

Linear Luminaire with LED

Series EXLUX 6402/2



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1 General Information

1.1 Manufacturer

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1.2 Information regarding the operating instructions

ID-No.: 243137 / 640260300020 Publication Code: 2015-12-07·BA00·III·en·04

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.stahl-ex.com. 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
i	Tips and recommendations on the use of the device
	General danger
EX	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



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
C C 0130	CE marking according to the currently applicable directive.
05594E00	
$\langle \mathcal{E}_{X} \rangle$	According to marking, device approved for hazardous areas.
02198E00	

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 6402/2 is equipment

- for stationary mounting
- for use in Zones 21, 2, 22 and in the safe area
- · can be used indoors and outdoors
- · for lighting areas, work spaces and objects

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.



4 Function and device design



DANGER

Explosion hazard due to improper use!

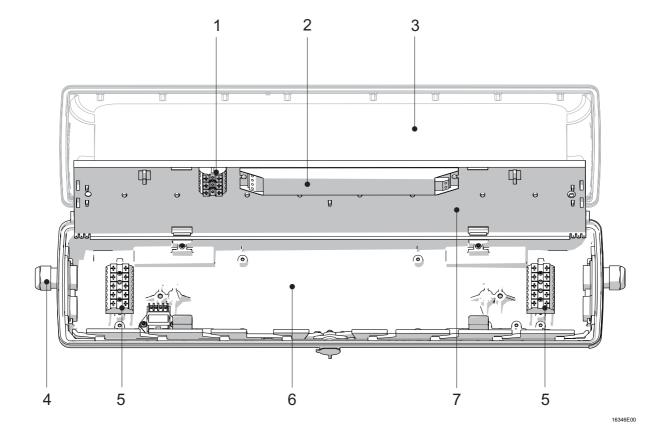
Non-compliance results in severe or fatal injuries.

• Use the device only according to the operating conditions described in these operating instructions.

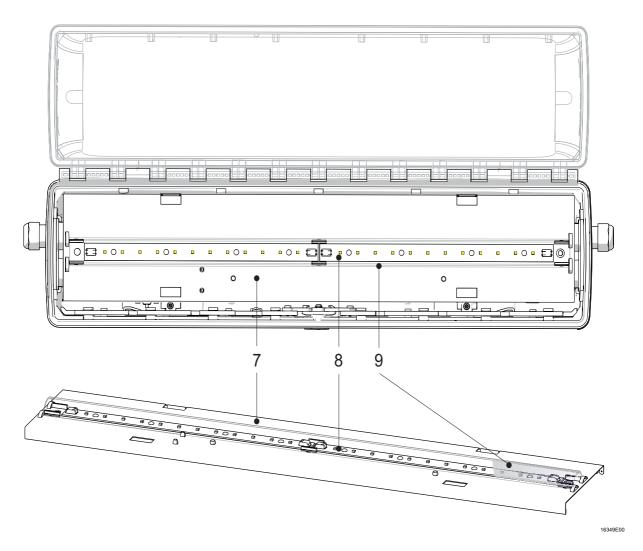
4.1 Function

- for lighting areas, work spaces and objects
- switching off the equipment by means of a central lock (optional) when the luminaire is opened

4.2 Device design







- 1 Connection terminal mounting plate 6 Luminaire enclosure (internal wiring)
- 2 Ballast
- 3 Translucent cover
- 4 Cable gland
- 5 Connection terminal luminaire (customer wiring)

- 7 Mounting plate
- 8 LED PCB
- 9 Diffuser (optional / accessories)

5 Technical data

Explosion Protection

Global (IECEx)

Gas and dust IECEx IBE 14.0080X

EX nA d op is IIC T4 Gc EX tb IIIC T100 °C Db EX tc IIIC T100 °C Dc

Europe (ATEX)

Dust IBExU14ATEX1292

II 2 D Ex tb IIIC T100 °C Db

Gas and dust IBExU14ATEXB020 X

⟨ II 3 G Ex nA d op is IIC T4 Gc⟨ II 3 D Ex tc IIIC T100 °C Dc

Certifications and certificates

Certificates IECEx, ATEX

Technical Data

Electrical data

Ballast AC: 220 ... 240 V ±10 %; 50 ... 60 Hz

DC: 200 ... 250 V ±10 %

Inrush current $I_{peak} = 53.5 \text{ A}$; $\Delta t = 124.8 \mu s$

maximum number of luminaires per miniature circuit breaker:

Туре	10 A	16 A	20 A	25 A
В	8	12	16	20
С	13	21	27	33

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.



Technical Data

Luminous characteristics

Luminous flux

	6402/21.250	6402/22.450
Power consumption [W]	28	52
Colour rendering [Ra]	≥ 80	≥ 80
Colour temperature [K]	5000	5000
without diffuser		
Luminous flux [lm]	2919	5375
Luminaire efficiency [lm/W]	105	103
Light output ratio [%]	85	85
with diffuser		
Luminous flux [lm]	2558	4670
Luminaire efficiency [lm/W]	92	90
Light output ratio [%]	75	76

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

Ambient conditions

Operating temperature range

Storage

-30 ... +55 °C

Service life

Service life

	T _a ≤ 25 °C	T _a ≤ 45 °C	T _a ≤ 55 °C
L ₇₀ B ₁₀ C ₁₀	100,000 h	100,000 h	50,000 h

 $L_xB_vC_z$

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



Technical Data

Mechanical data

Material

Enclosure

Material Polyester resin, glass fibre-reinforced

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 gland 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 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

5-pole: L1, L2, L3, N, PE (with through wiring)

Clamping range: 1 x 0.75 ... 4 mm² (solid/finely stranded)

(2 free clamping units for each pole available)

Special: Terminal block with covering

5-pole: L1, L2, L3, N, PE

Clamping range: 2x 0.75 ... 6 mm² (solid);

2 x 0.75 ... 4 mm² (finely and extra finely stranded)

Through wiring

Standard light with

fitting 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 mm² 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).



Technical Data

Assembly Standard luminaire

Standard: 2 x M8 insert nuts in the enclosure

Special: Mounting grooves in the enclosure for the 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.



7 Mounting and installation



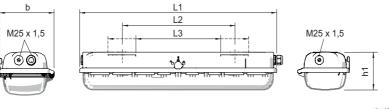
DANGER

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.

7.1 Dimensions / fastening dimensions

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



15440E0

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

EXLUX 6402 Standard luminaire



²⁾ variable mounting distance

7.2 Mounting / dismounting, operating position



DANGER

Explosion hazard due to electrostatic discharge Non-complicance results in severe or fatal injuries.

Do not use the luminaire in strong charge generating environments!

The following processes/activities should be avoided:

- · accidental friction
- · particle currents



DANGER

Explosion hazard due to inadmissible heating! Non-compliance results in severe or fatal injuries.

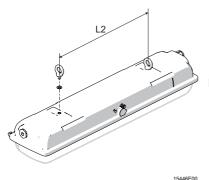
- Avoid external heat sources and/or direct sunlight (risk of change of temperature class or change of maximum permissible surface temperature).
- Do not exceed the maximum ambient temperature due to external heat sources (premature failure of equipment).



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

Suspension at fixed mounting points

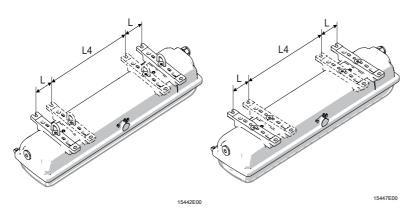




Version	L2 mm [inches]
28 W	400 [15.75]
52 W	800 [31.50]

max. screw-in depth 10 mm [0.39]

Suspension at moveable assembly parts



Mounting bracket		Top rail	
Version	L4 mm [inches]	L mm [inches]	
28 W	320 [12.60]	80 [3.15]	
52 W	670 [26.38]	130 [5.12]	

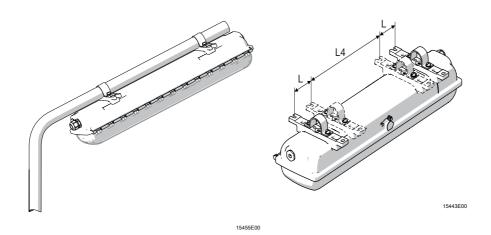
Lateral mounting pockets for variable suspension points.



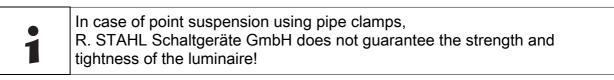
When mounting the luminaire using top rails, ensure that the mounting surface is flat. Otherwise, the enclosure might be mounted in a warped/twisted way. The result is leakage of the luminaire and difficulties in replacing the translucent cover.

Pole mounting Pole mounting using pipe clamps



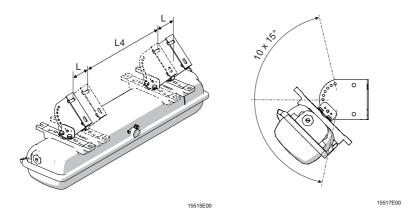


Version	L4 mm [inches]	L mm [inches]
28 W	320 [12.60]	80 [3.15]
52 W	670 [26.38]	130 [5.12]



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

Wall bracket mounting



Version	L4 mm [inches]	L mm [inches]
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.

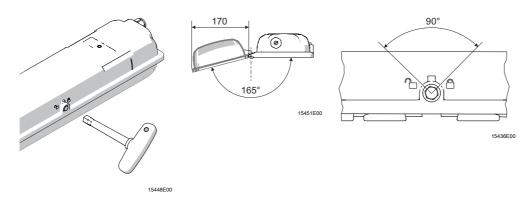
Electronic components can be destroyed if touched.

· Do not touch the LED-PCBs!



Recommendation

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



- 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).



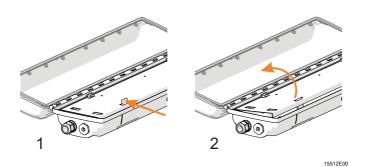
Note:

- 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



- 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.

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



EN

Standard: Optional:

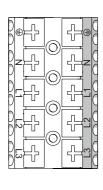
Spring clamp terminals

up to 4 mm²

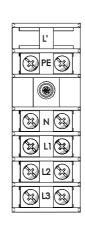
Screw-type terminals up to 4 mm² finely and extra finely stranded,

and 6 mm² solid

Stripping length: Stripping length: 10 ... 11 mm 10 ... 11 mm



15516E00



L1, L2, L3 = Phase

Ν = Neutral conductor

PΕ = Protective conductor

Through wiring

15438E00

Through wiring with 2.5 mm² 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 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!

8 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 LED assembly and the diffusor are clean.

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!



9 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.

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.

G	3 3
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

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.

9.2 Repair



DANGER

Explosion hazard due to improper repair! Non-compliance results in severe or fatal injuries.

 Repair work on the devices must be performed only by R.STAHL Schaltgeräte GmbH.

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

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 R. STAHL Schaltgeräte GmbH.



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



EN



EG-Konformitätserklärung

EC Declaration of Conformity Déclaration de Conformité CE



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:

Typ(en), type(s), type(s):

LED Langfeldleuchte

LED Linear Luminaire LED Luminaire Linéaire

6402/2...-...-...

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)
94/9/EG: ATEX-Richtlinie 94/9/EC: ATEX Directive 94/9/CE: Directive ATEX	EN 60079-0:2012 + A11:2013 EN 60079-31:2014
Kennzeichnung, marking, marquage:	€x II 2 D Ex tb IIIC T100 °C Db C € 0158
EG-Baumusterprüfbescheinigung: EG Type Examination Certificate: Attestation d'examen CE de type:	IBExU 14 ATEX 1292 (IBExU Institut für Sicherheitstechnik GmbH Fuchsmühlenweg 7, 09599 Freiberg, Germany)
2004/108/EG: EMV-Richtlinie 2004/108/EC: EMC Directive 2004/108/CE: Directive CEM	EN 55015:2006 + A1:2007 + A2:2009 EN 61547:2009 EN 61000-3-2:2006 + A1:2009 + A2:2009 EN 61000-3-3:2008
2011/65/EU: RoHS-Richtlinie 2011/65/EU: RoHS Directive 2011/65/UE: Directive RoHS	EN 50581:2012
Sonstige Normen: Other Standards: Autres normes:	EN 60598-1:2008 + A11:2009 EN 62471:2008

Waldenburg, 29. Juni 2015

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.-P. Rückgauer Leiter Qualitätsmanagement

Director Quality Management
Directeur Assurance de Qualité

EG-Konformitätserklärung

EC Declaration of Conformity Déclaration de Conformité CE



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:

Typ(en), type(s), type(s):

LED Langfeldleuchte

LED Linear Luminaire LED Luminaire Linéaire

6402/2...-...

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.

est comonne aux exigences des directives et des normes suivantes.				
Richtlinie(n) Directive(s) Directive(s)		Norm(en) Standard(s) Norme(s)		
94/9/EG: 94/9/EC: 94/9/CE:	ATEX-Richtlinie ATEX Directive Directive ATEX	EN 60079-0:2012 + A11:2013 EN 60079-15:2010 EN 60079-28:2007 EN 60079-31:2014		
Kennzeichnu	ng, marking, marquage:	II 3 G Ex nA d op is IIC T4 Gc II 3 D Ex tc IIIC T100°C Dc	CE	,
Type Examina	üfbescheinigung: tion Certificate: xamen de type:	IBExU 14 ATEX B020 X (IBExU Institut für Sicherheitstechnik GmbH Fuchsmühlenweg 7, 09599 Freiberg, Germany)		
2004/108/EC:	EMV-Richtlinie EMC Directive Directive CEM	EN 55015:2006 + A1:2007 + A2:2009 EN 61547:2009 EN 61000-3-2:2006 + A1:2009 + A2:2009 EN 61000-3-3:2008		
2011/65/EU: 2011/65/EU: 2011/65/UE:	RoHS-Richtlinie RoHS Directive Directive RoHS	EN 50581:2012		
Sonstige Nor Other Standar Autres normes	ds:	EN 60598-1:2008 + A11:2009 EN 62471:2008		

Waldenburg, 29. Juni 2015

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.-P. Rückgauer Leiter Qualitätsmanagement

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