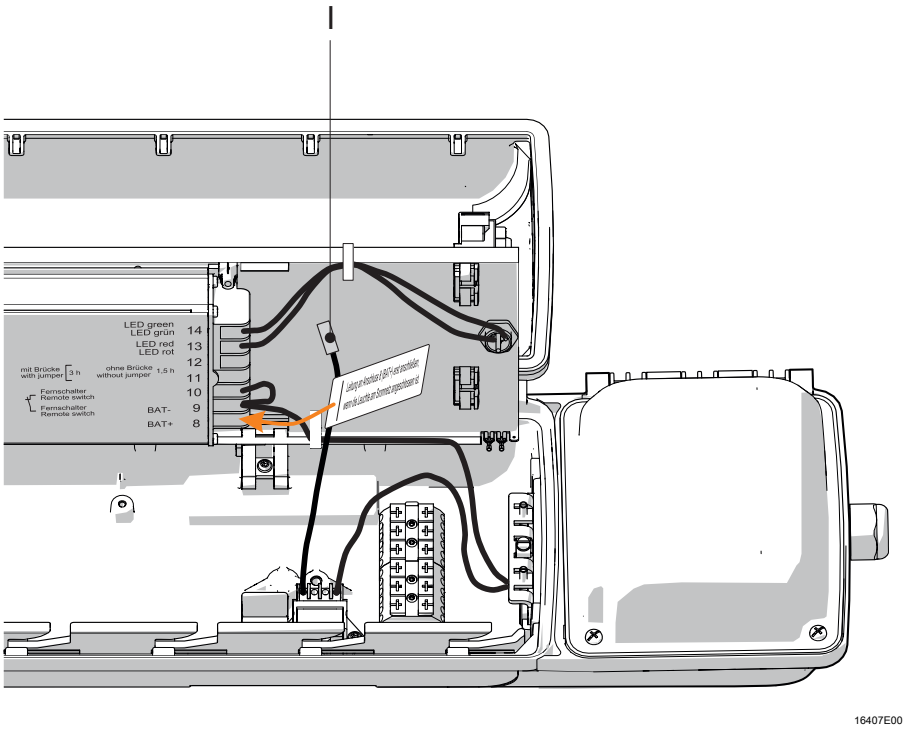
NOTE
Through wiring with 2.5 mm ^{2} cross-section for max. 16 A.

Battery connection

	The connection to the battery is interrupted. Before commissioning, connect the battery.

	CAUTION
	Danger deep battery discharge! The battery can no longer be charged! • If the luminaire is not connected to the power supply for more than **4 weeks** the battery must be disconnected.

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- Disconnect the conductor from the terminal (I).
- Connect the conductor to terminal 8 of the emergency light electronics.
- Tighten the screw of the terminal with 1.2 Nm.

8.3.3 Cable Entries

The standard luminaire is delivered with 3 lead-in holes, 2 cable glands and 2 stopping plug.
Please observe the tightening torque for luminaires with installed cable glands and stopping plugs.

	Tightening torque	
	Connection thread	Pressure screw
Cable gland 8161		
M20 x 1.5	2.3 Nm	1.5 Nm
M25 x 1.5	3.0 Nm	2.0 Nm
Stopping plugs 8290		
M20 x 1.5	1.0 Nm	
M25 x 1.5	1.5 Nm	

Luminaires with approved cable glands and stopping plugs; not supplied.

	WARNING
EX	Cable glands and stopping plugs which are not approved. Explosion protection is impaired! • Only use separately certified cable glands and stopping plugs.

Please note:
- the required dust resistance!
- the required type of protection!
- the required temperature resistance!
- the IP degree of protection according to the rating plate!
- the operating instructions of the cable glands and stopping plugs!
- the required tightening torques!
- the range of the permissible cable diameter!

9 Commissioning

	**DANGER**
	Explosion hazard due to incorrect installation! Non-compliance results in severe or fatal injuries. • Check the device for proper installation and function before commissioning. • Comply with the national regulations.

Before commissioning, ensure that
- the device has been installed according to regulations.
- the power supply voltage and the rated operational voltage are identical.
- the required cable diameter for cable glands has been used.
- the cable entries and stopping plugs have been securely tightened.
- the cables are correctly connected.
- the connection has been performed correctly.
- all screws and nuts are tightened according to regulations.
- the connection chamber is clean.
- the device is not damaged.
- no foreign bodies are inside the device.
- the device is sealed according to regulations.
- the battery is connected.

NOTE
Condensation due to specific environmental and operating conditions condensation cannot be avoided completely. • operate the luminaire continuously or periodically over extended periods of time! • avoid thermal bridges!

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10 Operation

10.1 Operation

10.1.1 Operating Modes

Power supply operation

Stand-by operation	The lamps are switched off regardless of normal lighting.
Continuous operation	The lamps are switched on regardless of normal lighting.
Normal lighting operation	The lamps are operated by normal lighting.

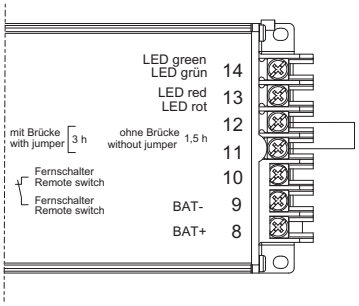
Emergency light operation:

In the event of a power failure, the light fitting switches to emergency light operation.
Emergency lamp

- is marked with a green dot on the lamp holder.
- is switched on regardless of the operation mode of the selected emergency light operating time.

If the emergency lamp is defective, the light will be switched to the secondary lamp.

Emergency light operation time

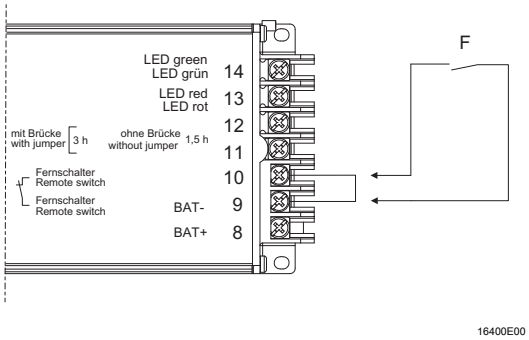


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Emergency light operation time	Jumper between terminals 11 and 12 of the emergency light electronics
1.5 hours	open
3.0 hours	closed

Emergency light blocking
A remote switch for emergency light blocking can be connected to terminals 9 and 10 of the emergency light electronics.

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	Remote switch is closed	Remote switch is opened
Power supply operation	Switching on the lamps depending on operation mode	Switching on the lamps depending on operation mode
Power failure	Emergency light function	No emergency light function

10.1.2 Function and capacity test

To carry out the test, the following prerequisites must be fulfilled:

- The time interval has expired.
- The power supply operation was active for at least 1 hour.
- The remote switch is closed.

The test result is shown on the LED display.
During a test the lamps are switched on.

Function test

- starts within 24 hours after commissioning.
- is carried out every 7 days.
- takes 1 minute.
- checks the function of the lamps and the battery.

Continuous operation test

- starts within 44 days after commissioning.
- is carried out every 365 days.
- discharges the battery up to the final discharge voltage.
- checks the function of the lamps and the capacity of the battery.
- can be deactivated and activated.

Deactivating and activating the continuous operation test:

- switch of the supply voltage.
- switch on the supply voltage.
- within 60 seconds, switch the lamps on and off 3 times for 5 seconds each.

The result will be shown on the LED display for 30 seconds.

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10.2 Indications

When connecting to the power supply

Initialisation within 30 seconds

Second	Description	
0 - 10	Function test green LED	
10 - 20	Function test red LED	
20 - 30	continuous operation test state	green LED blinks - continuous operation test active red LED blinks - continuous operation test not active

After that, the LED display switches to the operating mode.

During normal operation

Blinking: 1 second on, 1 second off
Flashing: 0.25 seconds on, 0.75 seconds off

Green	Light fitting is ready for operation	
blinking green	Light fitting is ready for operation	Function or continuous operation test is activated
Red	Error	Battery is defective or electric circuit is interrupted
blinking red	Error	Battery capacity is too low
flashing red	Error	The lamp reached its end of service life or is defective
blinking green/red	Light fitting is ready for operation No emergency light operation	Emergency light operation is deactivated by remote switch

During emergeny light operation

The LED display is switched off.

10.3 Troubleshooting

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Cause	Measure
The lamp was incorrectly inserted.	Insert the lamp correctly.
The lamp is defective.	Replace the lamp.
The ballast is defective.	Replace the ballast.
The switch is defective.	Replace the switch.
The lamp reached its end of service life.	Replace the lamp.
LED display red	
The battery is defective.	Replace the battery.
The switch in the battery case is defective.	Replace the switch.
The switch in the light fitting is defective.	Replace the switch.
LED display blinking red	
The battery capacity is too low.	Replace the battery.

Resetting the capacity error (blinking red).

- Replace the battery.

Automatic:

- A continuous operation test is carried out automatically after 36 hours.
- The error will be reset once the test has been passed successfully.

Manual:

- Actuate the switch in the battery case for 5 seconds.
- Release the switch.
- Actuate the switch twice within 10 seconds for a duration of 2 seconds.
- Close the battery case.
- Resetting of the capacity error will be indicated on the LED display for 5 seconds by blinking red/green.
- The error is reset.

Further error indications will be reset directly after troubleshooting.

If the error cannot be eliminated using the mentioned procedures:

- Contact manufacturer.

For fast processing, have the following information ready:

- Type and serial number
- Purchase information
- Error description
- Intended use (in particular input / output wiring)

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11 Maintenance and repair



WARNING

Risk of electric shock or malfunctioning of the device due to unauthorized work!
Non-compliance can result in severe injuries and material damage.

- Work performed on the device must only be carried out by appropriately authorized and qualified electricians.

11.1 Maintenance



Observe the relevant national regulations in the country of use.

- Determine the type and extent of inspections in compliance with the relevant national regulations.
- Adapt inspection intervals to the operating conditions.

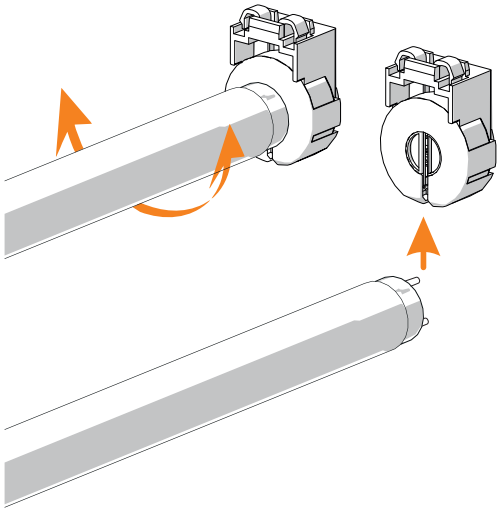
The following tests and measures must be carried out during regular maintenance.

Check	Measures
the permissible ambient temperature	If exceeding the permissible ambient temperature or falling below the device must be taken out of operation.
the enclosure components for formation of cracks and damage.	Replace the exchangeable enclosure components. If the enclosure components are non-exchangeable, the device must be taken out of operation.
its intended use	If the device is not used according to its intended use, it must be taken out of operation.
if the conductors are clamped properly	clamp loose conductors tightly.
the cables for ageing and damage	replace damaged or aged cables.
the seals for ageing and damage	replace damaged, aged and porous seals and completely change enclosure components with foamed seal.

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11.1.1 Replacement of lamps

i	**Only use fluorescent lamps with pins made of brass.**

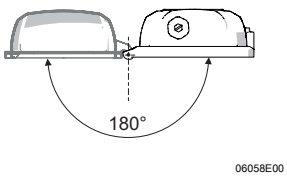


- Insert both lamp bases of the lamp into the holder slots as far as possible.
- Put the lamp into operating position by turning it to the right or to the left.
- Dismounting is carried out in reverse order.

Note:

- The lamp bases must be undamaged.
- The holders have a springy length compensation of 2.5 mm each.
- Observe the fit of the lamp; the lamp fit will be locked after turning the lamp.
- Replace the lamps in due time.
- Observe the service life specified by the manufacturer.
- EOL- safety shutdown: The EB switches off the lamp at the end of the service life.

11.1.2 Replacing the luminaire cover

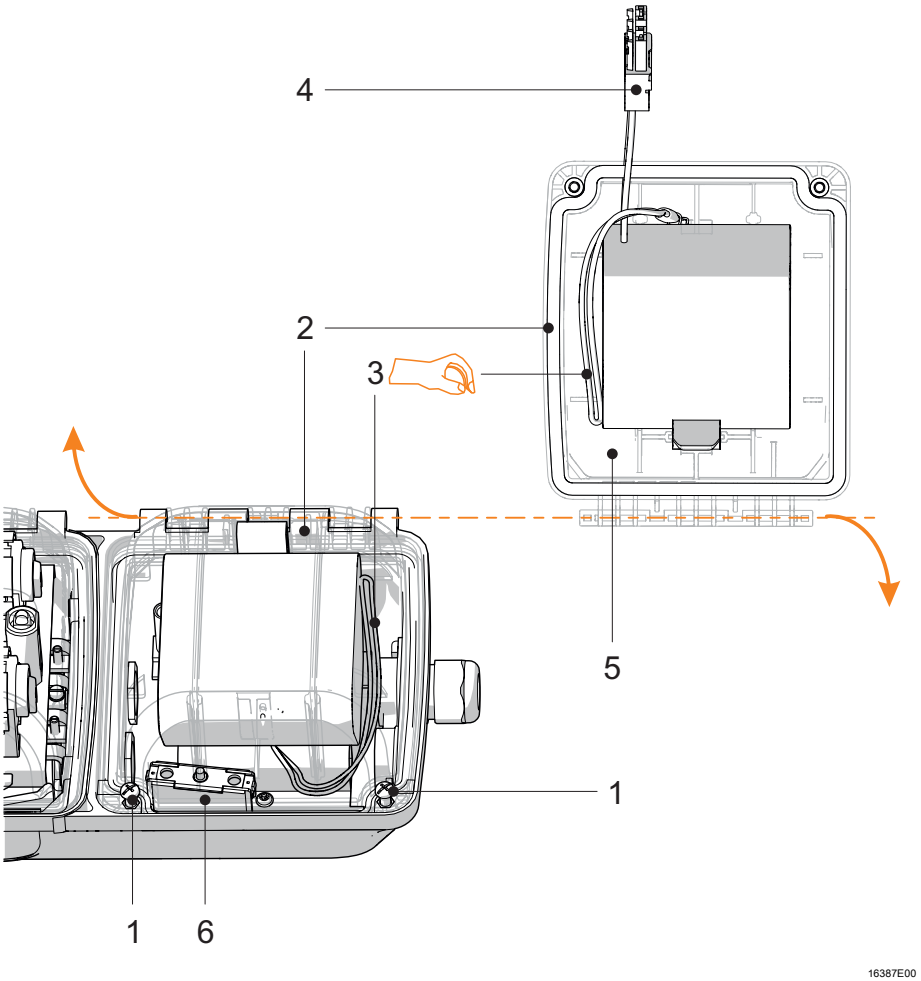


- Open the luminaire.
- Swivel the translucent cover backwards by 180°.
- Lift the translucent cover to detach it from the hinge.
- Insert new translucent cover into the hinge.
- All hinges must engage properly.
- Close the luminaire.
- Observe safety notes!

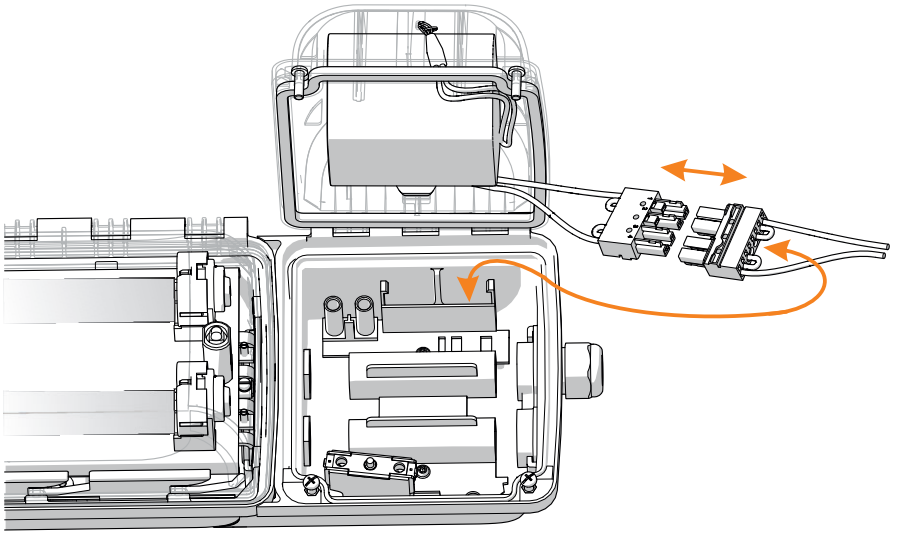
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11.1.3 Battery replacement

	WARNING
EX	Danger due to sparking! Explosion protection is impaired! • Carry the battery cover with built-in battery secured on the wrist. • Put the strap of the battery case around the wrist.



- Loosen the screws (1) (cross head H2) of the battery cover.
- Open the battery case.
- The switch (6) disconnects the battery circuit.
- Secure the battery cover with built-in battery on the wrist using the strap (3).



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- Remove the battery plug from the chamber.
- Disconnect the battery plug (4).
- Take off the battery cover with built-in battery (5).
- Put in the new battery cover with built-in battery (5).
- Connect the battery plug (4).
- Loosen the strap (3) from the wrist and store it in the battery case.
- Close the battery case and ensure that the conductors do not get jammed.
- Tighten the screws (1) (cross head H2) firmly (2 Nm).

11.2 Cleaning

NOTE
The luminaire is marked with the warning **"Clean with damp cloth only"**.

- Clean the device only with a damp cloth.
- Use water or mild cleaning agents.
- Do not use abrasive, scratching and aggressive detergents or solvents.

11.3 Returning the device

Use the "Service form" to return the device when repair/service is required.

- Download the service form and fill it out.
- Send the device along with the service form in the original packaging to original manufacturer.

EN

12 Disposal

- Observe national and local regulations and statutory regulation regarding disposal.
- Separate materials when sending it for recycling.
- Ensure environmentally friendly disposal of all components according to the statutory regulations.

	CAUTION
	Danger due to chemical reactions! Human health and the environment are at risk! Batteries • collect them separately • dispose of them in controlled fashion • do not dispose of them in the domestic waste • return them to public collection points or to the supplier

13 Accessories and Spare parts

NOTE
Malfunction or damage to the device due to the use of non-original components. Non-compliance can result in material damage. • Use only original accessories and spare parts from Larson Electronics.

	Figure	Description	Art. no.	Weight kg
Battery set	 16332E00	Battery cover with built-in battery. Gas-tight NiCd battery; 7 Ah / 6 V		

	For others, see data sheet on homepage www.larsonelectronics.com.