

Motion detector



BL4, BL4-C

Operating Manual

All device data can also be found here:

BL4:



<https://www.beg-luxomat.com/qr.php?prtno=93288>

BL4-C:



<https://www.beg-luxomat.com/qr.php?prtno=93284>

© 2020

B.E.G. Brück Electronic GmbH
Gerberstraße 33
51789 Lindlar
GERMANY

Phone: +49 (0) 2266 90121-0
Fax: +49 (0) 2266 90121-50
E-mail: info@beg.de
Internet: beg-luxomat.com

1	About this document	3
1.1	Other applicable documents	3
1.2	Used symbols and signal words	3
2	Safety	3
2.1	Intended use	3
2.2	Foreseeable misuse	4
2.3	Qualified persons / electricians	4
2.3.1	Certified electricians	4
2.4	Disclaimer	5
3	Device description	6
3.1	Device overview	6
3.2	Functions	7
3.3	LED indicators	8
4	Mounting	9
4.1	Choice of mounting location	9
4.1.1	Mounting location BL4	9
4.1.2	Mounting location BL4-C	9
4.1.3	Sources of interference	10
4.1.4	Range	10
4.2	Mounting options	11
4.2.1	Ceiling installation	11
4.2.2	Surface mounting with mounting set 93183	11
4.2.3	Flush mounting with mounting set 93194	13
5	Electrical connection	15
5.1	Preparing the connection	16
5.2	Schematic wiring diagrams	17
5.2.1	Standard connection	17
5.2.2	Parallel connection	17
5.3	RC suppressor unit	18

6	Commissioning	18
6.1	Factory default settings	18
6.2	Self-test cycle	18
6.3	Adjustment via IR remote control	19
6.3.1	Commands	19
6.3.2	Parameter	20
6.3.3	Adjusting the parameters with the remote control	21
7	Care, maintenance and disposal	22
7.1	Cleaning	22
7.2	Maintenance	22
7.3	Disposing	22
8	Diagnostics and troubleshooting	23
9	Service and support	24
9.1	Manufacturer's warranty	24
9.1.1	Product code	24
9.2	Contact details	24
10	Technical Data	25
10.1	General data	25
10.2	Dimensioned drawings	26
10.2.1	Ceiling installation	26
10.2.2	Surface mounting with mounting set 93183	26
10.2.3	Flush mounting with mounting set 93194	27
10.2.4	Wire basket BSK 92199	27
11	Accessories / Ordering information	28
12	EU declaration of conformity	28




1 About this document

1.1 Other applicable documents

Short operating manuals:

- BL4: 50271_V1Short_MAN_BL4-DE 091118-1 (supplied with the device)
- BL4-C 50272_V1Short_MAN_BL4-K-DE 091118 (supplied with the device)

1.2 Used symbols and signal words

	Symbol indicating possible dangers to persons
	Symbol indicating possible property damage
	Symbol for useful information and tips
NOTICE	Signal word for possible property damage
CAUTION	Signal word for possible minor injuries
WARNING	Signal word for possible serious injuries
DANGER	Signal word for possible fatal injuries



2 Safety

The motion detector BL4 was developed, manufactured and tested in accordance with the applicable safety standards. It corresponds to the state of the art.

2.1 Intended use

The **BL4** is a motion detector for ceiling mounting (interior applications) having a **circular detection area**.

The **BL4-C** is a ceiling-mounted motion detector (for indoor applications) with a **narrow, elongated detection range especially for corridors**.

 CAUTION	
	<p>Observe intended use!</p> <p>The protection of personnel and the device cannot be guaranteed if the device is operated in a manner not complying with its intended use.</p> <ul style="list-style-type: none"> → Only operate the device in accordance with its intended use. → B.E.G. Brück Electronic GmbH is not liable for damages caused by improper use. → Read these operating instructions before commissioning the device. Knowledge of the operating instructions is an element of proper use.

NOTICE

**Comply with conditions and regulations!**

→ Observe the locally applicable legal regulations and the rules of the employer's liability insurance association.

2.2 Foreseeable misuse

Any use other than that defined under "Intended use" or which goes beyond that use is considered improper use.

In particular, use of the device is not permitted in the following cases:

- in rooms with explosive atmospheres
- in circuits which are relevant to safety
- for medical purposes

NOTICE

**Do not modify or otherwise interfere with the device!**

→ Do not carry out modifications or otherwise interfere with the device. The device must not be tampered with and must not be changed in any way.

→ The device must not be opened. There are no user-serviceable parts inside.

→ Repairs must only be performed by B.E.G. Brück Electronic GmbH.

2.3 Qualified persons / electricians

Connection, mounting, commissioning and adjustment of the device must only be carried out by competent persons.

Prerequisites for competent persons:

- They have a suitable technical education.
- They are familiar with the rules and regulations for occupational safety and safety at work.
- They are familiar with the operating instructions for the device.
- They have been instructed by the responsible person on the mounting and operation of the device.

2.3.1 Certified electricians

Work on electrical equipment may only be carried out by certified electricians or by instructed persons under the direction and supervision of a certified electrician in accordance with the electrical engineering regulations.

Due to their technical training, knowledge and experience as well as their familiarity with relevant standards and regulations, certified electricians are able to perform work on electrical systems and independently detect possible dangers.

In Germany, certified electricians must fulfill the requirements of accident-prevention regulations DGUV (German Social Accident Insurance) provision 3 (e.g. electrician foreman). In other countries, there are respective regulations that must be observed.

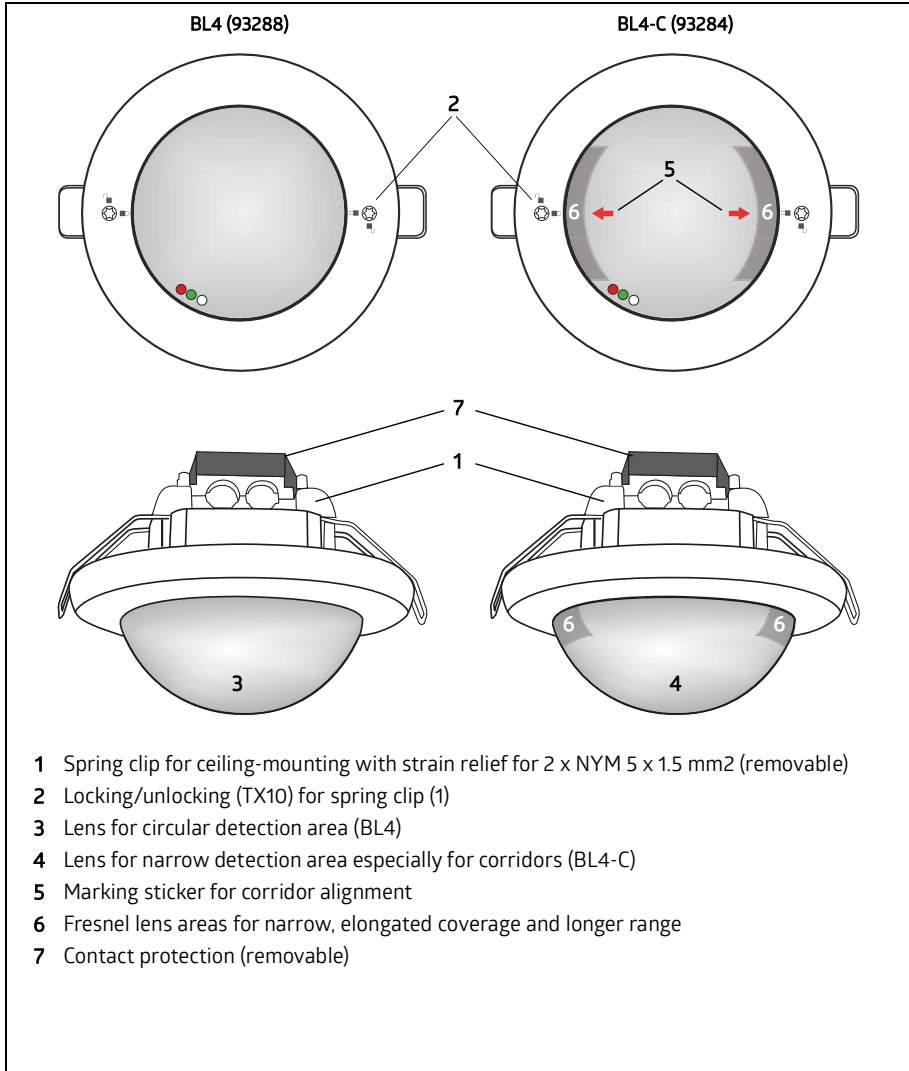
2.4 Disclaimer

B.E.G. Brück Electronic GmbH is not liable in the following cases:

- The device is not being used properly.
- Reasonably foreseeable misuse is not taken into account.
- Mounting and electrical connection are not properly performed.
- Changes (e.g., constructional) are made to the device.

3 Device description

3.1 Device overview



- 1 Spring clip for ceiling-mounting with strain relief for 2 x NYM 5 x 1.5 mm² (removable)
- 2 Locking/unlocking (TX10) for spring clip (1)
- 3 Lens for circular detection area (BL4)
- 4 Lens for narrow detection area especially for corridors (BL4-C)
- 5 Marking sticker for corridor alignment
- 6 Fresnel lens areas for narrow, elongated coverage and longer range
- 7 Contact protection (removable)

The BL4 is a motion detector for ceiling mounting having a circular detection area.

The BL4-C is a ceiling-mounted motion detector with a narrow, elongated detection range especially for corridors.

Settings can be made with the IR-BL infrared remote control.

3.2 Functions

The general operation of the motion detector is described in the short operating instructions supplied with the device.

Passive infrared motion detectors register movements of heat sources and convert them into signals that are evaluated by a processor.

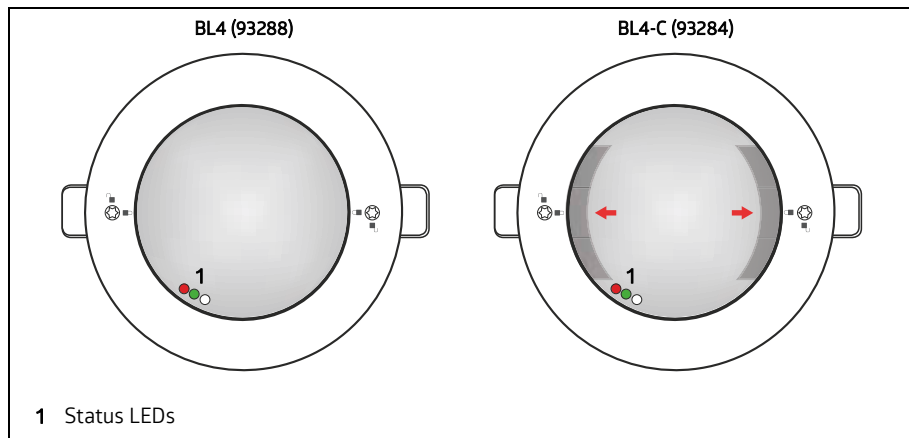
The device is a switching detector. The brightness value below which the illumination is to be switched on can be freely selected (switch-on threshold).

If the value measured by the light sensor is below the set switch-on threshold, a detected movement causes the connected illumination to switch on. The follow-up time also restarts with each newly detected movement. After the follow-up time has elapsed, the illumination is switched off.

The illumination can be switched on or off manually by remote control at any time. The device then remains switched on or off as long as movement is detected plus the set follow-up time.

The follow-up time is restarted by each movement detected. If no movement is detected during a follow-up time, the detector returns to normal operation (light is switched on during movement and remains on until no movement is detected for a follow-up time).

3.3 LED indicators



LED function indicators after each mains recovery (60 s self-test cycle)

Factory setting active	Red, green and white LEDs flash alternately
Detector is programmed	Red LED flashes quickly (2x/s)

LED function indicators during operation

Motion detection	Red LED flashes
Switch-on threshold exceeded	Green LED flashes
IR command	White LED flashes

4 Mounting

4.1 Choice of mounting location

The most important aspect of motion detection is the correct choice of mounting location.

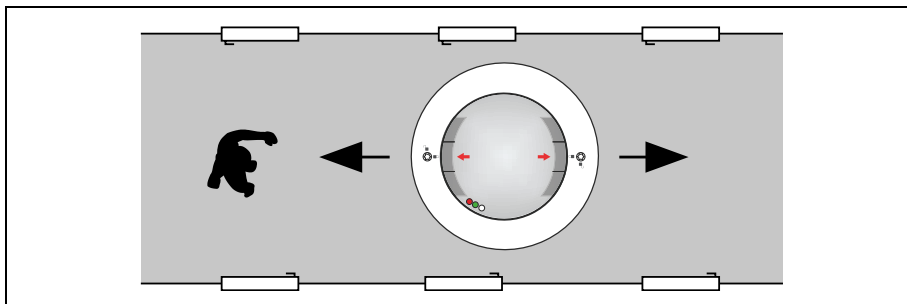
- Mount the detector so that the main direction of movement is always tangential (transverse to the device).
- Always mount the detector at the location with the lowest amount of daylight.

4.1.1 Mounting location BL4

If the smallest movements are to be detected (e.g. working with the PC keyboard), we recommend selecting the mounting location directly above the desk. This ensures that the detection can be guaranteed.

4.1.2 Mounting location BL4-C

The BL4-C motion detector has a narrow detection range especially for corridors.



- Mount the corridor/ceiling motion detector so that the red marker arrow labels or Fresnel lens areas in the detector's lens point in the direction along the corridor.

NOTICE



Observe mounting height!

The Fresnel lens areas, which increase the detection range of the motion sensor in the longitudinal direction of the corridor, are designed for a mounting height of 2.50 m.

→ It is essential to maintain a mounting height of 2.4 – 2.6 m!

A lower mounting height can significantly reduce the detection range.

A greater mounting height can lead to blind areas where no movement is detected.

- Remove the red marking arrow stickers from the lens after you have connected and installed the detector and checked that it is working properly.

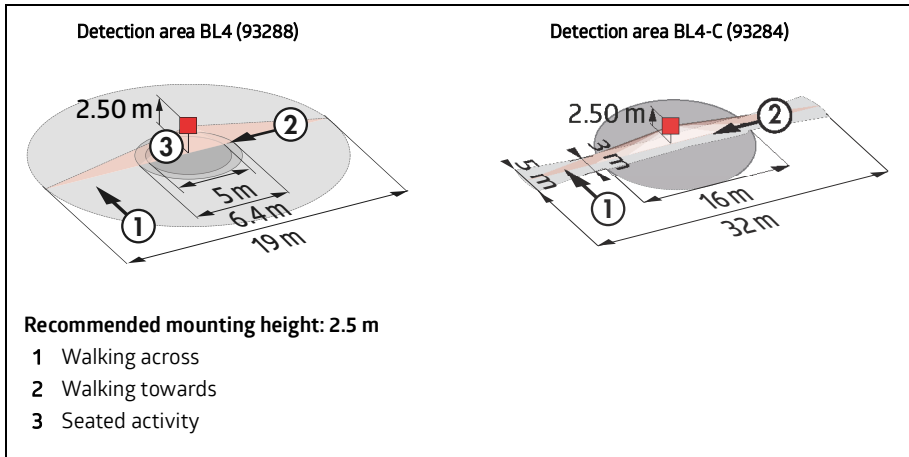
4.1.3 Sources of interference

The following sources of interference can lead to faulty switching because they also generate temperature differences:

- Radiant heaters
- Ventilation systems that emit warm or cold air
- Luminaires in the direct detection area

The detector must be installed at an appropriate distance from these sources.

4.1.4 Range

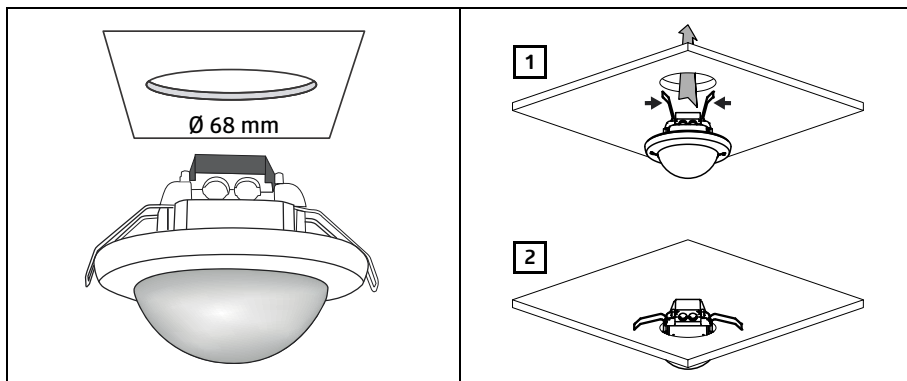


INFO	
	<p>With a switch-on threshold greater than 1000 lux (day mode, "sun" setting), the light evaluation is inactive, i.e. the detector operates independently of brightness.</p>

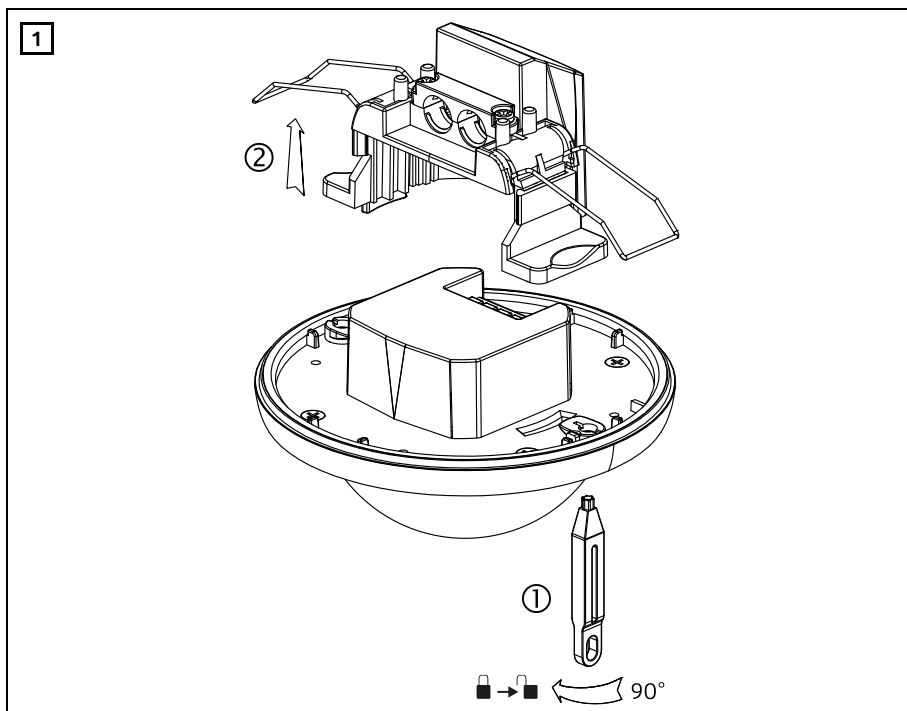
INFO	
	<p>Observe mounting height! Please be sure to observe the mounting height indicated for the devices.</p> <ul style="list-style-type: none"> ■ The range is reduced by a lower mounting height. ■ With a higher mounting height, the range increases, but the detection sensitivity decreases.

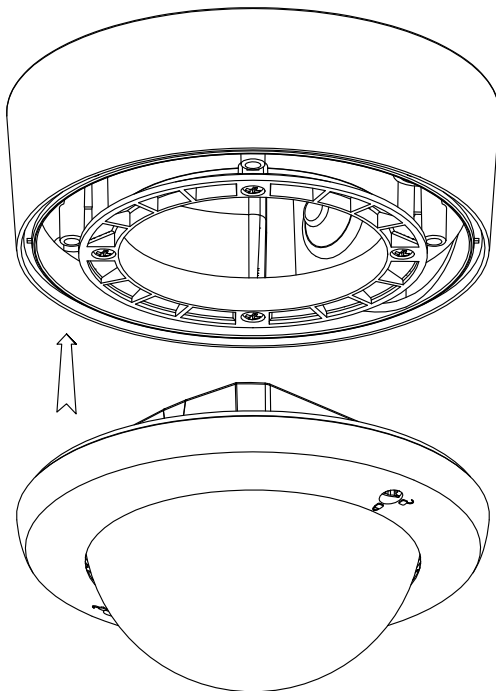
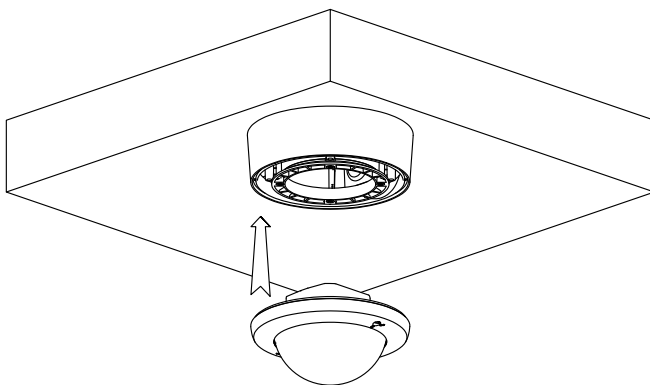
4.2 Mounting options

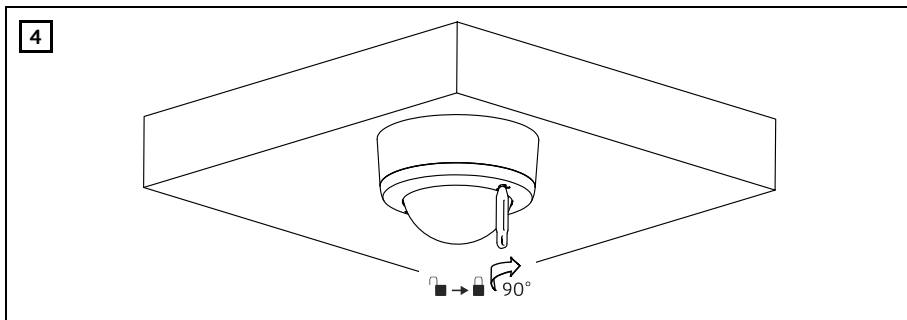
4.2.1 Ceiling installation



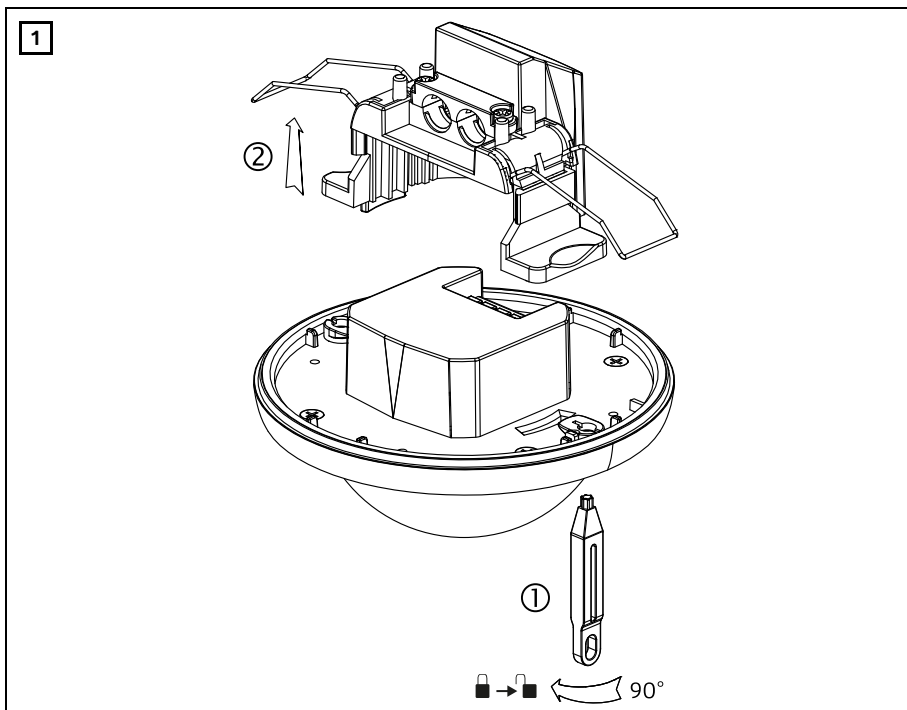
4.2.2 Surface mounting with mounting set 93183

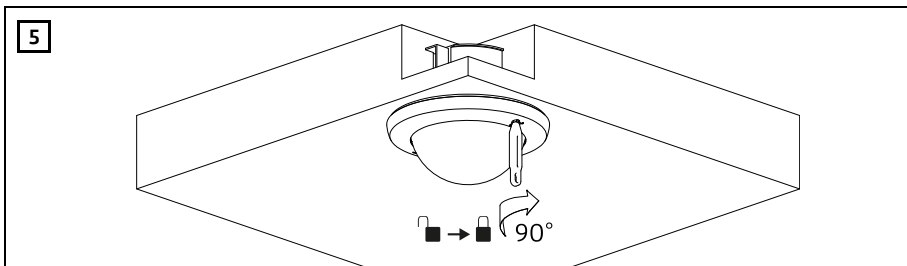
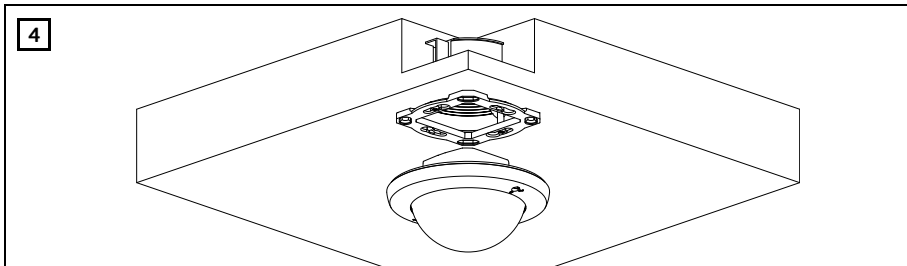
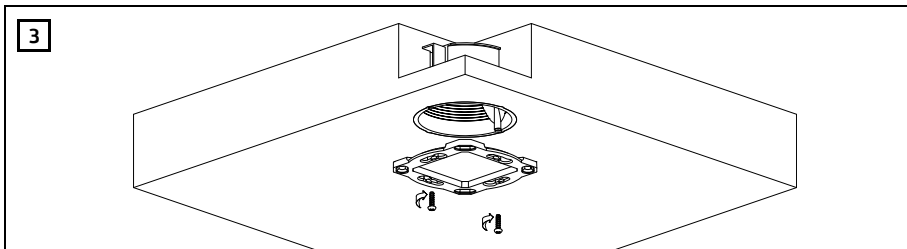
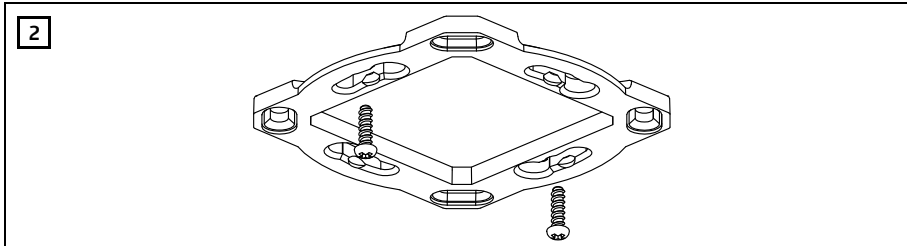


2**3**



4.2.3 Flush mounting with mounting set 93194





5 Electrical connection

DANGER



Danger of death due to electrical shock!

Work on electrical equipment may only be carried out by certified electricians or by instructed persons under the direction and supervision of a certified electrician in accordance with the electrical engineering regulations.

→ Disconnect supply before installing!

→ This device is not to be used to isolate other equipment from the mains supply.

WARNING



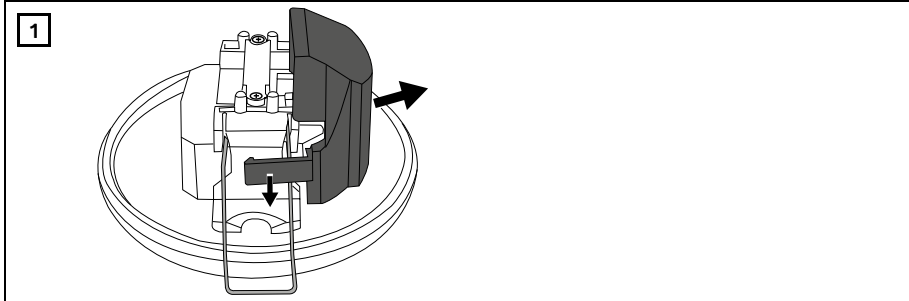
Observe inrush currents!

Due to the high inrush currents of electronic ballasts and LED drivers, the maximum number of switchable luminaires is limited.

→ Use an external contactor for a large number of loads.

5.1 Preparing the connection

→ Remove the contact protection (clipped on) of the terminal compartment.



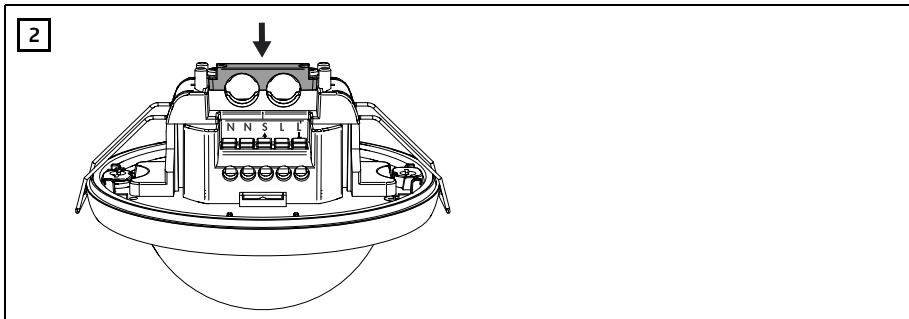
→ Open the strain relief and carry out the electrical connection.

NOTICE



Mount strain relief!

→ For ceiling mounting, install the strain relief after the electrical connection has been made.



CAUTION

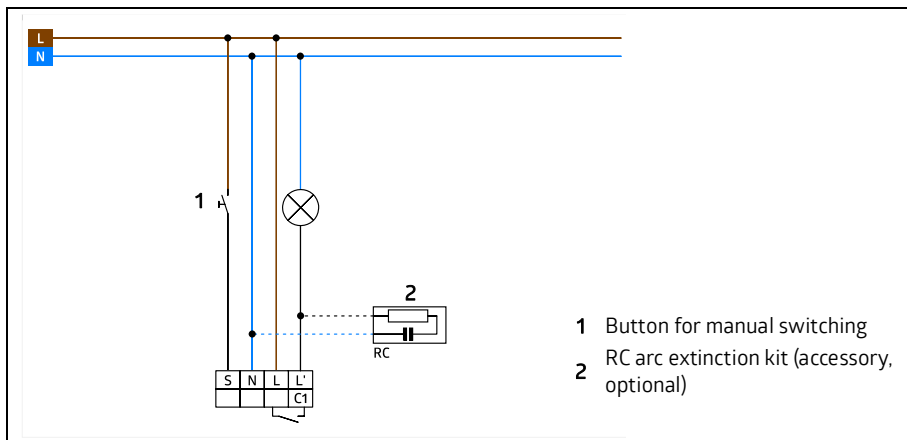


For ceiling mounting, attach contact protection!

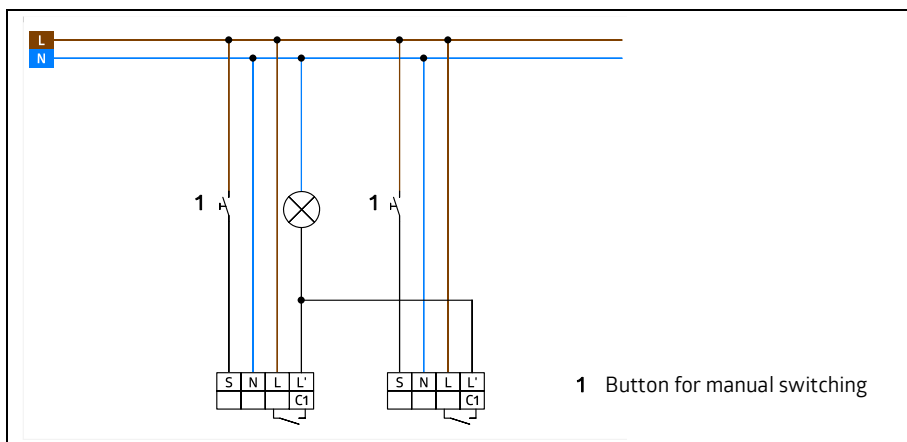
→ Replace the contact protection after the electrical connection has been made.

5.2 Schematic wiring diagrams

5.2.1 Standard connection



5.2.2 Parallel connection



NOTICE



Parallel connection!

Up to 8 detectors can be connected in parallel to extend the detection range. .
→ For parallel connection, connect all detectors to the same phase conductor.

5.3 RC suppressor unit

NOTICE



Interference suppression of the loads!

All switched loads must be properly suppressed.
We recommend our RC suppressor units (see accessories).

6 Commissioning

6.1 Factory default settings

The values printed in bold are the factory settings.

Device	
Switch-on threshold	500 Lux Adjustment range by remote control: 20 Lux - 1000 Lux
Sensitivity	HIGH (HIGH, MEDIUM, LOW)
Status LEDs	Function active (active, inactive)
Follow-up time	3 min (15 s - 60 min)

INFO

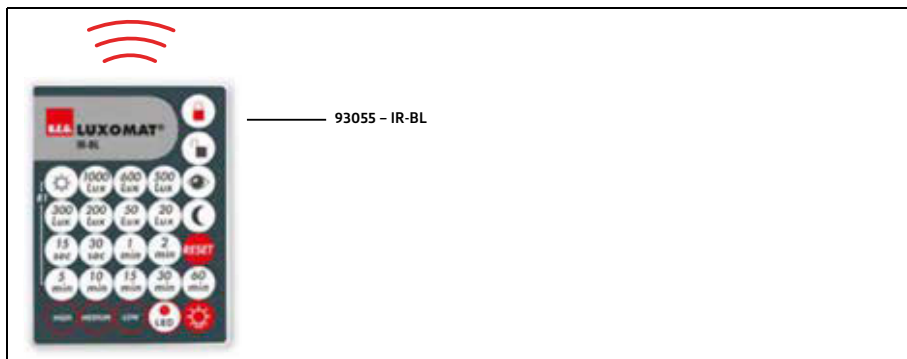


With a switch-on threshold greater than 1000 lux (day mode, "sun" setting), the light evaluation is inactive, i.e. the detector operates independently of brightness.

6.2 Self-test cycle

After power-on, the detector goes through a self-test cycle of 60 s. Different flashing of the LEDs (see chapter 3.3 "LED indicators") indicates whether the detector has already been programmed or whether the factory settings are active.

6.3 Adjustment via IR remote control













The device can be adjusted by infrared remote control. No adjustments can be made to the device itself.

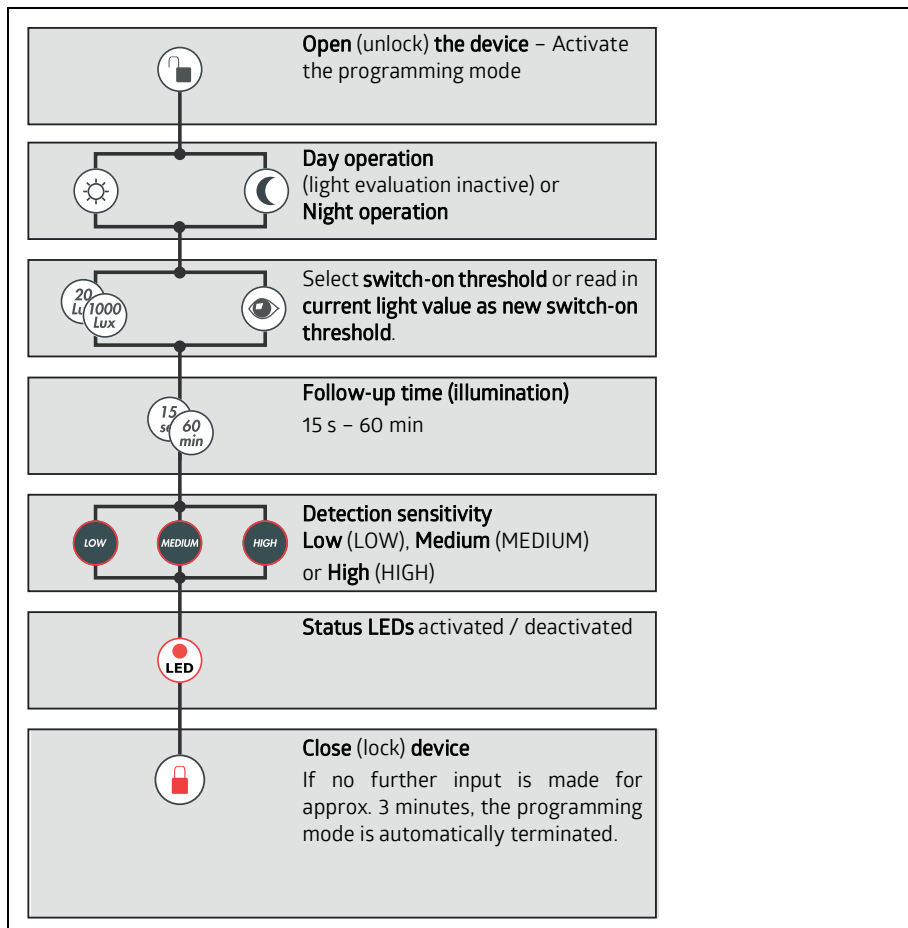
The white LED of the detector flashes briefly fast to confirm the correct reception of an IR signal.

6.3.1 Commands

Button	Command
	<p>Close detector (locked state) When closed, only the Switch illumination and RESET functions are available.</p>
	<p>Open detector (unlocked state) Press this key to open (unlock) the device for programming. The settings for the day/night operation, the switch-on threshold, the follow-up time, the detection sensitivity and the status LEDs can then be made. The procedure is terminated automatically after 3 minutes of no further input or by pressing the 'Close detector' button.</p>
	<p>Reset to factory default settings This command (long key press > 3 s) resets the device to its factory setting.</p> <div style="background-color: yellow; padding: 5px; border: 1px solid black; margin: 5px 0;"> <p> CAUTION</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p> Factory default settings! The individually made settings are lost.</p> </div>
	<p>Store brightness This key is used to measure the ambient brightness and apply the value as the switch-on threshold.</p>
	<p>Switch illumination The illumination is switched on or off and the follow-up time is started.</p>

6.3.2 Parameter

Button	Parameter
	Day operation The switching of the output when a movement is detected is almost light-independent (switch-on threshold approx. 2000 lux).
	Night operation The light evaluation is performed with a minimum switch-on threshold of 10 lux.
 to 	Switch-on threshold The brightness value below which the illumination is switched on is called the switch-on threshold. The switch-on threshold can be selected between 20 Lux and 1000 Lux. Below this value, the illumination is switched on during movement.
 to 	Follow-up time This is the duration after a movement for which the connected illumination remains switched on.
 or  or 	Detection sensitivity With a high detection sensitivity, even smaller movements are detected and larger areas are detected.
	Status LEDs This button is used to activate or deactivate the status LEDs.

6.3.3 Adjusting the parameters with the remote control

7 Care, maintenance and disposal

7.1 Cleaning

If necessary, clean the plastic lens of the motion detector with a soft, lint-free cloth.

NOTICE



Do not use aggressive cleaning agents!

→ Do not use aggressive cleaning agents such as thinner or acetone for cleaning the device.

→ To clean the lens, use only a lint-free cloth.

Tips and hard objects can destroy the lens.

7.2 Maintenance

Usually, the motion detector does not require any maintenance by the operator. Repairs to the device must only be carried out by the manufacturer.

For repairs, contact your local B.E.G. Brück Electronic subsidiary or directly B.E.G. Brück Electronic GmbH, Germany.

7.3 Disposing

For disposal observe the applicable national regulations regarding electronic components.

8 Diagnostics and troubleshooting

The connected luminaire does not switch

- The luminaire is defective:
 - Replace luminaire/lamp
- No mains voltage available:
 - Check the fuse in the subdistribution
- The turn-on threshold is not set correctly:
 - Correct threshold
- The lens of the sensor part is dirty:
 - Clean the lens

The connected luminaire switches on too late or the range is too small

- The detector is mounted too high:
 - Correct mounting height if necessary.
- The turn-on threshold is not set correctly:
 - Correct threshold
 - Correct detection sensitivity

The luminaire remains permanently switched on

- Permanent movements of heat sources in the detection area
 - Remove heat source.
 - Check the correct operation of the detector by covering the lens.
After the set follow-up time has elapsed, the detector must switch off the light.
- The detector is connected in parallel to a switch which enables the light to be switched on manually:
 - Correct circuit if necessary

Unwanted switching on of the illumination

- Movements of heat sources in the detection area:
 - Do not install the detector near radiators and fans.
 - Animals can also be detected by the detector as moving heat sources.

9 Service and support

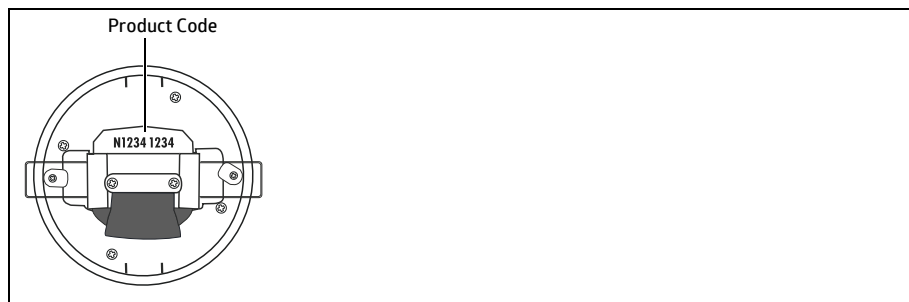
9.1 Manufacturer's warranty

The company B.E.G. Brück Electronic GmbH grants a warranty in accordance with the warranty conditions, which you can download from the website at <https://www.beg-luxomat.com/service/downloads/>.

9.1.1 Product code

The product is provided with a product code that enables the product to be traced in the event of a warranty/complaint.

The product code of the **BL4** and **BL4-C** is lasered into the housing of the basic unit.



9.2 Contact details

Service hotline:

+49 (0)2266 90121-0

Monday to Thursday 8.00 to 16.00 (UTC+1)

Friday 8.00 to 15.00 (UTC+1)

E-mail:

support@beg.de

Return address for repairs:

Contact your B.E.G. subsidiary or representative.

The contact details can be found at <https://www.beg-luxomat.com/en-in/service/service-points/>.

Or contact us directly at

B.E.G. Brück Electronic GmbH

Gerberstrasse 33

51789 Lindlar

GERMANY

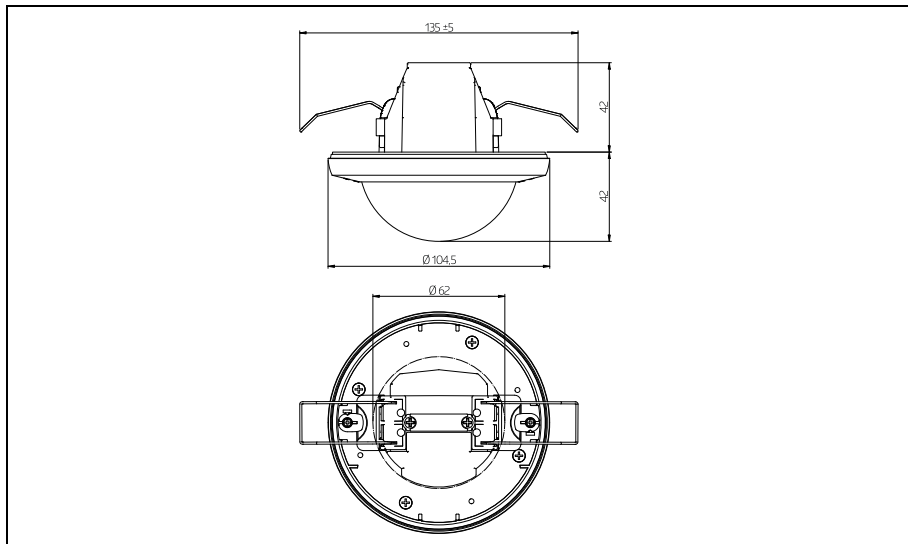
10 Technical Data

10.1 General data

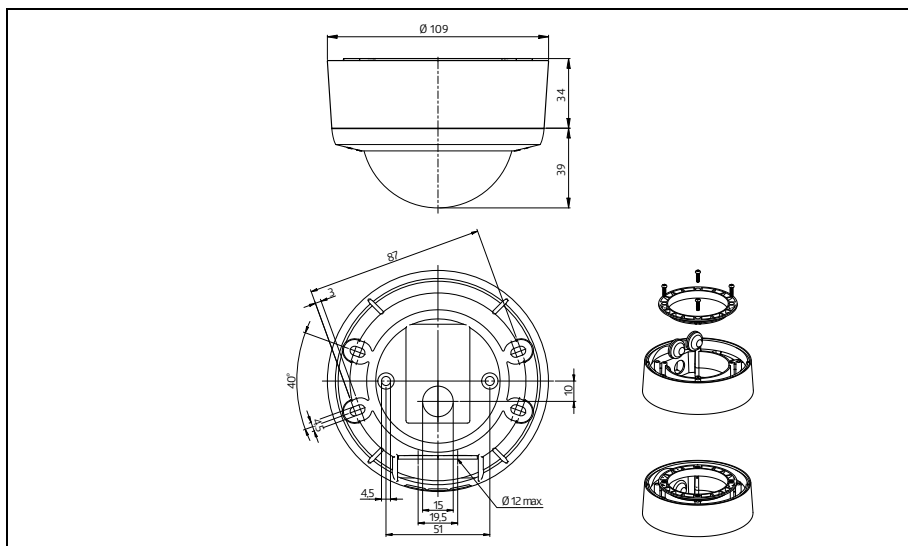
	BL4 (93288)	BL4-C (93284)
Voltage	AC 110 – 240 V~, 50/60 Hz	
Power consumption	approx. 0.3 W	
Terminal clamps	0.5 – 2.5 mm ² , for solid one-wire conductors	
Connection cable (recommended)	NYM 5 x 1.5 mm ²	
Circuit breaker	max. 10 A	
Detection area	vertical, 360°	vertical, narrow for corridors
Mounting height min./max./recomm.	2 m / 5 m / 2.5 m	2.4 m / 2.6 m / 2.5 m
Range (mounting height 2.5 m, at ambient temperature 18 °C)		
Walking across	max. Ø 19.0 m	max. 32.0 m
Walking towards	max. Ø 6.4 m	max. 16.0 m
Seated activity	max. Ø 5 m	
Monitored area when moving across the detector	284 m ² at 2.5 m mounting height	200 m ² at 2.5 m mounting height
Switch-on threshold	10 – 2000 Lux	
Follow-up time	15 s – 60 min	
Housing	Polycarbonate, UV-resistant	
Protection class/degree of protection	II / IP20	
Dimensions H x Ø [mm]	84 x 104.5 mm	
Ambient temperature	-25 °C – +50 °C	
Relay contact	1 x µ contact, normally open/NO	
Switching capacity	1000 W, cos φ = 1 500 VA, cos φ = 0.5 200 W LED	
remote controllable	yes (with IR-BL)	
Factory settings Detection sensitivity Follow-up time Switch-on threshold	High 3 min 500 Lux	
Nameplate	<p>The nameplate contains the following information for both models:</p> <ul style="list-style-type: none"> Model: BL4 (93288) and BL4-K/C (93284) Brand: B.E.G. LUXOMAT® Voltage: 110–240V~ Frequency: 50/60Hz Power: 1000W (cosφ=1), 500VA (cosφ=0.5) Terminal range: 0.5–1.5 mm Terminal spacing: 10mm Protection class: IP20 Certification: CE, RoHS, and other safety symbols. 	

10.2 Dimensioned drawings

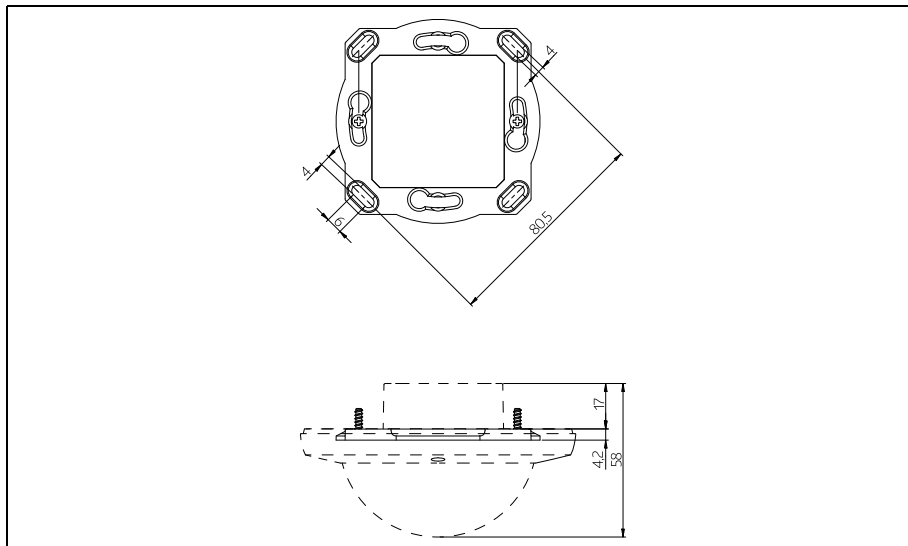
10.2.1 Ceiling installation



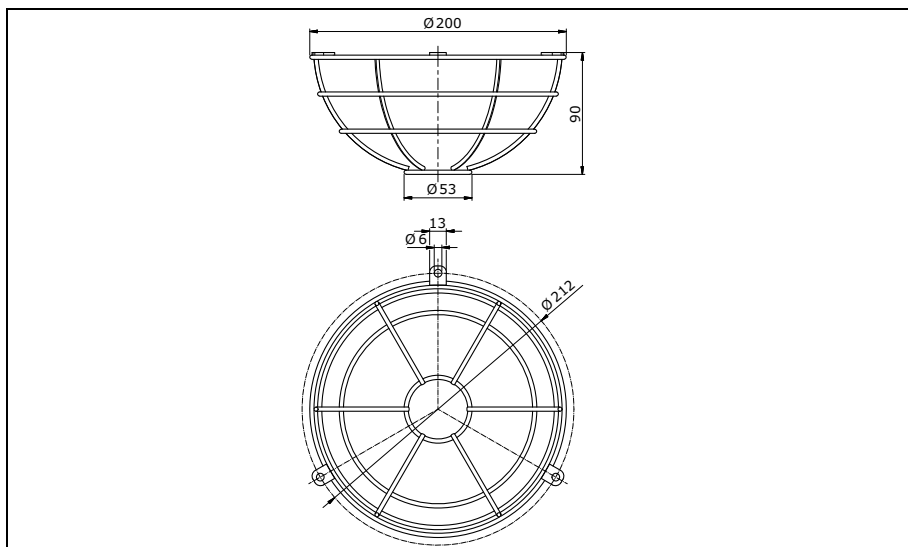
10.2.2 Surface mounting with mounting set 93183



10.2.3 Flush mounting with mounting set 93194



10.2.4 Wire basket BSK 92199



11 Accessories / Ordering information

Art. No.	Designation
93055	Remote control IR-BL
93183	Mounting set surface-mounted
93194	Mounting set flush-mounted
10880	RC suppressor unit
10882	Mini RC suppressor unit
92199	Wire basket / white

12 EU declaration of conformity

The product complies with the following EU directives

1. Electromagnetic Compatibility (2014/30/EU)
2. Low voltage (2014/35/EU)
3. Restriction of the use of certain hazardous substances in electrical and electronic equipment (2011/65/EU)

NOTICE



EU declaration of conformity

A detailed EU declaration of Conformity can be found at www.beg-luxomat.com or can be requested from the manufacturer.



Brück Electronic GmbH
Gerberstraße 33
51789 Lindlar
GERMANY

T +49 (0)2266-90121-0
F +49 (0)2266-90121-50

info@beg.de
beg-luxomat.com