Operating instructions EN

Additional languages www.r-stahl.com

Linear Luminaire with LED

Series EXLUX L402/2

STAHL

EN

Contents

1 General Information 3
1.1 Manufacturer 3
1.2 Information regarding the operating instructions 3
1.3 Conformity with standards and regulations 3
2 Explanation of the symbols 4
2.1 Symbols in these operating instructions 4
2.2 Warning notes 4
2.3 Symbols on the device 5
3 Safety notes 5
3.1 Operating instructions storage 5
3.2 Safe use 5
3.3 Intended Use 5
4 Function and device design 5
4.1 Function 5
4.2 Device design 6
5 Technical data 8
6 Transport and storage 10
7 Mounting and installation 11
7.1 Dimensions / fastening dimensions 11
7.2 Mounting / dismounting, operating position 12
7.3 Installation 14
8 Commissioning 17
9 Maintenance, Overhaul, Repair 18
9.1 Maintenance 18
9.2 Repair 19
9.3 Returning the device 19
10 Disposal 19
11 Accessories and Spare parts 19

EN

EN

1 General Information

1.1 Manufacturer

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1.2 Information regarding the operating instructions

ID-No.: 259910 / L40260300020
Publication Code: 2017-09-18·BA00·III·en·00

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: www.r-stahl.com.

EN

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 energised parts

2.2 Warning notes

Warnings 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 or 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 05594E00	CE marking according to the current applicable directives.

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 luminaire L402/2 is equipment

- for stationary mounting
- can be used indoors and outdoors
- for lighting areas, work spaces and objects

4 Function and device design

4.1 Function

- for lighting areas, work spaces and objects

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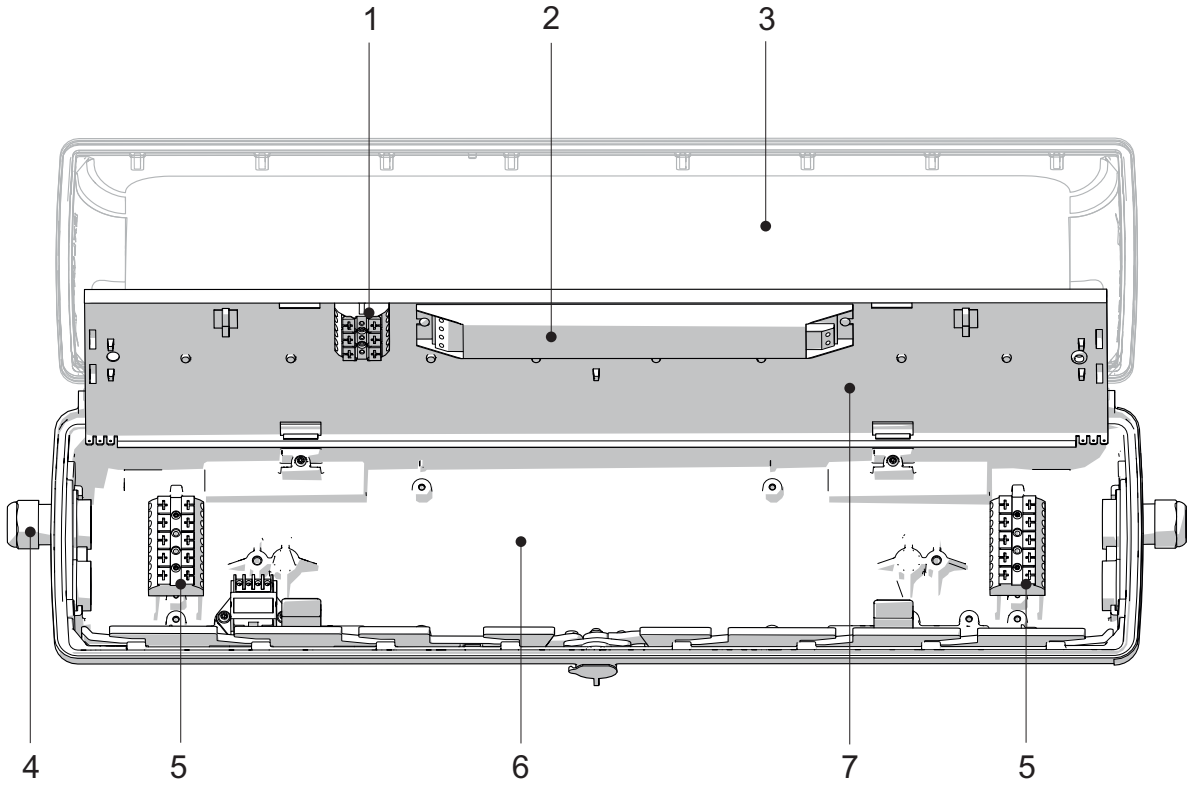
4.2 Device design



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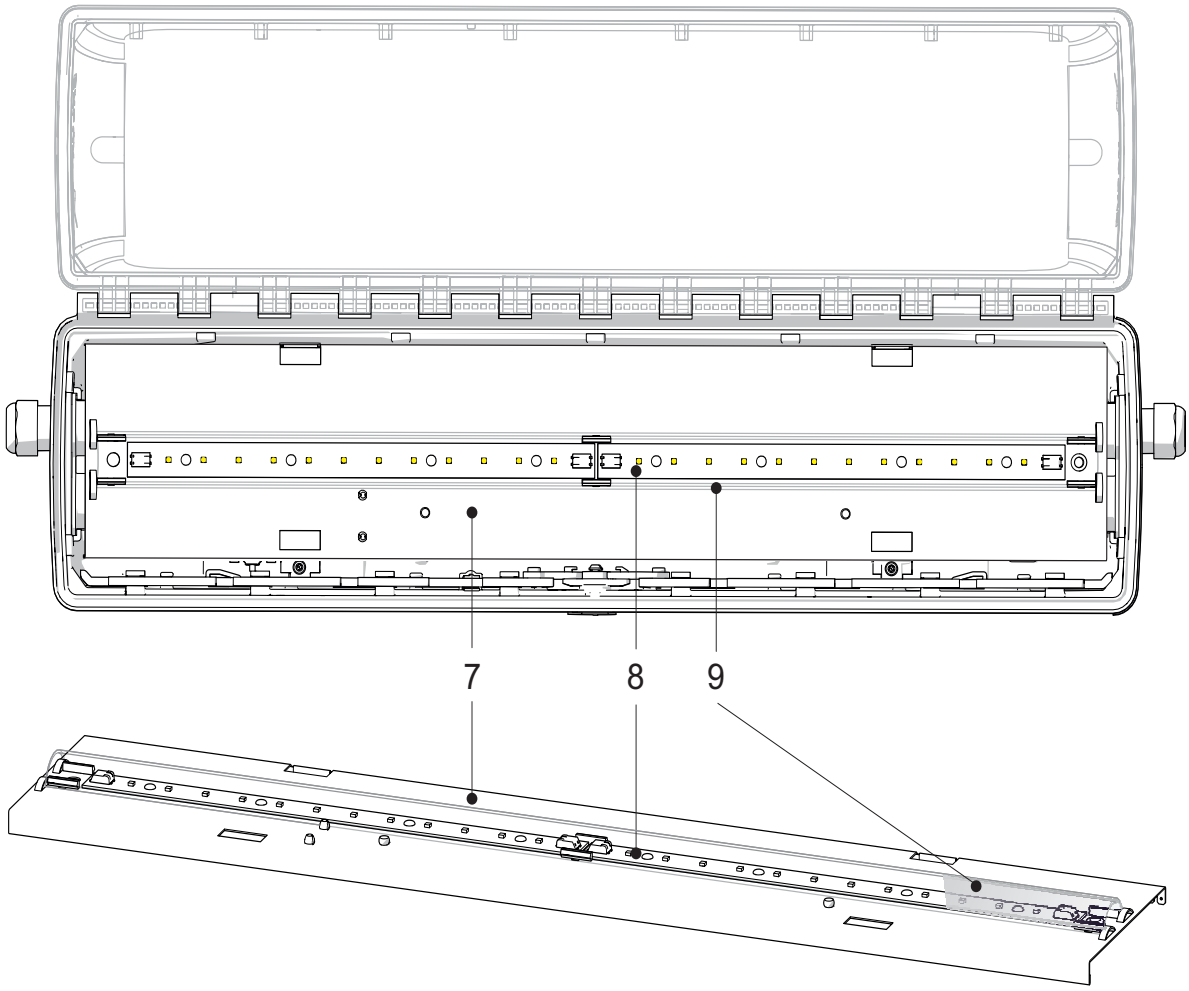

1 - Connection terminal - mounting plate (internal wiring)
2 - Ballast
3 - Translucent cover
4 - Cable gland
5 - Connection terminal - luminaire (customer wiring)
6 - Luminaire enclosure
7 - Mounting plate
8 - LED PCB
9 - Diffuser (optional / accessories)

EN

5 Technical data

Technical Data

Electrical data

Control gear	AC: 220 ... 240 V ±10 %; 50 ... 60 Hz DC: 200 ... 250 V ±10 %
Inrush current	I_{peak} = 53,5 A; Δt = 124,8 µs maximale Anzahl der Leuchten pro Leitungsschutzschalter:

Typ	10 A	16 A	20 A	25 A
B	8	12	16	20
C	13	21	27	33
K	27	43	54	67

Power factor	≥ 0.93
Degree of protection	IP66 / IP67 (IEC 60598)
Protection class	I (with internal PE connection)
Impact strength (IK code)	IK10 (IEC 62262)
Disconnection of the light	**When opening the luminaire** Switch with safety lock (optional); when opening the central lock all poles of the voltage supply to the ballast are disconnected; contacts of the switching element are positive opening, they can only be switched on again when the luminaire trough and the central locking system are closed.

Luminous characteristics

Luminous flux

	L402/21.2-5...-.0	L402/22.4-5...-.0	L402/21.2-5...-.1	L402/22.4-5...-.1
Power consumption [W]	28	52	28	52
Colour rendering [Ra]	≥ 80	≥ 80	≥ 70	≥ 70
Colour temperature [K]	5000	5000	5700	5700
without diffuser				
Luminous flux [lm]	3100	6200	3400	6800
Luminaire efficiency [lm/W]	111	119	121	131
with diffuser				
Luminous flux [lm]	2550	5100	2800	5600
Luminaire efficiency [lm/W]	91	98	100	108

Values apply to T_a = +25 °C.
Luminous flux decrease at T_a = +55 °C to 85% of the nominal value.

Technical Data

Ambient conditions

Operating temperature range	-30 ... +55 °C
Storage	-30 ... +75 °C

Service life

Service life

	$T_a \leq 25$ °C	$T_a \leq 45$ °C	$T_a \leq 55$ °C
$L_{70}B_{10}C_{10}$	100,000 h	100,000 h	50,000 h

$L_xB_yC_z$
At the end of the service life:

- Luminous flux decrease to "x" percent
- up to "y" percent of all luminaires fall below "x"
- up to "z" percent of all luminaires break down completely

Mechanical data

Material	
Enclosure	
Material	Polyester resin, glass fibre-reinforced
Colour	colour grey, similar to RAL 7035
Seal	Silicone foam gasket in the lamp cover
Translucent cover	Polycarbonate
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 glands 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 bores for M20, M25, NPSM ½'' max. 2 bores 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 5-pole: L1, L2, L3, 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 5-pole: L1, L2, L3, N, PE Clamping range: 2 x 0.75 ... 6 mm^2 (solid); 2 x 0.75 ... 4 mm^2 (finely and extra finely stranded)

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Technical Data

Through wiring	**Standard luminaire**	**with** Light fittings 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.
	Optional	**without** 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	**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 L = 700 mm: 320 ... 480 mm; L = 1310 mm; 670 ... 930 mm)

6 Transport and storage

- 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.

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7 Mounting and installation

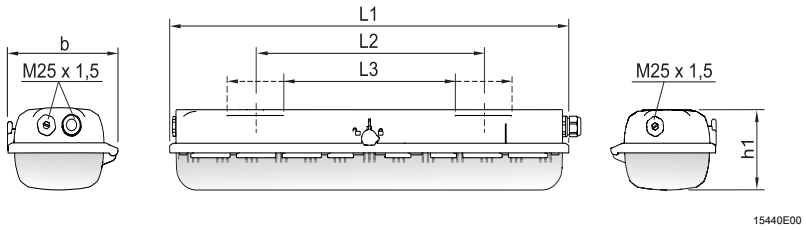
NOTICE

Malfunction or device damage caused by condensation.
Non-compliance can result in material damage!

- operate the luminaire continuously or periodically over extended periods of time.
- avoid thermal bridges.

7.1 Dimensions / fastening dimensions

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



Dimensions	Luminaire	
	28 W	52 W
L1	700 [27.56]	1310 [51.57]
L2 [1)]	400 [15.75]	800 [31.50]
L3 [2)]	320 ... 480 [12.60 ... 18.90]	670 ... 930 [26.38 ... 36.61]
b	184 [7.24]	184 [7.24]
h1	125 [4.92]	125 [4.92]

[1)] fixed mounting distance
[2)] variable mounting distance

EXLUX Standard luminaire

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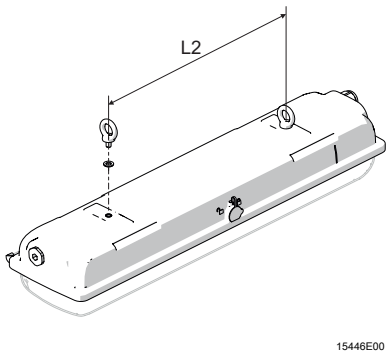
7.2 Mounting / dismounting, operating position

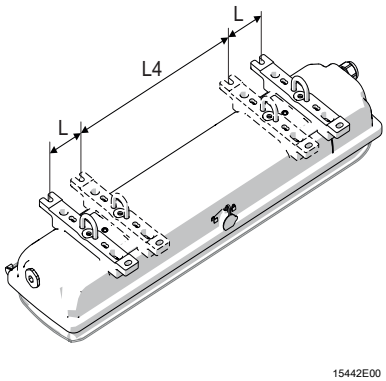
i	The luminaire is suitable for wall and ceiling mounting. In event of wall mounting in outdoor areas, avoid installation with central lock at top. The mounting position with upward light emission in outdoor areas is prohibited.

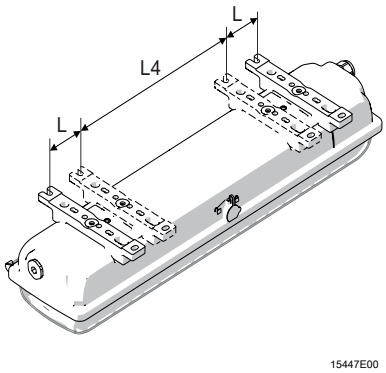
Suspension at fixed mounting points



Version	L2 mm [inch]	Screw-in depth mm
28 W	400 [15.75]	≤ 10 [0.39]
52 W	800 [31.50]	≤ 10 [0.39]

Suspension at movable mounting parts





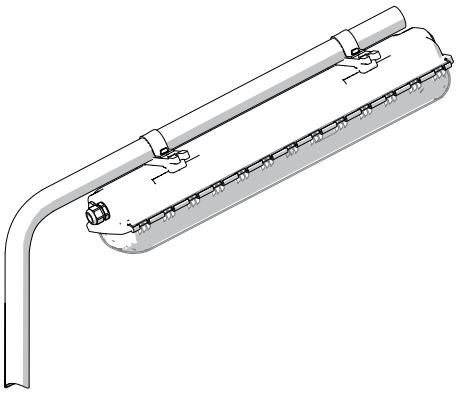
Mounting bracket Top rail

Lateral mounting pockets for variable points of suspension.

Version	L4 mm [inch]	L mm [inch]
28 W	320 [15.60]	80 [3.15]
52 W	670 [26.38]	130 [5.12]

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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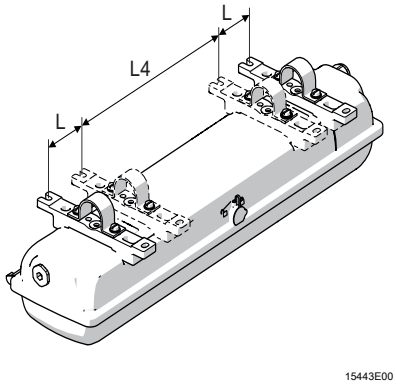

15443E00

Version	L4 mm [inch]	L mm [inch]
28 W	320 [12.60]	80 [3.15]
52 W	670 [26.38]	130 [5.12]

i	In case of point suspension using pipe clamps, R. STAHL Schaltgeräte GmbH does not guarantee the strength and tightness of the luminaire!

For pipe clamp mounting, use the solution of R. STAHL Schaltgeräte GmbH with integrated mounting rail providing reliable and stable four-point fixing!

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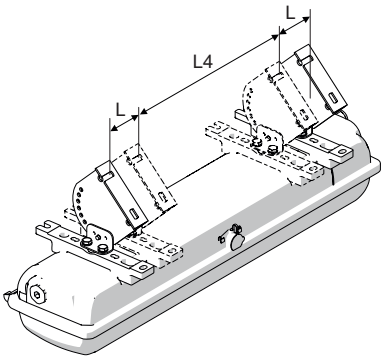
Wall bracket mounting



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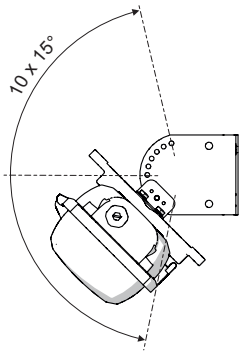


15517E00

Version	L4 mm [inch]	L mm [inch]
28 W	320 [12.60]	80 [3.15]
52 W	670 [26.38]	130 [5.12]

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.

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!

7.3 Installation

7.3.1 Opening and Closing of the Enclosure

DANGER

Risk of electric shock!
Risk of fatal injuries!

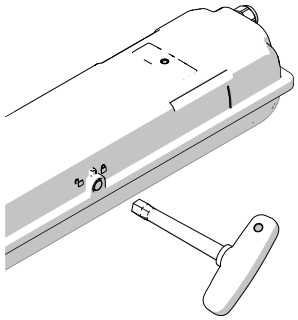
- Luminaires without switch must not be opened when they are supplied with power (see information plate on the lock)!

NOTICE

Danger due to electrostatic discharge.
Electronic components can be destroyed if touched.

- Do not touch the LED-PCBs!

Recommendation
Opening and closing of the luminaire by using a socket wrench from R. STAHL Schaltgeräte GmbH.



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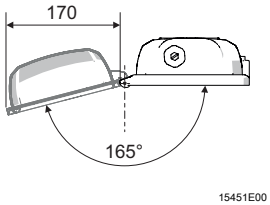
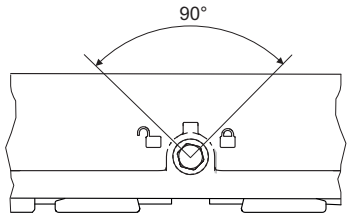


15451E00



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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 (dust protection).

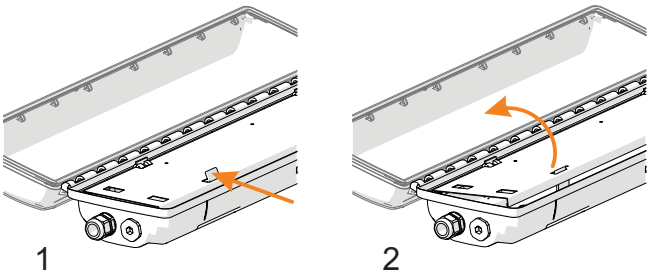
Note:

- 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.

EN

7.3.2 Electrical connections

Electrical connection

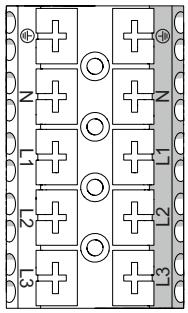
Observe the maximum clamping possibility of the connecting terminals (see chapter "Technical data").
For optional screw-type terminals, two conductors per clamping unit can be clamped (ingoing and outgoing wiring).

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

Connection terminals

Standard:	**Optional:**
Spring clamp terminals up to 4 mm^2	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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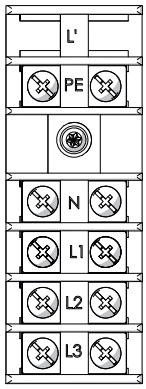

15438E00

L1, L2, L3 = Phase
N = Neutral conductor
PE = Protective conductor

Through wiring of the mains supply connection

NOTICE
Through wiring with 2.5 mm^2 cross section for max. 16 A.

7.3.3 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
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 cable glands and stopping plugs; not supplied by R. STAHL Schaltgeräte GmbH

Please note:

- 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!

8 Commissioning

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 LED assembly and the diffusor are clean.

EN

9 Maintenance, Overhaul, 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.

9.1 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.
the inside and outside of the luminaire for pollution	clean the luminaire.

9.1.1 Cleaning

- 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!

9.2 Repair

Repairs carried out on the mounting plate are not permitted. Replace the mounting plate completely in case of malfunction.

9.3 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.

10 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.

11 Accessories and Spare parts

NOTICE
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 R. STAHL Schaltgeräte GmbH.

	For accessories and spare parts, see data sheet on our homepage www.r-stahl.com.

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: *that the product:* *que le produit:*	LED Langfeldleuchte *LED Linear Luminaire* *LED Luminaire Linéaire*
Typ(en), *type(s), type(s):*	**L402/2...**

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)*
2014/35/EU **Niederspannungsrichtlinie** *2014/35/EU: Low Voltage Directive* *2014/35/UE: Directive Basse Tension*	EN 60598-1:2015 EN 62471:2008 EN 62493:2010
2014/30/EU **EMV-Richtlinie** *2014/30/EU EMC Directive* *2014/30/UE Directive CEM*	EN 61547:2009 EN 55015:2013 EN 61000-3-2:2014 EN 61000-3-3:2013
2011/65/EU **RoHS-Richtlinie** *2011/65/EU RoHS Directive* *2011/65/UE Directive RoHS*	EN 50581:2012

Waldenburg, 2017-09-25

Ort und Datum
Place and date
Lieu et date

i.V.

Dr. A. Kaufmann
Leiter BU Leuchten & Signalgeräte
Head of BU Lightings & Signalling
Directeur BU Eclairage & Appareils de signalisation

i.V.

J. Freimüller
Leiter Qualitätsmanagement
Director Quality Management
Directeur Assurance de Qualité