



Tubular Light Fitting with LED

Series 6036



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1 General Information

1.1 Manufacturer

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Business Unit Lighting & Signalling
Nordstr. 10
99427 Weimar
Germany

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74638 Waldenburg
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1.2 Information regarding the operating instructions

ID-No.: 224538 / 603660300010
Publication Code: 2017-07-31·BA00·III·en·07





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 EU Declaration of Conformity: 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

	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 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 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 tubular light fitting 6036 is equipment

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


3.4 Modifications and alterations

	DANGER
	<p>Explosion hazard due to modifications and alterations to the device! Non-compliance results in severe or fatal injuries.</p> <ul style="list-style-type: none"> • Do not modify or alter the device. No liability or warranty for damage resulting from modifications and alterations.

4 Function and device design

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

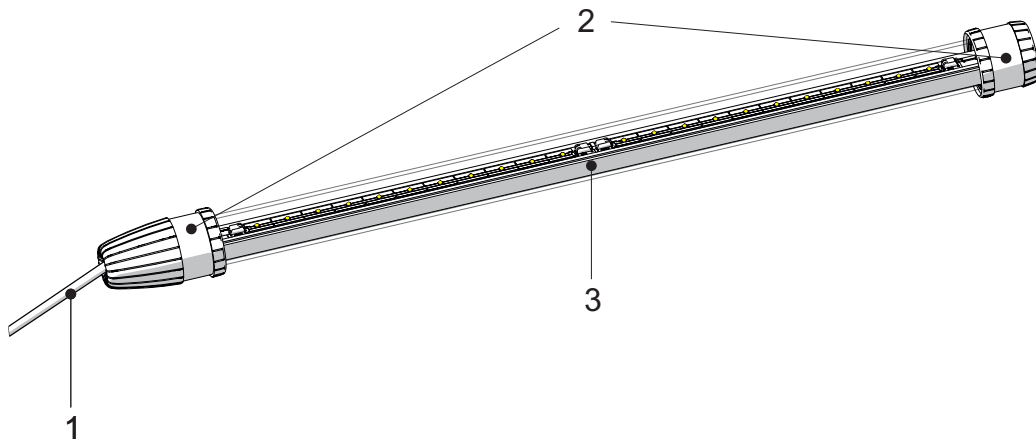
4.1 Function

	WARNING
	<p>Danger if used in aggressive ambient conditions! The explosion protection is impaired!</p> <ul style="list-style-type: none"> • Do not use when exposed to kerosene, ammonia and phosphorus vapour. • The enclosure can be damaged.

The tubular light fitting 6036 is equipment

- for lighting areas, work spaces and objects

4.2 Device design



16350E00

- 1 Connection cable
- 2 Rubber caps including mounting surfaces
- 3 Polycarbonate tube with LED insert

5 Technical data

Explosion Protection

Global (IECEX)

Gas, dust and mining	IECEX EPS 13.0027
	Ex db op is IIC T* Gb
	Ex tb IIIC T* °C Db
	Ex db op is I Mb
	* temperature classes and surface temperatures see below

Europe (ATEX)

Gas, dust and mining	EPS 13 ATEX 1 597
	Ex II 2 G Ex db op is IIC T* Gb
	Ex II 2 D Ex tb IIIC T* °C Db
	Ex I M 2 Ex db op is I Mb
	* temperature classes and surface temperatures see below

Certifications and certificates

Certificates	IECEX, ATEX, Kazakhstan (TR), Russia (TR), Belarus (TR)
Ship approval	DNV GL

Surface temperature and temperature class

Version	Temperature class	Surface temperature
6036/1...-0...-...-..	T4	100 °C
6036/1...-1...-...-..	T6	80 °C

Technical Data

Electrical data

Rated operational
voltage

Size 1, 12 V (6036/1212-...2-0...-...):
12 V DC
Size 1, 24 to 48 V (6036/1212-...3-0...-...):
24 to 48 V AC/DC 0, 50 to 60 Hz
Size 1, 110 to 240 V (6036/1212-...5-0...-...):
110 to 240 V AC/DC; 0, 50 to 60 Hz
Size 2, 220 to 240 V (6036/1225-...0-0...-...):
220 to 240 V AC; 50 to 60 Hz
209 to 240 V DC
Size 3, 220 to 240 V (6036/1235-...0-0...-...):
220 to 240 V AC; 50 to 60 Hz
209 to 240 V DC
Size 4, 220 to 240 V (6036/1248-...0-0...-...):
220 to 240 V AC; 50 to 60 Hz
209 to 240 V DC

Voltage range

Size 1, 12 V (6036/1212-...2-0...-...):
10.8 to 13.2 V DC
Size 1, 24 to 48 V (6036/1212-...3-0...-...):
21.6 to 52.8 V AC/DC; 0, 50 to 60 Hz
Size 1, 110 to 240 V (6036/1212-...5-0...-...):
99 to 264 V AC/DC; 0, 50 to 60 Hz
Size 2, 220 to 240 V (6036/1225-...0-0...-...):
198 to 264 V AC; 50 to 60 Hz
188 to 264 V DC
Size 3, 220 to 240 V (6036/1235-...0-0...-...):
198 to 264 V AC; 50 to 60 Hz
188 to 264 V DC
Size 4, 220 to 240 V (6036/1248-...0-0...-...):
198 to 264 V AC; 50 to 60 Hz
188 to 264 V DC

Rated operational
current

Size 1:
1.30 A (12 V)
0.70 A (24 V)
0.30 A (48 V)
0.13 A (110 V)
0.07 A (240 V)
Size 2:
0.13 A (230 V)
Size 3:
0.18 A (230 V)
Size 4:
0.25 A (230 V)

Technical Data

Inrush current

Size 1:

maximum number of luminaires per
miniature circuit breaker:

U_n [V]	I_{peak} [A]	Δt [μ s]	B10A	B16A	C10A	C16A
24	27	290	6	10	10	20
48	58	360	3	5	5	9
110	2	960	28	45	47	75
230	4	810	16	26	27	44

Size 2 to 4:

maximum number of luminaires
per miniature circuit breaker:

	U_n [V]	I_{peak} [A]	Δt [μ s]	B10A	B16A	C10A	C16A
6036/1225-...-...-...	230	13	38	61	98	61	98
6036/1235-...-...-...	230	13	38	44	71	44	71
6036/1248-...-...-...	230	13	38	32	51	32	51

Power factor $\cos \varphi$

Size 1:

N/A (12 V)

N/A (24 V)

N/A (48 V)

> 0.90 (110 V)

> 0.85 (230 V)

Size 2 to 4:

> 0.95 (230 V)

THD

Size 1:

N/A (12 V)

N/A (24 V)

N/A (48 V)

< 38% (110 V)

< 46% (230 V)

Size 2 to 4:

< 23% (230 V)

Protection class

II

Technical Data

Luminous characteristics

Variant	Colour temperature	Colour rendering	without diffuser		with diffuser	
			Luminous flux	Efficiency	Luminous flux	Efficiency
	[K]	R _a	[lm]	[lm/W]	[lm]	[lm/W]
Size 1 12 V, 16 W LED, 2-row						
6036/1212-252-....-1	5,000	>80	1,020	64	850	53
Size 1 24 to 48 V, 16 W LED, 2-row						
6036/1212-253-....-1	5,000	>80	1,200	75	1,000	63
Size 1 24 to 48 V, 16 W LED, 1-row						
6036/1212-053-....-1	5,000	>80	1,340	84	1,160	73
Size 1 110 to 240 V, 16 W LED, 1-row						
6036/1212-055-....-1	5,000	>80	1,340	84	1,160	73
Size 2 220 to 240 V, 28 W LED, 1-row						
6036/1225-.50-....-1	5,000	>80	2,680	96	2,330	83
6036/1225-050-....-5	yellow	N/A	1,730	64	1,502	55
Size 3 220 to 240 V, 38 W LED, 1-row						
6036/1235-.50-....-1	5,000	>80	4,020	106	3,480	92
6036/1235-050-....-5	yellow	N/A	2,595	64	2,252	55
Size 4 220 to 240 V, 49 W LED, 1-row						
6036/1248-.50-....-1	5,000	>80	5,360	109	4,640	95
6036/1248-050-....-5	yellow	N/A	3,459	64	3,003	55

Values apply to T_a = +25 °C.

Luminous flux decline at T_a = +60 °C to ≥ 50% of the nominal value.

Technical Data

Ambient conditions

Operating
temperature range

Cable	T4 variant	T6 variant	Mining variant
H07RN-F; 2 x 1.5 mm ²	-55 to +60 °C	-55 to +45 °C	-40 to +60 °C
HXSLHXÖ; 2 x 1.5 mm ²	-40 to +60 °C	-40 to +45 °C	-40 to +60 °C
RCO 5221; 2 x 1.5 mm ²	-55 to +60 °C	-55 to +45 °C	-40 to +60 °C
BFOU P5-P12; 2 x 1.5 mm ²	-40 to +60 °C	-40 to +45 °C	-40 to +60 °C
(N)SSHÖU 1 kV; 2 x 1.5 mm ²	-45 to +60 °C	-45 to +45 °C	-40 to +60 °C
RADOX, MFH-S B; 2 x 1.5 mm ²	-50 to +60 °C	-50 to +45 °C	-40 to +60 °C

Data applies to fixed electric lines.

The luminaire must be switched on above -40 °C.

Storage

-40 to +70 °C

Service life

Service life

	T _a ≤ 25 °C	T _a ≤ 45 °C	T _a ≤ 60 °C
L ₇₀ B ₁₀ C ₁₀	100,000 h	90,000 h	80,000 h

L_xB_yC_z

At the end of the service life:

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

Mechanical data

Degree of protection

IP66 / IP67
IP68 (10 m / 1 h)
acc. to IEC 60598

Impact strength
(IK code)

IK10 (IEC 62262)

Material

Enclosure tube

Polycarbonate

Sealing cap

NBR / PVC (EPDM)

Technical Data**Mounting / Installation**

Connection line

The connection line must be laid securely.**Designation**H07RN-F, \varnothing 8.8 to 11 mm, 2 x 1.5 mm²HXSLHXÖ, d 7.0 to 7.6 mm, 2 x 1.5 mm²RCO 52261, \varnothing 10 to 12 mm, 2 x 1.5 mm²(N)SSHÖU 1 kV, \varnothing 8.7 to 9 mm, 2 x 1.5 mm²RADOX, MFH-S B, \varnothing 6 to 7 mm, 2 x 1.5 mm²**Application**

Standard

Increased flame
resistance

Special applications

Voltage-proof up to 1 kV

Offshore

Mounting


Mounting options:

Pipe clamp: rubber coated, clamping range 48 ... 53 mm

Double pipe clamp: made of plastic for mounting of pipes with a
diameter of 45 ... 55 mm
(Screws and nuts made of stainless steel V2A)**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



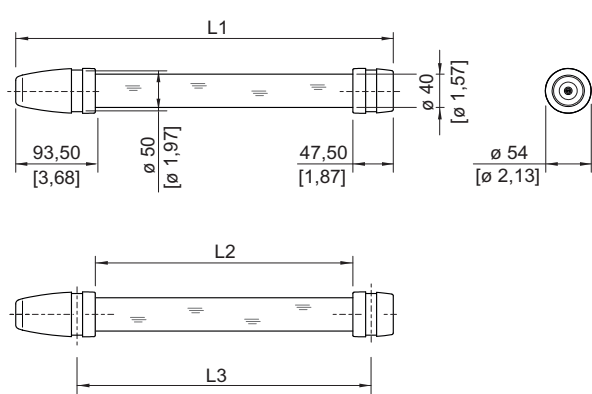
DANGER

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




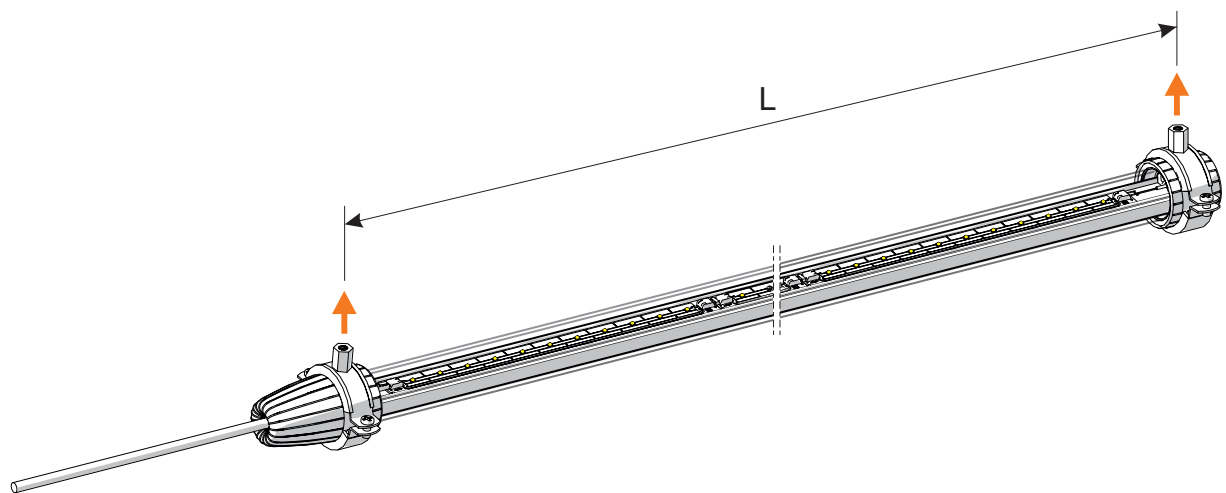
	L1	L2	L3
Size 1	444 [17.5]	303 [11.9]	346 [13.6]
Size 2	762 [30.0]	618 [24.3]	664 [26.1]
Size 3	1,059 [41.7]	917 [36.1]	962 [37.9]
Size 4	1,382 [54.4]	1,240 [48.8]	1,285 [50.6]



7.2 Mounting / dismounting, operating position

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

	<p>The light fitting is suitable for wall and ceiling mounting. Outdoors, the mounting position with cable outlet at top is not allowed.</p>
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16362E00

Size	L in mm [inches]
1	346 ±2 [13.6 ±0.08]
2	664 ±2 [26.1 ±0.08]
3	962 ±2 [37.9 ±0.08]
4	1,285 ±2 [50.6 ±0.08]

- Attach suitable hanger bolts with M8 or M10 thread at a distance "L" depending on the version of luminaire.
- Screw the pipe clamps on the hanger bolts.
- Mount the tubular light fitting inside the pipe clamps.


7.3 Installation

7.3.1 Electrical connections

The light fitting is delivered with connection cable.

The connection to the power supply must be established using a terminal box or a plug.


8 Commissioning

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


Before commissioning, ensure that

- the luminaire has been installed according to regulations.
- the connection has been performed correctly.
- the luminaire is not damaged.
- no foreign bodies are inside the device.
- all screws and nuts are tightened according to regulations.

9 Maintenance and repair

	WARNING
	<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"> • Work performed on the device must only be carried out by appropriately authorized and qualified electricians.

9.1 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	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.
the cables for ageing and damage	If the cables are damaged or aged, please send the device in for repair.

9.1.1 Cleaning

NOTE	
The luminaire is marked with the warning "Clean with damp cloth only".	
<ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • Repair work on the devices must be performed only by R. STAHL Schaltgeräte GmbH.

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.stahl-ex.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:

Rohrleuchte

Tubular light fitting

Appareil d'éclairage tubulaire



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

6036/.....-.....-.....

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	ATEX-Richtlinie	EN 60079-0:2012 + A11:2013	
2014/34/EU	ATEX Directive	EN 60079-1:2014	
2014/34/UE	Directive ATEX	EN 60079-28:2015	
		EN 60079-31:2014	
Kennzeichnung, marking, marquage:		<div>II 2 G Ex db op is IIC T6/T4 Gb</div> <div> II 2 D Ex tb IIC T80 °C/T100 °C Db</div> <div>I M2 Ex db op is I Mb</div> <div> 0158</div>	
EU-Baumusterprüfbescheinigung:		EPS 13 ATEX 1597	
EU Type Examination Certificate:		(Bureau Veritas Consumer Products Services Germany GmbH,	
Attestation d'examen UE de type:		Businesspark A96, 86842 Tuerkheim, Gemany, NB 2004)	
Produktnormen nach Niederspannungsrichtlinie:		EN 60598-1:2015	
Product standards according to Low Voltage Directive:		EN 60598-2-22:2014	
Normes des produit pour la Directive Basse Tension:		EN 62471:2008	
		EN 62493:2010	
2014/30/EU	EMV-Richtlinie	EN 61547:2009	
2014/30/EU	EMC Directive	EN 55015:2013	
2014/30/UE	Directive CEM	EN 61000-3-2:2014	
		EN 61000-3-3:2013	
2011/65/EU	RoHS-Richtlinie	EN 50581:2012	
2011/65/EU	RoHS Directive		
2011/65/UE	Directive RoHS		

Waldenburg, 2017-05-29

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