



## Emergency Luminaire with LED

Series EXLUX 6409/1



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# 1 General Information

## 1.1 Manufacturer

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## 1.2 Information regarding the operating instructions

ID-No.: 260520 / 640960300090  
Publication Code: 2017-07-25-BA00-III-en-01

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

## 1.3 Further documents





- Data sheet
- For further languages, see [www.stahl-ex.com](http://www.stahl-ex.com).

## 1.4 Conformity with standards and regulations

See certificates and EU Declaration of Conformity: [www.stahl-ex.com](http://www.stahl-ex.com).  
The device has IECEx approval. See IECEx homepage: <http://iecex.iec.ch/>  
Further national certificates can be downloaded via the following link:  
<http://www.r-stahl.com/downloads/certificates.html>.

## 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



### 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

	<b>DANGER</b> Danger to persons Non-compliance with the instruction results in severe or fatal injuries to persons.
	<b>WARNING</b> Danger to persons Non-compliance with the instruction can result in severe or fatal injuries to persons.
	<b>CAUTION</b> Danger to persons Non-compliance with the instruction can result in light injuries to persons.
<b>NOTICE</b>	
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 marking according to the currently applicable directive.
	According to marking, device approved for hazardous areas.

## 3 Safety notes

### 3.1 Operating instructions storage

- Read the operating instructions carefully.
- Store the operating instructions 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 6409 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 21, 22 and in the safe area

### 3.4 Modifications and alterations

	<b>DANGER</b>
	Explosion hazard due to modifications and alterations to the device! Non-compliance results in severe or fatal injuries. <ul style="list-style-type: none"> <li>• Do not modify or alter the device.</li> </ul>

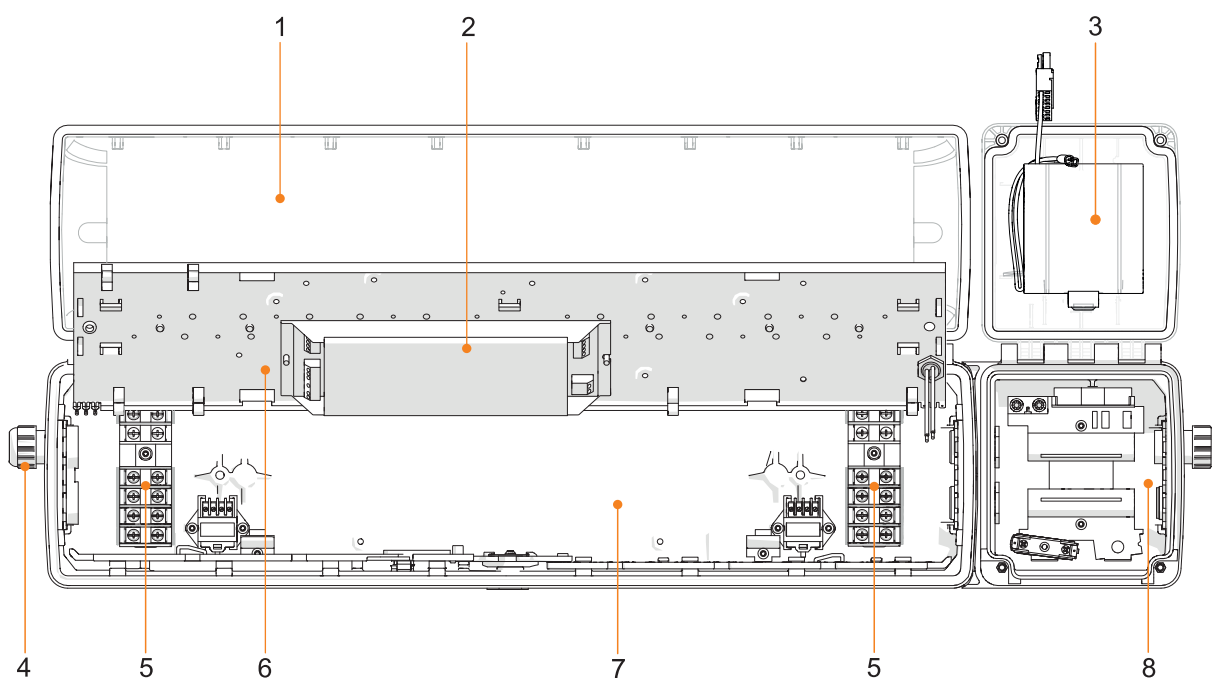
## 4 Function and device design

### 4.1 Function

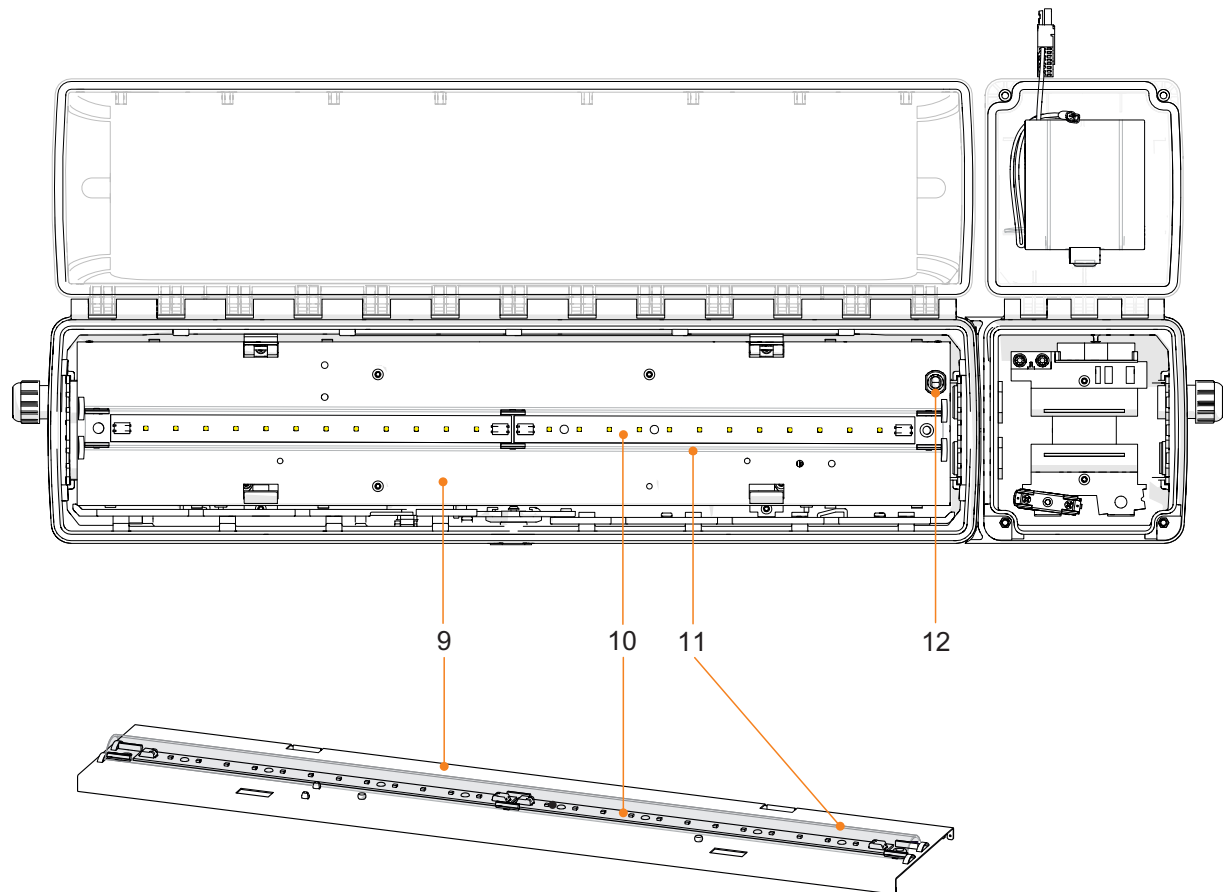
	<b>DANGER</b>
	<p>Explosion hazard due to improper use! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> <li>• Use the device only in accordance with the operating conditions described in these operating instructions.</li> <li>• Use the device only for the intended purpose specified in these operating instructions.</li> </ul>

- 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 (optional) when the luminaire is opened
- weekly functional test, permanently integrated
- annual rated operating time test

### 4.2 Device design



19191E00



18638E00

1 - Translucent cover	7 - Luminaire enclosure
2 - Control gear	8 - Battery enclosure
3 - Battery	9 - Mounting plate (top side)
4 - Cable gland	10 - LED PCB
5 - Connection terminal	11 - Diffuser
6 - Mounting plate (bottom side)	12 - LED indicator

## 5 Technical data

### Explosion Protection

#### Global (IECEEx)

##### Gas and dust

IECEEx IBE 16.0047  
Ex dc ec IIC T4 Gc  
Ex tc IIIC T100°C Dc  
Ex tb op is IIIC T100°C Db

#### Europe (ATEX)

##### Gas and dust

IBExU 16 ATEX 1233  
II 3 G Ex dc ec IIC T4 Gc  
II 3 D Ex tc IIIC T100°C Dc  
II 2 D Ex tb op is IIIC T100°C Db

#### Certifications and certificates

##### Certificates

IECEEx, ATEX

### Technical Data

#### Electrical data

##### Control gear

AC: 110 V ... 240 V  $\pm 10\%$ ; 50 ... 60 Hz

	6409/12..-1..-...-...-		6409/14..-1..-...-...-	
<b>Power consumption [W]</b>	28		52	
<b>Voltage [V]</b>	230	110	230	110
<b>Frequency [Hz]</b>	50	60	50	60
<b>Power factor</b>	$\geq 0.90$	$\geq 0.98$	$\geq 0.95$	$\geq 0.99$
<b>THD [%]</b>	$\leq 12.5$	$\leq 12.5$	$\leq 7$	$\leq 8$
<b>Typ. rated operational current [A]</b>				
LEDs off, battery conservation mode	0.05	0.05	0.05	0.05
LEDs on, battery conservation mode	0.14	0.26	0.24	0.48
LEDs off, battery charging mode	0.06	0.08	0.06	0.08
LEDs on, battery charging mode	0.14	0.28	0.24	0.50

##### Inrush current

$I_{peak} = 62\text{ A}$ ;  $\Delta t = 122\text{ }\mu\text{s}$   
maximum number of luminaires per miniature circuit breaker at 230 V:

Type	10 A	16 A	20 A	25 A
<b>B</b>	7	11	14	17
<b>C</b>	11	19	23	29
<b>K</b>	23	38	47	59



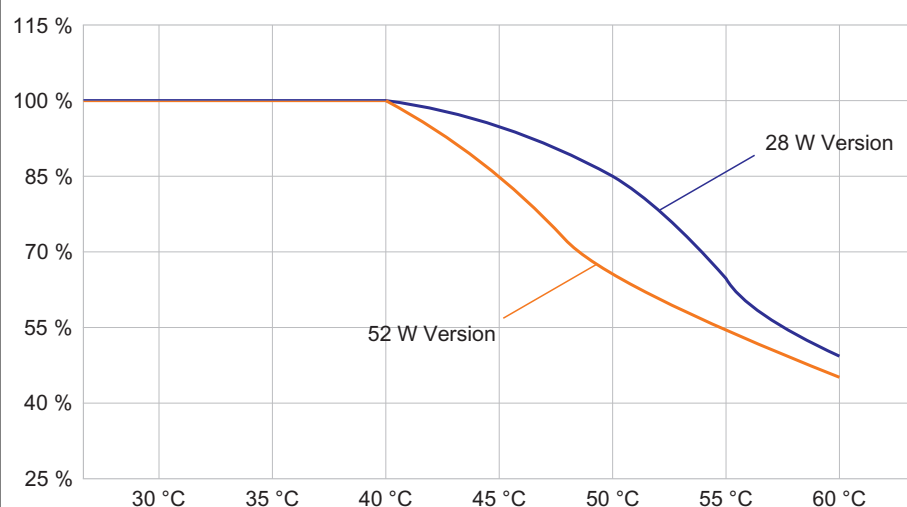
## Technical Data

### Luminous characteristics

	6409/12...-00	6409/14...-00	6409/12...-01	6409/14...-01
Power consumption [W]	28	52	28	52
Colour rendering [CRI]	≥ 80	≥ 80	≥ 70	≥ 70
Colour temperature [K]	5,000	5,000	5,700	5,700
<b>without diffuser</b>				
Luminous flux [lm]	typ. 3,100	typ. 6,200	typ. 3,400	typ. 6,800
Luminaire efficacy [lm/W]	typ. 111	typ. 119	typ. 121	typ. 131
<b>with diffuser</b>				
Luminous flux [lm]	typ. 2,550	typ. 5,100	typ. 2,800	typ. 5,600
Luminaire efficacy [lm/W]	typ. 91	typ. 98	typ. 100	typ. 108

Values apply to  $T_a = +25^\circ\text{C}$ .

Luminous flux decline vs. ambient temperature:



19585E00

### Service life

#### Service life

	$T_a \leq 25^\circ\text{C}$	$T_a \leq 45^\circ\text{C}$	$T_a \leq 60^\circ\text{C}$
$L_{70}B_{10}C_{10}$	100,000 h	90,000 h	50,000 h

$L_xB_yC_z$

At the end of the Service Life:

- Luminous flux decrease to "x" percent
- max. "y" percent of all the light fittings fall below "x"
- max. "z" percent of all the light fittings break down completely

## Technical Data

### Ambient conditions

#### Ambient temperature

- 30 ... + 60 °C (1, 2)	without through wiring
- 30 ... + 55 °C (1, 2)	with through wiring; $I_N \leq 10$ A
- 30 ... + 50 °C (1)	with through wiring; $I_N \leq 16$ A

#### (1) Rated operating time during emergency light operation

is guaranteed within an ambient temperature range of -5 °C ... 50 °C. This also applies to charging and discharging of the battery. The rated operating time might be reduced if used outside this temperature range.

#### (2) Battery service life

is guaranteed within an ambient temperature range of -30 °C ... 50 °C according to IEC/EN 60598-2-22.

### Mechanical data

Degree of protection IP66 / IP67 (IEC 60598)

Protection class I (with internal PE connection)

Impact strength (IK code) IK10 (IEC 62262)

#### Material

##### Enclosure

Enclosure Polyester resin, glass fibre-reinforced

Colour colour grey, similar to RAL 7035

Translucent cover Polycarbonate

Seal 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

### 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 1/2"  
max. 2 drilled holes for NPT 3/4"

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<sup>2</sup> (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<sup>2</sup> (solid);  
2 x 1.5 ... 4 mm<sup>2</sup> (finely and extra finely stranded)

## Technical Data

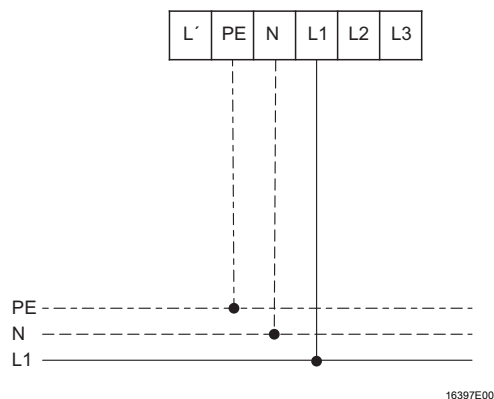
Through wiring	Through wiring	<b>Standard luminaire</b> Luminaires are equipped with internal through wiring. Ingoing and outgoing leads can be connected to the opposite sides. Terminals: see techn. data Wiring cross section: 2.5 mm <sup>2</sup> for max. 16 A.														
	without	<b>Optional</b> On the connection side, there are 2 cable entries M25 x 1.5 for ingoing and outgoing wiring of the connection line (ingoing and outgoing leads on one side).														
Assembly		<b>Standard luminaire</b> 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 L = 700 mm: 320 ... 480 mm; L = 1310 mm; 670 ... 930 mm)														
Control gear		In case of power failure the LEDs are supplied by the battery														
Emergency light mode		at optimal ambient temperature of the battery:														
Rated operating time		<table> <tr> <th rowspan="2">Battery capacity</th><th rowspan="2">Rated operating time</th><th colspan="2">Emergency light output</th></tr> <tr> <th>28 W</th><th>52 W</th></tr> <tr> <td rowspan="2">7 Ah</td><td>1.5 h</td><td>58 %</td><td>31 %</td></tr> <tr> <td>3.0 h</td><td>27 %</td><td>17 %</td></tr> </table>		Battery capacity	Rated operating time	Emergency light output		28 W	52 W	7 Ah	1.5 h	58 %	31 %	3.0 h	27 %	17 %
Battery capacity	Rated operating time	Emergency light output														
		28 W	52 W													
7 Ah	1.5 h	58 %	31 %													
	3.0 h	27 %	17 %													
Switchover voltage		from mains to battery operation for $U < 0.83 \times U_N$ from battery to mains operation for $U > 0.88 \times U_N$														
Battery set		Gas-tight NiCd battery														
Version		6 V														
Operating voltage		7 Ah														
Capacity		When opening the battery enclosure, the connection between the battery and the control gear is disconnected by means of a switch.														
Replacing the battery set		The battery set can be replaced after disconnecting the plug-in contacts.														

## 6 Engineering

### 6.1 Mains operation

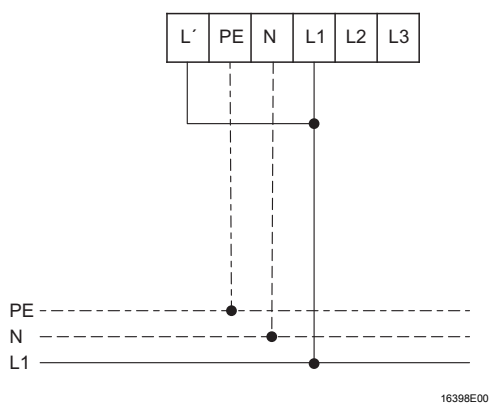
#### 6.1.1 Stand-by operation

- The light fitting is switched off.



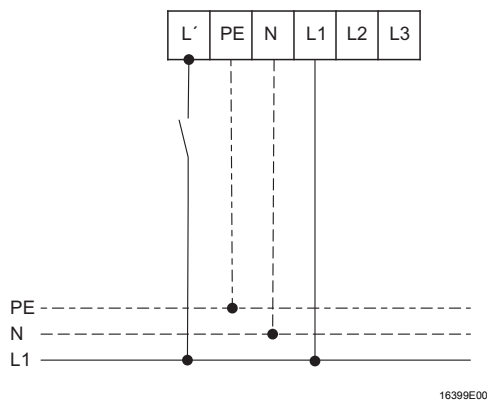
#### 6.1.2 Continuous operation

- The light fitting is switched on.



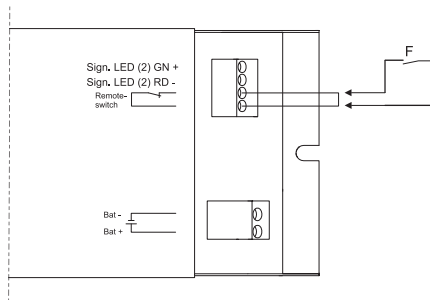
#### 6.1.3 Normal lighting operation

- 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 „Remote-switch“ of the control gear.



19192E00

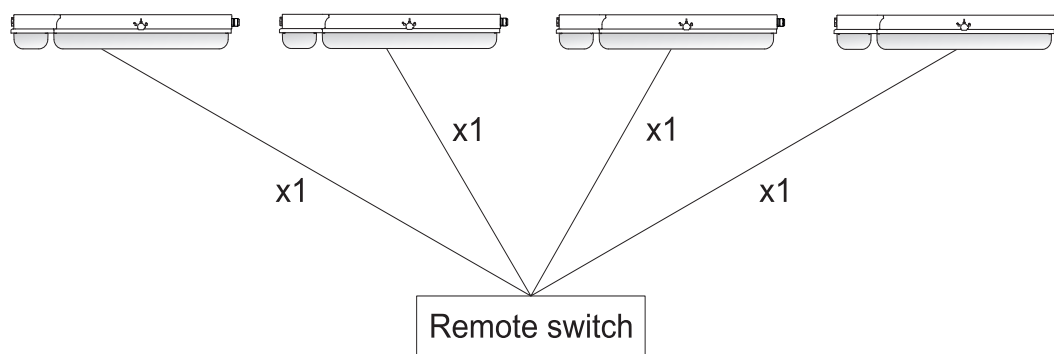
	Remote switch is closed	Remote switch is opened
Power supply operation	Switching on the luminaire depending on operation mode	Switching on the luminaire depending on operation mode
Power failure	Emergency light function	No emergency light function

### 6.2.1 Connection version remote switch

The remote switch is directly connected to the control gear.

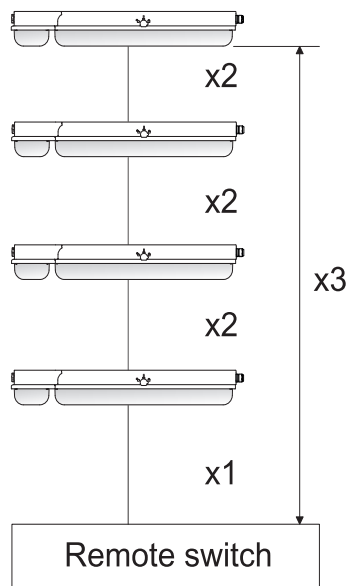
The following connection versions are possible:

#### Point-to-point connection



18474E00

## Linear connection



18473E00

The following conductor specifications must be observed during connection.

	Point-to-point connection	Linear connection
maximum conductor length		
x 1	500 m	100 m
x 2		50 m
x 3		500 m
maximum number of light fittings	50	30
Cable cross section	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>

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

#### Recommendation:

- Store battery at an ambient temperature of + 5 °C to + 25 °C and a relative humidity of 65 ± 5 %.

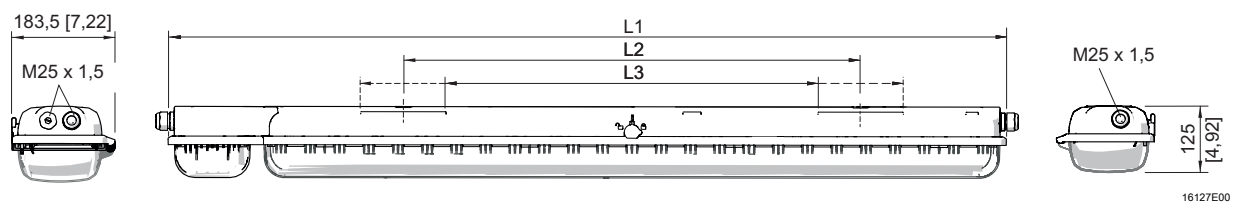
## 8 Mounting and installation

	DANGER
	<p>Explosion hazard due to incorrect installation of the device! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> <li>• Carry out installation strictly according to the instructions and national safety and accident prevention regulations to maintain the explosion protection.</li> <li>• 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).</li> <li>• The device must only be installed by trained qualified personnel who is familiar with the relevant standards.</li> </ul>

NOTICE
<p>Malfunction or device damage caused by condensation. Non-compliance can result in material damage!</p> <ul style="list-style-type: none"> <li>• operate the luminaire continuously or periodically over extended periods of time.</li> <li>• avoid thermal bridges.</li> </ul>

### 8.1 Dimensions / fastening dimensions

**Dimensional Drawings** (All dimensions in mm [inches]) - Subject to alterations



Dimensions Luminaire

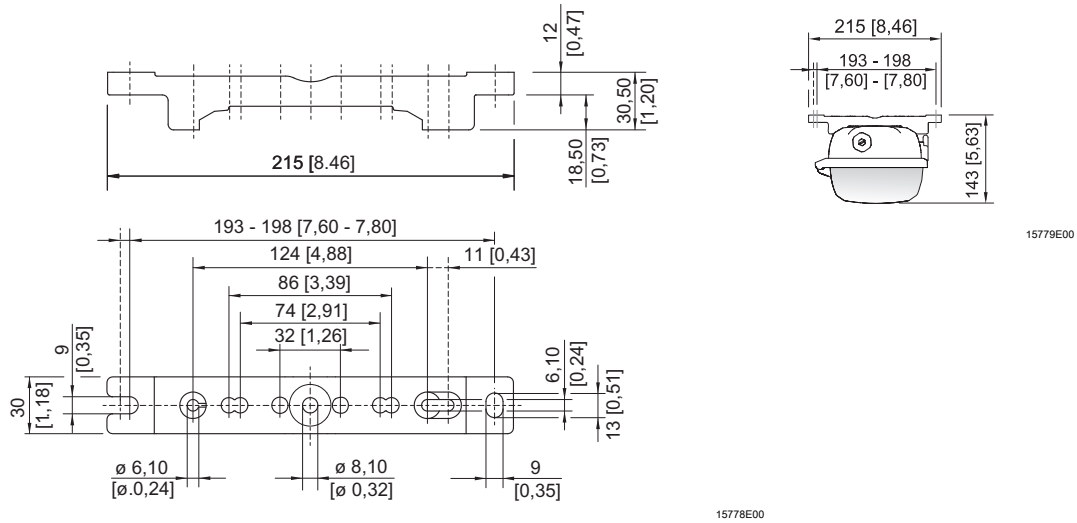
	28 W	52 W
L1	857 [33.74]	1467 [57.76]
L2 <sup>1)</sup>	400 [15.75]	800 [31.50]
L3 <sup>2)</sup>	320 ... 480 [12.60 ... 18.90]	670 ... 930 [26.38 ... 36.61]

<sup>1)</sup> fixed mounting distance

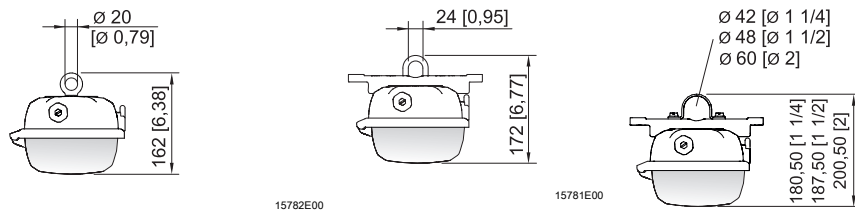
<sup>2)</sup> variable mounting distance

**EXLUX 6409/1**

## Dimensional drawings for assembly parts and accessories (all dimensions in mm [inches]) - Subject to alterations



### Mounting rail



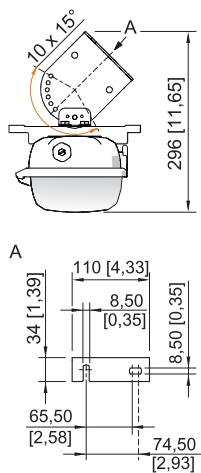
Ring bolt fitted in insert  
nut of the luminaire

Mounting bracket  
fitted in mounting  
rail

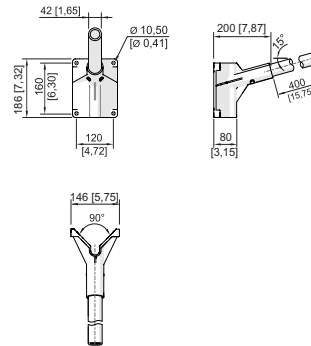
Pipe clamp fitted in mounting  
rail



## Dimensional drawings for assembly parts and accessories (all dimensions in mm [inches]) - Subject to alterations



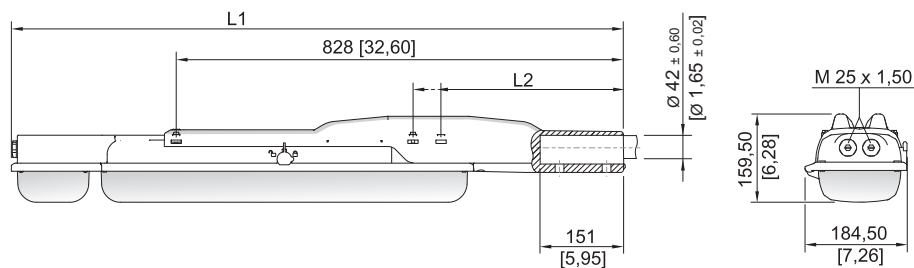
15780E00



03257E00

Wall mounting bracket  
fitted in mounting rail

Bracket for wall mounting with  
pipe section



17756E00

Dimen- sions	Luminaire	
	28 W	52 W
L1	1135 [44.69]	1744 [68.66]
L2	390 [15.35]	338 [13.31]

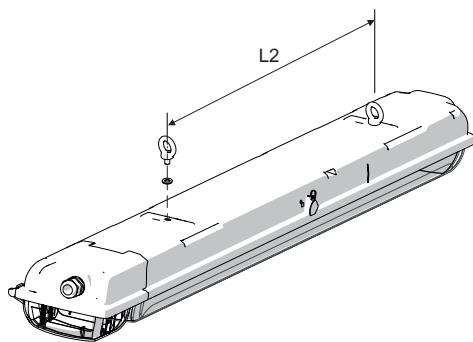
Linear luminaire EXLUX with pole mounting sleeve

## 8.2 Mounting / dismounting, operating position

	<b>DANGER</b>
	Explosion hazard due to electrostatic discharge Non-compliance results in severe or fatal injuries.
	Do not use the luminaire in strong charge generating environments!
	The following processes/activities should be avoided: <ul style="list-style-type: none"> <li>accidental friction</li> <li>particle currents</li> </ul>

<p><b>i</b></p>	<p>The luminaire is suitable for wall and ceiling mounting. In event of wall mounting in outdoor areas, avoid installation with central lock at top. The mounting position with upward light emission in outdoor areas is prohibited.</p>
<p><b>EX</b></p>	<p style="text-align: center;"><b>DANGER</b></p> <p>Explosion hazard due to inadmissible heating! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> <li>• Avoid external heat sources and/or direct sunlight (risk of change of temperature class or change of maximum permissible surface temperature).</li> <li>• Do not exceed the maximum ambient temperature due to external heat sources (premature failure of equipment).</li> </ul>

### Suspension at fixed mounting points

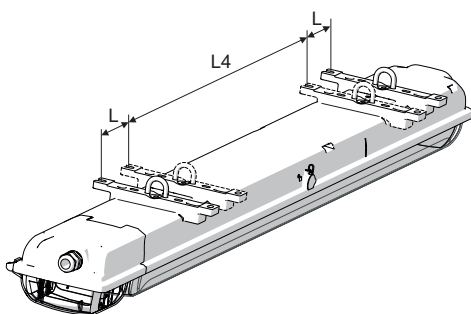


16324E00

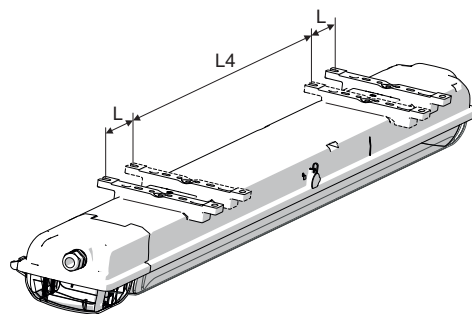
Version	L2 [mm]
28 W	400
52 W	800

max. screw-in depth 10 mm

### Suspension at movable mounting parts



16325E00



16326E00

#### Mounting bracket

Version	L4 [mm]	L [mm]
28 W	320	80
52 W	670	130

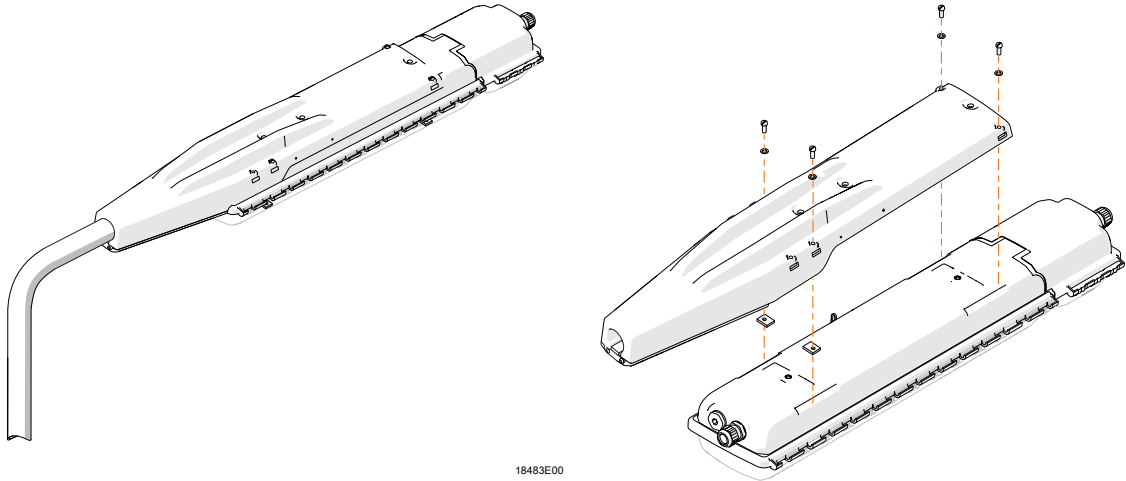
#### Top rail

Lateral mounting pockets for variable points of suspension.

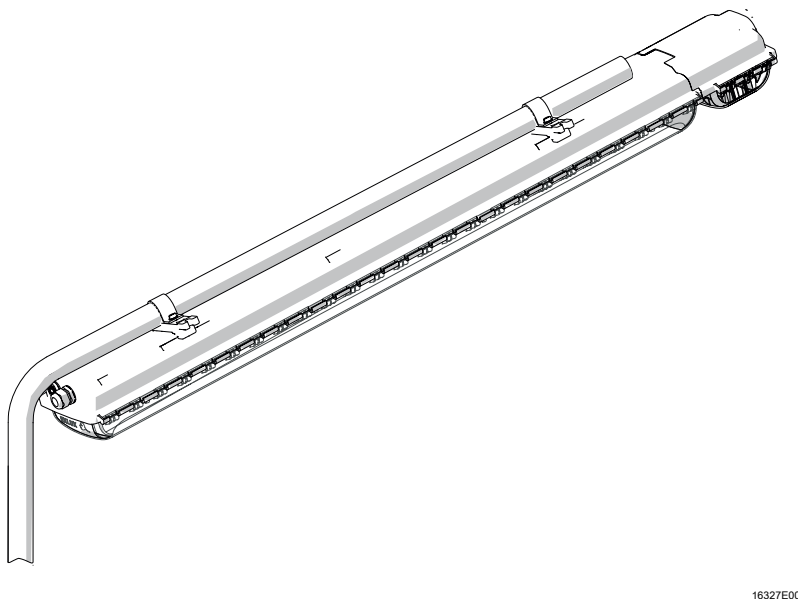


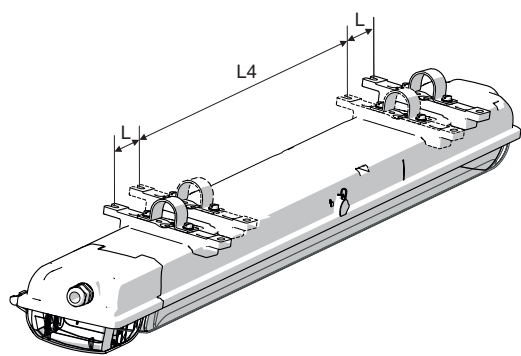
When mounting the luminaire using top rails, ensure that the mounting surface is flat. Otherwise, the enclosure might be mounted in a warped/twisted way. The result is leakage of the luminaire and difficulties in replacing the translucent cover.

### Pole mounting using pole mounting sleeve




### Pole mounting using pipe clamps





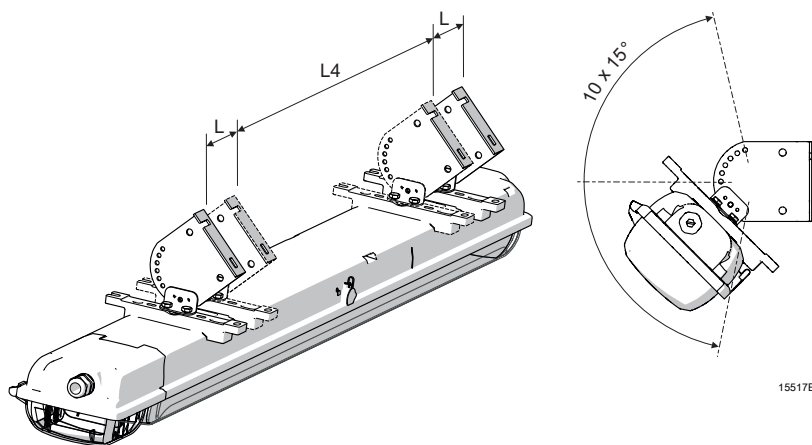
16328E00

Version	L4 [mm]	L [mm]
28 W	320	80
52 W	670	130



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

Wall bracket mounting



15517E00


15515E00


Version	L4 [mm]	L [mm]
28 W	320	80
52 W	670	130

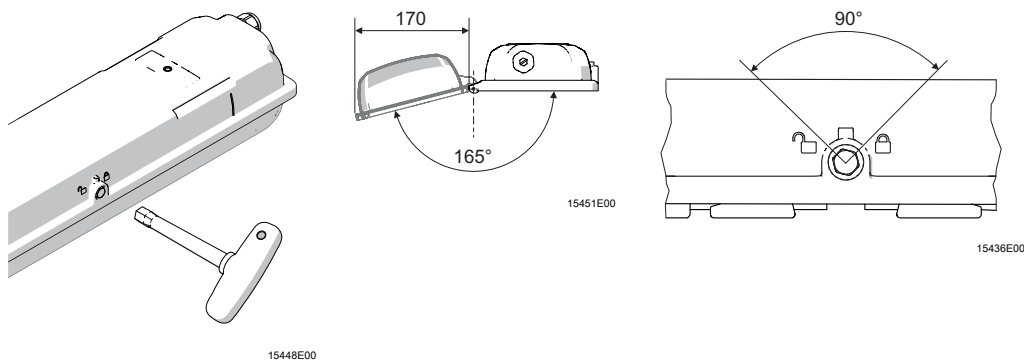


## 8.3 Installation

### 8.3.1 Opening and Closing of the Enclosure

	<p style="text-align: center;"><b>DANGER</b></p> <p>Risk of electric shock! Risk of fatal injuries!</p> <ul style="list-style-type: none"> <li>Luminaires without switch must not be opened when they are supplied with power (see information plate on the lock)!</li> </ul>
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	<p><b>Recommendation</b></p> <p>Opening and closing of the luminaire by using a socket wrench from R. STAHL Schaltgeräte GmbH.</p>
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- 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 (protection against dirt).

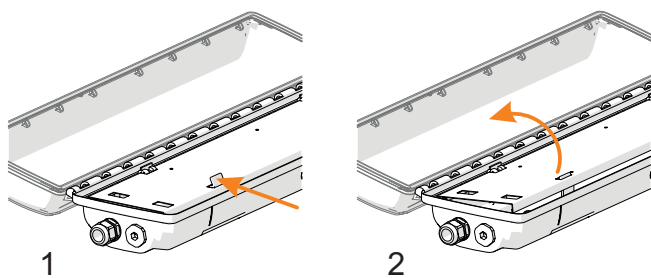
**Note:**

- Version without switch: Disconnect the luminaire from the power supply, secure it against being switched on again and open the battery box in order to disconnect the battery.
- 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.

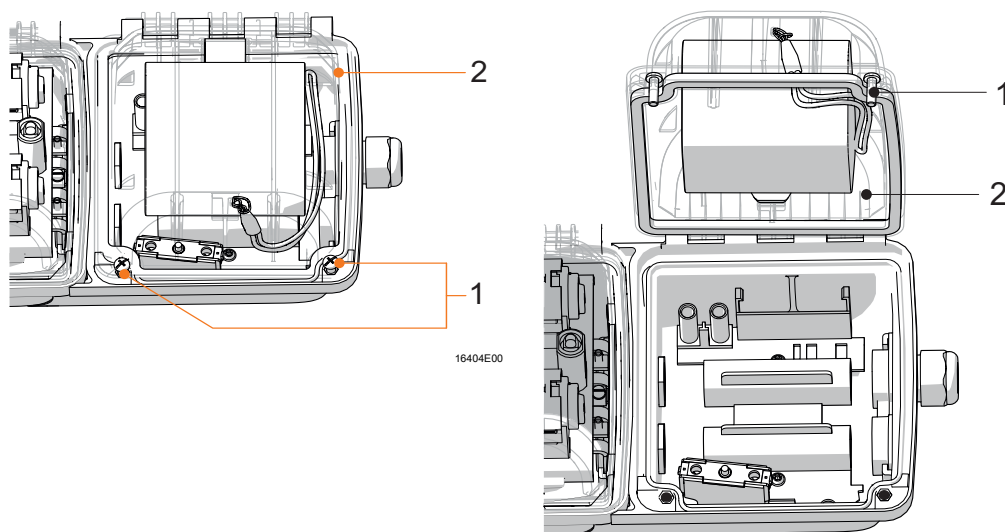
## Opening and closing the reflector plate



- 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.

15512E00

## Opening and closing the battery box



16404E00

16405E00

### 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 terminals: Firmly tighten screws (tightening torque 2 Nm, for unused clamping units 0.7 Nm)!

**Connection terminals****Standard:**

Spring clamp terminals

**Clamping range:**

0.75 ... 4 mm<sup>2</sup>

(2 free clamping units per pole available)

**Stripping length:**

10 ... 11 mm

**Optional:**

Screw terminals

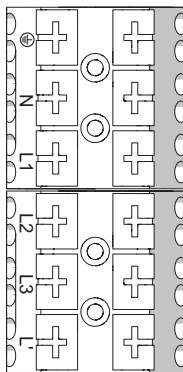
**Clamping range:**

2x 1.5 ... 4 mm<sup>2</sup> finely  
and extra finely stranded

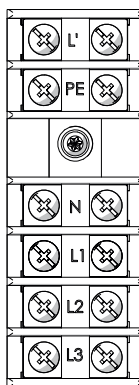
2x 1.5 ... 6 mm<sup>2</sup> solid

**Stripping length:**

10 ... 11 mm



16333E00



16408E00

L' = switched phase

L1 = charging phase

L2, L3 = phase

N = neutral conductor

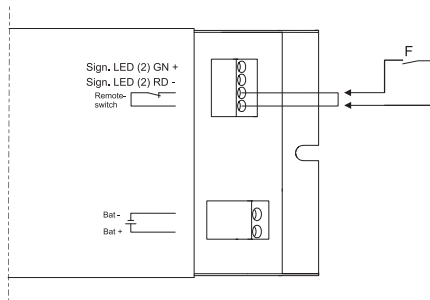
PE = protective conductor

**Through wiring of the mains supply connection****NOTICE**

Through wiring with 2.5 mm<sup>2</sup> cross section for max. 16 A.

## Connection of remote switch to control gear

Connecting the remote switch to the potential-free contact "Remote switch" of the control gear.



16333E00

**Clamping range:**

1.5 mm<sup>2</sup> solid, finely and extra finely stranded

**Stripping length:**

8.5 ... 9.5 mm

### 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 from R. STAHL Schaltgeräte GmbH.

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

**Luminaires with approved cable glands and stopping plugs; not supplied by R. STAHL Schaltgeräte GmbH**


WARNING	
	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

	<b>DANGER</b>
	<p>Explosion hazard due to incorrect installation! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> <li>• Check the device for proper installation and function before commissioning.</li> <li>• Comply with the national regulations.</li> </ul>

Before commissioning, ensure the following:

- Check the mounting and installation.
- Inspect enclosure for damage.
- If necessary, remove foreign bodies.
- If necessary, clean the connection chamber.
- Check if the conductors have been inserted correctly.
- Check if all screws and nuts have been tightened firmly.
- Check whether all the cable entries and stopping plugs have been tightened firmly.
- Check if all conductors have been clamped firmly.
- Check if the line voltage and the rated operational voltage are consistent.
- Check if the permissible conductor diameter for the corresponding cable entries have been used.
- Check if the device is closed according to regulations.
- Check if the battery is connected.

## 10 Operation

### 10.1 Operating Modes

#### Power supply operation

Stand-by operation	The luminaire is switched off regardless of normal lighting.
Continuous operation	The luminaire is switched on regardless of normal lighting.
Normal lighting operation	The light fitting is operated by normal lighting.

#### Emergency light operation:

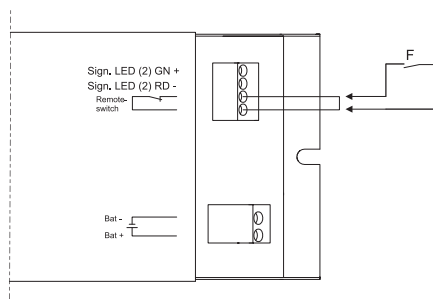
In the event of a power failure, the luminaire switches to emergency light operation. The luminaire is switched on regardless of the operation mode of the selected rated operating time.

#### Rated operating time

is 1.5 h or 3.0 h within the optimum temperature range depending on the variant (see chapter "Technical data").

#### Emergency light blocking

A remote switch for emergency light blocking can be connected to terminals „Remote-switch“ of the control gear.



19192E00

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

### 10.2 Functional and rated operating time 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 indicator. During a test the luminaire is switched on.

#### Function test

- starts within 24 hours after commissioning.
- is carried out every 7 days.

- takes 1 minute.
- checks the function of the LEDs and the battery.

#### Rated operating time test

- starts within 44 days after commissioning.
- is carried out once a year.
- checks the function and the operating time of the luminaire during emergency light mode.
- is repeated after 14 days if rated operating time test is faulty.

### 10.3 Indications

#### When connecting to the power supply

Initialisation within 10 seconds

Second	Description	
0 - 2	Function test LED indicator "green"	
2 - 4	Function test LED indicator "red"	
4 - 10	Status rated operating time test	LED indicator flashes green - rated operating time test active LED indicator off - rated operating time test deactivated

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

#### During power supply operation

Blinking: 1 second on, 1 second off


Flashing: 0.25 seconds on, 0.75 seconds off

LED indicator	State	Description
Green	Luminaire is ready for operation	
Blinking green	Luminaire is ready for operation	Function and rated operating time test activated
Red	Error	Battery is defective or electric circuit is interrupted
Blinking red	Error	Last function and/or rated operating time test faulty
Flashing red	Error	LEDs defective
Blinking green/red	Luminaire is ready for operation No emergency light operation	Emergency light operation is deactivated by remote switch
Flashing green/red	Luminaire is ready for operation	Reset signal detected


### During emergency light operation

The LED indicator is switched off.

## 11 Maintenance and repair

	<p style="text-align: center;"><b>WARNING</b></p> <p>Risk of electric shock or malfunctioning of the device due to unauthorized work! Non-compliance can result in severe injuries and material damage.</p> <ul style="list-style-type: none"> <li>• Work performed on the device must only be carried out by appropriately authorized and qualified electricians.</li> </ul>
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### 11.1 Maintenance

	<p>Observe the relevant national regulations in the country of use.</p>
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- 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

the permissible ambient temperature

the enclosure components for formation of cracks and damage.

its intended use

if the conductors are clamped properly  
the cables for ageing and damage

the seals for ageing and damage

#### Measures

If exceeding the permissible ambient temperature or falling below the device must be taken out of operation.

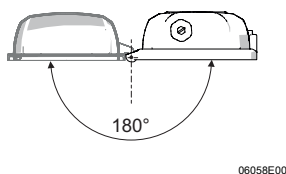
Replace the exchangeable enclosure components. If the enclosure components are non-exchangeable, the device must be taken out of operation.

If the device is not used according to its intended use, it must be taken out of operation.

clamp loose conductors tightly.  
replace damaged or aged cables.

replace damaged, aged and porous seals and completely change enclosure components with foamed seal.

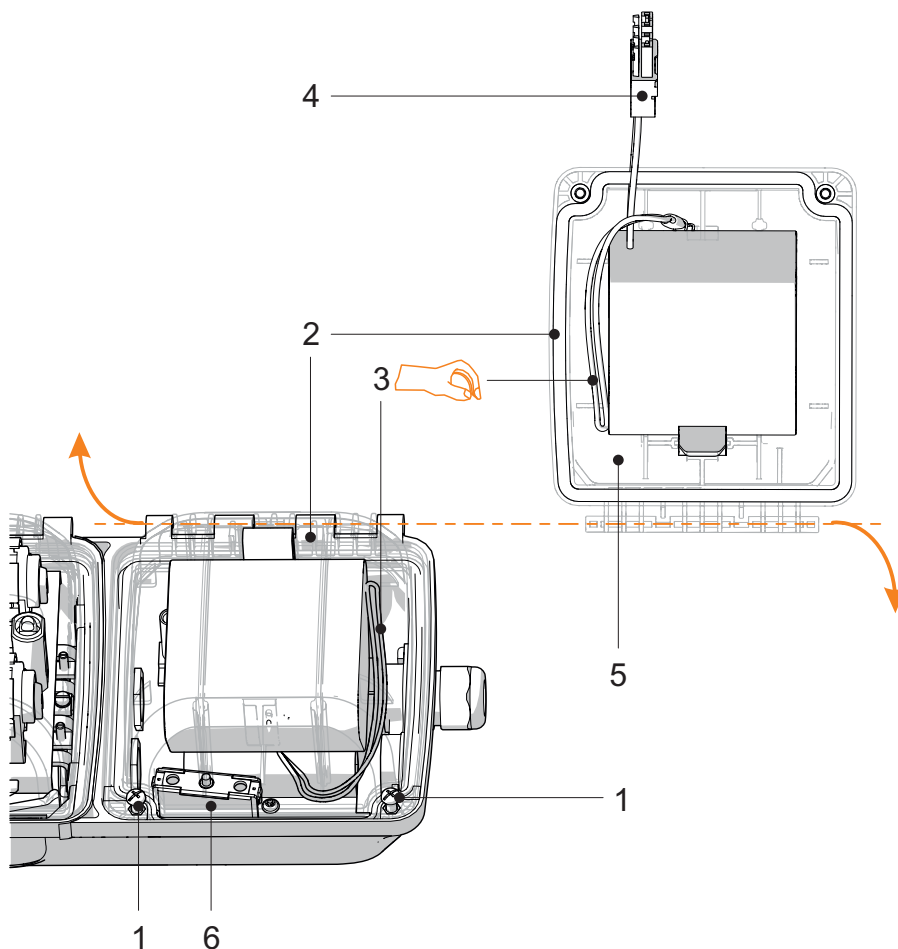
### 11.1.1 Replacing the luminaire cover



- 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!

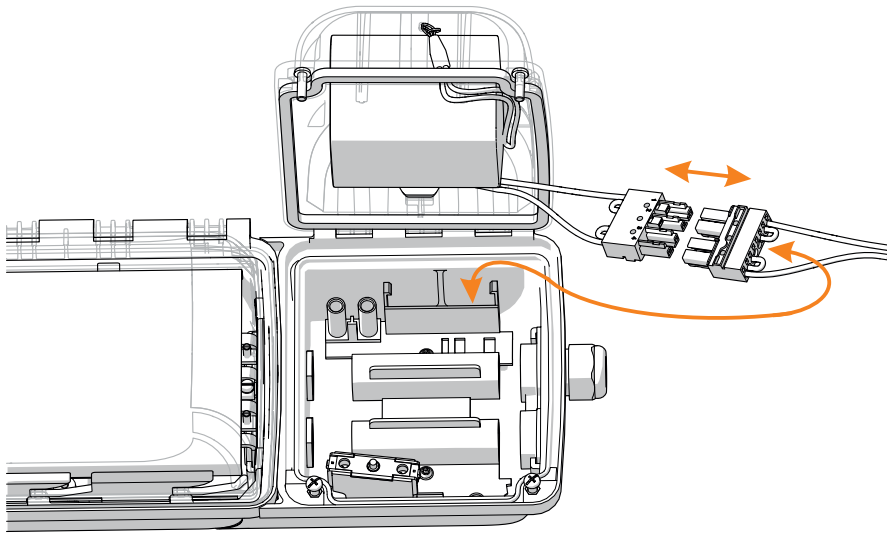
### 11.1.2 Battery replacement

	<p style="text-align: center;"><b>DANGER</b></p> <p>Explosion hazard due to explosive dust atmosphere! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> <li>• Do not replace or transport the battery in explosive dust atmosphere!</li> </ul>
	<p style="text-align: center;"><b>WARNING</b></p> <p>Danger due to sparking! Explosion protection is impaired!</p> <ul style="list-style-type: none"> <li>• Carry the battery cover with built-in battery secured on the wrist.</li> <li>• Put the strap of the battery case around the wrist.</li> </ul>



16387E00

- 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).



16406E00

- 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).

### Resetting the error indication "blinking red" after replacing the battery

<p><b>i</b></p>	<p>The error indication "blinking red" remains active after successfully replacing the battery.</p> <p><b>Deactivation:</b></p> <p>Automatic:</p> <ul style="list-style-type: none"> <li>• After replacing the battery a rated operating time test is carried out automatically within 14 days.</li> <li>• The error will be reset once this test has been passed successfully.</li> </ul> <p>Manual:</p> <ul style="list-style-type: none"> <li>• The line voltage must be switched on.</li> <li>• Actuate the switch in the battery box for 5 seconds.</li> <li>• Release the switch.</li> <li>• Actuate the switch twice within 10 seconds for a duration of 2 seconds.</li> <li>• Resetting of the error will be shown on the LED indicator for 5 seconds by blinking red/green.</li> <li>• The error is reset.</li> <li>• Close the battery box.</li> </ul>
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### 11.1.3 Troubleshooting

Refer to the following troubleshooting chart during troubleshooting:

Cause of error	Troubleshooting
The LEDs are defective.	Replace the mounting plate including LED and the control gear.
The control gear is defective.	Replace the mounting plate including LEDs and the control gear.
The switch is defective.	Replace the switch.

#### Red LED indicator

The battery is defective.	Replace the battery.
The switch in the battery box is defective.	Replace the switch.
The switch in the luminaire is defective.	Replace the switch.

#### LED indicator blinking red

The battery capacity is too low.	Replace the battery.
The LEDs are defective.	Replace the mounting plate including LED and the control gear.

The LED indicator lights up in green after troubleshooting.

If the error cannot be eliminated using the mentioned procedures:

- Contact R. STAHL Schaltgeräte GmbH.

For fast processing, have the following information ready:

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

### 11.1.4 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.
- Never clean the device with a strong water jet, e.g. using a high-pressure washer!




## 11.2 Returning the device

Use the "Service form" to return the device when repair/service is required. On the internet site "www.stahl-ex.com" under "Downloads > Customer service":

- Download the service form and fill it out.
- Send the device along with the service form in the original packaging to R. STAHL Schaltgeräte GmbH.

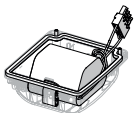
## 12 Disposal


- 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.

	<b>CAUTION</b>
	<p>Danger due to chemical reactions! Human health and the environment are at risk!</p> <p>Batteries</p> <ul style="list-style-type: none"> <li>• collect them separately</li> <li>• dispose of them in controlled fashion</li> <li>• do not dispose of them in the domestic waste</li> <li>• return them to public collection points or to the supplier</li> </ul>

## 13 Accessories and Spare parts

<b>NOTICE</b>	
<p>Malfunction or damage to the device due to the use of non-original components. Non-compliance can result in material damage.</p> <ul style="list-style-type: none"> <li>• Use only original accessories and spare parts from R. STAHL Schaltgeräte GmbH.</li> </ul>	

	Figure	Description	Art. no.	Weight kg
Battery set	 16332E00	Battery cover with built-in battery. Gas-tight NiCd battery; 7 Ah / 6 V	223532	1.195

	For others, see data sheet on homepage <a href="http://www.stahl-ex.com">www.stahl-ex.com</a> .
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**EU-Konformitätserklärung**  
*EU Declaration of Conformity*  
*Déclaration de Conformité UE*





**R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany**  
erklärt in alleiniger Verantwortung, declares in its sole responsibility, déclare sous sa seule responsabilité,

dass das Produkt: LED Notlichtleuchte  
that the product: LED Emergency light fitting  
que le produit: LED Luminaire de secours

Typ(en), type(s), type(s): 6409/1

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.  
is in conformity with the requirements of the following directives and standards.  
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) / Directive(s) / Directive(s)		Norm(en) / Standard(s) / Norme(s)
2014/34/EU 2014/34/EU 2014/34/UE	ATEX-Richtlinie ATEX Directive Directive ATEX	EN 60079-0:2012 + A11:2013 EN 60079-1:2014 EN 60079-7:2015 EN 60079-18:2015 EN 60079-28:2015 EN 60079-31:2014
Kennzeichnung, marking, marquage:		II 2 D Ex tb op is IIC T 100 °C Db II 3 G Ex dc ec IIC T4 Gc II 3 G Ex dc ec mc IIC T4 Gc II 3 D Ex tc IIC T 100 °C Dc  
EU-Baumusterprüfbescheinigung: EU Type Examination Certificate: Attestation d'examen UE de type:		IBExU 16 ATEX 1233 (IBExU Institut für Sicherheitstechnik GmbH Fuchsmühlenweg 7, 09599 Freiberg, Germany, NB 0637)
Produktnormen nach Niederspannungsrichtlinie: Product standards according to Low Voltage Directive: Normes des produit pour la Directive Basse Tension:		EN 60598-1:2015 EN 60598-2-22:2015 EN 62471:2008 EN 62493:2010
2014/30/EU 2014/30/EU 2014/30/UE	EMV-Richtlinie EMC Directive Directive CEM	EN 61547:2009 EN 55015:2013 + A1:2015 EN 61000-3-2:2014 EN 61000-3-3: 2013
2011/65/EU 2011/65/EU 2011/65/UE	RoHS-Richtlinie RoHS Directive Directive RoHS	EN 50581:2012

Waldenburg, 2017-01-26

Ort und Datum  
Place and date  
Lieu et date

i.V.

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